

# KNOWLEDGE MANAGEMENT INFLUENCE ON SUSTAINABLE BUSINESS GROWTH



Master's thesis

Business Management and Entrepreneurship  
Master of Business Administration  
Hämeenlinna

Spring 2021

Eric Thande

## Table of Contents

<b>INTRODUCTION .....</b>	<b>1</b>
1.1 Background .....	1
1.2 Research Objectives and questions .....	2
1.3 Research approach .....	2
<b>2. KNOWLEDGE ANALYSIS .....</b>	<b>3</b>
2.1 Knowledge definition .....	3
2.2 Features of knowledge .....	3
2.3 Forms of knowledge .....	5
2.3.1 Explicit knowledge .....	6
2.3.2 Tacit Knowledge .....	7
2.3.3 Embedded knowledge .....	9
<b>3 KNOWLEDGE MANAGEMENT .....</b>	<b>10</b>
3.1 Knowledge management process .....	11
3.1.1 Knowledge acquisition .....	12
3.1.2 Knowledge storage .....	13
3.1.3 Knowledge distribution .....	14
3.1.4 Knowledge use .....	14
<b>4. KNOWLEDGE DISSEMINATION .....</b>	<b>15</b>
4.1 Knowledge dissemination views .....	16
4.2 Approaches of knowledge dissemination techniques .....	17
4.2.1 Communities of Practice .....	17
4.2.2 Knowledge portals .....	18
4.2.3 Knowledge codification .....	19
4.2.4 Mentoring, apprenticeship, and training .....	20
<b>5. MEASURING KNOWLEDGE MANAGEMENT IN COMMUNITIES OF PRACTICES .....</b>	<b>21</b>
5.1 Measuring knowledge management in communities of practice .....	22
5.2 Knowledge governance structure in organizations .....	22
<b>6 DATA ANALYSIS OF KNOWLEDGE MANAGEMENT IN FINNISH COMPANIES .....</b>	<b>24</b>
<b>7 DATA MEASURES, ANALYSIS, AND REPORTING .....</b>	<b>26</b>
<b>8 EMPIRICAL DATA ANALYSIS .....</b>	<b>27</b>
<b>9 DISCUSSION .....</b>	<b>37</b>
9.1 Decision-making aspects concerned with knowledge management .....	37
9.2 Interaction and cooperation in organizations .....	38
9.3 Trust and atmosphere in the organizations .....	39
9.4 Strategy-making in organizations .....	39
9.5 Organizations' practices concerning information and knowledge organization .....	41

<b>10 CONCLUSIONS .....</b>	<b>42</b>
<b>References.....</b>	<b>44</b>
<b>INDEXES .....</b>	<b>49</b>
<b>3.1 Variables in the order of occurrence .....</b>	<b>49</b>
<b>Figures &amp; Tables .....</b>	<b>62</b>

Business Management and Entrepreneurship  
Master of Business Administration  
Hämeenlinna

---

**Author** Eric Thande **Year** 2021

**Subject** Knowledge Management Influence on Sustainable Business Growth

**Supervisor(s)** Mikko Mäntynevä

---

ABSTRACT

Knowledge is a shared resource that molds and affects the activities and operations associated with the business. This research explores how knowledge management, dissemination, and sharing influence the growth of businesses in Finland by examining how they influence sustainable development. The aim will be to examine how these forms of knowledge are useful in developing value by leveraging intangible assets.

Knowledge management and sharing are areas where organizations can focus on influencing their overall position in the market. Knowledge in business is a crucial strategic asset. It comprises the skills, experiences, professional insight, and capabilities within and outside an organization and can be used to integrate the desired strategies to achieve the firm's objectives. Several aspects of knowledge distinguish it from other resources in an organization. Primarily accumulation of knowledge occurs over time.

Some of the questions that can be asked in association with the research objectives include: do knowledge management and sharing affect organizations, what are the KPIs associated with knowledge management in communities of practices, and are companies in Finland better off with the latest access to knowledge management and sharing? Through the answers derived from the above questions, organizations in Finland and other readers will understand the benefits of having an effective knowledge resource.

**Keyword's** knowledge management, knowledge dissemination, key performance indicators (KPI)

**Pages** 66 pages including 15 appendices

## INTRODUCTION

### 1.1 Background

With the constant change and development affecting the business world, organizations need to adapt to these changes or face losing their competitive edge. Every company has to change their business strategies if they are to remain successful since new information and technologies regularly flood the market. Competitors also arise from all corners of the business realm, making companies work harder to maintain or elevate their market position (Vayrynen, Helander, & Kukko, 2014, 58). Knowledge management and sharing are areas where organizations can focus on influencing their overall position in the market. Throughout history, individuals and entities that have integrated information and knowledge to its maximum have succeeded in their endeavors. This can also be said for organizations where knowledge is viewed as the central resource and an aspect for survival that provides the organization with a competitive edge (Salojarvi & Furu, 2005, 105). One aspect that has made competition between organizations fierce is globalization, particularly organizations with an international market.

Even though knowledge management has had numerous analyses from a managerial and an academic standpoint, it can be viewed as a new discipline connected to the flow of further information into the organization to influence decision making. New information can also be used to increase motivation among employees in that they can share information and learn from this information which increases their performance in the organization. High performance in the firm is linked to increased motivation (Koskenkorva, 2019, 6). Information and technology go hand in hand, implying that new technological solutions in several instances accompany new information. The possibilities associated with increased knowledge and technology advancements create a versatile platform where sharing and knowledge management become easier. There are several benefits of knowledge sharing and technological advancements. One of them is that organizations can take advantage of working virtually through forming virtual teams where information can be freely relayed to team members.

With the increased interest in knowledge sharing and management, it is ironic that there are minimal studies that have been conducted to show the influence of this form of knowledge on companies. This research will aim to explore knowledge management and its influence in business across Finland. Sustainable growth has been chosen as a measure of success for these organizations. Several facets under knowledge, knowledge management and sharing, and knowledge dissemination will be examined and associated with these organizations.

## 1.2 Research Objectives and questions

This research explores how knowledge management, dissemination, and sharing influence the growth of businesses in Finland by examining how they influence sustainable development. The aim will be to examine how these forms of knowledge are useful in developing value by leveraging intangible assets. Intangible assets, in this case, can be classified, including human capital, external capital, and organizational capital. The essay examines how disseminating knowledge is crucial in ensuring it is available to those in need of it by implementing knowledge dissemination techniques. Another objective will be to determine the approaches to metrics for knowledge management in connection to community practices. These approaches will be based on knowledge and social learning processes and knowledge development, to mention a few.

Some of the questions that can be asked in association with the research objectives include:

- Do knowledge management and sharing affect organizations?
- What are the KPIs associated with knowledge management in communities of practices?
- Are companies in Finland better off with the latest access to knowledge management and sharing?

Through the answers derived from the above questions, organizations in Finland and other readers will understand the benefits of having an effective knowledge resource. It will also derive strategies to implement the knowledge resources in their operations and activities effectively.

## 1.3 Research approach

In this research, there is a mix of methods used to collect information on the influence of knowledge management in businesses across Finland. These methods are the qualitative and quantitative methods of analysis. The qualitative data collection method is associated with data collection using experimental and narrative forms, whereas the quantitative data collection strategy is associated with data collection using numerical forms.

The quantitative data collection method can be used to collect statistics on the sustainable development of organizations in Finland linked to knowledge resource implementation. The qualitative data collection method is crucial in collecting information on knowledge management and raising an organization's sustainable development across Finland. This information can be retrieved from primary or secondary sources such as publications and the use of Internet sources. There are also theoretical concepts on knowledge management, sharing, and dissemination that have been collected using qualitative data collection methods. These concepts are the basis of this study.

## **2. KNOWLEDGE ANALYSIS**

### **2.1 Knowledge definition**

Knowledge in business is a crucial strategic asset. It comprises the skills, experiences, professional insight, and capabilities within and outside an organization and can be used to integrate the desired strategies to achieve the firm's objectives. Knowledge is a shared resource that molds and affects the activities and operations associated with the business (Philippovich, Serzhankyzy, & Vladimirovich, 2019, 5). Business knowledge is crucial in Finland's operations, such as the designs and processes involved in producing goods and services, the market data retrieved from research, consumer information on suppliers and stakeholders, and future business activities, including new products and services.

Because of its uniqueness to organizations, knowledge is seen as a great resource that drives business activity in connections of the ability to make sales and stand out from competitors among other facets (Philippovich, Serzhankyzy, & Vladimirovich, 2019, 5). It is vital to collect individual information in teams since individual information in an organization can be easily lost through aspects such as the termination or resigning of employees (Ajmal, Helo, & Kekäle, 2010). Businesses, particularly the small and medium-sized enterprises in Finland, should ensure that employees share their knowledge and skills with their successors to ensure that they are retained within the organization. These organizations can achieve this by organizing training courses, maintaining current documentation on the processes and procedures involved concerning the business's activities and operations, and having brainstorming sessions.

### **2.2 Features of knowledge**

Several features of knowledge distinguish it from other resources in an organization. The first feature is that the accumulation of knowledge occurs over time, and in several cases, it does not incur additional costs. It is vital to note that the use of knowledge does not mitigate its usefulness (Chang & Chuang, 2011, 6173). However, it increases its usefulness as knowledge use is associated with evolution and been dynamic. Knowledge can also be hard to get ahold of; thus, an organization's knowledge resources can separate it from its competitors (Vayrynen, Helander, & Kukko, 2014, 59). Suppose a small business in Finland wisely uses its knowledge of the market to achieve its competitive niche. In that case, the chances of this occurring are high since this knowledge can create a platform where the small business can devise strategies that enable them to attract and retain consumers, thus increasing their competitive edge in the market.

However, it will require the small business to effectively design, attain, generate, and integrate this knowledge (Vayrynen, Helander, & Kukko, 2014, 59). One way to achieve this would be to construct physical, social, and resource-allocation frameworks designed to guarantee wide knowledge use. In theory, the above statement seems easy to achieve; however, it has proven difficult for several organizations in the nation to implement (Helander, Kukko, & Virtanen, 2011). Many have failed to effectively integrate the use of knowledge in attaining a competitive edge and have chosen other ways to do so and incur additional costs that could have been cut by effectively using the firm's resources.

Another characteristic of knowledge is that it can develop and exploit tangible and intangible information to develop competitive advantage potential by sustainable development. In this case, sustainable development refers to an organization's ability to meet its present needs without compromising future generations' needs (Vayrynen, Helander, & Kukko, 2014, 60). Knowledge can also serve as an effective change tool during the change process in an organization. Knowledge and its flow support the communication process and the employees involved in the transition.

Small and medium businesses tend to be more reactive compared to big organizations in Finland. This is based on their financial capacity, which hinders them from taking the necessary strategies to ensure a competitive edge is achieved. Therefore, these business entities need to adopt strategies that will incur heavy benefits at minimal costs (Helander, Kukko, & Virtanen, 2011, 82). One such resource is knowledge. The characteristics of a knowledge and how it can be beneficial for such businesses are that knowledge is contextual and recycled. This implies that information cannot lose value once it has been utilized. The opposite is quite true in that when information is shared. It tends to evolve because different perspectives will be included rendering the new information stronger and effective (Ho, 2009, 112). Therefore, this information can be used repeatedly until the business's objectives have been met, in this case achieving a competitive edge.

The fact that knowledge is recurring and can be reused implies that sustainable development in these businesses can be enhanced. This is because future generations can use this knowledge to protect the environment and eradicate poverty. Another characteristic is that it might be hard to transfer, capture, and share knowledge. One of the reasons might be difficulty attaining the correct knowledge about given subjects (Ajmal, Helo, & Kekäle, 2010, 61). For example, a business in Finland might try to acquire knowledge on effectively penetrating a new market, but the information provided might be plenty, with most of it being irrelevant. It is up to the business to research the correct information transmitted into knowledge concerning successful entry into the new market.



Another characteristic is that knowledge enables increased learning opportunities for employees and employers in businesses in Finland. Sharing of knowledge within the firm expands employees' skills and abilities when handling given tasks. The use of teams is an effective way in which these employees can share information (Helander, Kukko, & Virtanen, 2011, 83). By gathering information from several sources within and outside the company, employees can increase their learning, thus enhancing their career path. This explains why several organizations strive to have training sessions now and then increase their employees' knowledge.

These characteristics can be enforced into strategies that can be implemented in an organization's overall growth strategies to enable sustainable growth. Organizations in Finland can measure their sustainable growth by using two variables: the firm's annual sales growth and its age. These variables amalgamate in connection to sustainable growth because they must be sustained over a long period (Vayrynen, Helander, & Kukko, 2014, 60). Under sustainable development, it is vital to analyze knowledge management awareness. These variable measures intellectual capital management concepts known as ICM or knowledge management familiar to an organization. Intangible Assets Aptitude also plays a role in sustainable development in connection to an organization's sustainable development. Plenty of times, knowledge management has no connection to employees' actual behaviors; thus, it is essential to conduct self-assessments.

### **2.3 Forms of knowledge**

In knowledge management, it is vital to comprehend the different forms in which knowledge exists and distinguish between the various types of knowledge. When it comes to businesses in Finland, two essential types of knowledge are usually interpreted to connect business operations. These types of knowledge include explicit and tacit knowledge. The integration of explicit and tacit knowledge is solely based on knowledge management and organizational theory.

Some studies on the subject reveal that the amalgamation of both of these types of knowledge is the basis of business practices (Stevens, Joshua, & Sondra, 2010, 130). Some studies discuss embedded knowledge. This type of knowledge is based on the differences between the knowledge embodies in individuals that the knowledge embedded in business practices and organizational culture. Even though the essential types of knowledge are explicit and tacit knowledge, embedded knowledge adds value. This form of knowledge's managerial requirements is different and crucial for effective decision-making (Calo, 2008, 405).

