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Developing Competences in the Organization: Supply Chain Management

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Abstract

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This thesis focuses on developing a Plan for building the required future competencies for the supply chain management organization at the case company. The case unit of this thesis is a business unit that is responsible for the supply chain management.

This study utilizes Applied action research. The current state of the business problem was assessed by utilizing qualitative research methods. The data collection contained three rounds with relevant key stakeholders, which included internal document analysis, virtual interviews, and co-creation workshops. The current state analysis revealed issues regarding three areas: (1) competence development, creating the culture and way of working for learning, (2) competence development planning, and the creation of the competence development plan guiding the activities of competence development systematically, and (3) supply chain management talent, and building capabilities for the workforce of the future. The same three areas were explored via available literature, published knowledge and industry best practices.

As an outcome, this study suggested a Plan for the unit on how to proceed in building and developing competencies in the organization to meet future skill and capability needs and to drive organization strategy and strategic intent. Today businesses and supply chains have been impacted by different phenomena, creating increasingly competitive business landscapes, ever-increasing complexity, and digital revolution. This thesis has demonstrated that continuous learning in the organization has become essential and imperative for organizations to succeed. Sustaining competitiveness in today's market requires organizations to be adaptive, innovative, and constantly changing. This requires continuously learning new skills. By harnessing these skills and capabilities correctly, the case company can increase its abilities to grow and renew.

Keywords	Competence development, competence management, strategic planning, learning and development

Contents

Glossary

The following terms and definitions are used by the case company and, for consistency, are used in this thesis (Case company 2022).

- Ability - A person's internal potential (born with it) to accomplish one or more activities in certain manner and at a certain level of quality.

- Competence Development - professional development or skill enhancement, is the intentional and systematic process of acquiring, improving, and refining the skills, knowledge, and abilities needed to excel in one's or organization's current role or to prepare for future responsibilities. It involves continuous learning, training, and experiences that contribute to an individual's overall competency and effectiveness in their field. Competence development is a proactive approach to staying relevant, adaptable, and capable in a dynamic and evolving work environment.

- Competence Management - Supports the integration of human resources planning with business planning by allowing organizations to assess the current human resource capacity based on their competencies against the capacity needed to achieve the vision, mission, and business goals of the organization. Targeted human resource strategies, plans and programs to address gaps (e.g. hiring and staffing, learning, career development, succession management etc.) are then designed, developed, and implemented to close the gaps.

- Competence - Competences are observable and measurable characteristics of a person that include using knowledge and demonstrating skills, behaviours and abilities that contribute to performing well.

- Skill - A skill is a learned ability or capability acquired through training, practice, and experience, enabling an individual to perform specific tasks or activities effectively. Skills are essential components of an individual's competency and play a crucial role in determining their effectiveness in various personal, academic, and professional contexts.

- Knowledge - Through knowledge, employees assimilate and understand all the theoretical information related to performing a certain task or activity. It

encompasses facts, information, concepts, skills, and expertise that individuals accumulate and internalize over time. Knowledge is not only about possessing information but also involves the ability to comprehend, apply, and contextualize that information. It forms the foundation for problem-solving, decision-making, and critical thinking. Knowledge can be explicit, codified information that can be easily articulated, or tacit, representing practical know-how and insights that may be challenging to express explicitly. In various fields, knowledge is a key asset and plays a fundamental role in personal and professional development.

- Career path – overview of possible career development opportunities, both horizontal and vertical

- Capability – Company's or person's ability to achieve its objectives in relations to its overall mission.

- Job – A cluster of positions executing a certain set of tasks on a specific career level and job grade. Also covers general purpose and main responsibility areas and scope, impact, etc.

- Job role – A cluster of jobs that differentiate from each other by a job grade.

- Job grade – The hierarchical position of a job withing a career level that is consistent across jobs and recognizes incremental changes in scope and responsibility level.

- KPI – Key Performance Indicator. A KPI is a measurable value that indicates how effectively an organization, business unit, project, or individual is achieving key objectives and goals. KPIs are used to monitor performance, track progress, and assess the success of specific activities or strategies.

List of Tables

List of Figures

1   Introduction

All functions within companies have challenges to overcome in today's market environment. Also supply chain functions face many disruptions that require resilience to overcome. Geopolitical risks, wars, trade wars, pandemics, and rising costs from raw materials to freight costs, demand modern supply chains deal with the increased uncertainties and many unpredicted disruptions (SAP, 2023). Further, complexity of supply chains, and accelerating pace of automation and digitalization are likely to make this all the more urgent to tackle in the coming years (McKinsey, 2022).

To become a resilient supply chain, it is not enough to develop only the processes, tools, and ways of working, but it is important to strengthen the workforce's capabilities and skills across the whole supply chain to maintain a successful business. With this, the workforce is better equipped to respond to changes and to determine the best approaches in facing unprecedented challenges and possible new disruptions.

According to McKinsey Global Institute research (2022), half of today's supply chain tasks are expected to be automated by 2055, resulting in process transformations and the implicit need to reskill and upskill workers. At the same time nearly 70 percent of all transformation programs fail, due to the reason that employees do not have the necessary skills and capabilities to support the transformation programs (McKinsey, 2022). It will become imperative to identify these needed skills and capabilities so that they can be developed.

This study analyses the case company's supply chain management organization and, identifies the needed skills and competences to be develop in short and long term to achieve the organization's goals and to become an agile, resilient, and high-performing supply chain management organization with matching skills and capabilities. Even though every employee is responsible for their own individual development, with the roadmap and plan the learning needs are made visible, and the potential learning tools and methods can be considered, enabled, and communicated for the usage of leaders, people managers and employees.

1.1 Business Context

The case company is a global large-sized company that operates in the technology sector. The company operates in more than 100 countries and there are between 50000 and 100000 employees globally. In this thesis, the focus will be on a business unit that is responsible for the supply chain management. Alone the supply chain management organization size is equivalent to a large-size company in Finland.

As an industry, the supply chain includes those activities that are needed to move goods from the raw material state to the delivery of finished products to the end user. The end users can be a person, a company, or an organization. The supply chain consists of material flow, money flow, and information flow components.

1.2 Business Challenge, Objective and Outcome

As a field, supply chain is influenced by several global phenomena that are affecting its environment, including environmental regulations, geopolitical risks, semiconductor shortages, pandemic and lockdown risks, global transportation risks, wars, energy shortages, demand fluctuations, etc. At the same time, digitalization is pushing companies to transform their supply chains into digital supply chains to reach the next level of operational effectiveness by leveraging new digital business models and digital tools. All these changes and challenges require supply chain people and organizations to adapt to new ways of working.

In previous years, the case company's supply chain management organization has been in "firefighting mode," where the emphasis has been on managing daily challenges and running an operational business. There have been limited investments in, and focus on, change management and competence management for its employees. This was despite the fact that it was clearly understood that those were success factors for employee satisfaction as well.

Overall, high-tech companies are experiencing challenges when hiring and retaining talents, so for supply chain management, it is also important to investigate the ways employees are invested in and how their competence development journeys are supported. Further, it is important to consider how to build organizations' capabilities to succeed further.

The Objective of this thesis is *to develop a Plan for building the required future competencies for the supply chain management organization* at the case company.

This study focuses on the global organization of supply chain management and the steps towards achieving this objective include performing an evaluation of the current state of the competencies and strategic needs (gap + future needed competencies), identifying the competence development needs, learning from available knowledge and industry best practice, and building a plan detailing how to build the necessary capabilities.

The outcome is the Plan for the unit on how to proceed in building and developing competencies in the organization. The outcome will be called the Supply Chain Management Competence Development Plan.

1.3   Thesis Outline

The scope of the thesis is to create a plan detailing how to build needed competences in the global organization of supply chain management. With the help of the plan the supply chain management organization will be better equipped to understand the path to building correct competences and focus on prioritized topics.

The research design of this thesis is comprised of five steps. After setting the thesis objective, the current practice of evaluating competencies in the company is investigated to find suitable working methods, and the current employee data is investigated to understand the current roles and competencies mapped to those roles in the organization, and to understand the organization's structures, existing role structures, and how competencies are mapped to these. Also, the stability of the current data is investigated. By interviewing the leaders and company experts, the purpose is to collect their expert views of the organization's existing competencies, competence gaps and their understanding of competence development needs for short-term and long-term. Additionally, to investigate the best practices from other internal units.

After that, available knowledge and industry best practices are explored to gain relevant knowledge for building the Proposal.

Based on the findings from the current state analysis, as well as suggestions from available knowledge, and a new round of inputs from the stakeholders, the

recommendations are built for competence development that supports the supply chain management organization. The Plan is validated as the final step in stakeholder interviews   and after that, a final proposal is created to be implemented.

This thesis is written in seven sections. Section 1 gives an introduction and context of the business problem, as well as summary information about the case company and its business environment. On the request of the case company and supply chain organization, the company information is held confidential. Section 2 describes the research method and the materials used in this study. Section 3 reports on the results of the current state analysis. Section 4 explores literature and best practices on the topics of developing competencies and upskilling the workforce. 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. It also presents the justification for selecting the methods to enable fulfillment of the thesis objectives.

2.1   Research Approach

Research can be categorized into different research families and strategies. Researchers must make decisions, guided by careful planning, whether the study is basic or applied, will qualitative and/or quantitative methodologies be used, and in what manner the study will be conducted.

First, a researcher makes a decision on the research family, comparing basic (fundamental) and Applied approaches. Basic research is driven by the quest for knowledge and a deeper understanding of scientific problems without an immediate practical application. Applied research is directed towards solving practical problems and producing tangible outcomes to hands-on problems in business and operations. (Kananen, 2013.)

Secondly, for choosing the research techniques there are various methods available for different needs and different research questions. Qualitative research uses words and sentences whereas quantitative research is based on numbers. The purpose of qualitative research is to describe and understand a phenomenon and give it a reasonable interpretation and in-depth understanding. Quantitative research delivers exact, quantified information that can directly utilized e.g. in business economics. (Kananen, 2013, 31.)

Thirdly, *a research strategy* is chosen. Typically studies in a business context require the choice between case studies, action research, surveys, benchmarking, etc. Action research has always had a practical element, bringing about a change and aims to increase knowledge by means of a research element. Action research is mostly targeted

at people and their activities. It aims for change and participation in the change by the researcher. A conductor of action research is often a member of the research object with an understanding of the phenomenon and the researcher needs to find means to eliminate the problem and find ways to the change and show this with recommendations for action with testing in practice. (Kananen, 2013, 40.) A shorter form of Action research, especially targeted at thesis research, is Applied action research. It combines both research and development work. The target is a change for the better and it typically leads to the continuous improvement and development of organizations. (Kananen, 2013, 13-20.)

In this study, the Applied action research is chosen as the main purpose is to develop a plan and roadmap for the organization and organization development purposes for the case organization. It fits with the logic of Applied action research where there is a situation, phenomenon or process that needs to be improved. As this thesis focuses on co-creating a solution with key stakeholders and the descriptive data is collected during interviews and workshops with them, it is purposeful to rely mainly on qualitative research techniques. Yet, some elements of numerical calculations are used when looking into the organization data.

2.2   Research Design

This study is planned to be conducted according to the following research design.
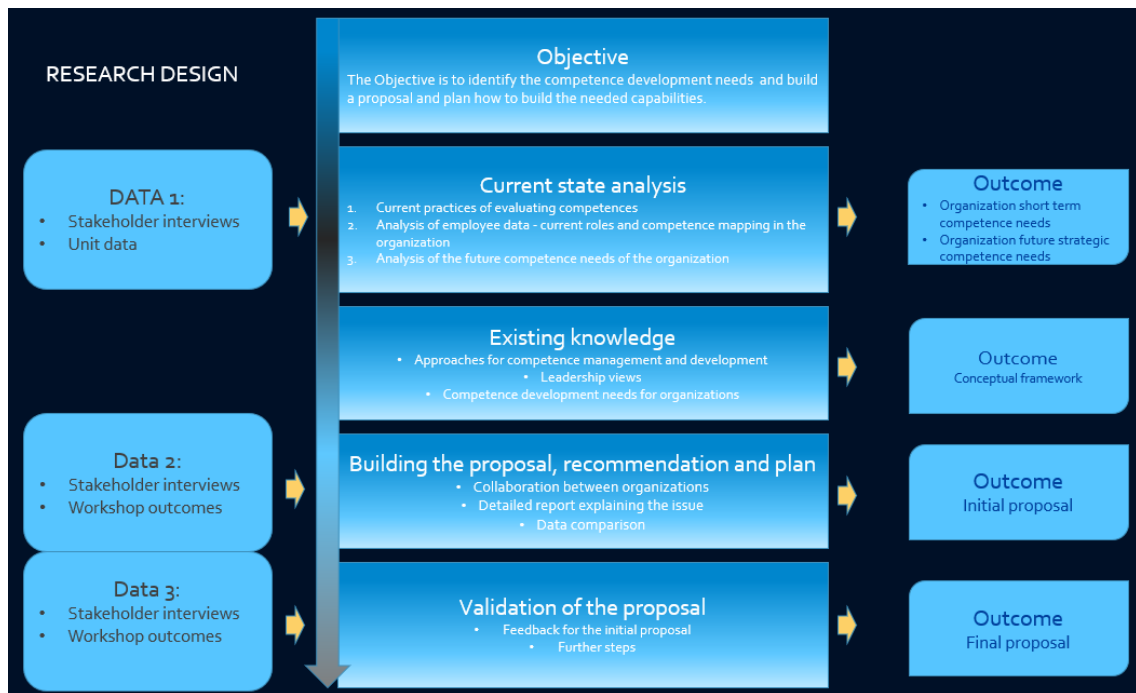
Figure 1.   Research design of this study.

Figure 1 shows that, after setting the thesis objective, the study starts with the current state analysis. The thesis company has current competence development practices in place and development methods in use, these are collected and analysed. The current state analysis starts by first looking into what kind of practices are available to evaluate competencies for the organization and the possibilities to evaluate the organization at this state. With the analysis of the employee data, the purpose is to understand the current roles in the organization and what kind of competencies are needed to perform daily tasks. Analysis of the future competence needs also investigates strategic competencies, as building the new strategic competencies can require different types of competence development methods.

Existing knowledge, literature, and industry best practices are explored for building the conceptual work. After that, to collect ideas and co-create the solution. Additionally, ideas from other levels and parts of the company are collected in a workshop. Leaders in the organization are used as a source of understanding the current level of their organization's competence levels and future needs.

Finally, the proposal is reviewed with the selected experts in supply chain management to get the validation for the proposal. Most knowledgeable stakeholders have been

chosen based on their role in the organization to prove the quality of outcomes and the latest information on organization practices.

2.3   Data Collection and Analysis

This study draws on data from a variety of sources, and the data was collected in 3 data collection rounds. Table 1 shows details of the three data collection rounds used in this study.

Table 1.   Details of the data collection plan.

