# Managing Organizational Knowledge

**HAMK**
HÄMEEN AMMATTIKORKEAKOULU
HÄME UNIVERSITY OF APPLIED SCIENCES

Bachelor's thesis

International Business

Valkeakoski spring 2017

*Thi Xuan Thanh Nguyen*

**HAMK**
HÄMEEN AMMATTIKORKEAKOULU
HÄME UNIVERSITY OF APPLIED SCIENCES

ABSTRACT

Valkeakoski
International Business
International Management

| | |
|---|---|
| **Author** | Thi Xuan Thanh Nguyen    **Year** 2017 |
| **Subject of Bachelor's thesis** | Managing Organizational Knowledge |

ABSTRACT

Knowledge has long been such a self-evident factor in many organizations that no one was talking about it. But as today's dynamic business environment is being shaped by such a global competitive landscape, knowledge has become a key competitive factor, which cannot be ignored. The main purpose of this bachelor thesis is to clarify and highlight today's required knowledge management as well as the key factors that ensure continuous knowledge creation.

The objectives of this bachelor thesis are: (1) to get familiar with the theory of knowledge management approaches and the continuous knowledge creation process in consideration of tacit knowledge capturing and codification. (2) To describe the current practical implication of knowledge management in Swiss and Finnish case companies, namely Nestlé S.A., KONE Corporation and Rovio Entertainment Ltd. based on quantitative and qualitative secondary data analyses. (3) To analyze the results by a direct theory-and-practice comparison as well as similarities and differences between the three case companies through external benchmarking. (4) To highlight the key factors or best practices and to provide recommendations to the case companies for future actions. The method used to gather information predominantly contains secondary data analysis, including selective reviews of literatures, internet research, professional blogs and published articles.

The main outcome shows the existence and importance of knowledge creation implication within the case companies in order to produce innovation. The central aspect in managing organizational knowledge is to understand how tacit knowledge can be captured and codified for future use, especially when it comes to the retirement of key knowledge workers. The interaction of tacit and explicit knowledge as well as tacit knowledge mobilization are one of the key factors to ensure a continuous knowledge creation. To enable an optimal condition for knowledge creation within the case companies, the author recommends the development of rewards and recognition for knowledge sharing as well as the creation of an organizational culture in which trust between employees and open communication can take place.

**Keywords**    Knowledge management, Knowledge creation, Tacit knowledge

**Pages**    48 p. + appendices 12 p.

CONTENTS

# 1 INTRODUCTION

## 1.1 Background for the Thesis

*"In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge…successful companies are those that consistently create new knowledge, disseminate it widely throughout the organization, and quickly embody it in new technologies and products."* (Nonaka 1991, 1.)

Economy of knowledge is already a reality in today's dynamic and competitive business environment. The upcoming lack of talent and the future retirement of the baby boomer generation are valid current issues that companies are faced with. For the last few years, human resource departments of several sectors have been heavily focused on building Knowledge Management herein after referred to as KM strategies to overcome the skills and talent gaps as well as to enable knowledge creation in their companies in order to produce innovation. (Livingston 2013.)

Employers usually draw on external replacements and recruitments, which often create higher costs. They often seek the perfect match to a job description rather than to seek new hires who demonstrate the ability to learn, and who fit with the organizations' own culture. For a further cost-cutting strategy, organizations consequently need to start with their own organizational knowledge base. This means, organizations need to find several ways to run their key businesses, including flexible operating models and organizational structures centered on their own employees' knowledge and skills. (Livingston 2013.)

Particularly know-how, also known as tacit knowledge, tends to be implicit, which is difficult to articulate, and mostly difficult to document. Tacit knowledge especially covers experiences from experts and senior workers, which is essential for an organization in order to provide competitive advantage. It is evident that companies need to know what kind of knowledge their employees possess, how it can be captured and shared. (Dalkir 2011, 9.)

Gaining a better understanding of ones' own talents and potential of their own people allows a company to identify the necessary knowledge and competencies that can be added to work in a more efficient and effective way (Livingston 2013). Making tacit knowledge available to the organizations' members should therefore be a key activity of a knowledge creation based-organization.