### 2.3.1 Explicit knowledge

Explicit knowledge can be based on tacit knowledge, but its actuality is based on tacit knowledge codification to its external environment. Explicit knowledge can become tacit knowledge by absorbing the information internally and synchronizing it with other organization data (Stevens, Joshua, & Sondra, 2010, 131). Some of the characteristics associated with explicit knowledge are that it is clear, traceable, and unambiguous. It may come in the form of documents or databases that make this type of knowledge easily transferrable within an organization (Stevens, Joshua, & Sondra, 2010, 131). In Finland organizations, the need for explicit knowledge should be focused on since this information tends to be correct and crucial for organizations in connection to satisfying the needs of the consumer. Through information about consumer preferences, what is preferred in the market, and how to produce products at a low cost with increased output, organizations in this nation can implement the correct strategies to ensure that they achieve a competitive edge (Calo, 2008, 406). Such information enables organizations to plan long-term objectives and design strategies that would help them attain these objectives.

Some studies define explicit knowledge as the tangible notions that comprise the numbers or words in the form of shared data. These studies also suggest that explicit knowledge is based on the specifications that are defined in formal language. One of the benefits of this type of information in organizations is that it is easily transferrable from one employee to the next through visual means such as computer programs and drawings (Stevens, Joshua, & Sondra, 2010, 131). Compared to tacit knowledge, explicit knowledge is easy to obtain and share since it can be distributed in tangible material. Even though the ease of transferring this form of knowledge is a crucial benefit to organizations, it can prove to be detrimental in that its interpretation is based on the individuals or team that is using the material.

In Finland, one might find that issues such as ensuring that individuals have access to whatever they require, storing vital knowledge, and reviewing, updating, and discarding knowledge affect how the knowledge resource is implemented. These factors should be carefully analyzed to devise ways to be effectively integrated into organizational strategies. If employees do not know to perform their roles and responsibilities effectively, they begin to make losses that affect overall business revenue (Seidler & Hartmann, 2008, 137). This is why several organizations in the nation ensure that the flow of knowledge within and outside the organization is open and precise. By training employees on managing certain tasks, employers ensure that their performance level increases, increasing their productivity in the organization and personally. Teamwork is another aspect that Finesse organizations can implement to ensure the constant flow of knowledge among employees. Teamwork is an excellent way of sharing knowledge. Team members get to share their opinions and views concerning an assigned task. This sharing of

knowledge is effective in devising the best solution to completing an assigned task.

Several specialists in this field argue that explicit knowledge is less significant because it is viewed as simpler and lacks rich experience-based information that can generate long-lasting competitive advantage (Stevens, Joshua, & Sondra, 2010, 131). Even though there have been changes to the above aspect, the knowledge management frameworks spurred by technology have frequent flaws in that they solely focus on this type of knowledge.

### **2.3.2 Tacit Knowledge**

Unlike explicit knowledge, tacit knowledge tends to be less deniable and informal. It cannot be readily transferred in an organization since it exists in employees' minds and experiences. Tacit knowledge is based on personal knowledge accumulated through years of experience and can be influenced by values and perspectives (Stevens, Joshua, & Sondra, 2010, 131). Transferring tacit knowledge from one individual to the next requires communications through discussions and demonstrations where the parties involved understand each other.

In the case of organizations in Finland, when an employee is promoted, implying they have to shift to new roles and responsibilities, the experience, skills, and abilities that they have accrued working their previous position should be passed down to their successors to ensure that they will not have trouble transitioning into that position (Seidler & Hartmann, 2008, 138). This may require several brainstorming sessions where the successor is shown how to handle tasks and roles in that position.

By sharing such knowledge, the time used for transitioning will reduce, thus reducing the costs incurred with time loss. A good example is a successor joining the distribution and logistics department of an organization. Training and brainstorming to share experiences, abilities, and skills may be crucial for the successor to take over the new role. This tacit knowledge is hard to forget because it is part of mind-based knowledge, meaning one must include all the knowledge attained to decipher the best solution to implement when handling a task (Malhotra, 2005, 15).

One essential aspect of tacit knowledge is that it is based on personal knowledge. It is also difficult to capture this type of knowledge. Some might state that it is derived from gut feeling decisions because this form of knowledge tends to rely on past experiences that give individuals the foresight and awareness to make such decisions (Stevens, Joshua, & Sondra, 2010, 131). This is why it cannot be defined because tacit knowledge is specific to the individual that possesses this form of knowledge. This implies that this knowledge is based on an individual and the context at play, making it hard to

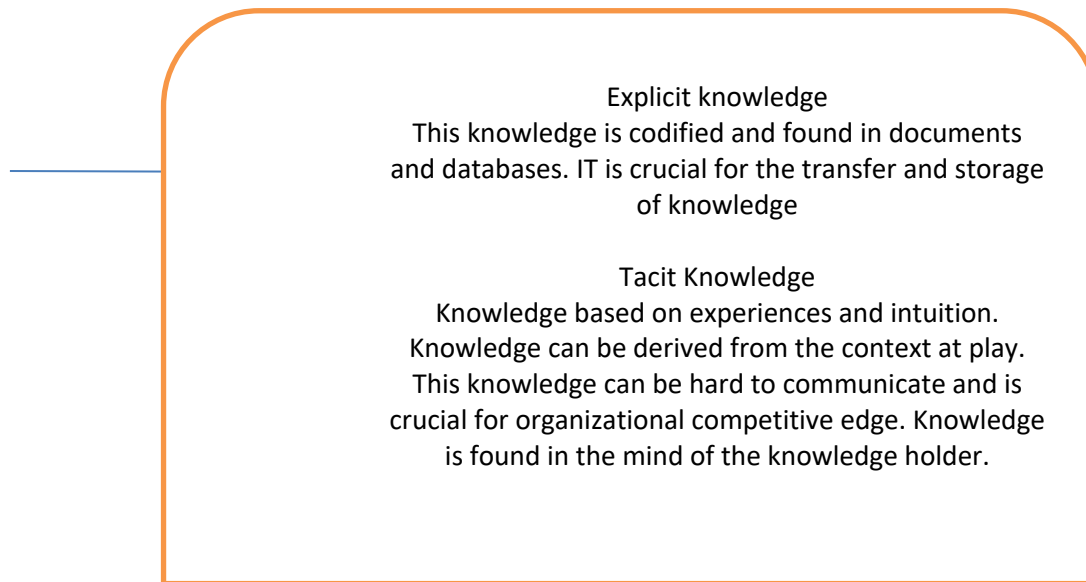
transfer it. On an organizational level, this type of knowledge is said to be acquired while one is working. This knowledge is then stored to be used by the organization to create a competitive edge (Stevens, Joshua, & Sondra, 2010, 131). This competitive edge is created because it is hard to imitate and copy this type of knowledge, making it difficult to store it.

Some studies suggest that tacit knowledge is based not only on what individuals know but also on whom they know. This is derived from the strong relationships that employees form as they work together to achieve common goals (Malhotra, 2005, 15). Because of this collaborative nature, when an employee leaves his position or the workforce, the successor might have difficulty getting along with the employees because the level of trust has not yet been formed (Stevens, Joshua, & Sondra, 2010, 131). This can present a problem for the workers because they rely on each other to complete tasks, thus achieving their objectives.

Therefore, if an organization in Finland wants to have a competitive edge in its industry, it would have to invest in the tacit and explicit knowledge connected to its employees. This would entail enabling platforms where employees in the organization progress because with this progression comes an increase in operations customized to the organization's operations, culture, and structure (Stevens, Joshua, & Sondra, 2010, 131).

Some studies show a direct connection of reduced capacities of innovation and sustained development and competitiveness with the lack of concentration on tacit knowledge. Knowledge Management Systems find it difficult to manage this knowledge because IT systems rely on codification, where tacit knowledge is reliant on the knowledge holder.

## Explicit and Tacit Knowledge



**Figure 1:** Explicit and tacit knowledge

### 2.3.3 Embedded knowledge

This type of knowledge is based on knowledge aligned with processes, cultures, routines, structures, and products. Knowledge can either be embedded through management initiatives designed to formalize the beneficial routines within an organization or informally when the organization integrated and applies explicit and tacit knowledge in strategy formation (Ibrahim & Salleh, 2019, 21). Some challenges are associated with embedded knowledge management; however, they vary considerably and differ from embodied tacit knowledge. Factors associated with embedded knowledge such as culture and routines can prove difficult to understand and change.

On the other hand, formalized routines, such as routines based on explicit knowledge, can be easy to implement and manage. ITs function in embedded knowledge tends to be limited. However, it has some areas where it is useful, such as mapping the organizational knowledge regions (Bhusry & Ranjan, 2012, 317). Here, it can be integrated as a tool in the reverse engineering of products or as a supporting framework for an organization's processes and cultures. It is vital to note that IT can have a disruptive influence on an organization's culture and processes if applied ineffectively.

Suppose a firm in Finland successfully embeds knowledge to achieve the desired objectives and goals. In that case, it has a high affinity for succeeding in its business operations and attaining a competitive advantage. Embedded knowledge can be found in aspects such as the organizational culture, the rules and regulations, the involved processes and activities, and the codes of conduct (Bhusry & Ranjan, 2012, 318). Even though embedded knowledge can exist in explicit sources, the knowledge retrieved is not explicit in that there is no definition of how this knowledge is beneficial to an organization.

### **3 KNOWLEDGE MANAGEMENT**

Knowledge management is concerned with identifying, structuring, storing, and sharing knowledge through the experiences and skills employees have gathered in an organization (Bhatt, 2012, 33). In Finnish organizations, knowledge management's main objectives are meant to improve organization efficiency and store knowledge within the organization (Gonzalez, 2017, 251). This storage is based on learning and training in the firm or on consumers. It involves aspects of creating, sharing, structuring, and auditing knowledge to increase its efficiency to the company's overall knowledge.

The value of knowledge management as an instrument for achieving a competitive edge among Finesse organizations is a systematic reality in the research. To encourage and develop their policies, all entities should leverage their information (Gonzalez, 2017, 251). Knowledge management demonstrates the structure of an organization and knowledge procurement gained by the entity. A literature review perspective is necessary to classify numerous models that discuss the control group (Dijk, Hendriks, & Romo-Leroux, 2016, 332). These different versions point to specific problems within knowledge management. In two major fields, the structures can be studied. A confined topic to the IT context is the first model of knowledge management.

The complexity and inability of documenting the tacit knowledge of people are one of the core issues with IT on the knowledge management participation since it is inconceivable to soak up or search the information and knowledge from the human brain and store it in an archive. In contrast, the second model examines organizational growth (Gonzalez, 2017, 251). An organization in Finland may highlight its framework and organizational culture to promote communication between people, facilitating knowledge sharing. The knowledge management method focuses on linking individuals, allowing them to think and behave collectively (Durst & Edvardsson, 2012, 882). The knowledge management aspects must align IT with organizational activities, which is an operation that creates, preserves, and transfers knowledge to offer organization employees expertise when it comes to accessing the

required information for effective decision making. Knowledge management frameworks derived from IT store the knowledge from static information deserting the individual functions on this process (Gonzalez, 2017, 252).

Knowledge management can be seen as a process that involves disseminating knowledge for later use by other individuals and teams in an organization. There is a transition of the content to new knowledge once this information is passed from user to user (Durst & Edvardsson, 2012, 883). The process of knowledge management is inclusive of the following stages; the acquisition stage, where organizations are focused on opportunities to acquire resources that can be used to improve the business operations in the bid to achieve the desired objectives, the storage phase where private and public knowledge that is useful to organizations is deciphered and stored for future use, and the diffusion stage where the integration and adaption of this knowledge are analyzed, the application stage where the knowledge is explored and exploited to support the innovative process of an organization (Gonzalez, 2017, 253).

### **3.1 Knowledge management process**

Each of the organizational features and aspects influences the four analyzed stages of the knowledge management process. Frameworks with several hierarchy levels prefer to follow knowledge management-based embedding. Knowledge management-oriented on the exchange of implicit information, depending on subjective interactions, follows a less stable frame associated with hierarchical structures (Gonzalez, 2017, 253). Involvement corresponds to how the worker acts as a representative of an association — for example, knowledge storage mechanism explicitly disrupts employees' affiliation to social background. The interaction between systemic (formal and inter-organizational connections) and ad hoc (unofficial and inter-organizational connections) corresponds to the coordination processes of an organization and disrupts the knowledge dissemination systems (Freeze & Kulkarni, 2007, 98).

The form of company approach that varies from reactive (progressive and aimed at preserving the institution's power structure) to revolutionary (proactive and aimed at promoting organization performance) disrupts the cycle of utilizing knowledge. The effectiveness of knowledge management programs is dependent on the institution's ability to encourage the sustained incorporation of knowledge from the retrieval of knowledge originating in topics to preserve it subsequently in its corporate processes, in a method that uses the phases of knowledge acquisition, storage, dissemination (Gonzalez, 2017, 253).

### 3.1.1 Knowledge acquisition

The acquisition of Knowledge corresponds to the internal organizational phase that promotes tacit and explicit knowledge, beginning with employees and incorporating the organization's strategy and the recognition and integration of data and credible secondary sources (Dijk, Hendriks, & Romo-Leroux, 2016, 335). Organizations in Finland argue that acquisition is the development of knowledge in the institution through a learning experience. These organizations dealing with acquiring knowledge center their emphasis on the learning experience.

Two operational structures in an organization are accountable for the learning experience: the operational protocol that corresponds with the business activities' usability and flexible features that allow change (routine alteration). Procedures are consistent rules of conduct that represent firm responses, producing two behavioral patterns from various environmental stimuli (Freeze & Kulkarni, 2007, 100). To generate revenue for the company — for example, to integrate the organizational resources, one must include conducting procedures previously established. To improve an organization's competitiveness, the second seeks to set improvements in patterns.

Employers in Finland should ensure that their employees accumulate experience in their organizations. This can be achieved by developing and establishing organizational routines that enable the accumulation of tacit knowledge. This process is known as the cumulative process, and it makes organizations in the nation gain the ability to develop innovations and integrate technological advancements (Gonzalez, 2017, 253). The cumulative process depends on the ability of an organization to integrate knowledge, also known as absorption. Absorption is crucial in an organization in that it identifies the values of given knowledge and encompasses its assimilation and application as a way of attaining competitive advantage (Gonzalez, 2017, 253). This process is based on the need for organizations to access primary knowledge to disseminate and store it since it can potentially impact future organizational learning.