	Data Source (Participants)	Data type	Content	Date/Duration	Documented as
	Data 1, for the Current state analysis				
1	Interviews with stakeholders. Unit Head, LT member	Virtual Interview	Discussion and views on the current state and future needs	1.8.2023 / 60 min	Recordings and field notes
2	LT member with business development role.	Virtual Interview	Discussion and views on the current state and future need.	6.10.2023 / 60 min	Recordings and field notes
3	Unit data.	Report	Current organization, roles, and competence mapping.	15.8.2023	Report
4	Best practices interview with development managers from other organization.	Virtual interview	Existing best practices for creation of a strategic plan.	9.10.2023 / 60 min	Field notes
	Data 2, for Proposal building				
5	Best practice data.	Materials	Recommendations and findings from other companies in similar field.		Materials
6	Proposal building and feedback from leadership team.	Virtual workshop	Proposal building with the dedicated network.	16.10.2023 /15 min	Field notes
7	Proposal building with the development manager for other organization.	Virtual meeting	Proposal building with an expert.	20.10.2023 / 60 min	Field notes
	Data 3, from Validation				

| 8 | Proposal building validation with network. | Virtual meetings | Proposal building with the dedicated network. | 15.10.2023 /60 min + 12x30 min | Recording + Field notes |
| 9 | Stakeholder interview. | Virtual meeting/ Final presentation | Validation, evaluation of the Proposal. | 30.10.2023 / 60 min | Field notes |

As seen from Table 1, data for this Thesis was collected and analyzed in three rounds. The first round of collecting Data 1, was conducted in the current state analysis phase and it was collected from the interviews organized among different groups of stakeholders. The first round of data was gathered from the thesis sponsor and unit head, which gave the view of expectations at the highest level of the organization. The second interview was conducted to look for a view on the person responsible for organization development in general. The third interview collected information and data on the next level of organization, to understand the ongoing and planned activities and information for the extended organization to be able to align planning work, prioritize work and understand commonalities.

In the second round, Data 2, the best practice data from other companies was collected first and then the findings were used as discussion points and suggestions, for other Data 2 collection purposes. This data included workshops and interviews with subject matter experts and the leadership team of the organization.

In the third round, Data 3 was collected when conducting validation of the initial proposal. Data 3 included the feedback for the proposal from the case company unit lead's appointed representatives. Due to the time zone challenges, there were several small meetings to collect the data.

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

	Name of the document	Number of pages/other content	Description
A	Case organization's structure material.	Table	Job role and organization structure information.
B	HR tool	22 tables	Competence mapping

As seen from Table 2, this study also analyzed internal documents. The main documents included an organization structure table and HR tool tables. The documents were analyzed for Data collection 1 round, the current state analysis, to get understanding about the active job roles, organization structure and competence mapping to the roles in detail.

In this thesis, the primary methods of data collection were interviews and workshops, complemented by the analysis of internal documents and organizational data. Due to the company being a global company and the main working method being a virtual meeting, also the data collection interviews were conducted as virtual interviews. Due to the different time zones of the participants and the organization structure and the specified roles in the organization, there was a need to conduct some of the meetings per individual rather than in a group manner, to get more in-depth data. Field notes were taken for each session and the recording was captured when it was possible and agreed upon in advance. The textual data was analyzed using Content analysis.

3   Current State Analysis of the Existing Competence Management Practices

This section reports on the results from the current state analysis of the competencies and competence needs of the case organization in the short-term and long-term periods. The focus is to form an understanding of the current practices and processes related to competence development in the organization which aims to identify competence gaps, to understand the current organization structure with roles and responsibilities, and to understand the future competence development needs for the whole organization and individual teams.

3.1   Overview of the Current State Analysis

The focus of the current state analysis was on (1) understanding the practices for competence management and development and what possible methods and processes are available and in use to evaluate competencies and competence gaps in the organization, followed by (2) analysis to understand what are the short-term competence development needs and longer-term competence development needs for the organization to fulfill its strategic intent and to build organization's competitiveness, and (3) thirdly, to understand the organization structure and the roles and responsibilities of each team. Each team may demand dedicated skills and competencies, and those are determined by the functional area it operates on. Each team has a set of roles working for the team and the organizational structure dictates how the roles that are mapped to the teams. The current state analysis continues with gaining an understanding of what are the recommendations from other organization's findings for competence development needs. As the company has many organizational layers, there will be some similarities and findings available that can be used as best practice data. Lastly, (5) the first findings will be summarized into a preliminary finding as key competence development needs, and they will be reviewed and shared with the leadership team for further development and proposal-building purposes.

3.2 Description of the Current State of Competence Management and Development Elements with Analysis and Findings

The case company of the thesis is a global large-size company, and it operates in truly global manner where the teams are distributed all over the globe. The thesis focuses on supply chain management organization that have around 600 internal employees in ~50 different countries. Many of the teams have team members in several countries, causing the working methods to be mainly virtual team working. For the competence development, this means that any of the identified competence building methods for teams needs to fit to this environment. Learning needs might not differ between the different countries per specific roles, as all the roles have similar tasks and responsibilities depending on the countries the employees are in.

The case company operates in a field that is constantly changing and evolving and is highly competitive. During the past years, the case company has been changing constantly e.g. due to internal or external marked demands. It has responded by reshaping its organization structures and updating its vision and strategies. This has also impacted the supply chain management organization. Employees' focus has been mainly on managing daily workload and organizational changes.

The thesis company has long experience in competence management and development, and it has established tools and processes for employees to utilize for their learning as learning resources. Individual competence development is derived, structured, and scheduled with actions through HR processes. But the main responsibility lies with employees to fulfill these actions with the support of their people managers. The completion of these actions is not followed and reported but is left to the employees and people managers. If there are support needs, there are support contacts for employees in many of the organizations and they are known as competence development experts.

Currently, competence management on the company level is relying on the active networking of existing competence development professionals in the organizations. It is not led or guided from the company level in a structured manner. There are competence development professionals in different levels of the organizations looking into the competence development needs, identifying the gaps and creating needed solutions to building the identified gaps.

The thesis researcher is responsible for supply chain management level competence development and there are some competence development contacts in some of the teams in supply chain management.

The case company competence management is expected to include following elements, (1) strategic competences are driving element of company strategy and vision. (2) Competences and competence priorities are defined for processes and functions, organizations, and teams and for jobs. (3) Similarly, competence mapping in the HR systems is created on those similar levels. (4) Competence development actions and plans are created on organization levels.

On a high level, these elements exist for the thesis company, but some have limitations. As stated earlier there is not one, single process that covers the case company's competence management, but different elements are relevant. The following chapters capture and explain those available main elements with analysis.

For the current state analysis, it was important to identify all the impacting elements to be able to create a reliable and workable proposal with proper priorities in a situation where there is a need to start with setting up the most important items for the plan and compliment the activities with subsequent important topics as a second step. The analyses is based on the interviews and interviewees responses conducted for the main stakeholders connected to the elements and for the organization with key roles.

3.2.1 Vision and strategy and linkage to the strategic competences

In the thesis company, the vision and strategy are created and available on needed organizational levels to guide the organization's strategic intent and view on the future state. This is needed as a basis to get guidance on what competencies are needed for the future as competencies are a keystone to the successful execution of a business strategy. The company's strategic level guidelines direct the development of competence at all levels of the company. The need is to be able to identify the necessary competencies and draw up plans based on the competence requirements, so that the operation can be secured now and in the future.

Analysis for the vision and strategy linkage to the strategic competences, based the on the interview of the Interviewee 1 and 2, reveals a clear strategic drive that provides

direction to both organizational and competence development. The strategic competence needs are visibly reflected in the strategy and strategic plans, allowing for partial identification of these essential requirements. The large size of the organization, high number of teams and various roles in the teams causes some complexity, and this needs to be considered and tackled in the activities that will be part of competence development plan. As a result of previous organizational changes and talent recruitment, the necessity for effective onboarding is particularly highlighted by Interviewees 1 and 3, underscoring the importance of emphasizing the introduction of team roles and responsibilities, organizational processes, Modes of Operation, and ways of working.

3.2.2 Strategic competences in the case organization

The identification of the strategic competencies in the case organization has not been set as a standard procedure but is initiated on demand. This can be the result of a new launch of an organization strategy or other initiatives. Identifying the strategic competencies is based on those competencies that are seen as important for the business to stay competitive and mark those characteristics that make the organization stand out compared to its internal or external competitors. Identifying strategic competencies can offer guidance, especially when there is a requirement to prioritize development activities aimed at building or enhancing competencies within the organization. The intention is to avoid selecting too many strategic competencies to keep the focus on the main capabilities to be developed. Usually, there are 4-6 strategic competencies identified for the specific organization level. Selection of the strategic competencies is done by investigating the company and organization strategies, external benchmarking information and business standards, as well looking into the information available in the upper-level organizations and interviewing the internal experts.

Analysis of the strategic competencies in the case organization was conducted by first looking into the strategies, external benchmarking information, and business standards and searching for the megatrends for the supply chains online. On a high level, the identified competencies support business digitalization and analytics, de-risking supply chains, enhance the resilience within the supply chain, and promote advancement in collaboration skills and communication skills in the organization. In addition to the identified strategic competencies, Interviewee 3 highlighted other crucial competencies as a need and a gap in the organization in general. These included competencies associated with a deficit in understanding business prioritization and strategic planning

skills. These were recognized as crucial across various roles. These competencies were seen as integral for enabling the organization to work more efficiently without constant direction and they would empower individuals to operate more independently. Additionally, there were key competences where the organization was already seen highly skilled.

> The organization has highly skilled experts and as an organization supply chain management is on mature level in many competences; related to the tools we developed, Dashboards and analytics, root cause analysis, score methodology are well in place. *(Interviewee 3).*

Interviewee 3 found that the organization is on right level of maturity on many needed skills to run daily business.

3.2.3   Competence description and competence levels

To be able to map and manage competencies and competence evaluations, it has been meaningful to have a competence structure and descriptions available for competence management. This setup is valid for all levels in the organization, and it is managed and maintained as a process. The structure is presented on high level in the Figure 3.
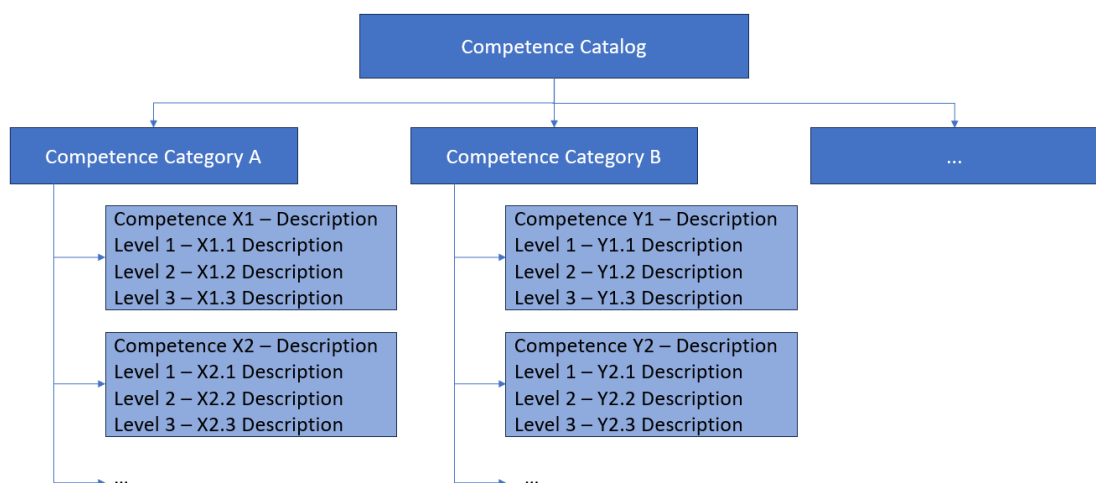
Figure 2.   The structure of the competence descriptions and competence levels.

As shown in Figure 3, the existing competence catalog offers listings of competencies categorized meaningfully for the company. Each competence has descriptions that

explain the details and give a description of the competence. All competencies have different levels, e.g. Level 1 means introductory level of knowledge, Level 2 means basic level of knowledge, and Level 3 means experienced level of knowledge. All different levels have purposeful descriptions. These different descriptions can be used when identifying competencies for different purposes.

Analysis of the competence descriptions and competence levels showed that the content of the current competence descriptions and leveling information is sufficient and in case some of the competence descriptions are missing, there is a channel and a process to follow to update the content. The content will be used in case there is activity to do competence evaluations or communication about competencies in detail.

3.2.4   Competence mapping

Competencies are used in HR processes for different purposes. Competences are e.g. identified and mapped and available for the roles in the organization. With this, it enables e.g. competence development activities that are driven from the individual perspective. Competence mapping is done outside of the thesis project, but for thesis analysis purposes, it offers a holistic view of the competencies of the whole organization. The key competencies in use can be enumerated providing an analyzable perspective that guides short-term competence development needs. In the future, competence development mapping content will offer the opportunity to conduct competence evaluation on individual needs.

Analysis of the competence mapping showed that the content from the actual competence mapping to the roles is at a sufficient level and the key competencies are available for roles. The challenge comes instead when people have more roles than one. The current systems offer mapping only to one role and the mapping information will be missed for other roles or tasks. This should be considered in case a competence evaluation is conducted on an individual level.

3.2.5   Competence development actions and action plans

There is no set guidance, process, or instructions on how to create and come up with competence development actions and plans in the case company for different levels of

organizations. As a practice, the method and content are under consideration by each organization to build a suitable plan for themselves.

Based on the analysis for competence development actions and action plans, in the thesis organization, there are no existing or previous action plans available to be used as an example or as a basis for the creation work. There is a need stated (by Interviewee 2) that a meaningful competence development action plan should be available to support the organization's short-term and long-term competence development, and this should be based on strategy and the competence development plan should guide competence development actions during the next years.

3.2.6 Competence evaluations

A typical way to conduct competence evaluations is to investigate the competence development needs and identify those competencies where there are the biggest gaps compared to the target state. When conducting competence evaluations in the organization, the activity's purpose and objective should be clearly stated. With a clearly stated purpose, there will not be false expectations about where the outcome will be used. The key is to have visibility and tools to identify lift and nurture people's competencies to be able to utilize them for organizational purposes and to give direction to development, grounds for recruiting, career development or even giving directions to new strategic directions. In a global company, country-specific guidance needs to be considered when conducting competence evaluations. E.g. in some countries with workers councils, additional approvals can be needed for conducting evaluations.

The analysis of competence evaluation revealed a misalignment in the timing for conducting a purposeful assessment, specifically concerning the evaluation of employees' role-based competences. The tool and process for systematically conducting competence evaluations aligned with mapped roles will be operational within the next 12 months. Therefore, the individual evaluation results will be unavailable in time for this thesis project. Following the discussion with Interviewee 2, the decision to manually conduct additional evaluation was suspended to prevent the introduction of varied methods for collecting the same information within a brief timeframe. Instead, information about competence needs is derived from discussions with the leadership team and their representatives, who possess a deeper understanding of team roles, responsibilities, and required competencies. These representatives have direct access and

communication methods to discuss and collect needs from their teams. This information will provide a comprehensive view of the entire organization, both from top to bottom and bottom to top. Additionally, these representatives will actively participate in workshops, providing input and reviewing competence development plans.