## 1.2 Research Question and Objectives for the Thesis

Due to the fact that employees' knowledge is the most valuable asset a company has, it is crucial and important to find out how it can be captured and shared in a sustainable way. It is also to find the premises that allows an organization to continually create new knowledge in order to compete successfully in a dynamic and uncertain environment. This bachelor thesis clarifies today's required knowledge management implications as well as the knowledge creation process, and therefore leads to the following research question:

*"How can the continuous creation of knowledge in an organization be ensured when considering the aspect of tacit knowledge?"*

The objective of this thesis is to emphasize and highlight the importance of knowledge management, considering the main aspect of tacit knowledge, which can be seen as an important part of the organizational culture. As a result of the analysis and evaluation of several existing theoretical frameworks, various key factors should be pointed out and listed as a general guide. The practical recommendations should guide the case companies through their current knowledge management implication and knowledge-creation process. It should help them bridge their hurdles, strengthen their organizations as well as to create competitive advantages.

The five main objectives of the thesis are defined as follows:

1. To get familiar with the theory of knowledge management and to describe the key roles for knowledge management application;

2. To gain a deeper insight of tacit knowledge, and to find out how it can be captured and converted to explicit knowledge to ensure a continuous knowledge creation process within an organization;

3. To describe the current situation by defining the practical implications of knowledge management in Swiss and Finnish case companies;

4. To analyze the results by a direct theory-and-practice comparison as well as similarities and differences between the three case companies, namely Nestlé S.A., KONE Corporation and Rovio Entertainment Ltd.;

5. To find out the key factors for knowledge creation implications and to clarify how tacit knowledge creation could be developed within an organization. This objective should also provide recommendations to the case companies for future actions to ensure a creation of a knowledge-based organization.

## 1.3    Research Methods

The methods used to acquire the needed information in order to fulfill the research question and to meet the objectives predominantly contains secondary data analysis.

The secondary data analysis for the theoretical part of the thesis is based on selective reviews of recent literatures, including internet researches, professional blogs and several latest published articles with focus on organizational knowledge, knowledge management models and existing theoretical approaches concerning tacit knowledge creation. By doing this, the author is aware of taking suitable secondary data for the evaluation in order to answer the research question and meeting objectives in terms of coverage, reliability, validity and measurement bias.

As primary literature sources, the author is referring to the book "Knowledge Management in Theory and Practice" by Kimiz Dalkir (2011). As revealed in the title, this book offers a perfect balance between the theoretical and practical view of knowledge management, including several tools and clear instructions. Dalkir also presents and contrasts various existing concepts that have become essential to the relatively new field. Given that this book represents a compendium of approaches and adoptable KM methods, it provides an ideal guide for educators, business managers as well as KM practitioners.

Another book that has a great impact on the field of knowledge management is "The Knowledge-Creating Company" by Ikujiro Nonaka and Hirotaka Takeuchi. This book was first published in 1995. Nonaka and Takeuchi are one of the first pioneers of stressing the need for highlighting on knowledge management. The book provides an inside look at how Japanese companies create new organizational knowledge by converting tacit into explicit knowledge. Furthermore, it points out the high importance of tacit knowledge as a key factor to success in order to produce innovation. Still, this book has not only advanced the literature in general, but also various Asians and Western corporate practices. Due to the strong focus on tacit knowledge and knowledge creation process, this book provides an essence foundation for the deliberate covered topic of the thesis. But to get a more critical point of view, the author also draws back on further authors who have investigated in the KM field.

The practical part of this thesis consists of an in-depth current state analysis and an external benchmarking analysis across industries. Moreover, it includes a strategic process and operational benchmarking with the goal of identifying best practices. The secondary data analysis includes quantitative and qualitative information. The gathered data are based on website visits, previous and recent companies' annual reviews, published reports as well as articles.

Since the author is conducting International Business in Finland as a part of the Double Degree Programme Switzerland-Finland, it is of great interest to compare companies' KM implications from both countries. Given the fact that Switzerland and Finland has been ranked among the top five most

innovative countries in the world in 2016, they may be seen as referencing countries relating to the knowledge creation process (Weller 2016.; Myers 2016.). It is necessary to catch on their key factors that enable them to gain such competitive advantages. Therefore, the benchmarking analysis consists three international companies of several sizes and several branches: Nestlé S.A. (Switzerland), KONE Corporation (Finland) and Rovio Entertainment Ltd. (Finland).