An excellent example is how a bakery in Finland should invest in acquiring, disseminating, and storing knowledge crucial to achieving competitiveness. This knowledge can be retrieved from quantitative and qualitative methods of data research such as observations and interviews. By examining the consumers' preferences in an in-depth analysis, the business can decipher the crucial material for increasing and retaining the number of consumers, thereby increasing their revenue.

Some of the aspects that could present in this knowledge may include how consumers prefer quality products with stylish creations, among many more. By integrating such knowledge into their business strategies, the bakery can



satisfy the needs of the consumers and create a positive business image. Therefore, knowledge acquisition is crucial in organizations meeting their objectives. Without it, they would know what consumers and market preferences are, thus making losses because they cannot satisfy their consumers.

An organization with a high absorption rate tends to be more dynamic concerning its ability to exploit resources and opportunities in the environment despite its market performance. In a way, these organizations can be termed as proactive (Durst & Edvardsson, 2012, 888). Those organizations that have low absorption rates tend to be reactive in that they strive to establish strategies in which they can implement to eradicate or mitigate the issues that affect their operations and activities. The creative process of employees in an organization is an effective way of acquiring organizational knowledge. This process is linked to the ability of creativity been a problem solution.

An example is how an organization in Finland might be facing low levels of innovation among its employees (Gonzalez, 2017, 254). These low levels are accompanied by a stable dependence on expertise to complete assigned tasks and projects. In such a case, management can implement a simple knowledge transition and integrate it into employees through training and learning. Such a transition can be a major difference in employees' innovation and motivation in that there will be an increase in knowledge sharing. In the process, the learning process continues (Gonzalez, 2017, 254). Knowledge transformation is specialized and categorized into two, including specialization within and specialization through transformation. Specialization within is associated with the generation and enhancement of knowledge. Specialization through is based on the integration of various specialized knowledge.

### **3.1.2 Knowledge storage**

Knowledge storage is defined as the process that an organizational system uses to form memories where knowledge can store in physical memory systems and retained in codes of conduct, organizational culture and values, and beliefs (Gonzalez, 2014, 42). A firm's crucial functions in connection to knowledge management are to incorporate the individual specialized knowledge and coordinate organization failures in the incorporation process. The previous statement implies that the organization has reference to knowledge ordnance characterized by a location that supports research and development, thus offering a social context (Bhatt, 2012, 36).

Organizations in Finland might store knowledge in different ways. The first one is the employees that compose the organization in connection to their skills and experiences. The other repository is the transitioning process that occurs by creating, selecting, and examining fresh working approaches that can be

socialized. Organizational structure stores the codes of conduct, the hierarchies, and the features associated with the organization's functional initiative.

Knowledge storage is crucial in the conversion process that involves the organizational structure, the amalgamation of knowledge that enhances future use, and storage. Knowledge institutionalization associated with knowledge storage is essential in connection to the organizational structure and culture been key drivers of knowledge storage success (Gonzalez, 2017, 255). The organizational culture is associated with employees' values, and behaviors whereas the organizational structure is linked to the mobilization of knowledge through management protocols and patterns. It is vital to note that IT is a supporting factor in knowledge storage.

### **3.1.3 Knowledge distribution**

The distribution of knowledge involves how updated data from various outlets are transmitted and can help enhance new knowledge, comprehension, and information. To generate a "sharing environment," this sharing mechanism allows the company to mobilize its knowledge. Systematic transmission is the most productive way of spreading information and business processes (Gonzalez, 2017, 255). This is to foster a culture of information sharing. The simple fact that the firm has custody of information is inadequate. To allow the learning experience between employees, the company should ensure knowledge dissemination, leading to improved results.

There are four ways to transmit knowledge. The first way is deemed self-learning based on the information obtained from a company's administrative reports that include pertinent data. The second type applies to shifts that arise in a social world outlook due to its employees' direct interaction (Durst & Edvardsson, 2012, 891). Transgressed relationships are the third mode of transmission of knowledge. They involve the basic sharing of knowledge within a collective, originating from communities of practice dominated by particular knowledge and a shared heritage (Gonzalez, 2017, 256). Ultimately, the fourth type of information sharing is focused on transactions that a company conducts with other organizations, for example, external knowledge gained by the company. This implies that the modes of communication and distribution connected to knowledge are based on their explicit and tacit states.

### **3.1.4 Knowledge use**

The incorporation of knowledge is related to an institution's employees' capacity to identify, reach, and integrate information and knowledge contained in the explicit and implicit organization of memory frameworks. Knowledge should be incorporated as the foundation for acquiring new ideas

through the incorporation, invention, growth, and management of the current knowledge base (Dijk, Hendriks, & Romo-Leroux, 2016, 339). This knowledge should also be used as the framework for effective decision-making. Consequently, the use of information has a coercive aspect when decisions or changes are made through it while utilizing the same knowledge base; or an exploratory aspect when the knowledge base is being used as the principal knowledge to generate new knowledge in a creative proposal (Gonzalez, 2017, 257).

The forms in which coercive and exploratory information is used are closely attributed to a business's strategic plan: reactive or imaginative. The first strategy utilizes established information — for example, it is restricted to using knowledge. The creative approach uses a paradigm of exploration to perform differently in the existing market or emerging markets. The use of information is a process of extraction that expresses itself at two stages (Gonzalez, 2014, 45). The first stage is labeled as automatic, and it references the repetitive data extraction, utilizing processes, framework, and culture common among employees and employers in the workplace. The second stage, referred to as alterations, accomplishes regulation in the retention rates and pathways designed in the retention process.

Since the extraction of the data from the environmental transition stage is automated, the only way to track the extraction is by redesigning these preservation components. The incorporation is centered on how the operations are traditionally established in the company. However, the use must be modified to adapt to changing circumstances as the intensity of workload increases (Freeze & Kulkarni, 2007, 102). This procedure involves a collaborative initiative between information research and assessment and entails two key stages. A study space is the first of these stages, which includes an attempt to seek expertise. A collection of approaches is generated from this research stage that comprises the second phase, whereby an alternative should be selected through an evaluation process.

#### **4. KNOWLEDGE DISSEMINATION**

Whereas knowledge management is based on the strategies involved in transferring the right knowledge to the right individuals at the right time as a way of improving the performance of an organization, knowledge dissemination is attributed to the distribution of this knowledge to this that require it thereby making it essential in knowledge management (Kingston, 2012, 1). There are several approaches that organizations in Finland can incorporate to enhance knowledge dissemination. These organizations need to choose approaches that aid in achieving the organization's goals and objectives.

#### 4.1 Knowledge dissemination views

One view on the classification of knowledge dissemination is by Milton (Kingston, 2012, 2). He establishes a four-way strategy of classifying the systems used to capture and disseminate lessons and experiences acquired in an organization. These classification use two dimensions, with the first one distinguishing the approaches used to collect information (whereby knowledge is then transmitted and recorded or written into a repository) and the connection approaches where the knowledge retrieved is communicated directly among employees in an organization, be it through verbal or non-verbal means (Swan, Newell, Scarbrough, & Hislop, 1999, 266).

The second dimension differentiates between the formal and informal approaches used to disseminate knowledge. When talking about formal strategies, Milton suggests functioning within a defined structure or codes of conduct, whereas informal strategies involve using strategies that are not regulated (Kingston, 2012, 2). This implies that the formal strategies are based on structured formats of knowledge distributed, whereas informal approaches are based on knowledge distributed because of conversational texts.

These categories are effective because they reflect one of the biggest debates in knowledge management research between constructivists and cognitivist. Cognitivism believes that knowledge comprises models attempting to represent the environment in connection to simplifying problem-solving. At the same time, constructivists' views are based on the knowledge that cannot be passively attained through senses or communication. It is constructed by cognizing aspects (Kingston, 2012, 3). Therefore, as per the constructivists' view, knowledge is derived from one's personal belief.

The lesson derived from these views is that constructivists view knowledge as inseparable from an individual's mental models, thus reclining more towards the connection approach to knowledge dissemination and management. They believe that anything that is collected and stored cannot be termed as knowledge. They base their belief that a repository is not animate; therefore, they cannot hold beliefs (Kingston, 2012, 3). This implies anything that is in a repository is information and not knowledge. These individuals prefer informal approaches to knowledge dissemination and management. There are no assurances that the utilized framework associated with formal approaches will be similar to a learner's mental models.

Cognitivism, on the other hand, build their concepts on the aspect that the knowledge possessed by an individual can be separated from their mind. Therefore, these individuals' approaches are collective and prefer formal approaches to knowledge dissemination and management (Kingston, 2012, 3). This preference is based on the codes of conduct that identify their models

connected to their construction and the aim behind constructing models that have structures reflecting the expert's mental capacity.

The point that is evident from the above analysis is that these debates appear to have two aspects of practice referred to as knowledge management but are derived from different theories and use different strategies in analysis in the bid to achieve the desired objectives of an organization (Kingston, 2012, 3). Therefore, one of the essential factors in successful knowledge management is comprehending the aspects wherein different approaches can be integrated.

## **4.2 Approaches of knowledge dissemination techniques**

The following four dissemination approaches were selected because of their association with Finland's commerce, industry, and government.

### **4.2.1 Communities of Practice**

The first one is communities of practice, also referred to as COPs. These are a group of individuals that have a common interest in given issues or passions and, in the process, increase their knowledge and understanding of these facets through these interpersonal relationships (Kingston, 2012, 4). The essential aspect of utilizing communities of practices as knowledge management dissemination approaches is facilitating interactions between communities of practice members concerning knowledge requirements, available knowledge, and concepts. These interactions can be through face-to-face contact through workshops and meetings or internet-based fora (Akkerman, Petter, & De Latt, 2008, 386). This dissemination approach is based on informal strategies in that they connect the individuals that require knowledge with those possessing knowledge.

Communities of practice are effective when members have a common history. Effective COPs should give the members a sense of belonging to the community. This is why apart from having internet-based forums and discussions, members should have face-to-face interactions (Kingston, 2012, 4).

The above statement applies to organizations when it comes to their interactions in the community. Every successful business in Finland is aware of the importance of corporate social responsibility. This is where the organization, through several initiatives, interacts with the community to better the community. If a successful organization is to achieve this, it should strive to examine the issues that affect the community and devise strategies that can be implemented to curb such issues. Such actions make the organization a member of the Communities of Practices in a given region in Finland. When it comes to making decisions in the community, the

organization has shared history with other members concerning the community, thereby having a strong sense of belonging (Akkerman, 2006). The more an organization is concerned with the community's matters, the more the sense of belonging they feel in association with shared interests.

#### **4.2.2 Knowledge portals**

Knowledge portals are based on IT systems possessing a webpage to represent a user interface providing a single access point to crucial data and knowledge. The user can compile internal and external sources relevant to the organization and customize the user requirements. Some of the frequently used sources include internal databases and specialized websites. Knowledge portals offer a lawyer between data applications and information users (Kingston, 2012, 7). This approach was created to aid organizations in seeking unified information access and enhancing information resources management. The solution they discovered was replicating the popularity and success of public domains, including Yahoo and Google. Milton's classified knowledge portals are formal connect systems that connect users with other knowledge sources instead of storing knowledge in a repository. The design of knowledge portals acts as a framework for contained knowledge (Kingston, 2012, 7).

An example of knowledge portals usage in Finland can be seen in organizations requiring several regulations for their products to be publicly worthy. The medicine and chemical industry are some of the fields where industries might have a hard time ensuring their products are put to ode with the government's regulations. It is vital to note that some regulations are buried in the European Commission website, making it hard to access this knowledge. Therefore, using a knowledge portal can be an effective way of relaying information on products (Kingston, 2012, 8). In this case, organizations in the medical field can use the knowledge portal to provide the users with links to all information deemed relevant. It gives the users instant access to web pages difficult to access.

The organization should use knowledge portals when there are several IT systems that employees frequently access, where there is the frequent use of IT systems proves to be difficult to navigate, implying there is a need for a customized interface to these systems that may be easy to use for employees when there is the requirement for knowledge to be distributed to disconnected knowledge sources such as different databases, and where staff would take the opportunities of access to IT systems and improved interactive access to collaborative instruments to share data and knowledge (Kingston, 2012, 9).

### 4.2.3 Knowledge codification

Knowledge codification is based on the knowledge that has additional features to make the knowledge more comprehensive and accessible by either an individual or a computer program. Several strategies can be implemented to codify knowledge that various knowledge modification extents (Paliszkievicz, 2009, 83). The first one is reformatting using small modifications where the codification methods required include drawing a diagram to represent a previously ascribed process. The purpose is to create a knowledge map. It involves the rearrangement of the sections by order of appearance in a document. The other type is reformatting using large modifications to the knowledge that require knowledge to be encoded into an IT system (Chow, Harry, & Lee, 2007, 885). Information that was previously extracted from interviews or other sources can be retrieved and used as needed in given situations through systems.

The other method of knowledge codification is indexing using small modifications. A small scheme indexing scheme comprises creating an index to a document or book or the generation of hyperlinks in documents. Indexing in large modifications is another method of knowledge codification (Paliszkievicz, 2009, 85). This process includes identifying key specs to knowledge in a given text, extracting the knowledge and positioning it with a new classification scheme, and running analyses on the text in the document with other documents containing similar keywords.

An organization can use Re-formatted knowledge to make procedures available for the employees and other users. The organization can be transformed into a guidance document that is passed around to the employees so they could read. If the knowledge is encoded, the system can ask users for information on aspects of a given issue and use the knowledge retrieved to suggest guidance paths for the issue (Paliszkievicz, 2009, 86). Indexed knowledge is utilized to support the search for large collections of knowledge. In several instances, it is used to support the lessons that employees in an organization have learned through training and searching for past cases relevant to a given situation.

The following are instances when knowledge codification should be utilized. The first one is when several potential users of the disseminated knowledge in connection to the operations and activities of an organization and when the organization has seen the opportunity to save costs (Chow, Harry, & Lee, 2007, 887). Another reason for knowledge codification is the strong desire for users to integrate a standard aspect of knowledge to solve a given issue. The last reason for using knowledge codification is if the assigned task can be performed better and faster by an expert system compared to a human expert.