3.2.7 Tools for competence development and the 70-20-10 model

The learning reference model 70-20-10 is used and available as a reference guidance for the company's competence management and development. The purpose is mainly to give inspiration for personal learning objectives and methods that can be used for personal development and the dialog between managers and employees. The purpose of the reference model is to share different development methods. In history, the main focus in self-development has been learning through formal events (10), but in the past years, the focus has also shifted to utilize more efficiently learning by doing (70) and learning with and through others (20) as well and making the learning experience more efficient and motivating and cover different type of learners. Learning reference model 70-20-10 is shown in Figure 3.
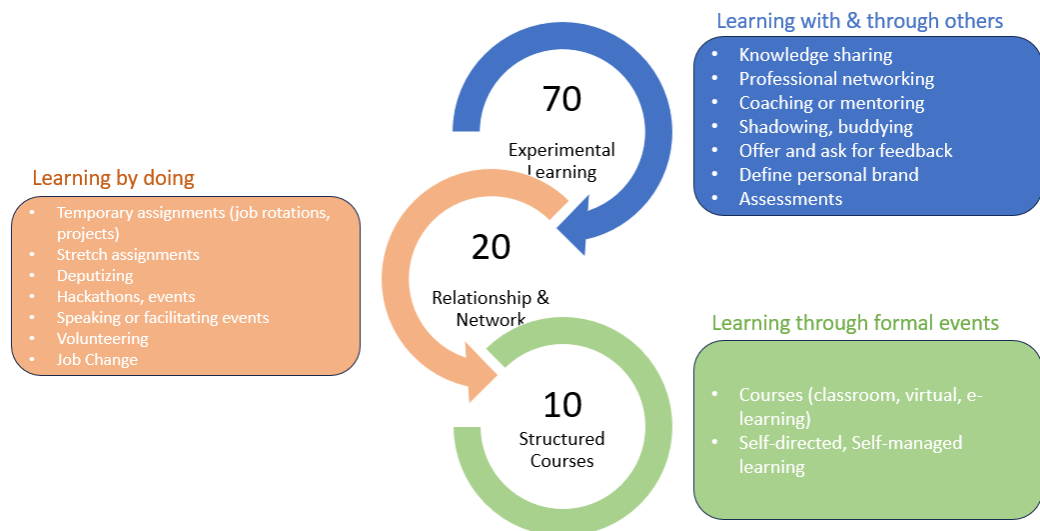
Figure 3.   Learning reference model 70-20-10.

The thesis company offers a variety of learning tools for structured courses (10) with an extensive selection of different and various learning items in the form of courses, virtual

and classroom training, but also self-directed and self-managed learnings to choose from.

The analysis of learning tools and the 70-20-10 learning reference model reveals that while the model is well-known and theoretically applied, it faces practical challenges in the current hybrid and remote work environment.

During the interview, Interviewee 3 emphasized the significance of learning with and through others (20) in the thesis organization, considering it the most important and effective, particularly when fostering mentoring, coaching, stepping outside one's comfort zone, and learning from mistakes in a safe environment. However, the constraints of remote and hybrid work environments pose obstacles to authentic dialogue, potentially hindering the effectiveness of these learning methods. Additionally, previously piloted job rotations have been observed to generate more administrative work than their benefits warrant for the teams.

The learning content in current learning tools supports learning on various topics, and learning content is available with high quality. However, the sheer volume of learning items poses challenges in terms of locating relevant and up-to-date content. While the accessibility and usage of learning tools are generally straightforward, disparities exist in their utilization, and without consistent usage, they may become challenging to navigate.

Based on feedback from Interviewees 1 and 2, it is recommended to review and ensure the availability of learning content specific to organizational topics, particularly for onboarding purposes. Additionally, emphasis should be placed on making relevant learning content for strategic competencies and crucial skills easily visible and accessible. Furthermore, the highly and strategically important learning content should be highlighted and communicated to underscore its significance within the organization.

3.2.8   KPI's – Learning organization

The learning Key Performance Indicators (KPIs) are measurable metrics that are used to assess the effectiveness and impact of learning and development initiatives within an organization. Presently, the thesis organization does not actively employ learning Key Performance Indicators (KPIs) as such; however, there exists company guidance and encouragement for utilizing time for learning. This encouragement is established as an

objective and guideline within the organization. The aim of this objective is to underscore the significance of learning new skills and emphasize its importance within the thesis organization.

The set objective can be followed by individuals as time investments through reports. The time investments can be also followed on the organizational level by all in the organization. These learning KPIs should help organizations monitor the success of their learning and development efforts, identify areas for improvement, and ensure that learning initiatives contribute meaningfully to the organization's overall performance.

The analysis of Learning Key Performance Indicators (KPIs) showed that there are means to measure completion rates on selected training and learning curriculums, training feedback, and time spent on competence development. There is not a set way or a process available to follow up the measure of learning impact and answer questions like: How effectively does the learning strategy support the organization's priorities? What is the return on Investment (ROI) for learning initiatives, how cost-effective the training programs are and what is the measured impact on employee performance, productivity, or quantified financial benefits that are derived from improved skills and knowledge.

By evaluating time investments in learning at the team level, there is also an opportunity to identify teams that are not dedicating sufficient time to learning. This data allows for further investigation into the specific obstacles hindering learning within those teams, and corresponding mitigation actions can be developed.

3.2.9   Learning culture

In this thesis a learning culture refers to the organization culture that prioritizes and promotes continuous learning and development among its members.

A vibrant learning culture and environment is grounded upon individuals who are willing and capable to learn. Motivating and inspiring individuals learn through encouragement and setting examples is crucial. Those who are willingly and actively eager to develop both their work and themselves tend to be more committed to make the organization, its vision, mission, and strategic goals success.

Continuous learning requires continuous reflection, dialogue, and the sharing of learning. Making mistakes should be tolerated as a way of learning that brings knowledge and growth to the organization. Organizations should actively foster an open and collaborative working environment, where diverse opinions are respected, and systematic dialogue and learning are encouraged as integral parts of daily operations.

Competence development is a structured approach that reinforces learning culture. Competence development is about people and developing individuals. As a psychological being, man builds competence from own starting points, in own field of experience, and in own social environment. A person learns and uses his skills if he/she is able, willing, and able to. So, in practice, there are different aspects to people's development. It's not only about the organization's cultural issues, but also about leadership and the psychological-physical condition of the personnel. On the other hand, to be able to lead and manage competence development, competencies, and capabilities should be also looked at as a resource, an ever-changing flow that needs to be renewed so that a company can succeed.

In the analysis of learning culture during the interviews, the case company's and case organization's investment in people development and competence development is seen to be important by all interviewed experts (Interviewees 1,2,3 and 4). The support of the top leadership was clear for the competence development activities, which helps to progress on the planning and driving the activities in practice. Supply chain management as an organization is seen to be at a mature level in many competences (Interviewee 3). People working in supply chain management were seen to have quite nice careers and careers paths, as they have opportunities to see different parts of the supply chain in their work. Experience is that there are plenty of opportunities and ways in the company to develop competences, even to an in-depth level. Prioritized training was seen to be clearly visible for all levels of organization guiding the most important learning priorities. Present leaders were seen as knowledgeable, talented, and supportive of their teams. (Interviewee 3.)

On the other hand, the level of deep expertise can sometimes limit seeing the business' strategic requirements. Visionaries should somehow be also able to understand a certain level of expertise. That is, there is balance needed. The deficiency is in business prioritization, strategic planning skills, and problem-solving skills to able to prioritize work

without constant direction. Enabling the right skills would also empower people. (Interviewee 3.)

3.3 Summary of the Analysis Results

This section summarizes the results of the current state analysis, pointing out the main strengths and weaknesses that were identified in the evaluation process of the case organization's competence development and management. The identified results is based on the discussions with the key stakeholders and impacts the creation of the competence development plan.

3.3.1 Strengths and Weaknesses

Based on the key findings above, the strengths and weaknesses identified during the analysis of Data Collection 1 can be summarized for the company's competence development needs and as a bases for the plan creation as follows, visible in table 3.

Table 3.   Strengths and weaknesses for the case organization during the analysis of Data collection 1.

Strengths	Weaknesses
There are several high-quality learning resources available for competence development	During past years, the competence development as a systematic activity has been outrun by the daily tasks
The organization leadership is aware of the importance of the competence development and committed to the activities	The systematic plan and roadmap for competence development is not in place
The organization has highly skilled experts	The identification of needed supply chain management specific competences is missing
The organization has tools and practices in place for internal communication activities in general	Onboarding of employees is not fully in place and the systematic way to do this is missing content for current ways of working, processes, organization set up, R&R
	Organization complexity

First, the organization has good sources for learning with high-quality learning content that is available for all personnel.

Second, the organization leaders and leadership team are motivated to invest in learning, and they are supportive of their teams when it comes to learning activities and learning investments.

Third, the organization has highly skilled and experienced experts available that can be used to support learning activities.

Fourth, the internal communication tools and practices are well in place, and these can effectively be used to facilitate the implementation of activities and information sharing.

In addition to the strengths mentioned above, certain weaknesses were identified. The current state analysis revealed obstacles and deficiencies in competence development practices, including a lack of guidance on strategic focus and assessing relevant learning solutions essential for the organization. Moreover, time allocated for learning is sometimes overshadowed by daily work activities. The organizational complexity further complicates competence development, often requiring additional expertise in the planning process to identify and develop the most suitable learning solutions.

In summary, the current approach to working does not facilitate the systematic management of competence development. Without a clear plan, activities are driven solely by individual interests and learning preferences, potentially overlooking the strategic skills and knowledge vital for the organization. Therefore, it is imperative to ensure that strategic initiatives are systematically supported by building the necessary capabilities.

The next sub-sections provide the selected focus areas identified in the current state analysis.

3.3.2   Selected focus areas for developing competencies

There is a need for to build an appropriate plan for the case organization's competence development purposes to address the key challenges outlined in the current state analysis. Table 4 explains the three topics to be focused on to ensure the organizations capabilities for the future and end ensure the fitting learning solutions and methods to communicate the activities properly.

Table 4.   Selected focus areas for developing competences for the case company.

	Dimension
1	Competence development (Creating the culture and way of working for learning)
2	Competence Development Planning (Creation of the competence development plan guiding the activities of competence development in a systematic manner.)
3	Supply chain management talent (Building supply chain management capabilities for the workforce of the future)

The areas for improvement and content to be developed were pointed out by the key stakeholders as the elements to be focused on as priorities. With the thesis project the key purpose is to identify the competence development needs for the supply chain management as an organization, ensure the suitability for the teams and then create the development plan with actions how to build the competences.

Informed by these focus areas, existing knowledge and best practices for creating a competence development plan are explored in the next chapter.

4 Existing Knowledge and Best Practice on Creating a Competence Development Plan

This section of the thesis discusses existing knowledge and best practices on Competence Development, Competence Development Planning, and Supply chain management future capabilities, as shown in Figure 5. These three challenge areas were selected for exploration to support the core theme of this thesis: mapping and developing competencies in the supply chain management organization. The study utilizes available literature and other published knowledge including articles, and publications by professional associations and research institutions that are essential when focusing on the mentioned areas.
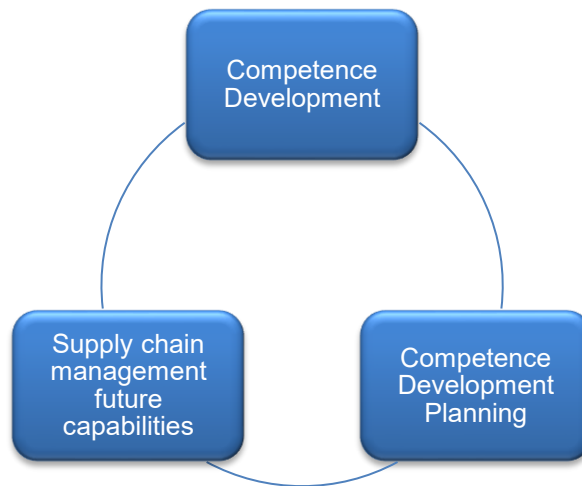
Figure 4. Selected knowledge and best practise areas for exploration.

The section starts with key terms and definitions in each area, followed by a description of their key features and applications. As an outcome, the last part of this section summarizes and presents the conceptual framework merged from relevant elements of knowledge and best practice to guide the Proposal building in Section 5.

4.1 Competence Development: Developing Competences and Supporting Continuous Learning

During the last decades, businesses have been impacted by different phenomena, creating increasingly competitive business landscapes, ever-increasing complexity, and digital revolution. According to Forbes (2023) continuous learning in the organization has

become essential and imperative for organizations to succeed. Sustaining competitiveness in today's market requires organizations to be adaptive, innovative, and constantly changing. This requires continuously learning new skills. By harnessing these skills and capabilities correctly, companies increase their abilities to grow and renew. Continuous learning brings benefits, not only to the organizations but also to individual employees through creating job satisfaction and opportunities for career growth. (Dennison, 2023.)

Competence requirements for every job have escalated, requiring a solid knowledge of the job with a good theory-based understanding. This foundation enables individuals to learn new applying capabilities that will help to further develop and learn new phenomena. New competence requirements also highlight intellectual and learning skills (Otala, 2018, 17.). According to Boston Consulting Group (2020), the modern world is 35 times more complex than the world in 1960, when a good employee was expected to master 4-5 skills. Today employees should master 20 skills (Morieux & Tollman, 2020).

Also upskilling in the modern context looks for alternative solutions. The traditional organized classroom learning events are not suited anymore to modern learners in complex environments, where employees are working in a hybrid or remote manner. Even though there is still a place for classroom training, the basic need is to move away from event-based capability building, and towards learning in a more modern way through technology, remote learning, micro-learning, and simulations impeded to actual work for learning. (McKinsey, 2021.)

4.1.1 Definition of Competence and competence development: Developing competences and supporting continuous learning

In literature and business publications, there are several descriptions available for defining a competence. Most of these descriptions point out that competencies are a set of observable and measurable behaviours comprised of knowledge, skills, and abilities that are indicative of performance for a particular role and aligned with key business objectives and values that help foster an organization's success (IAEA, 2001).
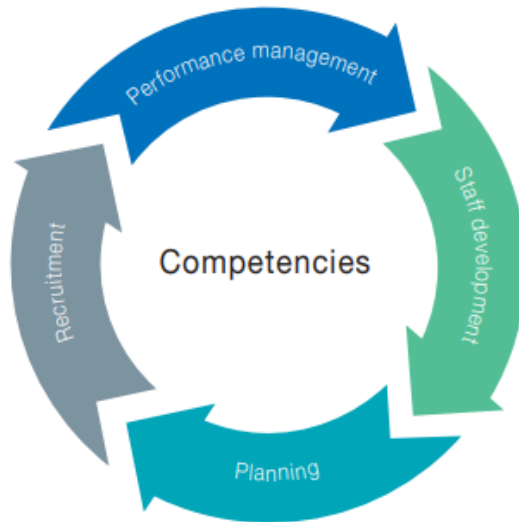
Figure 5.   Competencies in use for human resource management purposes (IAEA 2001).

As visible in Figure 5, competencies are in use for different human resource management purposes. According to the IAEA (2001) competency framework, competencies are observable behaviours that can be measured and evaluated. They can be used in processes for performance management, staff development, planning and recruitment. Figure 7 shows defining concept of competence by Warier (2008.)
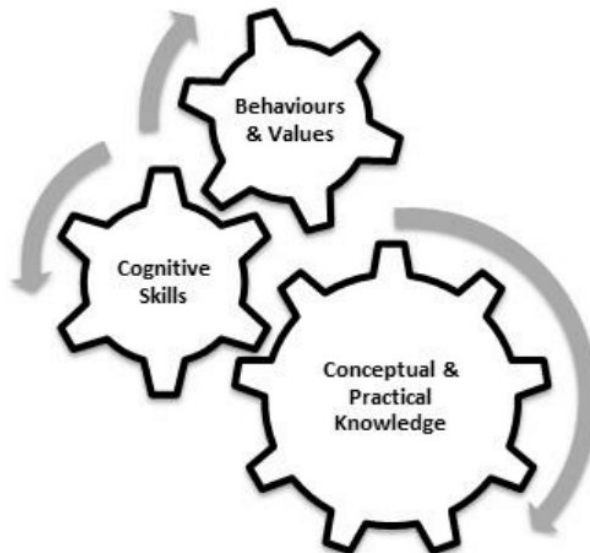
Figure 6.   Defining concept of Competence (Warier, 2008).

Figure 6 illustrates the concept of competence based on three key elements (Warier 2008). according to Warier. Competences can be defined as cognitive, affective, behavioural, and motivational personality or dispositions enabling an individual to perform well in specific situations and they are for accomplishing organizational goals (Warier, 2008).

The usage of 'competence' vs. 'competency' varies depending on the source. While some sources, such as dictionaries, consider these terms to be identical, others make a clear distinction between them. According to Warier (2008), 'competency' is used in the context of an individual, whereas 'competence' is used in an organizational context. In this thesis, the term 'competence' is used for both.

From the strategic perspective, only a few selected competencies are most relevant, and these are usually referred to as core competencies or strategic competencies (Vaughan, 2018). According to Awati and Pratt (2021), these competencies are distinct to the organization and cannot be easily replicated by other organizations and they provide a strong foundation from which the business can bring value to the customers and stakeholders, and they also serve as catalysts for new opportunities and growth (Awati & Pratt, 2021).

Competencies can be developed through suitable learning interventions. The purpose of developing accurate and appropriate competencies results in enhanced organizational learning, and performance management while maximizing the usage of the organizational intangible assets (Warier, 2008). In order for learning solutions to be effective, in the short term and the longer term, they must be grounded in reality. They need to explicitly be designed and implemented to meet organizational needs. Learning solutions must be aligned to company strategy keeping the bigger picture in mind. The company strategy outlines why a company is in existence, what it is trying to achieve, and the direction of travel. The governing drivers, objectives, and principles need to align. The strategic intent of competence development of an organization brings meaning, value, and impact to the work. (Parry-Slater, 2021, 28-31.)

Developing competencies should be part of an organization's strategy as well, the most optimal outcomes are attained when competence development is done as a systematic approach, and when competence development is proactive, long-term, and goal-oriented work aiming to enhance the company's competitiveness, elevate market standing and

employer image. Competence development is an ongoing, dynamic process that is constantly evolving. (Tainio-Keinonen, 2022.)

According to Deloitte (2022), organizations fostering learning and having a culture of learning are 92% more likely to innovate.
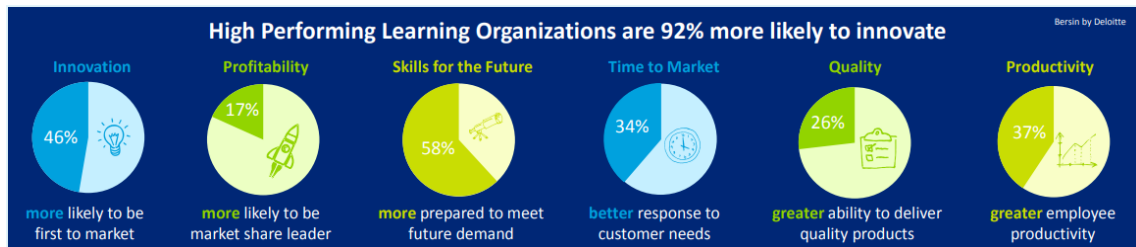
Figure 7.   Benefits of High Performing Learning Organizations (Deloitte 2022).

Figure 7 shows that having a learning culture in place will bring other important benefits to the organizations as well. They are more innovative, profitable, productive, future-ready, customer-focused, and quality-assured. (Deloitte 2022). Additionally the Workplace Learning Report by LinkedIn shows other internal benefits of investing in learning and learning culture. Where companies with strong learning cultures see higher rates of retention, and more internal mobility compared to those with smaller levels of learning culture investment. (LinkedIn Learning, 2024)

4.1.2   Description of Competence development: Developing competences and supporting continuous learning

Academic literature considers competence management to be a systematic process that is supported by its operating machine, infrastructure, and its elements. These competence management infrastructure elements can be identified as organization structure and ways of working, competence development (e.g. onboarding, personnel development), competence planning and evaluation, practices and tools for learning, IT tools and systems for learning, management of competence risks, and other supporting functions. (Viitala, 2005, 193.)

All roles of the organization have an impact on competence management. Top leadership when maintaining the vision and strategy. All managers when defining and measuring objectives, including relevant competence definitions, evaluation of

competence needs, and plan. And all individuals when with support of their manager, defining individual level objectives and performing evaluations. Competence-based learning and people development emphasize clarifying the needed competencies in the time frame where business planning extends.   (Viitala, 2005, 229-232.) Figure 8 shows Company competence development system presented by Ruohotie (1999).
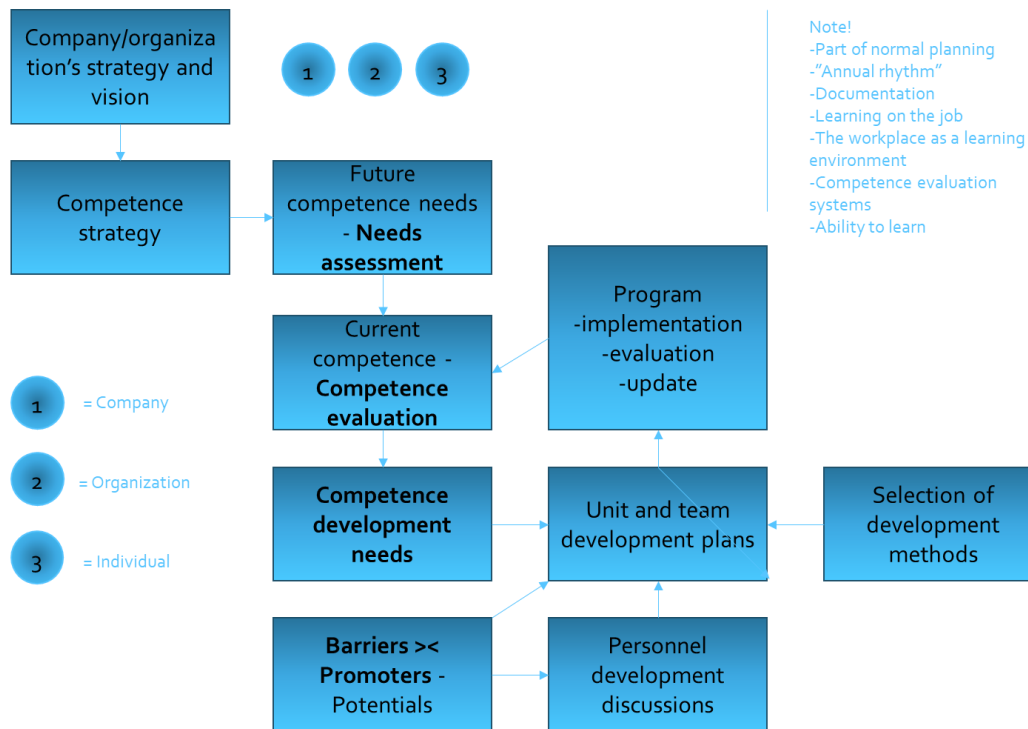
Figure 8.   Company competence development system (Ruohotie 1999; cited in: Viitala 2005). Translated by the thesis researcher.

Figure 8 presents the main elements and topics of a company competence development system according to Ruohotie (1999). These elements are dependent on the company, and they are selected and created based on the company's own needs (Viitala, 2005, 255). The same elements are identified by many consulting companies and those are described in the following chapters based on their examples.

McKinsey (2019) emphasizes that a learning strategy and corresponding actions should align with and reinforce the execution of the business strategy, prioritizing the development of essential people capabilities that are crucial for organization's success.

For optimal effectiveness, the capability agenda should undergo yearly review, aligning closely with business priorities and strategic objectives. (McKinsey, 2019.)

Identification of future competence needs, according to CIPD (2023), begins by understanding the organization's current and future capability requirements and assessing existing skills, attitudes, and knowledge levels using formal and informal methods. This action will allow decisions about the needed learnings on individual, team, or organizational level, which should align with broader organizational strategy. (CIPD, 2023.)

According to CIPD (2023), this action can be seen as a current or future health check on the skills, talent, and capabilities of the organization. Involving multiple stakeholders and systematic data gathering and insights from organizational demands, it aims to ensure adequate capability to sustain current and secure future business performance. By identifying these needs, in this thesis considered as Competence Development needs, it's possible to create organization, team and individual development plans with fitting content. (CIPD, 2023)

Additionally, literature and best practice also offer many resources that recommend using a learning model called 70-20-10, sometimes also referred to as a framework or principle. The identification of the owner or origin of the model seems to be somewhat unclear, but often it is cited to sources like Professor Allen Tough, Morgan McCall, Robert Eichinger, or Michael Lombardo. This model presents that 10% of learning happens through organized training, 20% through social conventions and 70% of learning happens on the job. (70:20:10 Institute, 2016) There does not seem to be a clear study of the presented figures, and there seem to be variations in the figures. Some sources recognized learning models like the 90-10 model and the 3-to-1 learning model. Some sources suggest different figures for different kinds of learners, from blue-collar workers to different-level leaders.

Regardless of the actual figures in the learning model, the guidance that it shares is that there are different methods to be used for learning for different types of learners and learning needs. Also, those learning methods need to be incorporated to organization learning practices and learning designs. 70-20-10 learning model is a tool for promoting a culture of continuous learning, and it assists employees to take in charge of their own learning (70:20:10 Institute, 2016). The idea of following the learning model in a strict

manner and trying to measure the used different learning methods does not seem to bring value to the organization, so the model should not be used as a KPI as such.

Deloitte stresses the following principles that target to build learning solutions on creating and building capabilities to deliver business strategy: solutions need to be based on business needs and customized for the teams and individual workers. Effective learning solutions should be of high quality and continuously reviewed and developed. They should achieve their purpose, and learning solution content should be designed the future in mind. To lead with example, leaders should contribute to the design and delivery of the solutions. (Deloitte 2022)

Zavvy by Deel (2024) recommends that a meaningful competence development process includes the following steps, Step 1. Analyse the organization, to understand the strategic goals, different relevant projects, and products and to collect this information in common discussions with executives in charge, from managers to top leaders. Step 2. Out of the first step, identify the competence needs that are valid for now and for the future. Step 3. Identify the needs for hire competencies or define the training needs of current staff. Step 4. Additionally, Zavvy by Deel (2024) recommends examining possible employee retention and career progression levels. (Zavvy by Deel, 2024.)

Another example of Competence Development model is offered by WV Development, their "Competency Development Cycle" is visible in the next Figure 9.
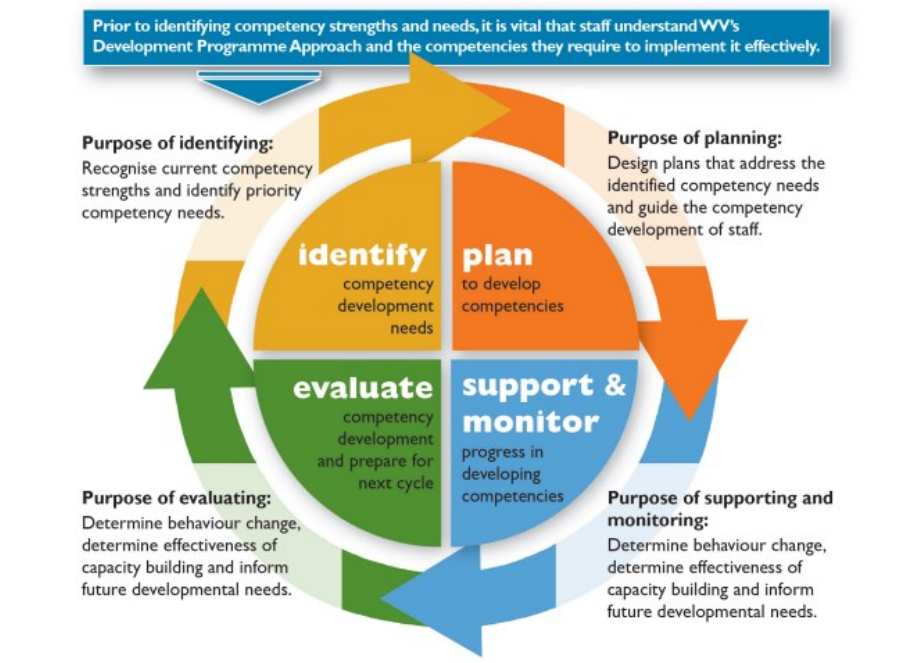
Figure 9.   Competency Development Cycle by WV development (World Vision Development, 2015).

As seen in Figure 9, WV Development organization shares 4-step model as a competence development cycle to support the competence development process. This cycle is created as a framework to guide planning and implementing competence development activities as a continuous cycle of actions, reflection, and learning. Step 1 is to identify strengths and development needs, Step 2. is to develop an action plan to engage relevant staff in competence development activities, Step 3. is to support and monitor competence development progress, including the application of learning, and Step 4. is to evaluate the impact. (World Vision Development, 2015.)

In today's business environment, learning and development are crucial for empowering the workforce. However, mere investment in training initiatives is insufficient and to achieve successful outcomes it is important to measure the effectiveness and impact of the development programs. (Abbas, 2023.) McKinsey advises to measure the learning strategy execution and impact on business performance with KPIs. This to be done using indicators to measure (1) business excellence and how closely learning initiatives and investments align with business priorities, (2) learning excellence, and how learning interventions change people's behaviours and performance and (3) operational excellence, measuring how well learning investments and resources are utilized. (McKinsey, 2016.) However, the key challenge for measuring competence development

activities raised by Ketkin (2022) is how to define and measure only those activities and KPIs that are directly impacted only by learning, as there are many factors affecting people's performance. (Ketkin, 2022.)

To understand if learning investments are bringing value to the organization, literature and best practices guide to measure ROI (Return On investment) for learning initiatives. Learning ROI (%) = (Gain from Learning - Cost of Learning)/Cost of Learning x 100. The calculation can be done by using monetary figures, time savings, or increased productivity. In case the benefit of investment is in the form of improved skills gained by the training program, the measure can be found through conducting surveys before and after the program. (Ketkin, 2022.)