A good example is how an organization dealing with peanuts' production and distribution across Europe decides to shift from human expertise to computer expertise. Even though this has detrimental effects to the human resource in the organization in association with unemployment, it implies that job efficiency will increase as computers will be able to pack peanuts after been issued an algorithm that ensures effectiveness in packing at it will do it a shorter period compared to human expertise. From a business perspective, the organization chose computer expertise since it performed better and faster, thus generating more revenue in sales. By increasing the production process's quantity without affecting the quality of the products at a decreased cost, the organization can achieve a competitive advantage in its market.

#### **4.2.4 Mentoring, apprenticeship, and training**

The mentorship program is one of the oldest learning methods where a novice gains access to practical experience through working with a skilled instructor or craftsman in the given field. Effective mentorship involves short-term commitment designed to enable the apprentice to achieve a threshold level of acceptance and prepare the successor to enable them to function as professionals in that field (Kingston, 2012, 12). Apprenticeship also works along with the mentorship guidelines with minor differences such as, instead of a short-term commitment, apprenticeship is based on long-term commitments.

For an organization in Finland to have a successful apprenticeship, the following factors must be considered and implemented. There has to be recognition of the achievements. When a successor achieves a given stage during the apprenticeship, the instructor should acknowledge this step and offer motivation. The instructor gives the successor the energy to move forward with the apprenticeship from a positive and learning perspective by offering motivation. The apprenticeship needs to be included in activities involving communities of practice (Kingston, 2012, 12). Some of the activities may include social initiation into the rules and regulations of the community.

Successful apprenticeship also involves purposeful learning through carrying out assigned tasks. By letting the successor participate in assigned tasks, the instructor can judge the level of experience and skills that the successor possesses and devise a plan that will increase these experiences and skills (Goodwin, 2009). It is also vital for the successors to feel essential and a sense of belonging when interacting with skilled staff, even when the process hinders completing their tasks.

Training and apprenticeship programs go hand in hand in ensuring the employee or successor learns formally from the trainer and puts the learned training into their apprenticeship programs (Kingston, 2012, 13). Milton argues that training is a formal connect approach whereby the trainees are



offered the chance to connect with the instructor who possesses structured knowledge and is willing to relay them. Apprenticeship and mentoring are informal connect approaches that possess minor aspects of formal facets such as the progression of organized tasks and recognizing successors' achievements (Kingston, 2012, 13).

Mentoring and apprenticeship can be viewed as a default strategy for the dissemination of knowledge. The issue with this approach is that it is time-consuming compared to other approaches. The period taken by the apprentice before they are fully experienced ranges between two to five years. Another issue is that it is time extensive for instructors to pass their knowledge to successors while performing their daily tasks (Chow, Harry, & Lee, 2007, 888). This is why there are training courses where the issue is decreased through training in other areas. However, knowledge's efficiency and effectiveness are not accurate compared to the knowledge dissemination techniques associated with apprenticeship and mentorship.

Apprenticeship and mentoring approaches are crucial for disseminating tacit knowledge or task that requires knowledge of graphics and perception among other factors (Kingston, 2012, 13). In Finland's rail industry, this dissemination can be seen in the perceptual and physiological rail knowledge. Aspects such as wheel tapping involving striking the wheel of a railway engine with a hammer and listening to the sound to determine the damage to the when are some aspects of tacit knowledge that require years of mastering. This skill can only be honed with an instructor's help to guide a successor on how to identify the correct sounds.

## **5. MEASURING KNOWLEDGE MANAGEMENT IN COMMUNITIES OF PRACTICES**

Communities of Practice play a vital role in the increased importance of modern knowledge on organizations. Therefore, Communities of Practice are linked to knowledge networks known as institutionalized informal networks comprising professional managing concepts of knowledge. The practice focuses on knowledge development and creating interactions among specialized experts channel efforts where they are most required (Moor & Smits, 2004, 1). This makes the community of practice an essential aspect in organizations. The performance of knowledge management in an organization has to be a measure to determine knowledge in a community. Key Performance Indicators can be effective tools in determining this level (Moor & Smits, 2004, 1). After the desired indicators have been chosen, the best practices and milestones can be collected and utilized to improve community practices connected to knowledge management.

## 5.1 Measuring knowledge management in communities of practice

This section deals with the Key Performance Indicators associated with knowledge development and management in communities of practice. It is vital to note that it is not adequate to converse on the abstract knowledge management processes and social learning procedures. These constructs must be incorporated into a task or goal in the organizational structure (Moor & Smits, 2004, 2). In this case, the communities play a set of relationships that amalgamate the community members through a common space. In a scenario associated with the community of practice linked to workers' knowledge, this common space is derived by the context of the firm in connection to their operations (Venkatraman & Venkatraman, 2018, 41). One of the questions that organizations in countries such as Finland should ask is what approach they can implement across communities of all cultures in diverse organizations and offer guidance to be practical and useful for members of the community.

To answer this question, one has to select and amalgamate the concepts involved to derive an approach that enables the organization to support knowledge management in practice communities (Moor & Smits, 2004, 2). It is also essential to test whether the approach is effective through its application in a real-world setting. In constructing an approach that supports knowledge management in communities of practice, it is vital to decipher what is required in the definition, measurement, and integration of the key performance indicators and choose the concepts that prove useful in practice. A case study can be used to analyze the effectiveness of the approach in a real-world setting.

## 5.2 Knowledge governance structure in organizations

Every organization has a set of goals and objectives that they strive to achieve. These goals and objectives are based on extrinsic and intrinsic strategies and visions. To achieve these goals, knowledge management processes should be implemented (Moor & Smits, 2004, 4). The knowledge management governance framework is based on the organization controlling the processes of knowledge resources designed to achieve the firm's goals. In an organization, the knowledge governance structure is categorized into three including the operational, maintenance, and long-term knowledge management (Moor & Smits, 2004, 5).

An operational knowledge manager is responsible for taking care of the consumer needs for knowledge on the products and services that the organization offers. After the reception of a customer's needs, operational knowledge management requires available knowledge resources and an availability map for developing a project team (Moor & Smits, 2004, 5). The maintenance knowledge manager maintains the given level of knowledge by comparing the capacity map, all the available knowledge resources available in

the organization with the deficiency map (Pemsel & Muller, 2012, 867). One way to achieve this is by implementing strategies such as training, hiring, knowledge development, and social learning. A long-term manager is responsible for evaluating summaries associated with the maintenance and operations of knowledge management that took the form of aggregated maps (Moor & Smits, 2004, 5). The outcome will be compared with the business strategy and objectives of the firm to generate long-term planning. This planning is then communicated to other knowledge management processes. This plan comprises the knowledge management objectives to be attained and the costs and profits that will be accrued.

## 6 DATA ANALYSIS OF KNOWLEDGE MANAGEMENT IN FINNISH COMPANIES

Knowledge in business is a crucial strategic asset. It comprises the skills, experiences, professional insight, and capabilities within and outside an organization and can be used to integrate the desired strategies to achieve the firm's objectives. Knowledge is a shared resource that molds and affects the activities and operations associated with the business (Philippovich, Serzhankyzy, & Vladimirovich, 2019, 5). Business knowledge is crucial in Finland's operations, such as the designs and processes involved in producing goods and services, the market data retrieved from research, consumer information on suppliers and stakeholders, and future business activities, including new products and services.

Knowledge management is concerned with identifying, structuring, storing, and sharing knowledge through the experiences and skills employees have gathered in an organization. In Finnish organizations, knowledge management's main objectives are meant to improve organization efficiency and store knowledge within the organization (Gonzalez, 2017, 251). This storage is based on learning and training in the firm or on consumers. It involves aspects of creating, sharing, structuring, and auditing knowledge to increase its efficiency to the company's overall knowledge.

The survey conducted focused on knowledge management practices and activities incorporated by the fifty biggest organizations in Finland. The data in questions belonged to individual datasets implying they do not belong to any series. This research was conducted as part of the research program known as REBUS at Finnish Metals and Engineering Competence Cluster, also referred to as FIMECC. The main themes analyzed in this research include the practices, organization, efficiency, limitations, and generation of needs of knowledge management in these organizations. Data from this research was collected from June 2014- September 2014.

Information for this research was retrieved from secondary online sources such as journal articles connected to the research objectives of associating the Finnish companies' growth and development (sustainable development) to knowledge management. There are several modes of data collection. These modes refer to the approaches that researchers implement to collect data pertaining to a given topic. Modes can differ with the number of dimensions in questions, including the interviewer's presence or absence, the way the questions are presented, and responses documented, and the incurred costs.

The data collection modes that have been integrated into this research include a self-administered questionnaire given to the participants and CAWI (Web-

based CAWI). The instrument used in the research is a structured questionnaire. The time method that was utilized in data collection is the cross-section method. Out of the fifty potential participants, the rate of Finnish organizations that responded was twenty-seven. The sampling procedure that was utilized in this research was the total universe or complete enumeration procedure. A questionnaire link was distributed, to the participants in this research who represented personnel management and technical services departments of organizations in Finland. The target number for these responses was 135. However, the number of respondents who took part in this questionnaire was 37 individuals from 36 different companies. Most of these questions were structured in statements associated with the issues that the organizations in question experienced. The respondents were asked to state whether or not they agree with the questions, among other formats.

The questioned organizations' strategic and organizational capacities were charted with statements that were linked to decision-making, feedback, communication and coordination activities, work environment, and interactions and trust between management and staff. The research design that the researchers incorporated was explanatory. The explanatory research is conducted for an issue that has not had effective research, demands priorities, and develops operational definitions. It focuses on explaining the study's facets in a detailed fashion (Chinese Scholarship Council, 2018). The researcher begins with a general idea such as how sustainable development is enhanced by knowledge management among Finnish companies then integrates research as an instrument that leads to subjects that could be analyzed in the future. It provides details where a minimal amount of information exists for a given product of the researcher's mind (Chinese Scholarship Council, 2018).

In this research, the outline of this design is meant to use the ideas and thoughts present in the provided data set while further exploring their theories in trying to elaborate the facets of knowledge management and the aspects of the research objectives. To achieve these objectives, collective research must be conducted. This involves the integration of qualitative and quantitative research to answer the research questions.

In this research, the data and questionnaire were obtained from a codebook that is part of the data FSD3014 archived at the FSD (Finnish Social Science Data Archive). The dataset has been described in as much detail as possible in Finnish and English. Variable frequencies, variable and value labels, and missing values have been checked. If necessary, the data have been anonymised. On request from the FSD (Finnish Social Science Data Archive), a translated data set and questionnaire from Finnish to English was made available for the purpose of this research.

The survey focused on Knowledge Management (KM) practices of the 50 biggest companies in Finland. It was part of the research programme REBUS at Finnish Metals and Engineering Competence Cluster, FIMECC. Main themes included the practices, organisation, effectiveness, challenges and development needs of knowledge management. Most questions were in the form of statements relating to how certain issues were handled in the organisation, with the respondents being asked to state to what extent they agreed or disagreed.

The data provided contained a total of one hundred and eighty-nine variables and thirty-seven cases. These variables were in the form of statements and questions in the questionnaire. Some of the questions were further divided into other questions and statements associated with Finnish organizations' knowledge management and sustainable development. Some of the variables analyzed in the research include the industrial classification of the respondents' organizations, the turnover rate of the organizations in the research, the decision-making process in these organizations, and the issuance of feedback in these organizations.

## **7 DATA MEASURES, ANALYSIS, AND REPORTING**

In research and data, measurement scales refer to the various ways in which parameters are described and categorized. It defines the essence of the significance attached to the parameters in a data set and is also known as the degree of estimation (Formplus, 2020). The phrase scale of measurement derives from two measurement keywords: measurement and scale. The method of documenting measurement taken as part of a study is known as measurement. The allocation of concepts to quantities or semantics is known as scaling (Formplus, 2020). These two combined terms define the connection between the assigned entities and the reported findings.

The level of data measurement that has been incorporated in this research is ordinal scale when it comes to the data collection methods. When using an ordinal scale, the attributes are ranked or ordered according to the measuring element (Formplus, 2020). The elements on this scale are categorized as per the frequency at which the attribute in question occurs. On an ordinal scale, the characteristics are normally mentioned in ascending or descending order (Formplus, 2020).

It assesses the frequency at which the parameter occurs. Market analysis, advertisements, and consumer satisfaction surveys will benefit from using an ordinal scale (Formplus, 2020). It depicts an extent using criteria such as very, highly, more, less, and so on to answer the questionnaire. The ordinal scale allows the researchers to conduct statistical analysis such as median and

mode, but not mean. There are, nevertheless, other statistical equivalents to mean that can be calculated using an ordinal scale.

Another tool of analysis used to analyze the information retrieved from the questionnaire is the GAP analysis instrument with an inclusion of the side-by-side matrix for measuring the variables (Expert Program Management, 2019). Gap analysis is an important method for evaluating the difference between the goal and expected outcomes by determining the scope of the mission and the forms in which the difference can be closed.

It entails contrasting the entity's or company unit's current overall performance with a previously defined norm. Gap Analysis compares the correlation between the optimal allocation and implementation of resources and the actual allocation stage (Expert Program Management, 2019). The firm's advantages, weaknesses, prospects, and risks are investigated and potential actions. Alternative solutions are chosen based on the size of the distance, its value, and the likelihood of success (Expert Program Management, 2019).

Under a side-by-side matrix, researchers can gather data in two or more aspects using a side-by-side matrix. Sub-columns in each column gather the participants' preferences, thoughts, and suggestions. A participant must choose one of the alternatives in the sub-columns for each response object in the rows. With simplicity, survey designers may obtain feedback on different attributes or subtopics of a single subject. Data reporting is the method of gathering and processing raw data and converting it into a useful form to measure its growth and success. Basic questions about the condition of the market can be answered using data reports.

Reporting tools enable businesses and researchers to collect data and display it in maps, graphs, and other visual representations so that people can search for what they need. It can also be used to create paginated operating reports that can be printed. A business analytics reporting tool is usually an application part of a larger business intelligence software package. One tool that can be used is Dash This. Dash This is a good way to keep track of marketing analytics. It's a platform that gives researchers and organizations a good picture of their campaign's main performance indicators. The dashboard provides easy access to statistics and reports.

## **8 EMPIRICAL DATA ANALYSIS**

The respondents' field of work was based on several departments found in an organization. Of the 37 participants that were part of the research, 24 were from Human Resources administration and development; 6 were from

information management, 1 from sales and marketing, 1 from communication, 2 from general management, and 3 under system missing (SYSMIS). Analyzing the positions that these participants had in their organizational hierarchy, the following data was collected. Thirteen of the participants were from senior management levels of the organization hierarchy. Seventeen were from middle management, six were expert or professional employees, and one was under system missing.

The participating organizations' industrial categorization is as follows: eighteen organizations were from the manufacturing and construction industry in Finland, six were from business and trade, ten were from the finance and services industry, and three were under the systems missing category. In total, out of the one hundred and fifty organizations that were invited to take part in the research, only thirty-seven were present.

**Table 1:** Analysis of the participants' answers in connection to the decision-making fallacies in their organizations.

Decision making in organizations					
	Strongly disagree	Disagree to some extent	Neither agree nor disagree	Agree to some extent	Strongly agree
Decision making based on valid information	0	1	2	20	13
Decision making based on employee expression	0	4	6	14	12
Decision making based on management communicating early on the decisions	0	4	7	18	6
Decision making based on logical and consistent practices	0	3	8	17	8



Reversal of wrong decision making	0	3	6	17	10
Monitoring of decision making	0	4	4	16	12
Open decision-making process	0	5	5	19	7

**Table 2:** Analysis of the participants' answers in connection to the interaction and cooperation in their organizations.

Interaction and cooperation in organizations					
	Strongly disagree	Disagree to some extent	Neither agree nor disagree	Agree to some extent	Strongly agree
Different channels used in internal communication	0	0	2	8	19
Communication within organizations is nonhierarchical and informal	0	8	8	17	3
Organizations have discussion spaces for employees	0	2	7	13	14
Participation in different work groups is active in organizations	0	4	3	15	14
Diverse workgroups form different sectors in organizations	0	4	6	13	13
Employees encouraged to take initiative	0	2	1	15	17

Employees encouraged by organizations to network within and outside the firm	0	7	7	14	7
Different groups in the organization can freely cooperate	0	3	7	8	17
Organization provides employee opportunities for interaction	1	5	6	14	9

There were several questions asked that required responses from participants. One question was based on whether the organizations provide opportunities for employees to engage in constructive interactions. The majority of the respondents stated that they agreed to some extent their organizations followed this strategy. Several participants stated that they had office spaces in their organizations where employees could come together to discuss given tasks and projects. Several of these participants also thought that the participation rate in different workgroups is high.

**Table 3:** Analysis of strategy-making aspects in the organizations participating in this research.

Strategy-making in organizations					
	Strongly disagree	Disagree to some extent	Neither agree nor disagree	Agree to some extent	Strongly agree
Organizations have strategy-making processes	2	0	4	7	21
Discussion of strategy issues in work groups	3	1	4	14	14
Organizations involved in strategy making	4	11	10	7	4
Staff is acquainted with organizations' strategies	0	3	12	18	3

Strategy-making among Finnish companies is essential if they are to achieve success and growth. Therefore, the correct knowledge should be acquired, distributed, and used within the organization to facilitate the firm's objectives. When it came to collecting information on the participants' organizations' defined strategic process, close to sixty percent stated that they strongly agreed there was a definitive strategic process. Two of the thirty-seven respondents suggested that they strongly disagreed that their organizations had definitive strategic-making processes.

When these participating organizations faced strategic issues, over sixty percent of the respondents suggested they would form work teams to form solutions to these issues. Three respondents strongly disagreed with this part of the questionnaire. Of the thirty-seven respondents, eleven disagreed to some extent that the whole organization was involved in creating developmental strategies.

Only four strongly agreed that the whole dogmatization took part in the creation of developmental strategies. Another aspect of strategic creation in this side-by-side matrix is how well the employees of the participating organizations are acquainted with their organizations' current strategies. Of the thirty-seven respondents to the research, eighteen believed that the employees in their organizations were well acquainted with the organizational strategy, while three disagreed to some extent.

**Table 4:** Analysis of practices of knowledge development aspects in the organizations participating in this research.

Practices of knowledge development in organizations					
	Strongly disagree	Disagree to some extent	Neither agree nor disagree	Agree to some extent	Strongly agree
Knowledge and competence of staff is regularly assessed	0	5	4	13	13
Strategic goals of organizations direct how staff knowledge is created	1	0	3	15	16
Organizations provided opportunities for employee knowledge and competence development	0	1	2	13	19
Organizations train new personnel.	0	4	6	9	16

When the respondents were asked whether their organizations' strategic goals were associated with employee knowledge development, over eighty percent of the thirty-seven respondents stated they agreed with that statement. Over

seventy percent of the participants agreed that staff knowledge and competencies were regularly assessed in their organizations and that these organizations provided opportunities for employees to enhance their competence and knowledge in the work environment. Of the thirty-seven respondents, sixteen strongly agreed that their organizations trained new personnel.

**Table 5:** Analysis of the effectiveness and accomplishments of the participating organizations over the last two years.

Effectiveness and accomplishments of the participating organizations					
	Strongly disagree	Disagree to some extent	Neither agree nor disagree	Agree to some extent	Strongly agree
Ability to innovate new products	0	1	3	14	15
Ability to identify new opportunities	0	2	3	11	17
Ability to commercialize new innovations	0	3	5	15	6

Several respondents agreed that their organizations have improved the ability to adapt to unforeseen transformations. They also agreed that the organizations have improved their ability to recognize new business opportunities and innovate new products and services.

**Table 6:** GAP analysis of the current and future effectiveness and accomplishments of organizations

Focus areas	Current state	Desired future state
Where the organization is focusses	Where the organization is currently situated	Where the organizations are striving to be in the future
Ability to innovate new products	The innovation rate is	Organizations should strive to

	approximately forty percent	reach sixty percent
Ability to identify new opportunities	The identification rate is fifty percent	The potential future rate is seventy-five percent
Ability to commercialize new innovations	The commercializing rate is approximately sixty percent	The organizations are trying to increase the figure by twenty percent

**Table 7:** Analysis of the development goals associated with knowledge management in participating organizations.

Development goals of knowledge management in organizations					
	Not considered a goal at all	A goal of small importance	Not a very important goal	Quite an important goal	Very important goal
Keeping the schedule	1	5	8	16	1
Reserving time for information and knowledge	3	7	14	9	0
Employee resistance to change	2	8	5	14	4
Personnel resources	3	3	10	14	3

When it came to personnel resources in connection to knowledge management, over sixty percent of respondents stated that these resources were crucial in knowledge management. They also believed that resistance to change is not considered a vital goal with inclusion of reservation of time for knowledge and information. Keeping the schedule of the organization was considered a vital goal.

**Table 8:** This side-by-side matrix examines the usage of information systems and services among the participating organizations.

Use of information systems and services in organizations					
	Not in use	In use, but not actively	In use, used somewhat rarely	In use, used somewhat frequently	In use, used actively
Internet	0	0	0	1	35
Intranet	0	0	0	2	34
Extranet	4	0	3	7	17
Organizations' websites	0	1	2	4	27

All of the aspects of the information systems and services that have been analyzed in the above figure in connection to the organizations in this research are actively used by employees.

**Table 9:** This figure examines the practices of information and knowledge among the participating organizations in this research.

Practices of information and knowledge sharing in organizations					
	Strongly disagree	Disagree to some extent	Neither agree nor disagree	Agree to some extent	Strongly agree
Organizations have process for information sharing throughout firms	1	2	10	12	10
Organizations have process for information sharing among individuals	1	5	10	11	8
Information sharing occurs in teams	1	7	11	4	4
Some units in the organizations withhold information	5	9	8	8	2

The participants of this research agreed that their organizations implemented processes for sharing information throughout the organizations from employees to management. They also agreed that the best way to share information as through teams. However, numerous individuals thought that some units were withholding information.



## 9 DISCUSSION

### 9.1 Decision-making aspects concerned with knowledge management

The first side-by-side matrix of the variables is on decision-making in the participating organizations. Knowledge and its management are crucial when it comes to decision-making. When knowledge is effectively organized, managed, and distributed using delivery strategies such as software solutions, it makes it easier for staff and consumers to interact through the retrieval of information (Abubakar et al., 2019). The information in figure one concerning decision-making in Finnish organizations suggests that most employees who participated in this research agreed to some extent on how decision-making was associated with the six elements presented in this figure. However, this was closely followed by individuals who strongly agreed the provided six elements had a crucial role in their organization's decision-making process.

By equipping consumers with easily retrievable information, the process of decision-making becomes easier. This suggests that the participating organizations should devise strategies where consumers' information is easily accessible (Abubakar et al., 2019). If employees of these organizations can easily retrieve information about consumers, they can quickly come to the aid of consumers, thus increasing consumer satisfaction.

This increased level of customer satisfaction is one factor that leads to the sustainable development of organizations. This occurs when these organizations take part in corporate social responsibility to give back to society through several factors such as environmental management. Through effective decision-making in CSR strategies, the organization can strengthen its positive image in Finland since numerous consumers pay close attention to CSR activities. By being successful in this area, organizations tend to create a platform for attracting and retaining consumers.

By improving their environmental performance, organizations can enhance confidence among consumers in the ability to devise effective environmental management initiatives. This confidence can enhance these organizations' identification and desire of products and services as the perceptions of value (De Mendonca & Zhou, 2019). Customer satisfaction is connected to profitability and future revenue as follows. By satisfying the needs of the consumer, companies can earn revenue and returns.

The factors that drive satisfied consumers to make organizations profitable include customer loyalty, consumer behaviors, and customer retention. These factors enable the organizations to increase future revenue by conducting business with these consumers (De Mendonca & Zhou, 2019). If the participating firms have long-time consumers, they can integrate price

bonuses for their services and products. This will enhance their relationship with the organizations; the consumers will be willing to pay more to firms at high consumer satisfaction levels.

Satisfied consumers tend to recommend these organizations to others, thus creating new opportunities for new revenue sources. Therefore, in this case, effective environmental management initiatives designed to increase an organization's sustainable development can be a factor that increases customer attraction and retention since most are concerned with CSR activities. This increase leads to an increase in customer satisfaction, which enhances the generation of revenue for future use.

## **9.2 Interaction and cooperation in organizations**

The second analysis of the side-by-side matrix in connection to the respondents' questionnaire is the interaction and cooperation in organizations that participated in this research, which is depicted by the information provided in Figure 2. Interaction and cooperation among employees in an organization are crucial. The main aspect that is shared in such gatherings is information or knowledge. This knowledge is crucial because it can be used to devise future strategies that will enhance company growth. Therefore, knowledge storage is crucial in such cases. As seen earlier in this research, knowledge storage is defined as the process that an organizational system uses to form memories where knowledge can store in physical memory systems and retained in codes of conduct, organizational culture and values, and beliefs (Gonzalez, 2017, 254).

A firm's crucial functions in connection to knowledge management are to incorporate the individual specialized knowledge and coordinate organization failures in the incorporation process. Suppose Finnish organizations were to gain access to knowledge that might prove a turning point for future success. In that case, its distribution within the organization's required departments will enhance the creation of new strategies based on this knowledge, which can be implemented to attain a competitive edge in the market scene. This competitive edge can be associated with the success of these organizations. Therefore, the distribution of knowledge to the required aspects within an organization can instill organizations' future success and growth.

Numerous companies regularly struggle to assemble a robust employee engagement plan, particularly in today's fast-paced corporate environment. It's a problem that can appear out of nowhere and progress to the extent that it's impossible to solve. The effective way to prevent possible pitfalls is to ensure that workers are engaged from the start (Eisehnauer, 2014). One of the key reasons why businesses don't prioritize employee engagement initiatives is that they haven't thoroughly investigated the advantages of doing its integration.

### 9.3 Trust and atmosphere in the organizations

Many respondents agreed that there is an atmosphere of trust in their organizations where the management trusts the employees' work and actions. The employees trust the expertise of their colleagues. However, several participants agreed to some extent that the social relationships between the supervisors and employees are based on equality. Approximately three percent of the participants neither agreed nor disagreed that their organizations react fast concerning employees' concerns. Over three percent agreed to some extent of the above role.

The way workers communicate and work on the same tasks is influenced by their trust level in the workplace. Bad employee contact is the leading cause of poor teamwork in the majority of cases. The first move toward creating dependable and cooperative organizations is to encourage transparent and truthful interaction (Smarp, 2020). Employees are much more likely to work hard to accomplish the same collective company objectives when supporting their employers. However, achieving such effective collaboration is difficult, particularly in large corporations with departments worldwide (Smarp, 2020).

Institutions must integrate effective strategies for expressing their organization's core principles, objective, and mission to their staff to have every employee in the same wavelength. Trust is reciprocal in highly reputable work environments. The staff has confidence in their bosses and other leaders, and executives have confidence in their staff (Smarp, 2020). Leaders are more likely to encourage their workers to make their choices when there is cooperation, and workers have the trust and confidence to achieve their assigned tasks. In the workplace, confidence reduces tension and exhaustion (Smarp, 2020). According to a study conducted, employees who trust their bosses have seventy-four percent less tension and forty percent less exhaustion.

### 9.4 Strategy-making in organizations

The making of strategies in an organization is a crucial aspect of business growth and success. Forming several choices on what steps the organization plans to take to become more competitive is strategic thinking. Once a year, a business will undergo a strategic planning phase, resulting in a report that serves as a reference book for the management staff in the ensuing quarter. Efforts should be made to make strategic assessment an annual practice for businesses. Figure 3 examines the strategy-making aspects associated with the thirty-seven organizations that took part in this research

Concerning this research, firms that took part will gain the capacity to predict significant changes in the competitive landscape and recognize new

opportunities at the core of strategic thinking. Coping with finite resources of capital, personnel, and time is a reality for all companies, including multinational firms (Victoria University, 2019). The Finnish organizations should use strategic thinking to figure out how to integrate these tools best to help them achieve their goals. The management team's strategic planning reflects on the areas that are most likely to thrive. Strategic thinking can save company money by preventing expensive errors like opening a new store location before the consumer base is big enough to afford the move.