In summary, systematically managed competence development with continuous and planned activities brings value to the company and the organization. As Prusak mentioned already in 1997, a company's competitiveness depends more than anything else on what it knows, how the knowledge is used, and how quickly it is able to learn new things. Based on the literature, competence development is a crucial activity for companies to adapt to rapidly changing skill requirements. By aligning competencies with strategic goals, organizations can differentiate themselves competitively and foster regeneration capacity. Investing in competence development not only enhances employee well-being but also boosts overall company performance, as harnessing collective expertise drives growth and renewal. Efficient competence development includes understanding required skills, assessing existing competencies, and facilitating skill development. When competencies are developed it allows organizations to maintain competitiveness and deliver on its customer promises even when circumstances change. Prioritizing internal skill development enables organizations to retain top talents and fill skill gaps efficiently, ultimately driving sustainable growth.

The next sub-section provides the existing knowledge and best practices for the second selected focus area, competence development planning. Also, relevant best practices and academic literature related to designing and creating the plan will be discussed in the next section.

4.2   Competence Development Planning: Guiding Competence Development in a
        Systematic Manner

According to Cabem (2023), a strategic and well-developed competence development plan enhances workforce skills, reduces frustration in employees, and strengthens the team for higher performance. When employees have clear development paths and learning opportunities for growth, they are less likely to feel frustrated or stagnant in their roles. (Cabem, 2023.) By strategically developing competencies, organizations ensure that their workforce possesses the necessary skills and capabilities to meet current and future challenges. Figure 10 shows the competitive advantage of the companies that focus on people and performance.
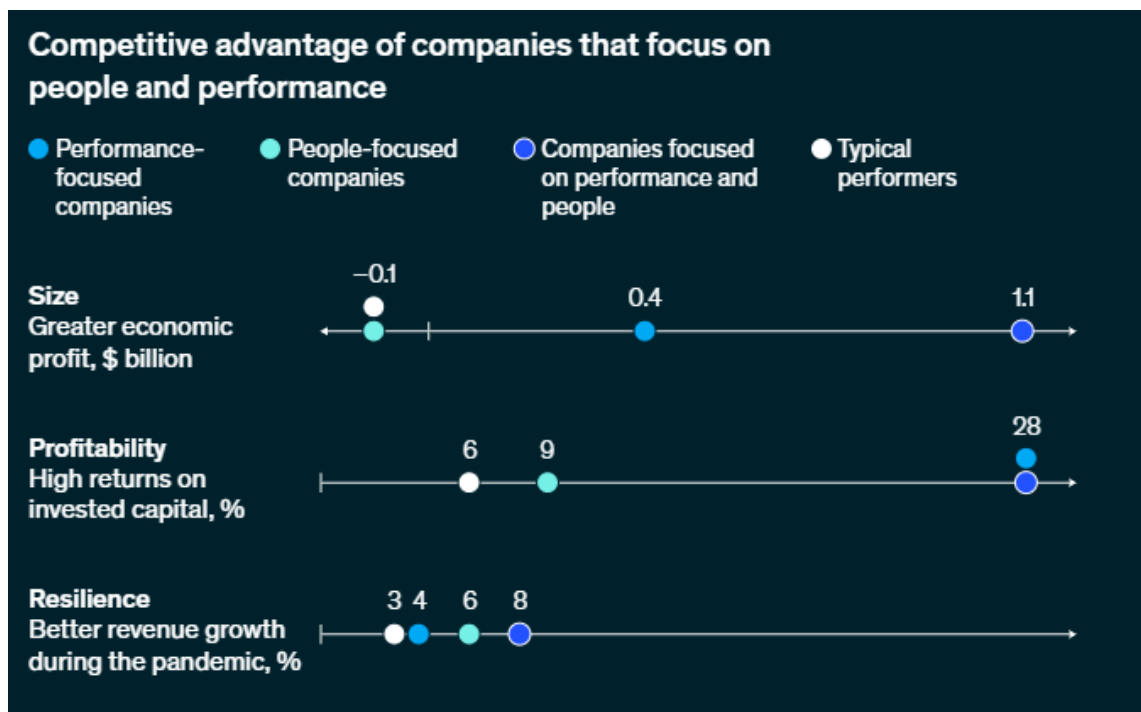
Figure 10. Performance through people, transforming human capital into competitive advantage
            (McKinsey, 2023).

As shown in Figure 10 and pointed out by McKinsey (2023), the investments in the workers and capability building bring benefits, not only to the workers but also to the companies. The benefits are seen as economic profit and as resilience for those companies that focus on both performance and people. (McKinsey, 2023.)

4.2.1 Definition of Competence Development Plan

A competence development plan is an action plan to improve an organization's immediate performance and prepare for long-term goals, and with that enhance overall performance and productivity. Competence development plans provide a roadmap to help align employee skills and capabilities with business goals and organizational objectives. By identifying and addressing skill gaps, competency development plans prepare organizations for future challenges and opportunities. (Cabem, 2023.)

A competence development plan is a proactive approach to enhance the workforce's skills and capabilities, enabling the organization to stay competitive in an evolving business landscape. As a dynamic tool, it evolves alongside the workforce and involves continuous refinement. A competence development plan serves as a strategic tool for talent development, driving performance, and sustaining long-term success in the organization. (Coursera, 2024.)

A competence development plan is important for staying competitive, as it offers guidance for better decision-making and future planning, and allocating development resources efficiently. It is intended to enhance skills company- and/or organization-wide, streamline recruitment efforts, and prepare the workforce for future challenges and opportunities. (Coursera, 2024.)

4.2.2 Description of Competence Development Planning

As one example, to improve the quality of core competencies and closing of the skill gaps in the organization, Avilar provides a competence development plan as a seven-step approach. (Jaynes, 2016.)

First, the organization needs to agree on the company's core competencies. This step includes identifying and establishing the core competencies, which distinguishes the organization in the marketplace. The core competencies reflect long term goals in terms of mission and vision. These are identified with the support of the organization's leadership.

Second, the organization needs to identify competencies to develop. The second step starts by identifying the skill gaps and with a definition of competencies that should be

developed. This step is conducted by surveying managers and staff. As every organization is different, an understanding of the workforce specifics is needed.

Third, the organization needs to align competence development initiatives with company goals. Competence development initiatives needs to support company and organization goals. To emphasize consistency, the plan needs to be outlined with leadership and managers and then shared and communicated systematically with the organization throughout its validity period.

Fourth, the organization needs to agree on competence management techniques. Leadership has a role in advancing competence management programs and for this essential competence management techniques should be chosen and agreed upon. e.g. employee assessments, and training strategies.

Fifth, the organization needs to begin skills development activities. Both employees' and managers' buy-in is needed for successful skills development activities, as time and energy commitment are required. Users should be encouraged to develop their skills and apply the learnings in their jobs.

Sixth, the organization needs to consider career development, and succession planning. A robust competence management plan also includes career development and success planning for acquisition and employee retention.

Seventh, the organization needs to understand and evaluate established processes. To understand what worked and what did not work in the competence development program, continuous evaluation and feedback should be organized to collect information for further development purposes. (Jaynes, 2016.)

As seen from the example of a competence development plan above, effective goal setting is key to a successful business strategy and having clear goals and strategies can lead to higher success. Employees competencies are relevant when they reflect company's and organization's goals and objectives. (Alveyra, 2021.) When knowing where the business is headed, the competence development needs can be defined. Team skills, behaviours, and knowledge can be developed through a competence development process in a systematic manner toward the defined goals. (Coursera, 2024.)

Summing up, by planning the competence development activities organization gains a better understanding of what the team is capable of and what needs to be improved. Gaining these insights provides an understanding of where to focus with competence development programs, as usually there is a limitation with the time and money investments. Competence development plans are not static, but a living process that is fine-tuned and developed along with the workforce. (Coursera, 2024.) By implementing a competence development plan organizations will have a roadmap with the essential components for effective competence development activities.

The next sub-section provides the existing knowledge and best practices for the third selected focus area that was identified in the current state analysis, Supply chain management future capabilities.

4.3 Supply Chain Management Future Capabilities: Building Capabilities of the Workforce for the Future

Today, supply chain management plays an important role in orchestrating material, information, and financial flows across transnational networks of suppliers and customers, serving as a key success factor in many firms. As demonstrated by leading global companies, advanced supply chain management capabilities have been shown to enable them to achieve cost advantages, enhance service and product quality, and foster faster innovation. Supply chain management is today perceived as a topic and business function that has high strategic relevance and creates opportunities to bring customer satisfaction and shareholder value. (Merkert & Hoberg, 2023, 2.)

However, today numerous global phenomena are putting pressure on supply chain organizations, demanding transformation. As these phenomena are transformative in themselves, also organizational and individual skills and competencies are impacted. In order to align with the evolving demands of supply chain management skills for the future, organizations must not only seek to recruit individuals with new skills and competencies but also undertake comprehensive efforts to upskill and reskill their existing workforce. This transformation is crucial for enabling competencies that can drive strategic value and ensure competitiveness in intense disruptions. (Merkert & Hoberg, 2023, 207.) Figure 11 shows skills categories that will become important for the companies by 2030.

By 2030, more jobs will require technological, social, and emotional skills.

Skill category	Physical and manual	Basic cognitive	Skills that are becoming more important		
			Higher cognitive	Social and emotional	Technology
Change in hours worked by 2030, %	−2	−14	8	29	48
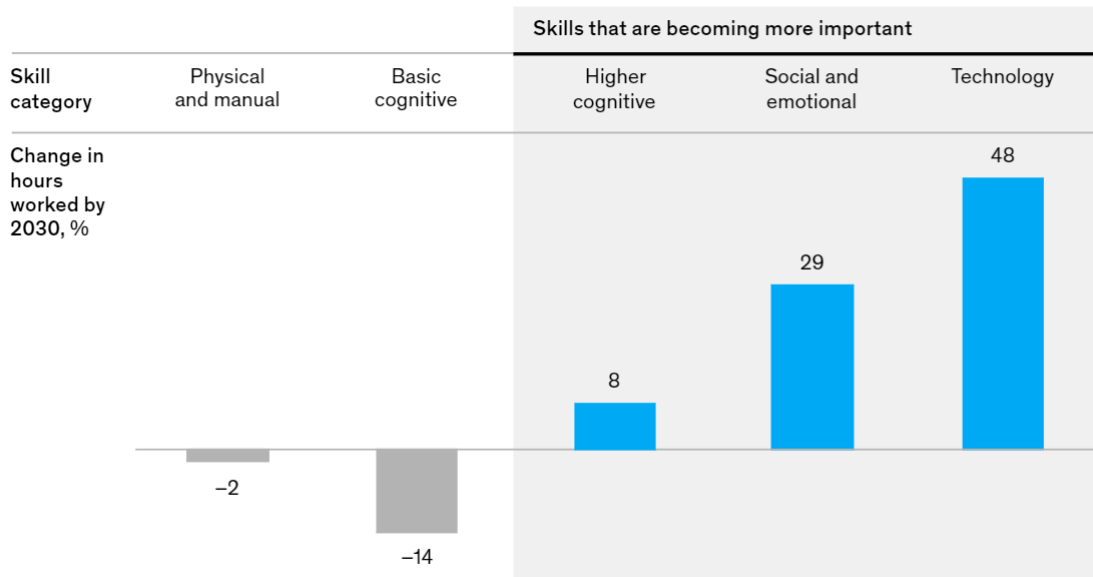
Source: US Bureau of Labor Statistics; McKinsey Global Institute analysis

Figure 11. By 2030, more jobs will require technological, social, and emotional skills (McKinsey, 2021).

Figure 11 illustrates McKinsey's prediction of the skills change needs, the shift is from physical, manual, and basic cognitive skills to the need to have skills more related to technology, social, and emotional skills by 2030. (McKinsey, 2021.) According to McKinsey (2021), the next ten years will bring fundamental changes to our working world, and to adapt, employees in almost every role and industry will need to acquire new skills.

4.3.1   Definition of Supply Chain Management Future Competences

Supply chain management competencies refer to the set of knowledge, capabilities, and expertise that are required to effectively plan, coordinate, and optimize the flow of goods, information, and finance across the entire supply chain network. SupplyChainManagementEDU.org (2024) defines supply chain management professionals as versatile business experts responsible for planning, analysing, monitoring, coordinating, and managing activities within complex and unpredictable environments. While industry specialization and position within the supply chain may influence to the needed skill set, these professionals are equipped to serve as skilled logisticians, adept negotiators and forecasters, and proficient planners. Today's in-demand hard skills are identified as e.g. inventory management, project management,

risk management, data analysis, and operations management, and soft skills include e.g. problems-solving, adaptability, communication, collaboration, negotiation, and time management. (Turley, 2024.)

According to Merkert and Hoberg (2020), there are many challenges facing the supply chain management sector in the 2020's. They present four main key trends that will affect supply chain management, and these are visible in the Figure 12.
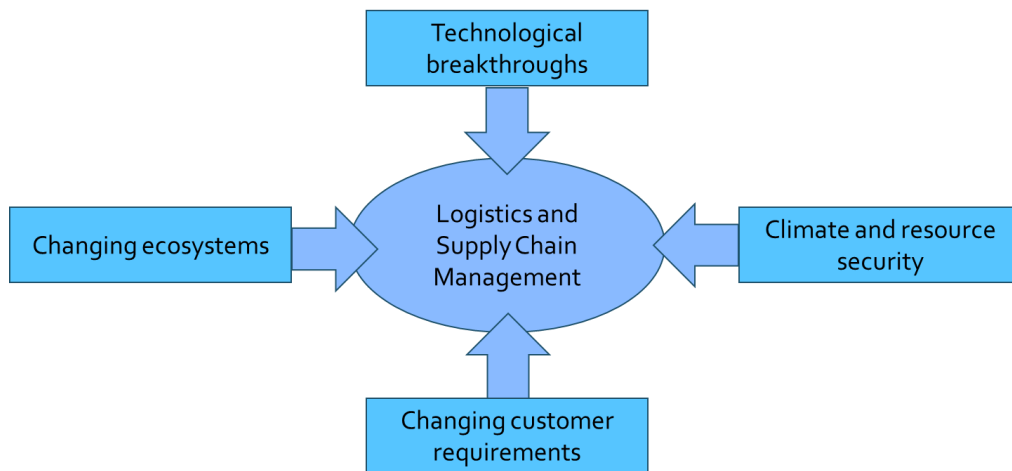
Figure 12. Key trends affecting logistics and supply chain management in the 2020's (Merkert& Hoberg, 2020, 1).

There are many technological breakthroughs available and emerging that are impacting supply chains targeting to increase efficiency, resilience, and agility. This phenomenon is often referred to as the "Fourth Industrial Revolution" (I4.0). Industry 4.0 provides the groundwork for intelligent and efficient operations, emphasizing that technologies are most effective when they are used together as integrated. The adoption of I4.0 is expanding, and businesses are incorporating these technologies into their supply chains to enhance various functions, facilities, and processes. (Asif & Searcy, 2022.)