Strategic thinking is directly connected with knowledge management (Victoria University, 2019). The effectiveness of knowledge management programs is dependent on the institution's ability to encourage the sustained incorporation of knowledge from the retrieval of knowledge originating in topics to preserve it subsequently in its corporate processes, in a method that uses the phases of knowledge acquisition, storage, dissemination (Victoria University, 2019). Therefore, for the organizations participating in this research to effectively make and implement strategies, they should first acquire the desired knowledge, which is done through learning and training. Once this knowledge is acquired, it can be distributed and used to make the desired strategies that would enhance the organization's objectives.

So, how can strategy creation lead to increased sustained development? One aspect that organizations understand is the need for corporate social responsibility or CSR. Effective CSR enables the organization to create a positive influence and image among society, including the stakeholders of the organization. Finnish organizations should strive to improve the community they operate by providing solutions to issues that affect these communities. Communities of Practice is an excellent strategy to implement because it links the organization with individuals in the community that share the same interests (Kingston, 2012, 4).

By building a positive image, these organizations create consumer loyalty associated with the generation of future revenue in the form of the attraction and retention of consumers. These strategies are derived from knowledge management. The knowledge management governance framework is based on the organization controlling the processes of knowledge resources designed to achieve the firm's goals. In an organization, the knowledge governance structure is categorized into three including the operational, maintenance, and long-term knowledge management.

Operational knowledge is associated with taking care of the consumer needs for knowledge on the organization's products and services. After the reception of a customer's needs, operational knowledge management requires available knowledge resources and an availability map for developing a project team (Moor & Smits, 2004, 5).

The maintenance knowledge manager maintains the given level of knowledge by comparing the capacity map and all the available knowledge resources available in the organization with the deficiency map. One way to achieve this is by implementing strategies such as training, hiring, knowledge development, and social learning. Long-term knowledge is responsible for evaluating summaries associated with the maintenance and operations of knowledge management that take the form of aggregated maps. Therefore, knowledge management through strategy creation can enhance sustainable development.

## **9.5 Organizations' practices concerning information and knowledge organization**

For business operations to be successful, all employees need to access all the required information to finished assigned tasks and projects. Figure four examines some of the practices adopted by organizations that take part in this research, such as whether or not memory is ideal for retaining work knowledge. Numerous respondents stated they did not think that information needed for work purposes should be retained in the memory. Strategic goals can be associated with knowledge development.

The participating Finnish companies have different strategic goals, which require different sources and pieces of knowledge to achieve these objectives. Therefore, the organizational diversity in connection to departments implies several ways that the objectives can be achieved. Through collaboration and cooperation, knowledge is distributed across the right platforms to be used appropriately in devising strategies that guarantee competitive advantage for businesses.

While the Sustainable Development Goals (SDGs) were created for and endorsed by policymakers, they also serve as an international approach for evaluating business contributions to the world – specifically, how businesses can "win with intent." The Sustainable Development Goals (SDGs) are more than just a guideline for policymakers to aim. They serve as a road map for potential business opportunities. Business owners have many excellent reasons to seek social impact and work with the SDGs.

Aside from the need to respond to society's demand for more openness and accountability, combining intent and benefit may create a unique competitive edge that appeals to discerning customers and investors. Sustainable development goals or strategies aligned with social impact in the community are part of the core values of successful organizations that create the following financial value; it generates new revenue by creating new opportunities of market differentiation that leads to market growth. The goals enable the organizations to recruit and retain a talented workforce; the sustainable development goals also help organizations increase their supply chain

resilience by implementing supply chain sustainability and operational effectiveness. It also initiated investor interests by enhancing the attractiveness of the SDGs. SDGs also help businesses generate value by assuring them the license to operate by addressing legal compliance and managing associated threats.

## 10 CONCLUSIONS

In hindsight, every company has to change its business strategies to remain successful since new information and technologies are regularly flooding the market. Competitors also arise from all corners of the business realm, making companies work harder to maintain or elevate their market position. Knowledge management and sharing are areas where organizations can focus on influencing their overall position in the market. Knowledge in business is a crucial strategic asset. It comprises the skills, experiences, professional insight, and capabilities within and outside an organization and can be used to integrate the desired strategies to achieve the firm's objectives.

Several aspects of knowledge distinguish it from other resources in an organization. The first one is that the accumulation of knowledge occurs over time, and in several cases, it does not incur additional costs. The use of knowledge does not mitigate its usefulness. However, it increases its usefulness as knowledge use is associated with evolution and been dynamic. The basic types of knowledge include tacit and explicit knowledge.

Tacit knowledge tends to be less deniable and informal. It cannot be readily transferred in an organization since it exists in employees' minds and experiences. The effectiveness of knowledge management programs is dependent on the institution's ability to encourage the sustained incorporation of knowledge from the retrieval of knowledge originating in topics to preserve it subsequently in its corporate processes, in a method that uses the phases of knowledge acquisition, storage, dissemination.

Knowledge dissemination is part of knowledge management with methods such as communities of practice used to disseminate knowledge. Communities of Practice are linked to knowledge networks known as institutionalized informal networks comprising professional managing concepts of knowledge. This makes the community of practice an essential aspect in organizations. The performance of knowledge management in an organization has to be a measure to determine knowledge in a community.

In retrospect, knowledge management is a crucial aspect of organizations for organizational growth and success. It also has a beneficial aspect in connection to sustainable development. Knowledge is a shared resource that molds and

affects the activities and operations associated with the business. Business knowledge is crucial in Finland's operations, such as the designs and processes involved in producing goods and services and the market data retrieved from research. Whereas knowledge management is based on the strategies involved in transferring the right knowledge to the right individuals at the right time as a way of improving the performance of an organization, knowledge dissemination is attributed to the distribution of this knowledge to this that require it thereby making it essential in knowledge management (Kingston, 2012, 1).

There are several approaches that organizations in Finland can incorporate to enhance knowledge dissemination, such as communities of practice and knowledge portals. The research used to determine the connection between knowledge management in organizations, success, growth, and sustainable development is based on thirty-seven participants from Finnish organizations. The data presented is based on feedback, strategy creation, and decision-making, to mention a few. A side-by-side matrix was integrated to analyze the varied aspects of the above elements connected to sustainable development and organizational growth with inclusion of data sets retrieved from the information on the conducted research. It was evident that knowledge management and dissemination were crucial in organization success and sustainable development.

## References

- Abubakar, M. A., Elrehail, H., Ahmad, M. A., & Elci, A. (2019). Knowledge management, decision-making style, and organizational performance. *Journal of Innovation & Knowledge*, 4(2): 104-114  
<https://doi.org/10.1016/j.jik.2017.07.003>.
- Ajmal, M., Helo, P., & Kekäle, T. (2010). Critical factors for knowledge management in project. *Journal of Knowledge Management*, 14(1), 156-168.  
[https://www.researchgate.net/publication/220363184\\_Critical\\_factors\\_for\\_knowledge\\_management\\_in\\_project\\_business](https://www.researchgate.net/publication/220363184_Critical_factors_for_knowledge_management_in_project_business)
- Akkerman, S. (2006). *Strangers in Dialogue. Academic Collaboration across Organizational Boundaries*. Utrecht : Utrecht University.  
<http://dspace.library.uu.nl/handle/1874/19170>
- Akkerman, S., Petter, C., & De Latt, M. (2008). Organising communities of practice: facilitating emergence. *Journal of Workplace Learning*, 20 (6): 383-399.  
[https://www.researchgate.net/publication/46705762\\_Organising\\_communities-of-practice\\_Facilitating\\_emergence](https://www.researchgate.net/publication/46705762_Organising_communities-of-practice_Facilitating_emergence)
- Bhatt, G. D. (2012). Management strategies for individual knowledge and organizational knowledge. *Journal of Knowledge Management*, 6(1), 31-39.  
<http://dx.doi.org/10.1108/13673270210417673>.  
<https://www.emerald.com/insight/content/doi/10.1108/13673270210417673/full/html>
- Bhusry, M., & Ranjan, J. (2012). Enhancing the teaching-learning process: a knowledge management approach. . *International Journal of Educational Management*, 26(3), 313-329. <https://doi.org/10.1108/09513541211213372> .  
<https://www.emerald.com/insight/content/doi/10.1108/09513541211213372/full/html>
- Calo, T. (2008). Talent management in the era of the aging workforce: The critical role of knowledge transfer. . *Public Personnel Management*, 37: 403-416. [http://www.entrepreneur.com/tradejournals/article/192352085\\_5.html](http://www.entrepreneur.com/tradejournals/article/192352085_5.html)
- Chang, T. C., & Chuang, S. H. (2011). Performance implications of Knowledge Management. *Expert Systems Applications*, 38, 6170–6178.  
 doi:10.1016/j.eswa.2010.11.053.  
[https://www.researchgate.net/publication/220218380\\_Performance\\_implications\\_of\\_knowledge\\_management\\_processes\\_Examining\\_the\\_roles\\_of\\_infrastructure\\_capability\\_and\\_business\\_strategy](https://www.researchgate.net/publication/220218380_Performance_implications_of_knowledge_management_processes_Examining_the_roles_of_infrastructure_capability_and_business_strategy)



Chinese Scholarship Council. (2018, July 19). *Explanatory Research Definition. Explanatory Research example. Explanatory Research questions*. Retrieved from Chinese Scholarship Council:  
<https://www.chinesescholarshipcouncil.com/explanatory-research.html#:~:text=explanatory%20Research%20is%20the%20conducted,study%20in%20a%20detailed%20manner.>

Chow, K., Harry, C. K., & Lee, W. B. (2007). Knowledge management approach in building-to-order supply chains. *Industrial Management and Data Systems*, 107, 883-903.  
<https://www.emerald.com/insight/content/doi/10.1108/02635570710758770/full/html>

De Mendonca, T. R., & Zhou, Y. (2019). Environmental Performance, Customer Satisfaction, and Profitability: A Study among Large U.S. Companies. *MDPI*, 1-15.  
[https://www.researchgate.net/publication/336144840\\_Environmental\\_Performance\\_Customer\\_Satisfaction\\_and\\_Profitability\\_A\\_Study\\_among\\_Large\\_US\\_Companies](https://www.researchgate.net/publication/336144840_Environmental_Performance_Customer_Satisfaction_and_Profitability_A_Study_among_Large_US_Companies)

Dijk, A., Hendriks, P., & Romo-Leroux, I. (2016). Knowledge sharing and social capital in globally distributed execution. *Journal of Knowledge Management*, 20(2), 327-342.  
<https://www.narcis.nl/publication/RecordID/oai%3Arepository.ubn.ru.nl%3A2066%2F160907>

Durst, S., & Edvardsson, I. R. (2012). Knowledge management in SMEs: a literature review. *Journal of Knowledge Management*, 16(6), 879-903.  
<http://dx.doi.org/10.1108/13673271211276173>.  
<https://www.emerald.com/insight/content/doi/10.1108/13673271211276173/full/html>

Eisenhauer, T. (2014, November 06). *Employee Engagement Strategy for Growing Your Business*. Retrieved from Axero Solutions:  
<https://axerosolutions.com/blogs/timeisenhauer/pulse/269/employee-engagement-strategy-for-growing-your-business>

Expert Program Management. (2019, September 03). *Gap Analysis*. Retrieved from Expert Program Management:  
<https://expertprogrammanagement.com/2017/09/gap-analysis/>

Formplus. (2020, December 04). *7 Types of Data Measurement Scales in Research*. Retrieved from Formplus:  
<https://www.formpl.us/blog/measurement-scale->

type#:~:text=Sometimes%20called%20the%20level%20of,as%20part%20of%20a%20research.

Freeze, R. D., & Kulkarni, U. (2007). Knowledge management capability: defining knowledge assets. *Journal of Knowledge Management*, 11(6), 94-109  
<http://dx.doi.org/10.1108/13673270710832190>.  
[https://www.researchgate.net/publication/220363153\\_Knowledge\\_Management\\_Capability\\_Defining\\_Knowledge\\_Assets](https://www.researchgate.net/publication/220363153_Knowledge_Management_Capability_Defining_Knowledge_Assets)

Gonzalez, R. V. (2017). Knowledge Management Process: a theoretical-conceptual research. *Gestão & Produção*, 24(2): 248-265.  
[https://www.scielo.br/scielo.php?pid=S0104-530X2017000200248&script=sci\\_arttext&tlng=en](https://www.scielo.br/scielo.php?pid=S0104-530X2017000200248&script=sci_arttext&tlng=en)

Gonzalez, M. A., Toledo, O. A., & Rodriguez, A. R. (2014). The management and construction of knowledge as an innovation strategy for collaborative learning through the use and creation of learning communities and networks. *International Journal of Knowledge Management*, 10(4), 38-49.  
<http://dx.doi.org/10.4018/ijkm.2014100103>.

Helander, N., Kukko, M., & Virtanen, P. (2011). A Knowledge Management View to a Strategic. *International Journal of Strategic Change Management*, 3(1): 76 - 89.  
[https://scholar.google.com/citations?user=RYveKuQAAAAJ&hl=fi#d=gs\\_md\\_cita-d&u=%2Fcitations%3Fview\\_op%3Dview\\_citation%26hl%3Dfi%26user%3DRYveKuQAAAAJ%26citation\\_for\\_view%3DRYveKuQAAAAJ%3ANhqRSuF\\_l8C%26tzom%3D-180](https://scholar.google.com/citations?user=RYveKuQAAAAJ&hl=fi#d=gs_md_cita-d&u=%2Fcitations%3Fview_op%3Dview_citation%26hl%3Dfi%26user%3DRYveKuQAAAAJ%26citation_for_view%3DRYveKuQAAAAJ%3ANhqRSuF_l8C%26tzom%3D-180)

Ho, C. T. (2009). The relationship between Knowledge Management enablers and performance. *Industrial Management & Data Systems*, 109, 98–117.  
[https://www.researchgate.net/publication/220671974\\_The\\_relationship\\_between\\_knowledge\\_management\\_enablers\\_and\\_performance](https://www.researchgate.net/publication/220671974_The_relationship_between_knowledge_management_enablers_and_performance)

Ibrahim, F., & Salleh, N. M. (2019). Embedding Knowledge Management Theory in Learning and Teaching Approach. *International Journal of Learning and Development*, 9(1):19-40.  
[https://www.researchgate.net/publication/330622552\\_Embedding\\_Knowledge\\_Management\\_Theory\\_in\\_Learning\\_and\\_Teaching\\_Approach](https://www.researchgate.net/publication/330622552_Embedding_Knowledge_Management_Theory_in_Learning_and_Teaching_Approach)

Kingston, J. (2012). Choosing a Knowledge Dissemination Technique. *Health and Safety Executive*, 1-19.  
[https://www.researchgate.net/publication/230703501\\_Choosing\\_a\\_Knowledge\\_Dissemination\\_Approach](https://www.researchgate.net/publication/230703501_Choosing_a_Knowledge_Dissemination_Approach)

Koskenkorva, H. (2019). Knowledge sharing in a virtual and multilingual organization. *Turku University of Applied Sciences*, 1-54.  
[https://www.theseus.fi/bitstream/handle/10024/267087/Koskenkorva\\_Hanna.pdf?sequence=2](https://www.theseus.fi/bitstream/handle/10024/267087/Koskenkorva_Hanna.pdf?sequence=2)

Malhotra, Y. (2005). Integrating knowledge management technologies in organizational business processes: getting real time enterprises to deliver real business performance. *Journal of Knowledge Management*, 9: 7-28 DOI: 10.1108/13673270510582938.  
[https://pdfs.semanticscholar.org/5707/33e820b90678e067ada10203c9a81b7d9d67.pdf?\\_ga=2.239861571.1735209721.1615342220-266907305.1615342220](https://pdfs.semanticscholar.org/5707/33e820b90678e067ada10203c9a81b7d9d67.pdf?_ga=2.239861571.1735209721.1615342220-266907305.1615342220)

Moor, A., & Smits, M. (2004). Measuring Knowledge Management Effectiveness in Communities of Practice. *School of Economics, Tilburg University*, 1-9.  
[https://www.researchgate.net/publication/221184441\\_Measuring\\_Knowledge\\_Management\\_Effectiveness\\_in\\_Communities\\_of\\_Practice](https://www.researchgate.net/publication/221184441_Measuring_Knowledge_Management_Effectiveness_in_Communities_of_Practice)

Paliszkievicz, J. (2009). Knowledge codification and organisational performance in small and medium enterprises. *International Journal of Management and Enterprise Development*, 6(1): 80-87 DOI: 10.1504/IJMED.2009.021737.  
[https://www.researchgate.net/publication/247832980\\_Knowledge\\_codification\\_and\\_organisational\\_performance\\_in\\_small\\_and\\_medium\\_enterprises](https://www.researchgate.net/publication/247832980_Knowledge_codification_and_organisational_performance_in_small_and_medium_enterprises)

Pemsel, S., & Muller, R. (2012). The governance of knowledge in project-based organizations. *International Journal of Project Management*, 30(8):865–876 DOI: 10.1016/j.ijproman.2012.02.002 .  
<https://www.sciencedirect.com/science/article/abs/pii/S0263786312000300?via%3Dihub>

Philippovich, A. T., Serzhankyzy, Z. A., & Vladimirovich, S. A. (2019). The role of knowledge management in organizational development. *Espacios*, 40(25): 1-12. <http://www.revistaespacios.com/a19v40n25/a19v40n25p11.pdf>

Salojarvi, S., & Furu, P. (2005). Knowledge management and growth in Finnish SMEs. *Journal of Knowledge Management*, 9(2):103-122 DOI: 10.1108/13673270510590254.  
[https://www.researchgate.net/publication/220363551\\_Knowledge\\_Management\\_and\\_Growth\\_in\\_Finnish\\_SMEs](https://www.researchgate.net/publication/220363551_Knowledge_Management_and_Growth_in_Finnish_SMEs)

Seidler, D. A., & Hartmann, E. (2008). The use of tacit knowledge within innovative companies: Knowledge management in innovative enterprises. *Journal of Knowledge Management*, 12: 133-147.

[https://pdfs.semanticscholar.org/84e4/4dbf8970236ff7f94878684ab4ac4bc06174.pdf?\\_ga=2.226605789.1735209721.1615342220-266907305.1615342220](https://pdfs.semanticscholar.org/84e4/4dbf8970236ff7f94878684ab4ac4bc06174.pdf?_ga=2.226605789.1735209721.1615342220-266907305.1615342220)

Smarp. (2020, June 23). *Trust in the Workplace: Why It Is so Important Today and How to Build It*. Retrieved from Smarp: <https://blog.smarp.com/trust-in-the-workplace-why-it-is-so-important-today-and-how-to-build-it>

Stevens, R., Joshua, M., & Sondra, C. (2010). Waves of Knowledge Management: The Flow between Explicit and Tacit Knowledge. *American Journal of Economics and Business Administration*, 2(1): 129-135. [https://www.researchgate.net/publication/46293456\\_Waves\\_of\\_Knowledge\\_Management\\_The\\_Flow\\_between\\_Explicit\\_and\\_Tacit\\_Knowledge](https://www.researchgate.net/publication/46293456_Waves_of_Knowledge_Management_The_Flow_between_Explicit_and_Tacit_Knowledge)

Swan, J., Newell, S., Scarbrough, H., & Hislop, D. (1999). Knowledge management and innovation: networks and networking. *Journal of Knowledge Management*, 3(4): 262-275. <https://www.emerald.com/insight/content/doi/10.1108/13673279910304014/full/html>

Vayrynen, H., Helander, N., & Kukko, M. (2014). Knowledge Management Practices in Large Companies. *The Macrotheme Review*, 3(9): 56-72. [https://tutcris.tut.fi/portal/files/5769601/Knowledge\\_Management\\_Practices\\_in\\_Large\\_Companies\\_Author.pdf](https://tutcris.tut.fi/portal/files/5769601/Knowledge_Management_Practices_in_Large_Companies_Author.pdf)

Venkatraman, S., & Venkatraman, R. (2018). Communities of Practice Approach for Knowledge Management Systems. *Systems*, 6(4):36-56 DOI: 10.3390/systems6040036. <https://www.mdpi.com/2079-8954/6/4/36>

Victoria University. (2019, May 23). *What is strategic management and why is it important?* Retrieved from Victoria University: <https://online.vu.edu.au/blog/why-strategic-management-important>

## INDEXES

### 3.1 Variables in the order of occurrence

FSD study number [FSD_NO] .....	5
FSD edition number [FSD_VR] .....	5
FSD case id [FSD_ID] .....	6
Began responding [VASALKU] .....	6
Finished responding [VASLOPPU] .....	6
Duration of responding (in minutes) [VASKESTO] .....	7
Language [KIELI] .....	7
Respondent's field of work [Q1] .....	7
Respondent's occupational status [Q2] .....	8
Industrial classification of the company [Q3] .....	8
Company's turnover (million euros) [Q4] .....	9
Describe decision-making in your organization: Decisions are made based on valid information [Q6_A] .....	9
Describe decision-making in your organization: Everyone has a chance to express their opinions when it comes to their own work [Q6_B] .....	9
Describe decision-making in your organization: Top level management informs the staff about important decisions at a sufficiently early stage [Q6_C] .....	10

**Describe decision-making in your organization: Decisions made are logical and consistent, and the practices for their implementation are the same for everyone [Q6\_D] . . . . . 10**

**Describe decision-making in your organization: Wrong decisions can be reversed or changed [Q6\_E] . . . . . 11**

**Describe decision-making in your organization: The impacts of decisions are monitored and communicated [Q6\_F] . . . . . 11**

**Describe decision-making in your organization: Decision-making is open [Q6\_G] . . . . .12**

**Describe how feedback is given in your organization: The management gives employees regular feedback [Q7\_A] . . . . . 12**

**Describe how feedback is given in your organization: Employees give the management regular feedback [Q7\_B] . . . . . 13**

**Describe how feedback is given in your organization: The organization has a formal process for giving feedback [Q7\_C] . . . . . 13**

**Describe interaction and cooperation in your organization: Many different channels are utilized in internal communication [Q8\_A] . . . . . 14**

**Describe interaction and cooperation in your organization: The communication of our organization is mainly nonhierarchical and informal [Q8\_B] . . . . . 14**

**Describe interaction and cooperation in your organization: Our organization has spaces where employees can gather to discuss in peace [Q8\_C] . . . . . 15**

**Describe interaction and cooperation in your organization: Participation in different work groups or teams is active [Q8\_D] . . . . . 15**

**Describe interaction and cooperation in your organization: Work groups or teams are diverse, with representatives from different sectors in the organization [Q8\_E] . . . . . 16**

**Describe interaction and cooperation in your organization: Employees are encouraged to take initiative [Q8\_F] . . . . . 16**

**Describe interaction and cooperation in your organization: Employees are encouraged to network with individuals or bodies outside the organization [Q8\_G] . . . . . 17**

Describe interaction and cooperation in your organization: Different groups (e.g., teams and units) can freely cooperate [Q8_H] .....	17
Describe interaction and cooperation in your organization: The organization provides opportunities for staff to engage in constructively critical interaction [Q8_I] .....	18
Describe trust and atmosphere in your organization: The management trusts the employees' work and actions [Q9_A] .....	18
Describe trust and atmosphere in your organization: Employees trust each other's expertise [Q9_B] .....	19
Describe trust and atmosphere in your organization: The organization has a good atmosphere [Q9_C] .....	19
Describe trust and atmosphere in your organization: We regularly survey atmosphere and job satisfaction [Q9_D] .....	20
Describe trust and atmosphere in your organization: Social relationships between supervisors and employees are based on equality [Q9_E] .....	20
Describe trust and atmosphere in your organization: The organization reacts fast to employees' concerns [Q9_F] .....	21
Describe trust and atmosphere in your organization: The individual capabilities of employees are valued [Q9_G] .....	21
Describe trust and atmosphere in your organization: Employees trust the work and actions of the management [Q9_H] .....	22
<b>100</b>	
<b>3.1. Variables in the order of occurrence</b>	
Describe strategy-making in your organization: The organization has a defined process for strategy-making [Q10_A] .....	22
Describe strategy-making in your organization: Strategy issues are discussed in our work units [Q10_B] .....	23
Describe strategy-making in your organization: The whole organization is involved in strategy-making [Q10_C] .....	23
Describe strategy-making in your organization: Strategy, organizational structure and practices are interdependent in our organization [Q10_D] .....	24

<b>Describe strategy-making in your organization: The actions and decisions of the top-level management are in line with the strategy [Q10_E] . . . . .</b>	<b>. . . . . 24</b>
<b>Describe strategy-making in your organization: The management at all levels of the organization is committed to implementing the strategy [Q10_F] . . . . .</b>	<b>. . . . . 25</b>
<b>Describe strategy-making in your organization: The staff is well acquainted with the strategy of the organization [Q10_G] . . . . .</b>	<b>. . . . . 25</b>
<b>Describe strategy-making in your organization: All members of the organization are committed to achieving the common goals [Q10_H] . . . . .</b>	<b>. . . . . 26</b>
<b>Describe your organizational structure: Our unit structures promote interaction and information sharing between units [Q11_A] . . . . .</b>	<b>. . . . . 26</b>
<b>Describe your organizational structure: Our organizational structure promotes collective rather than individual behaviors [Q11_B] . . . . .</b>	<b>. . . . . 27</b>
<b>Describe your organizational structure: Our organizational structure facilitates creating and finding new information and knowledge [Q11_C] . . . . .</b>	<b>. . . . . 27</b>
<b>Describe your organizational structure: Our workspace has been organized so that people can easily converse with each other [Q11_D] . . . . .</b>	<b>. . . . . 28</b>
<b>Describe the information and communications technologies used in your organization: The organization uses technologies which enable cooperation between employees [Q12_A] . . . . .</b>	<b>. . . . . 28</b>
<b>Describe the information and communications technologies used in your organization: The organization uses technologies which enable cooperation between employees and persons outside the organization [Q12_B] . . . . .</b>	<b>. . . . . 29</b>
<b>Describe the information and communications technologies used in your organization: The organization uses technologies which enable the monitoring of competitors and business partners [Q12_C] . . . . .</b>	<b>. . . . . 29</b>
<b>Describe the information and communications technologies used in your organization: The organization uses technologies which enable people in multiple locations to learn as a group [Q12_D] . . . . .</b>	<b>. . . . . 30</b>
<b>Describe the information and communications technologies used in your organization: The organization uses technologies which enable the collection and use of new information and knowledge related to products and processes [Q12_E] . . . . .</b>	<b>. . . . . 30</b>
<b>Describe the information and communications technologies used in your organization: The organization uses technologies which enable the collection</b>	



and use of new information and knowledge related to markets and competitive situation [Q12_F] .. . . .	31
101	
<b>3. Indexes</b>	
Describe the use of information systems and services in your organization:	
The Internet [Q13_A]	
.....	
31	
Describe the use of information systems and services in your organization:	
Intranet[Q13_B]	
.....	
32	
Describe the use of information systems and services in your organization:	
Extranet [Q13_C]	
.....	
...32	
Describe the use of information systems and services in your organization:	
The organization's own website [Q13_D] .. . . .	
.....	
33	
Describe the use of information systems and services in your organization:	
Email	
[Q13_E].....	
...33	
Describe the use of information systems and services in your organization:	
Management information system (e.g., reporting system) [Q13_F] .. . . .	
.....	
34	
Describe the use of information systems and services in your organization:	
Operational information systems (e.g., payroll, resource management, customer database) [Q13_G].	34
Describe the use of information systems and services in your organization:	
Online learning	
platforms [Q13_H] .. . . .	
.....	
35	
Describe the use of information systems and services in your organization:	
Basic software forward processing, spreadsheet calculation (e.g., Excel) and creating presentations (e.g., Power-Point) [Q13_I] .. . . .	
.....	
35	
Describe the use of information systems and services in your organization:	
Project management software [Q13_J] .. . . .	
.....	
36	
Describe the use of information systems and services in your organization:	
Personnel (HR)	
databases [Q13_K] .. . . .	
.....	
36	