The awareness of climate change and resource scarcity has grown significantly in recent years. Industrialization and emissions have contributed creating greenhouse effect and climate change. Efforts to reduce carbon emissions are directly impacting logistics and supply chains, as it has been recognized that with the superior supply hain management practices CO2 emissions can be reduced. (Merkert & Hoberg, 2023, 6.) The planetary boundaries are a limiting factor to economic growth. The staggering speed of consuming commodities and raw materials is causing supply chain constraints and higher prices

when acquiring rarer materials. (Merkert & Hoberg, 2023, 7.) These have implications for supply chain management in the form of the need to review transportation and manufacturing networks more frequently, deal with higher energy costs, local environmental requirements, and limited availability of important resources. (Merkert & Hoberg, 2023, 7.)

As customer expectations have risen, supply chain management organizations are facing more complex and unpredictable demands. Customers now expect personalized goods delivered faster than ever before, prompting supply chain organizations to shift towards more intricate models and channels. This transformation is driven by the need to meet evolving customer requirements for individualized products and quicker delivery times. (Merkert & Hoberg, 2023, 8.) To meet evolving customer expectations supply chain organizations can leverage adjusting the strategies, through automation and digitalization organizations are developing their capabilities to improved order tracking, and inventory management to address and respond quicker to changing customer needs. With forecasting and predictive analytics prepare for changes before they occur. Collaborating across stakeholders enables sufficient supply chain operations to deliver on customer expectations. Establishing sustainability practices supports meeting customer expectations for transparency and ethical sourcing and in general, develops a customer-centric culture to ensure that customer needs are involved in decision-making. (Halcon Primo Logistics, 2021.) All these actions and activities will require new skills and capabilities for organizations.

With technology advancements, changes to the operational environments and changing customer preferences, also supply chain management ecosystems have grown into more competitive and more advanced industries. Addition, to market concentration, there are trends seen towards omni-channel distribution, e-commerce, horizontal and vertical distribution like joint ventures, as well a shift from globalization to onshoring and sure shoring. (Merkert & Hoberg, 2023.)

As technology advancements will continue to provide new opportunities, Gartner (2024) identifies top trends for supply chain technologies for 2024. It recognizes the interplay between humans and machines as a key theme driving multiple trends and these trends will support new business models, augment, and automate decision making and foster ecosystem collaboration. Garter presents these trends to be driven by two themes that are visible in the following Figure 13. (Gartner, 2024.)

Top Trends in Supply Chain Technology for 2024

■ Humans and Machines ■ Control and Protect

Cyber Extortion

Machine Customers

Next-Generation Humanoid Working Robots

Supply Chain Data Governance

End-to-End Sustainable Supply Chains

Top Tech Trends

Composite AI

AI-Enabled Vision Systems

Augmented-Connected Workforce
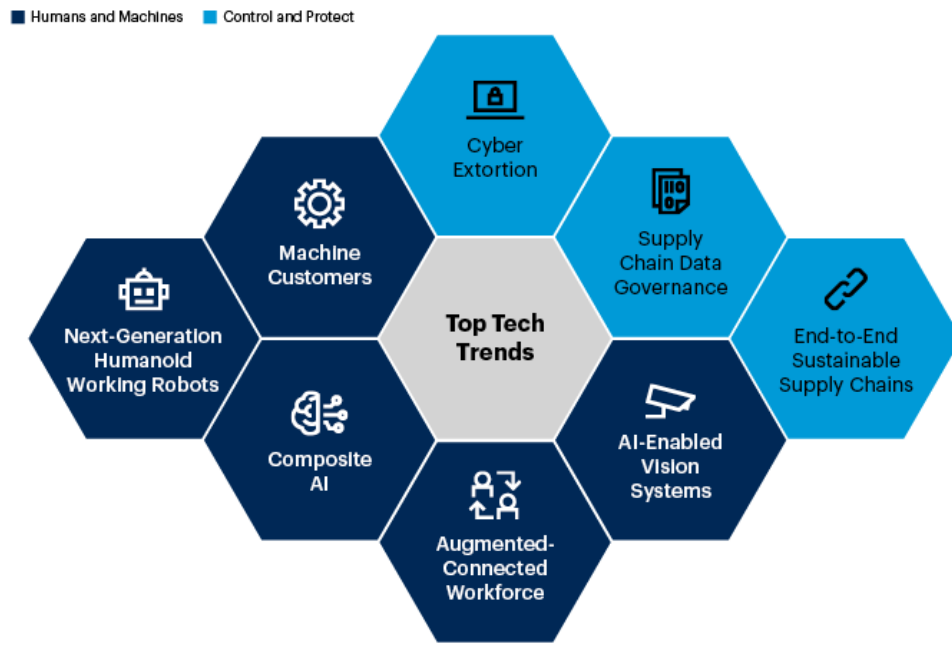
Source: Gartner
794003_C

Gartner

Source: Gartner (March 2024)

Figure 13. Top Trends in Supply Chain Technology 2024 by Theme (Gartner, 2024).

Figure 13 presents two themes for technology trends that are mutually reinforcing and interconnected, these emerging technologies are to control and protect businesses and create competitive differentiation through integration of humans and machines. Top trends are cyber extortion, supply chain data governance, end-to-end sustainable supply chains, AI-enabled vision systems, augmented connected workforce, composite AI, Next-Generation humanoid working robots and machine customers. (Gartner 2024.)

According to the survey conducted by Korn Ferry the needed skills are not solely just digital, operation and traditional hard skills, but soft skills like collaboration, communication, and abilities to work through ambiguity. (Korn Ferry 2023.)

Several sources identify supply chain resilience to be important in current complex environment. Deloitte (2017) offers five areas for businesses to cultivate resilience in the supply chain. By mastering these areas, companies can accelerate performance and embrace complexity.

First, understanding data. There is data everywhere in the world today. By taking a strategic approach to information management, data analytics can help to make better use of information, e.g. to isolate opportunities to drive efficiencies and identify potential problems.

Second, managing compliance. As supply chains become more complicated, understanding the rules and regulations what needs to be followed becomes important and how to manage compliance.

Third, mitigating and monitoring risk. Shift the perspective on risk from negative to strategic opportunity. Identify and transform processes to manage and mitigate risks effectively and utilize risk sensing with external data to anticipate future disruptions.

Fourth, staying nimble. Deloitte's survey found that 74% of organizations faced disruptions with third parties in the past three years, with one in five experiencing major consequences. Staying nimble helps organizations to overcome, e.g. by creating contingency plans for events conditions necessitate changes.

Fifth, assessing business partners in an ongoing and structured manner will offer meaningful data to find any possible risks or problems. To give understand about the full end to end transparency and enable de-risking the businesses makes it to hold partners in uniformed practices. (Deloitte, 2017.)

Summing up, trends and best practices identify the ongoing and still emerging technologies that will impact the supply chain environment, the field of the supply chain, as well the individuals and their competencies that need to be built.

Firstly, digitalization and technology utilization, creating a capability to adapt to digital operation-related skills and capabilities.

Secondly, risk management, as supply chains operate in the complex and changing environment with network of supplier, where the danger of something going wrong impacts to all parties. With risk management capabilities to find and address potential vulnerabilities in the supply chain. (McGrath & Jonker, 2023.)

Thirdly, data analytics and data literacy. Companies can access and collect data from various sources. For embracing technology and understanding the available data for the organization it can support data-driven decisions, based on relevant, trusted data with descriptive, predictive, prescriptive, and cognitive analytics. (IBM).

Fourthly, flexibility and resilience, as the supply chain environment has complexity and is impacted by different phenomena and descriptions, the need is to ensure capabilities to balance cost and operational efficiencies with improved resilience, meaning to have good visibility and the agility to shift sourcing, manufacturing, and distribution activities quickly when needed. (Hippold, 2020.)

Fifthly, to adapt to business trends there is a need to ensure soft skills related to social and emotional skills, such as problem-solving, collaboration, and communication skills (CIPS, 2023).

Additionally, learn to learn. In a changing environment that requires continuously new skills, organizations and individuals will benefit when they are able to unlearn some old habits and learn how to adapt to constant changes and strive further. Lifelong learning is here to stay, as professionals and organizations need to regularly become familiar with new trends and approaches throughout different times. (Merkert & Hoberg, 2023, 12-14.)

All individuals carrying the job and job role in supply chain management naturally need certain competencies for performing their roles. Some of these competencies the organization can decide to obtain by hiring, but the focus in this section was to identify those competencies that will be important for the supply chain management organizations in the future.

The next sub-chapter presents the conceptual framework and the logic behind selecting the relevant knowledge in the above focus areas.

4.4   Conceptual Framework of This Thesis

The findings from best practice, and business and academic literature that are relevant to this study are summarized into the conceptual framework for developing competencies for supply chain management organizations. The key themes in the conceptual

framework were informed by the three areas identified in the Current State Analysis, Section 3: (1) Competence Development, (2) Competence Development Planning, and (3) Supply chain management future capabilities. The conceptual framework is shown in Figure 14 below.
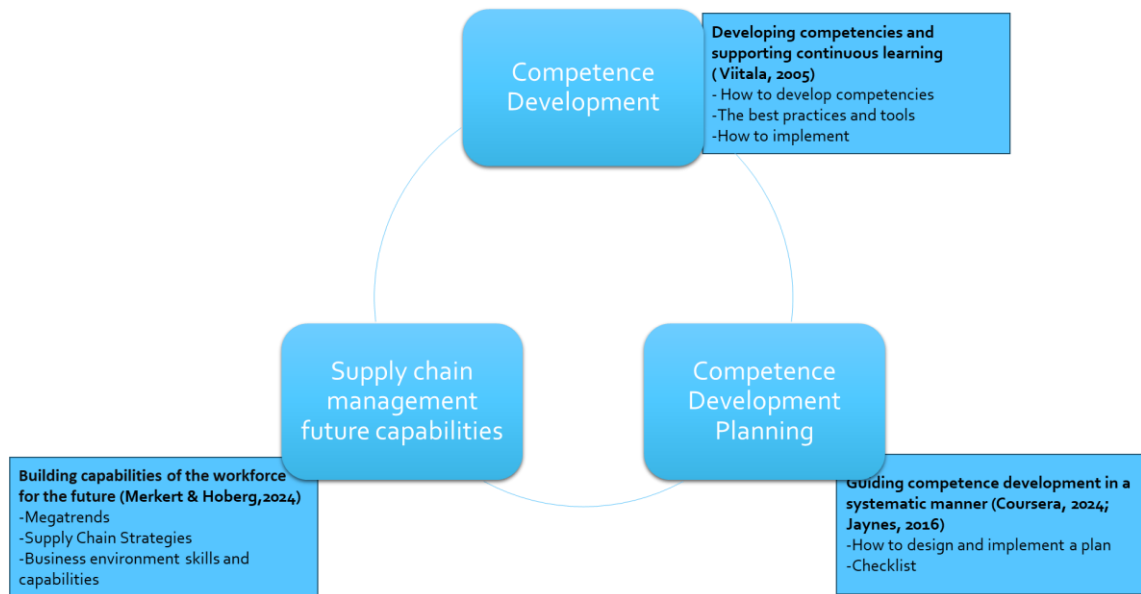
Figure 14. Conceptual framework of the thesis Mapping and Developing Competences in the Organization: supply chain management.

As seen from Figure 14, the first component of the conceptual framework focuses on the elements relevant to competence development and supporting continuous learning. It describes the process and tools, and practices of developing competencies.

The second component of the conceptual framework focuses on competence development planning and guiding the competence development in organizations in a systematic manner.

The third component focuses on the supply chain management future capabilities and building the capabilities of the workforce for the future.

Thus, the conceptual framework point to the relevant elements and best practices that are important for developing capabilities and skills for building supply chain management future capabilities. These contents are used in the next section of the thesis for solution-building proposals and for creating the competence development plan for the case organization.

In the next section, the proposal is built based on the results of the current state analysis and the existing knowledge and best practices that were synthesized into the conceptual framework.

5   Building the Proposal for a Mapping and Developing Competences in the Organization: Supply Chain Management

This section merges the findings of the current state analysis and the conceptual framework to support the building of the initial Proposal based on co-creation and discussions with the key stakeholders (Data collection 2).

5.1   Overview of the Proposal Building Stage

This section presents the steps in the Proposal building for this study. The goal of the initiative is to propose a clear and concise plan for supply chain management on how to proceed in building and developing needed future competencies in the organization, in the form of a Competence Development Plan.

The proposals relate to and build upon, selected findings in the current state analysis phase, which were reported in Section 3. The analysis revealed three main challenges. First, during the past years there has not been a systematic activity on leading competence development in the organization. Second, there has not been a clear plan or roadmap available for the organization on how and what activities should be driven to develop competencies. Third, the needed future supply chain management-specific competence identification, which would guide and support organization's strategic intent and activities, has not been established in a systematic and clear manner.

The identified three areas in CSA were studied in Section 4 with a literature review, and all of them will be taken into account in the building of the initial Proposal. The literature pointed out the importance of managing competencies in a systematic way as a process to support strategic intent and strategy implementation in the organization, from identifying key competencies to be developed to creating a clear plan to follow throughout the year with a follow-up activity.

The initial Proposal was built through co-creation with key internal stakeholders and followed by a discussion with the leadership. The discussion was conducted as part of the leadership team meeting practices in the form of a competence development workshop. The leadership team consists of all leaders from the sub-units, key support personnel, and the leader of the supply chain management organization. The structure and logic of building the initial Proposal are visualized in Figure 15.
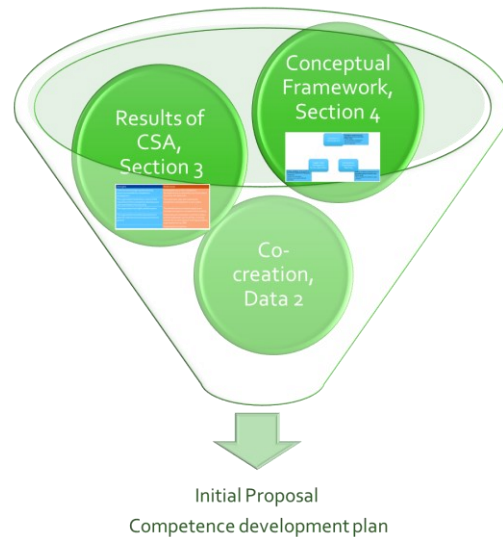
Figure 15. Structure and logic of the initial Proposal building.

As seen in Figure 15, the initial proposal was synthesized from information and results of the current state analysis, conceptual framework, and co-creation Data 2. Through analyzing the organization's current state in relevant and identified areas of competence development the strengths and weaknesses were collected. Existing knowledge and best practices offered a theory input for the creation of a thesis conceptual framework. Data 2 was collected as a co-creation with stakeholders. All these 3 aspects enabled the creation of an initial proposal building for a competence development plan for the supply chain organization.

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

This section reports on the main inputs from the key stakeholders. The fundamental input for building the initial Proposal consists of (1) the findings from the CSA, (2) Conceptual Framework (input from literature), and (3) Data 2 (from this co-creation round).

Data Collection 2 concentrates on identifying suggestions from the key stakeholders and proposing solutions across all three key areas: 1) Competence development, creating the culture and way of working for learning, 2) Competence Development Planning, creation of the competence development plan guiding the activities of competence development systematically and 3) Supply chain management future capabilities, building capabilities of the workforce for the future.

Table 5 summarizes the key stakeholder suggestions for the initial Proposal building upon the key focus areas identified in the CSA phase and considering the inputs from the literature.

Table 5. Key stakeholder suggestions (findings of Data 2) for Proposal building in relation to findings from the CSA (Data 1) and the Conceptual framework.

Element	Key focus areas from CSA (from Data 1)	Inputs from literature and best practices (CF)	Suggestions from stakeholders for the Proposal, summary (from Data 2)	Descriptions of their suggestions (in detail)
1	Competence development, creating the culture and way of working for learning.	Aligning competencies with strategic goals and implementing a systematic approach for identification of skills gaps and methods for closing the gaps.	a) Revise and strengthen the setup for competence development in the organization.	The stakeholders suggested implementing a network of experts to provide specialized expertise for the definition and development of competencies in the sub-units and supporting development activities.
			b) Ensure the support, follow-up, and promotion of competence development activities and learning solutions	The stakeholders suggested ensuring the information flow and setting up tools and systems for promoting and informing about the competence development activities for the organization.
			c) Plan and identify the proper onboarding content for the organization	The stakeholders suggested ensuring the proper onboarding content creation to be included in the plan, due to the recent changes in the organization.
2	Competence development planning, guiding competence development in a systematic manner.	Implementing a competence development plan for succeeding in future skill gap closer, implementation of successful business strategy and to have a roadmap with the	a) Develop a holistic plan for the organization that considers common activities	The stakeholders suggested setting up a holistic competence development plan for the starting year that also considered other ongoing or planned activities that impact or are related to skill and people development.
			b) Verify the activities to align with the next level of the organization to	

		essential components for effective competence development activities.	avoid parallel efforts.	
			c) Identify other ongoing professional programs impacting people	
3	Supply chain management future capabilities – building capabilities of the workforce for the future.	Identification of strategic competencies for supply chain management organization to enable building of the future capabilities.	a) Identification of strategic competencies for the organization	The stakeholders reviewed suggested strategic competencies that were created as a first draft to serve as a discussion starter and gave proposals for further development.
			a) Define professional learning programs needed for upskilling the strategic competencies at a high level	The stakeholders suggested providing a starting point for skill development and identifying the common learning solutions for strategic competencies, that are valid for all organizations dependent on the role. Content would need to serve as an introductory training to the topics.

As seen from Table 5, first, the findings related to competence development, creating the culture and way of working for learning revealed the need and a will to align competencies with strategic goals and implement a systematic approach for identification of skills gaps and methods for closing the gaps. To tackle the complexity of the organization and to ensure expertise in defining and developing quality in the learning solutions and support the continuous learning organization with properly executed information flow, the suggestion was made to establish a competence development network and identify contacts from each unit to represent their scope of responsibilities. (Interviewee 2.) As the organization is a global organization, the need is to establish suitable methods for promoting and communicating competence development activities for all personnel, regardless of their location. (Interviewee 7).

Second, the findings related to Competence Development Planning, the creation of the competence development plan guiding the activities of competence development in a systematic manner was seen as a requirement to manage activities and involve relevant experts in the work throughout the year. (Interviewee 7.) The stakeholders pointed out

that to ensure the holistic view in the plan for the whole organization, other ongoing work that impacts the people development should be visible in the same plan even though not led by supply chain management competence development. This means other projects or development activities that impact supply chain management organization and require learning new skills. (Interviewee 2.)

Third, the inputs from stakeholders for supply chain management future capabilities and building capabilities of the workforce for the future was seen as key, and identification of the strategic and core competencies need to be reflected in the future work by competence development and competence development network. The stakeholders pointed out that, after the final definition, the identified strategic competencies need to be visible at the job role level and in the work when evaluating skill gaps. (Interviewee 7 & Interviewee 12). It was also pointed out that these strategic competencies should be visible through the defined communication channels with suggestions of learning solutions, and they need to be identified as priority learnings for the organization and managed accordingly. (Interviewee 4.)

Summing up, the discussions with stakeholders suggested the case organization needs to have a systematic approach to ensure the organization's future skills and capabilities, this will include implementing a holistic plan for identifying needed competencies to be able to define the needed learning solutions for capability-building and developing competences together with dedicated experts to contribute to the process.

5.3   Initial Proposal

The initial proposal incorporates the key action items for building organization skills and capabilities to meet the future needs of the supply chain management organization in a systematic manner. The initial proposal, i.e. the Competence development plan, focuses on driving planning item actions for four focus areas: (1) Successful onboarding, (2) Continuous learning organization, (3) Building learning solutions to fit the need and (4) Establishing competence development support and communication.

5.3.1 Element 1: Competence development, creating the culture and way of working for learning

The initial proposal includes implementing a holistic plan for the organization's competence development. Table 6 shows the selected elements for the planning items with descriptions.

The initial proposal incorporates the findings of the CSA for Element 1. Competence development and creating the culture and ways of working for learning in the organization.

After the identification of strengths and weaknesses in the current state analysis phase and evaluation of best practice findings and existing knowledge, the stakeholders agreed that competence development is a crucial activity for a company to adapt to rapidly changing skill requirements. When aligning competencies with the organization´s strategic goals, it can differentiate themselves competitively and foster regeneration capacity. Efficient competence development includes processes for understating required skills, assessing existing competencies, and facilitating skill development.

5.3.2 Element 2: Competence development planning, guiding competence development in a systematic manner.

The initial proposal incorporates the finding for Element 2, Competence development planning, that guides the competence development work in the organization in a systematic manner.

After the identification of strengths and weaknesses in the current state analysis phase and evaluation of best practice findings and existing knowledge, the stakeholders agreed that, competence development with an effective goal setting is key to a successful business strategy and employees' competencies are relevant when they reflect company's and organization's goals and objectives. By planning the competence development activities, an organization gains a better understanding of what the team is capable of and what needs to be improved. Focused competence development programs derive from these insights and are planned in a competence development plans as a living process. By implementing a competence development plan an organization will have a roadmap with the essential components for effective competence development activities.

5.3.3 Element 3: Supply chain management future capabilities – building capabilities of the workforce for the future.

The initial proposal incorporates the findings for Element 3, supply chain management future capabilities and building capabilities of the workforce for the future.

After the identification of strengths and weaknesses in the current state analysis phase and evaluation of best practice findings and existing knowledge, the findings share and highlight the examples for strategic and core competencies as a benchmark from the industry. The stakeholders agreed on trends and megatrends impacting supply chains and supply chain management. These trends share information on the core and strategic competencies that support supply chain management organizations when building and developing their workforce for the future.

5.4 Summary of the Initial Proposal

The initial proposal includes a Plan for the organization's competence development. Table 6 shows the elements for the planning items with descriptions.

Table 6.   Competence development planning and action items on high level (Initial proposal).

Element	Company descriptions of the planning items	Action	Action details	Priority and timing sequence	Timing
1 Competence development, creating the culture and way of working for learning.	Continuous learning organization	"Learning Mindset", investing in a learning activity. Including learning target setting on the individual level.	Defining the learning targets on individual and team levels. Setting up the KPIs for learning and adding the content to the HR tools and communication materials.	2	Set up : month 2
	Establishing competence development support and communication	Competence development communication site creation for promoting learning solutions, information sharing, and co-creating competence development solutions.	Building up the necessary communication channels for competence development by following the agreed internal communication guidance. (SPOL, Teams site).	2, maintained monthly	Set up : month 2 + monthly updates
	Establishing competence development support and communication	Setting up the competence development network.	Establishing a dedicated competence development network, nominated by leaders. Setting up monthly calls.	1, monthly calls	Set up : month 1 + monthly meetings
	Successful on-boarding	Supply Chain Management on-boarding solution creation.	Building up the organization's onboarding content with the latest information; introduction to the organization, introductions to the processes and mode of operation, and ways of working.	3, second half of the year	Set up : second half of the year
	Establishing competence develpment support and communication	Follow up on competence development activities and learning investments.		4, quarterly activity	Set up : month 4 + quarterly follow up
2 Competence development planning, guiding competence development in a systematic manner.	Continuous learning organization	Continuous verification of learning needs.	Verification and feedback collection on new learning needs from the teams. Collecting information from the possible changes to the strategy, ways of working, and processes impacting skill development.	2, quarterly activity	Set up : month 2 + quarterly updates
	Continuous learning organization	Competence-based learning solution program, enabling individual-level skill assessment.	Creating organization-specific learning content and training paths based on the defined roles that is needed for evaluation. Program implementation and support in the organization.	3, full year program	Full year program
	Continuous learning organization	Learning needs tracking. Needs derived from projects requiring skill development.	Learning needs verification, needs derived from the organization's projects requiring skill development.	2, quarterly maintained	Set up : month 2, quarterly maintained
3 Supply chain management future capabilities – building capabilities of the workforce for the future.	Building learning solutions to fit the need	The final definition of strategic competencies, competence mapping to the roles. Creation of needed learning solutions.	Learning program creation on developing skills: Digitalization and technology utilization, Risk Management, Data analytics and data literacy, Flexibility and resilience, and problem-solving, collaboration, and communication.	2	Set up and creation : months 2 - 6
	Building learning solutions to fit the need	Identification and setting up priority training for organizations and teams.	Defining the organization's priority training and setting up the content to the HR tools and communication materials.	2, maintained twice a year	Set up : month 3 + update month 6
	Building learning solutions to fit the need	Building other identified learning solutions to fit the need.	Building up needed learning solutions for selected competences. -Quality learning program -Leadership learning program	2, continuous review	Set up : month 4 + updates according to the need

The planning items are visible in the Table 6, but the full level of details is not visible in the thesis material due to confidentiality. The detailed actions were planned and scheduled to follow the common HR and organization's yearly calendar and considering the available resources throughout the yearly calendar of the planning year. The establishment of the competence development network was considered a priority, as the network has the accountability of the competence development actions in their own responsibility area; by supporting the identification of the needed skills and capabilities, identification of the skills gaps and learning needs, and contribute to the development of learning solutions and the follow up of the learning achievements and KPIs as well the communication activities.

The initial Proposal was built on four selected areas, with schedules and outcome definitions. The first planning item drove the successful onboarding of new and transferring employees, and the defined actions that were related to ensuring employees' induction to the organization, processes, mode of operation, and way of working. (Data 2, Section 5.2)

The second planning item drove continuous learning organization and the defined actions were related to ensuring a skill gap identification, setting up learning targets, and following learning investments. Action items are based on McKinsey's recommendation of learning KPIs (McKinsey, 2016).

The third planning item drove building learning solutions to the identified learning needs and the defined actions were related to building solutions for the selected strategic and core competencies. (The thesis proposal and references for strategic competencies are visible in Section 4.3.3.) Also, other relevant projects and initiatives impacting people's skills and capabilities were identified to have a comprehensive view of the plan.

The fourth planning item drove the establishment of competence development support and communication and the defined actions that were related to establishing the competence development network community and establishing the needed communication channels for sharing relevant information for the organization. The competence development network supports and drives the cycle of competence development; Identify, Plan, Support & Monitor and evaluate. (WV Development, 2015.)

Due to the restrictions of the available resources, the competence plan is proposed for delivering the selected actions during the first year, considering the most effective, impacting, and critical actions.

The proposal addresses the case organization's strategy and implementation of strategy. This takes place through identifying the key strategic and core competencies, building a plan to identify the skills gaps, building the needed competencies, and ensuring learning solutions to close the gaps.

The competence development network was established as a priority. This community of experts was nominated by their leaders and comprised of experts from sub-unit organizations. As representatives of their own responsibility area organization, they contribute to the evaluation and validation of the initial Proposal. The validation of the initial proposal will be described in the next section of this thesis.

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 State

This section reports on the validation results of the proposal developed in Section 5. Validation refers to the experts' judgment of the Initial proposal. The input of the experts in the thesis is referring to as Data 3.

The Initial proposal was built on the findings across selected areas in Data 2, described in detail in the previous sub-chapter. These findings were derived from the current state analysis evaluation of the case organization's competence development and management and the key elements impacting the creation of the competence development plan and the collection of the most relevant literature, as well as best practices established by consulting companies and businesses, that were then synthesized in the conceptual framework described in Section 4.4. The proposal was accepted by the organization's key stakeholders as a baseline version, with the intent to be further developed after being reviewed by the extended network.

The validation stage was conducted in three rounds and the validation focused on the four selected areas in the plan and the actions driving those areas, their schedules, and planned outcomes. The four areas were (1) successful onboarding, (2) continuous learning organization, (3) building learning solutions to the need and (4) establishing competence development support and communication. The purpose of the validation was to assess the accuracy, relevance, and practicality of the initial Proposal, competence development plan and to collect the stakeholders' feedback for improvement and to gain confirmation that the expectations are met.

The validation rounds were performed. The first initial Proposal was shared with the established group of experts that formed a community Competence development network. The initial proposal was then shared in a common workshop with the collection of feedback. The first round was complemented by the second round where each

network representative gave feedback specific to their organization. The third round was conducted with the stakeholder that represented the next level of the organization with the same responsibility area, competence development.

The experts involved with the validation process were considered to bring the most relevant expertise and best insights for the organization's competence development and competence development plan creation. All discussion results and recommendations were written down for final proposal-building purposes.

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

The conversations with stakeholders and the analysis of the feedback constitute Data 3 gathered from validation of the initial Proposal. The findings of Data collection 3 guide the final proposal. Data Collection 3 is strictly focused on the Proposal contents and seeks to finalize the solution based on the expert's feedback. The following sub-sections describe the feedback provided by the experts on each element of the initial Proposal.

6.2.1   Developments to Element 1 of the Initial Proposal

The development suggestions for Element 1, Competence development, creating the culture and way of working for learning, pointed to the need for minor changes. During discussions, the importance of having a culture that supports learning and highlights the importance of it was stated. Ensuring the ways of working and having the systems in place for competence development with clearly defined roles and responsibilities was seen as important. The establishment of a competence development network was seen to support these needs. The key feedback inputs from the validation discussions are visible the following Table 7 below.

Table 7.   Summary of the findings from Data 3 collected in the validation of the Element 1 of the initial Proposal.

	Element 1 of the initial Proposal	Parts commented in Validation	Description of the comment/feedback by experts (in detail)	Development to the initial Proposal
1	Competence development, creating the culture and	a) Revise and strengthen the setup for competence	The stakeholders suggested including and conducting onboarding for	The timeframe for the onboarding was agreed upon and included in the plan.

way of working for learning.	development in the organization.	a dedicated competence development network.	
	b) Ensure the support, follow-up, and promotion of competence development activities and learning solutions.	Confirmed, without further feedback.	n/a
	c) Plan and identify the proper onboarding content for the organization.	Confirmed with an additional suggestion to complement common plan with sub-unit details when relevant.	An optional placeholder was created to enable full visibility for all needed levels of organization.