Describe the use of information systems and services in your organization: Knowledge databases [Q13_L] .....	37
Describe the use of information systems and services in your organization: Training/education databases [Q13_M] .....	37
Describe the use of information systems and services in your organization: Orientation databases [Q13_N] .....	38
Describe the use of information systems and services in your organization: Competitor databases [Q13_O] .....	38
Describe the use of information systems and services in your organization: Possibility for video or phone conferences [Q13_P] .....	39
Describe the use of information systems and services in your organization: Collaborative work/working group platforms (e.g., Lotus Notes) [Q13_Q] .....	39
Describe the use of information systems and services in your organization: Dedicated documentation of internal best practices [Q13_R] .....	40
Describe the use of information systems and services in your organization: Mentoring [Q13_S].....	40
Describe the use of information systems and services in your organization: Work rotation [Q13_T].....	41
Describe the use of information systems and services in your organization: Brainstorming [Q13_U].....	102
<b>3.1. Variables in the order of occurrence</b>	
<b>41</b>	
Describe the use of information systems and services in your organization: Information specialist services [Q13_V] .....	42
Describe the use of information systems and services in your organization: E- services for customers [Q13_X] .....	42
Describe the use of information systems and services in your organization: Other, please specify (open-ended) [Q13_Y_2] .....	43

Describe the practices of information and competence acquisition in your organization: The organization has functional processes for acquiring customer data [Q14_A] . . . . .	43
Describe the practices of information and competence acquisition in your organization: The organization has functional processes for sharing information with business partners [Q14_B].....	44
Describe the practices of information and competence acquisition in your organization: The organization has functional processes for acquiring information on new products and services within the industry [Q14_C] . . . . .	44
Describe the practices of information and competence acquisition in your organization: The organization has functional processes for acquiring information on competitors [Q14_D] .	45
Describe the practices of information and competence acquisition in your organization: To learn how to improve customer services, employees from departments besides sales and/or marketing are in direct communication with customers [Q14_E] . . . . .	45
Describe the practices of information and competence acquisition in your organization: We acquire new ideas through networks [Q14_F] . . . . .	46
Describe the practices of information and competence acquisition in your organization: When people need information, they know exactly who to ask [Q14_G] . . . . .	46
Describe the practices of information and competence acquisition in your organization: Information relevant to the employees' work is available to a sufficient degree [Q14_H] 47	47
Describe the practices of information and competence acquisition in your organization: Information seeking tasks have been centralized to experts [Q14_I] . . . . .	47
Describe the practices of information and knowledge sharing in your organization: The organization has processes for information sharing throughout the organization [Q15_.	48
Describe the practices of information and knowledge sharing in your organization: The organization has processes for information sharing between individuals [Q15_B] . . . . .	48
Describe the practices of information and knowledge sharing in your organization: Information sharing happens mainly in teams [Q15_C] . . . . .	49

**Describe the practices of information and knowledge sharing in your organization: Information sharing between profit centers is plentiful [Q15\_D] . . . . . 49**

**Describe the practices of information and knowledge sharing in your organization: Some units in the organization withhold information [Q15\_E] . . . . . 50**

**Describe the practices of information and knowledge sharing in your organization: Employee often have informal conversations (e.g., by water automats, in halls, during coffee break) related to their work [Q15\_F] . . . . . 50**

**103**

### **3. Indexes**

**Describe the practices of information and knowledge sharing in your organization: Employees share information related to their expertise to others [Q15\_G] . . . . . 51**

**Describe the practices of information and knowledge sharing in your organization: There are processes for ensuring that the expertise and knowledge of individuals leaving is not lost to the organization [Q15\_H] . . . . .51**

**Describe the practices of information and knowledge sharing in your organization: The organization has a standardized reward system for information sharing [Q15\_I] . . . . .52**

**Describe your organization's practices concerning information and knowledge organization: Our employees have access to all the information they need for their work [Q16\_A] . . . . . 52**

**Describe your organization's practices concerning information and knowledge organization: The information needed by employees for their work is best retained in their own memory [Q16\_B] . . . . . 53**

**Describe your organization's practices concerning information and knowledge organization: Information is easy to find in our organization [Q16\_C] . . . . .53**

**Describe your organization's practices concerning information and knowledge organization: Information is kept up to date in our organization [Q16\_D] . . . . . 54**

**Describe your organization's practices concerning information and knowledge organization: Written reports are frequently circulated [Q16\_E] . . . . . 54**

**Describe your organization's practices concerning information and knowledge organization: We regularly update our guidelines on work processes and methods [Q16\_F] . . . . . 55**

- Describe your organization's practices concerning information and knowledge organization: There are defined processes on how to organize information within the organization [Q16\_G]55**
- Describe the practices of knowledge development in your organization: The strategic goals of our organization direct how staff knowledge is developed [Q17\_A] . . . 56**
- Describe the practices of knowledge development in your organization: The knowledge and competence of our staff is regularly assessed [Q17\_B] . . . . .56**
- Describe the practices of knowledge development in your organization: The organization provides opportunities for employees to develop their knowledge and competence during working hours [Q17\_C] . . . . . 57**
- Describe the practices of knowledge development in your organization: We train new personnel systematically [Q17\_D] 57**
- Describe the practices of knowledge development in your organization: Our employees have a clear plan for developing their knowledge [Q17\_E] . . . . . 58**
- Describe the practices of knowledge development in your organisation: The knowledge and competence need of our staff as a whole are actively discussed [Q17\_F] . . . . . 58**
- Describe the practices of knowledge development in your organisation: The organisation monitors whether the goals agreed in professional development reviews are met [Q17\_G]. 59**
- Describe the practices of knowledge and competence evolution in your organisation: We learn new things when working together and asking for help from each other [Q18\_A] . 59**
- 3.1. Variables in the order of occurrence**
- inexperienced employees always practice first under the guidance of more experienced employees[Q18\_B] . . . . .60**
- Describe the practices of knowledge and competence evolution in your organisation: We spend time on developing new ideas [Q18\_C] . . . . .60**
- Describe the practices of knowledge and competence evolution in your organisation: Instead of just sticking to the routines, we engage in critical thinking and developing things together[Q18\_D] . . . . . 61**
- Describe the practices of knowledge and competence evolution in your organisation: The improvement suggestions of everyone (customers, employees and managers) are taken into account [Q18\_E] . . . . . 61**
- Describe the practices of knowledge and competence evolution in your organisation: Best practices and experiences are written down as e.g.,**

guidelines and shared for the use of the whole organisation [Q18_F] . . . . .	62
Describe the practices of knowledge and competence evolution in your organisation: We examine the successes and failures of projects critically [Q18_G] . . . . .	62
Describe the practices of knowledge and competence evolution in your organisation: The experience and knowhow of more experienced employees is valued and utilized [Q18_H]	63
Describe the practices of knowledge and competence evolution in your organisation: The knowledge and knowhow of new employees is valued and utilized [Q18_I] . . . . .	63
Describe the practices of knowledge and competence evolution in your organisation: The organisation has processes for creating new knowledge based on existing knowledge [Q18_J]	64
Describe the practices of knowledge and competence evolution in your organisation: The organisation has processes for merging different types of information and knowledge from various sources [Q18_K] . . . . .	64
Describe the practices of knowledge and competence evolution in your organisation: The organisation has processes for replacing out-of-date information and knowledge [Q18_L] . . . .	65
Describe the practices of information and knowledge application in your organisation: Employees have enough time to seek and apply information [Q19_A] . . . . .	65
Describe the practices of information and knowledge application in your organisation: Information gained from projects is used to improve subsequent projects [Q19_B] . . . .	66
Describe the practices of information and knowledge application in your organisation: The organisation has employees whose work tasks include recognizing best practices [Q19_C] . . .	66
Describe the practices of information and knowledge application in your organisation: The organisation has processes for using the information gained through learning from mistakes [Q19_D] . . . . .	67
Describe the practices of information and knowledge application in your organisation: The organisation knows to use the appropriate sources of information when solving problems and challenges [Q19_F] . . . . .	67
Describe the practices of information and knowledge application in your organisation: The organisation has ways for bringing information to those who need it [Q19_G] . . . . .	68
Describe the practices of information and knowledge application in your organisation: Information is transferred between projects [Q19_H] . . . . .	68

**Describe the practices on how your organisation keeps information and knowledge protected and secure: The organisation has established processes for retaining information and knowledge when an employee leaves [Q20\_J] . . . . . 73**

**Describe the effectiveness/accomplishments of the past two years in your organisation: The organisation has improved its ability to innovate new products or services [Q21\_A] . 74 Describe the effectiveness/accomplishments of the past two years in your organisation: The organisation has improved its ability to recognize new business opportunities [Q21\_B] 74**

**Describe the effectiveness/accomplishments of the past two years in your organisation: The organisation has improved its ability to coordinate development activities carried out by different units [Q21\_C] . . . . . 75**

**Has the following been a challenge in knowledge management for your organisation? Keeping to schedule [Q22\_1\_A] . . . . . 79**

**Has the following been a challenge in knowledge management for your organisation? Time use/ reserving time to utilize information and knowledge [Q22\_1\_B] . . . . . 80**

**Has the following been a challenge in knowledge management for your organisation? Commitment of the management [Q22\_1\_E] . . . . . 81**

**Has the following been a challenge in knowledge management for your organisation? Amount of training [Q22\_1\_F] . . . . . 82**

**Has the following been a challenge in knowledge management for your organisation? Negative attitude towards information sharing [Q22\_1\_G] . . . . . 82**

**Has the following been a challenge in knowledge management for your organisation? Utilizing internal information and knowledge [Q22\_1\_H] . . . . . 83**

**Has the following been a challenge in knowledge management for your organisation? Utilizing external knowledge from outside the organisation [Q22\_1\_I] . . . . . 83**

**Has the following been a challenge in knowledge management for your organisation? Defining knowledge [Q22\_1\_J] . . . . . 84**

**Has the following been a challenge in knowledge management for your organisation? Suitable and integrated technologies [Q22\_1\_K] . . . . . 84**

**Has the following been a challenge in knowledge management for your organisation? Financial resources [Q22\_1\_L] . . . . . 85**

Has the following been a challenge in knowledge management for your organisation? recognizing necessary and important information [Q22_1_M] . . . . .	85
Has the following been a challenge in knowledge management for your organisation? Efficiency of information gathering and management [Q22_1_N] . . . . .	86
Has the following been a challenge in knowledge management for your organisation? Withholding of information [Q22_1_O] . . . . .	86
Has the following been a challenge in knowledge management for your organisation? Measuring the usefulness of operations/work/activities [Q22_1_P] . . . . .	87
Has the following been a challenge in knowledge management for your organisation? Tools and equipment [Q22_1_Q] . . . . .	87
What are presently the most important development goals for knowledge management in your organisation? Keeping to schedule [Q22_2_A] . . . . .	88
What are presently the most important development goals for knowledge management in your organisation? Time use / reserving time to utilize information and knowledge [Q22_2_B] . . . . .	88
What are presently the most important development goals for knowledge management in your organisation? Employee resistance to change [Q22_2_C] . . . . .	89
What are presently the most important development goals for knowledge management in your organisation? Personnel resources [Q22_2_D] . . . . .	89
What are presently the most important development goals for knowledge management in your organisation? Commitment of the management [Q22_2_E] . . . . .	90
What are presently the most important development goals for knowledge management in your organisation? Amount of training [Q22_2_F] . . . . .	90
What are presently the most important development goals for knowledge management in your organisation? Negative attitude towards information sharing [Q22_2_G] . . . . .	91
What are presently the most important development goals for knowledge management in your organisation? Utilizing internal information and knowledge [Q22_2_H] . . . . .	91
What are presently the most important development goals for knowledge management in your organisation? Utilizing external knowledge from outside the organisation [Q22_2_I]	92
What are presently the most important development goals for knowledge management in your organisation? Defining knowledge [Q22_2_J] . . . . .	92



- What are presently the most important development goals for knowledge management in your organisation? Suitable and integrated technologies [Q22\_2\_K] ..... 93
- What are presently the most important development goals for knowledge management in your organisation? Financial resources [Q22\_2\_L] ..... 93
- What are presently the most important development goals for knowledge management in your organisation? Recognizing necessary and important information [Q22\_2\_M] ..... 94
- What are presently the most important development goals for knowledge management in your organisation? Efficiency of information gathering and management [Q22\_2\_N] . . . 94
- What are presently the most important development goals for knowledge management in your organisation? Withholding of information [Q22\_2\_O] . . . 95
- What are presently the most important development goals for knowledge management in your organisation? Measuring the usefulness of operations/work/activities [Q22\_2\_ . . . 95
- What are presently the most important development goals for knowledge management in your organisation? Tools and equipment [Q22\_2\_Q] ..... 96
- 1083.1. Variables in the order of occurrence**
- What are the goals for knowledge management in your organisation? (open-ended) [Q23]96
- Explain briefly what knowledge management is in your view: (open-ended) [Q24] .....96

## Figures & Tables

**Figure 1:** Explicit and implicit knowledge

**Table 1:** Analysis of the answers of the participants in connection to the decision-making fallacies in their organizations.

**Table 2:** Analysis of the answers of the participants in connection to the interaction and cooperation in their organizations.

**Table 3:** Analysis of strategy-making aspects in the organizations participating in this research.

**Table 4:** Analysis of practices of knowledge development aspects in the organizations participating in this research.

**Table 5:** Analysis of the effectiveness and accomplishments of the participating organizations over the last two years.

**Table 6:** GAP analysis of the current and future effectiveness and accomplishments of organizations

**Table 7:** Analysis of the development goals associated with knowledge management in participating organizations.

**Table 8:** This side-by-side matrix examines the usage of information systems and services among the participating organizations.

**Table 9:** This figure examines the practices of information and knowledge among the participating organizations in this research.