Table 7 summarizes the key validation inputs from stakeholders for Element 1. The experts' conversations and feedback reinforced the discussions and Data collection 2. There were some minor development suggestions. The first suggestion was to take into consideration the complexity of the organization. Many sub-teams have their own responsibility areas, and few teams stated they would benefit from a separate complementary plan with separate actions that are only relevant to them. A request was made to enable this as optional and to make linkage visible in the common plan. It was discussed that in case the optional sub-team plan is created, the ownership of the sub-team plan and its content will be by the sub-team competence development network contact and visible mapping to the common planning will be enabled.

As for onboarding, the onboarding of employees was seen as important, with the note that existing onboarding content was not according to the needed quality and with the latest information. Also, the induction of the competence development network members was seen as beneficial to enable competence development community work. The onboarding content was seen as important to reflect the organization's full structure, and the visibility to sub-team content needs to be enabled. The structure was requested to be visible also in the communication materials. Even though competence development network members were experienced in the organization, the onboarding content about competence development was agreed to be collected and included in the plan. With this, it can be ensured that all competence development network members have the same level of knowledge and information to start with.

6.2.2   Developments to Element 2 of the Initial Proposal

The development suggestions for the Competence development planning, guiding competence development in a systematic manner pointed mainly to the updates in the schedules and to some content updates of parallel ongoing and starting activities impacting people's capability building. The key feedback inputs from the validation discussions are visible in Table 7 below.

Table 8.   Summary of the findings from Data 3 collected in the validation of the Element 2 of the initial Proposal.

	Element 2 of the initial Proposal	Parts commented in Validation	Description of the comment/feedback by experts (in detail)	Development to the initial Proposal
2	Competence development planning, guiding competence development in a systematic manner.	a) Develop a holistic plan for the organization that considers common activities.	Confirmed with an additional suggestion to complement the common plan with sub-unit details when relevant.	An optional placeholder is to be created to enable full visibility for all needed levels of organization.
		b) Verify the activities to align with the next level of the organization to avoid parallel efforts.	Confirmed with an additional suggestion to complement the common plan with further details from the next level organization plan.	The timeframe and details are to be updated according to the suggestion.
		c) Identify other ongoing professional programs impacting people.	Confirmed	The timeframe and details updated according to the suggestion.

Table 8 summarizes the key validation inputs from stakeholders for Element 2. The experts' conversations and feedback reinforced the Proposal elements. There were suggestions for adding action items to the plan, to enable a comprehensive plan for the organization. These suggestions were added to the plan with their schedules. For the most part, the plan was seen as clear and complementing the objective and outcome drivers of the organization.

6.2.3   Developments to Element 3 of the Initial Proposal

The development suggestions to the supply chain management future capabilities, building capabilities of the workforce for the future, pointed to confirming the suggested strategic competences identified from the literature and best practice information. The key feedback inputs from the validation discussions are visible in Table 9 below.

Table 9.   Summary of the findings from Data 3 collected in the validation of the Element 3 of the initial Proposal.

	Element 3 of the initial Proposal	Parts commented in Validation	Description of the comment/feedback by experts (in detail)	Development to the initial Proposal
3	Supply chain management future capabilities – building capabilities of the workforce for the future.	a) Identification of strategic competencies for the organization.	In general, confirmed. The identified strategic competencies were not fully serving all sub-units. A proposal to have a complementary set of core competencies for dedicated sub-teams was seen as important.	A complementary set of core competencies were included in the plan.
		a) Define professional learning programs needed for upskilling the strategic competencies at a high level.	The experts suggested some already defined and created learning solutions to be used as a starting point and rest could be defined as a next step.	Already defined learning solutions were utilized as part of the recommendations, further solutions will be identified/collected/created according to the updated schedule.

Table 9 summarizes the validation inputs from stakeholders for Element 3. For the most part, the plan was seen as clear and complementing the objective and outcome drivers of the organization. The experts' suggestions pointed to taking into consideration the complexity of the organization as well as the different roles of the teams. The identified strategic competencies were seen as important for all, but lacking aspects of 5 sub-teams that had recently joined the organization and had specific work scope. To complement the needs, the plan was adjusted accordingly, and an additional set of competencies was identified as core competencies. To support the next level of activities, there was also a suggestion made to have already identified learning solutions mapped and available for organizations' usage as priority training.

6.3 Final Proposal

The final proposal for the implementation of the competence development plan that enables the thesis organization to ensure and build needed competencies systematically for the future is presented below in Table 10.

Table 10.   Competence development planning and action items on high level (Final proposal)

Element	Company descriptions of the planning items	Action	Action details	Adjusted priority and timing sequence	Adjusted Timing
1 Competence development, creating the culture and way of working for learning.	Continuous learning organization	"Learning Mindset", investing in a learning activity. Including learning target setting on the individual level.	Defining the learning targets on individual and team levels. Setting up the KPIs for learning and adding the content to the HR tools and communication materials.	2, maintained twice a year	Set up : month 2 + update mid year
	Establishing competence development support and communication	Competence development communication site creation for promoting learning solutions, information sharing, and co-creating competence development solutions.	Building up the necessary communication channels for competence development by following the agreed internal communication guidance. (SPOL, Teams site). Sub teams relevant content, links and materials to be included to all materials.	1, maintained monthly	Set up : month 1 + monthly updates
	Establishing competence development support and communication	Setting up the competence development network.	Establishing a dedicated competence development network, nominated by leaders. Organizing a kick-off call and onboarding calls with nominated experts and setting up monthly calls.	1, monthly calls	Set up : month 1 (incl onboarding) + monthly meetings
	Successful on-boarding	Supply Chain Management on-boarding solution creation.	Building up the organization's onboarding content with the latest information; introduction to the organization, introductions to the processes and mode of operation, and ways of working. Sub teams relevant content, links and materials to be included to all materials.	3, second half of the year	Set up : second half of the year
	Establishing competence develpment support and communication	Follow up on competence development activities and learning investments.		4, quarterly activity	Set up : month 4 + quarterly follow up
2 Competence development planning, guiding competence development in a systematic manner.	Continuous learning organization	Continuous verification of learning needs.	Verification and feedback collection on new learning needs from the teams. Collecting information from the possible changes to the strategy, ways of working, and processes impacting skill development.	2, quarterly activity	Set up : month 2 + quarterly updates
	Continuous learning organization	Competence-based learning solution program, enabling individual-level skill assessment.	Creating organization-specific learning content and training paths based on the defined roles that is needed for evaluation. Program implementation and support in the organization.	3, full year program	Full year program, accoding separate program schedule + monthly follow up
	Continuous learning organization	Learning needs tracking. Needs derived from projects requiring skill development.	Learning needs verification, needs derived from the organization's projects requiring skill development.	2, quarterly maintained	Set up : month 2, quarterly maintained
3 Supply chain management future capabilities – building capabilities of the workforce for the future.	Building learning solutions to fit the need	The final definition of strategic competencies, competence mapping to the roles. Creation of needed learning solutions.	Learning program 1 creation on developing skills: Digitalization and technology utilization, Risk Management, Data analytics and data literacy, Flexibility and resilience, and problem-solving, collaboration, and communication. Learning program 2 creation for sub-team on developing skills: Business Acument, Problem solving, Conflict management, Project Management, Partner collaboration and management, Cost management and control.	2	Set up and creation : months 2 - 6
	Building learning solutions to fit the need	Identification and setting up priority training for organizations and teams.	Defining the organization's priority training and setting up the content to the HR tools and communication materials. Sub teams relevant content, links and materials to be included to all materials.	2, maintained twice a year	Set up : month 3 + update month 6
	Building learning solutions to fit the need	Building other identified learning solutions to fit the need.	Building up needed learning solutions for selected competences. -Quality learning program -Leadership learning program	2, continuous review -Continuosly ongoing learning program -Continuosly ongoing learning program	Set up : month 4 + according to the need

As shown in Figure 10, the final comments and feedback were considered and implemented into the plan. There were some minor adjustments to the timelines of the plan. The request to consider the complexity of the organization and the visibility of the sub-unit-specific content was included accordingly. Overall, the proposal was supported and received well, therefore there was no need to rethink the approach or redesign the content in a major way.

The final proposal's plan was accepted to be carried out after the implementation of the mentioned changes. The cycle of revisiting the plan periodically was agreed and implemented as part of the responsibilities of the competence development network and the initiation of the review was agreed to be with the competence development lead of the organization.

It is recommended that the plan will be revisited also after any changes to the organization's strategy, or after major changes to the organization's setup or way of working and processes.

Section 6 ends with the validated proposed improvements, therefore the study proceeds to conclusions.

7 Conclusion

This thesis section provides an executive summary of this study. It describes the main conducted steps and results in building proposal for the presented business challenge and offers thesis quality evaluation and closing words by the author.

7.1 Executive Summary

The case company of the thesis is a global large-sized company that operates in the technology sector. In this thesis, the focus is on a business unit that is responsible for the supply chain management. Today businesses and supply chains have been influenced by several global phenomena, creating increasingly competitive business landscapes, ever-increasing complexity, and digital revolution. Continuous learning in the organization has become essential and imperative for organizations to succeed. Sustaining competitiveness in today's market requires organizations to be adaptive, innovative, and constantly changing. This requires continuously learning new skills. By harnessing these skills and capabilities correctly, companies increase their abilities to grow and renew. Continuous learning brings benefits, not only to the organizations but also to individual employees through creating job satisfaction and opportunities for career growth. The thesis objective is to do an evaluation of the current state of the competencies and strategic needs, identify the competence development needs, and build a proposal on how to build the necessary capabilities. The outcome offers recommendations in the form of a competence development plan for the unit on how to proceed in building and developing competencies in the organization.

The thesis is conducted by following applied action research and qualitative research methods. In the background of Applied action research, the research and development process are combined to solve a business problem, as it combines research and development that typically relates to continuous enhancement and improvement in organizations (Kananen, 2013.) This thesis focuses on co-creating solutions with key stakeholders and the descriptive data that is collected during interviews and workshops, mainly relying on qualitative research techniques, and complementing them with qualitative techniques only when looking into the organization data.

This thesis starts by analyzing the current state of the competencies and competence needs of the organization. The focus is also to form an understanding of the current available practices and processes for competence development in the organization that support identifying competence gaps, to understand the current organization structure with roles and responsibilities, to understand the future competence development needs, and to gain insights into the strengths and weaknesses of the current practices in place. The current state analysis key findings reveal issues in three main areas, (1) Competence development, creating the culture and way of working for learning, (2) Competence development planning, creation of the competence development plan guiding the activities of competence development systematically and (3) Supply Chain management talent, building capabilities for the workforce of the future. These three challenge areas is explored utilizing available literature, published knowledge including articles and publications by professional associations and research institutions that are essential when focusing on the aforementioned areas.

The thesis also reviewed best practice and business and academic literature that are relevant to this study and are summarized selected relevant knowledge into the conceptual framework for developing competencies for supply chain management organizations. The conceptual framework for this study follows the selected three areas informed by the challenges identified in the current state analysis. The initial proposal is built in co-creation with key internal stakeholders and the initial proposal building was synthesized from information and results of current state analysis, conceptual framework, and co-creation with internal stakeholders.

The initial proposal includes a Plan for the organization's competence development focusing on selected planning items, which actions drive successful onboarding, continuous learning organization, building learning solutions to the organization's needs, and establishing competence development support and communication.

To verify the usability of the initial proposal, it is validated by the key stakeholders. The identified elements are discussed, and the feedback is collected in a subsequent round of co-creation, referred to in the thesis as Data 3. Data 3 is used to develop the final proposal, a competence development plan. The final proposal's plan is accepted and carried out, as a competence development plan that enables the thesis organization to ensure and build needed competencies systematically for the future.

7.2 Thesis Evaluation

The objective of this Master's thesis was to perform an evaluation of the current state of the competencies and strategic needs (gap + future needed competencies), identify the competence development needs, and build a plan how to build the necessary capabilities. As an outcome, this Master's thesis created to a Plan for the unit on how to proceed in building and developing competencies in the organization. The outcome was called supply chain management Competence Development Plan.

The plan was implemented for the thesis organization and the plan can utilized by other units of the organization in relevant parts. The content visible in the thesis can act as an enabler or inspiration for other companies for building competence development plans, the recommendations and findings are not relevant only to similar companies or similar fields. The final proposal offers a tool for putting basics in place, leaving the next considered and needed step to be evaluated and implemented in the next cycle of the plan. These could tackle even more of the opportunities in building and implementing more agile learning models and methods that could suit the organization's environments.

While the results were met there were some limitations during the thesis process. The thesis relies mainly on the analysis of qualitative information. The thesis might have benefitted from further measurable quantitative data on the organization's competence levels. It could have helped to perform a more in-depth analysis of existing skills. This data collection was prepared to be collected as a separate project, but the timing did not support the thesis schedule and therefore the decision was made to proceed with the thesis project without this information and use mainly qualitative research methods.

7.3 Closing Words

This study explored the important topic of building the organization's skills and capabilities, and how to ensure the important and needed competencies and sustain competitiveness in today's market where businesses are required to constantly evolve. The implemented thesis solution, a competence development plan, offers a starting point and a roadmap to harness the selected and business-critical skills and capabilities. Enabling the case organization ensures competence development in a structured

manner with clear actions and it guides and sets targets on the actions and activities of competence development.

Furthermore, with the implemented solution, the organization can focus on the most important things in competence development, and through the visibility of the plan help to prioritize the resources effectively when driving the organization's strategy and strategic intent.

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WRITTEN STATEMENT

on the use of AI-based tools in this thesis

by Sari Lydén, the student of BI Master´s Degree Programme

Thesis title: Mapping and developing competences in the organization; supply chain management

According to the *"Guidance for addressing the use of AI-based tools in studies at Metropolia Business School (for written submissions)"* from August 2023, I make this statement on the use of AI-based tools in my submitted Master´s thesis.

1) Which AI-bases large language models or other AI-based tools I used

   ChatGPT and Grammarly

2) In which parts of the thesis which tools were used, and for which tasks *(please make a list)*

   ChatGPT were used as additional source to identify biggest consulting companies for supply chain field. Further information and details was studied via search engine and directly from the companies' pages.

   Grammarly was used for to catch spelling mistakes, grammar errors, punctuation mistakes.

3) What portion of the text was helped with these tools, for each use

   Grammarly was used for to catch spelling mistakes, grammar errors, punctuation mistakes throughout the thesis writing process.

4) Which prompts were asked, exactly *(please indicate the page number in the text where used)*
   What would be biggest consulting companies for supply chain field? (in general, not specifically for text creation)

5) Here, I describe what continues an ethical and reliable use of AI-based tools that I used *(use, for example, the recommended documents from "MBS Guidance" referred to above)*
   AI tool was used as an idea search, but the similar information was found from search engine search with usable and accessible links. Therefore, there were no value add of the ChatGPT usage for the thesis content.

6) Here, I describe how ethically and reliably I used the AI-based tools in my thesis submission

GhatGPT AI tool was used as an idea search, but the similar information was found from search engine search with usable and accessible links. Therefore, there were no value add of the ChatGPT usage for the thesis content.
Grammarly was used for to catch spelling mistakes, grammar errors, punctuation mistakes.

This written statement makes part of my thesis and is done to help in evaluation and assessment.

6.5.2024

_____

(Data and place)

Sari Lydén

_____

(Signature)