# 2   KNOWLEDGE MANAGEMENT

## 2.1   Definition and Purpose of Knowledge Management

**Definition of Knowledge Management**

There are many existing definitions of knowledge management since the subject came up as a new discipline. The number of over a hundred published definitions of knowledge management indicates that knowledge management is a multidisciplinary field of study that covers a lot of ground. Nevertheless, the field of knowledge management does suffer from the promotion of absolute truth. (Dalkir 2011, 5.)

It is important to note that knowledge management is a relatively young field. There is still no commonly accepted definition in several literatures and articles, which deals within the field of knowledge management. Therefore, the author is aware of respecting and taking in consideration of different perspectives as valuable resources while trying to understand and define the main nature of knowledge management.

Even though there are still some disagreements that occurs in conjunction with the creation of new knowledge, knowledge management in general can be seen as a discipline that provides an integrated methodology of identifying, capturing, evaluating, retrieving, and sharing all of an organization's knowledge assets in order to achieve efficiency, to gain competitive advantage and to ensure innovation. These assets contain explicit organizational knowledge as policies, databases and written documents, as well as tacit knowledge as uncaptured expertise and experience in individual employees. (Coyote Creek 2016.)

Drucker (1999) states knowledge management as *"the coordination and exploitation of organizational knowledge resources, in order to create benefit and competitive advantage"*, whereas Bukowitz and Williams (1999) directly link it to tactical and strategic necessities. In their eyes, knowledge management focuses more on the use and enhancement of knowledge based assets to enable the firm to respond to these issues. (Drucker 1999, 157; Frost 2016.)

Frost (2014) came up with a broader perspective that encompasses both the exploitation of existing knowledge assets and the initiatives involved in new knowledge creation and acquisition. *"Knowledge Management is the **explicit** and **systematic** management of vital knowledge – and its associated processes of creation, organization, diffusion, use and exploitation – a pursuit of business objectives"* (Frost 2014, 2).

It is also to note that knowledge management can be understood under different perspectives, including the business, intellectual and knowledge asset perspective as well as knowledge science perspective (Dalkir 2011, 5−6).

**The Purpose of Knowledge Management**

Wiig (1997) is emphasizing the high important role and the benefits knowledge management provides if keeping it constantly alive within the company.

*" The overall purpose of KM is to maximize the enterprise's knowledge-related effectiveness and returns from its knowledge assets and to renew them constantly... It is the role of KM to keep the body of knowledge alive and vibrant to secure the enterprise's well-being and long-term viability. The objectives of KM are 1. To make the enterprise act as intelligently as possible to secure its viability and overall success and 2. To otherwise realize the best value of its knowledge asset."* (Wiig 1997, 1−2.)

2.2    Organizational Knowledge

According to Davenport and Prusak (1998), knowledge originates and is applied in the minds of those individuals who know. They define knowledge as a fluid mixing of framed experiences, values, contextual information, and expert insight that provide a framework for evaluating and incorporating new experiences and information. Knowledge in organizations, however, becomes embedded, which can be found not only in documents or databases, but in organizational routines, practices, processes as well as norms. Moreover, it can be seen as a part of the organizational culture. (Dalkir 2011, 60−61.)

Not only Davenport and Prusak (1998) refer to the main distinctions between data, information and knowledge, but they argue that information can be transformed into knowledge through comparison, consequences, connections as well as conversations. Furthermore, they emphasize that activities concerning knowledge creation take place within each individual as well as through interaction with other people, and that knowledge has to be considered to be one of the most important corporate assets. (Dalkir 2011, 60−61.)

2.3    Integrated Knowledge Management Cycle

To be able to manage knowledge within the company, it is necessary to understand all the relevant activities and functions throughout the KM cycle. But since the thesis' scope is to focus on knowledge creation, this chapter of the paper confines itself to the main creation aspect. In this sense, the author draws on an integrated KM cycle created by Dalkir (2011), which summarizes the key activities of several existing approaches. The integrated KM cycle provides an overview of relevant steps that encompass the capture, creation, codification, sharing, accessing, applying reuse of knowledge within and between organizations. The cycle is a developed approach synthesis of Meyer and Zack (1996), Bukowitz and Williams (2000), McElroy (1993, 2003) and Wiig (1993). (Dalkir 2011, 51−54.)

According to Dalkir, the following ten major knowledge processing steps make up the integrated KM cycle, which can be classified within three major stages. These ten steps enable an effective knowledge management within an organization:
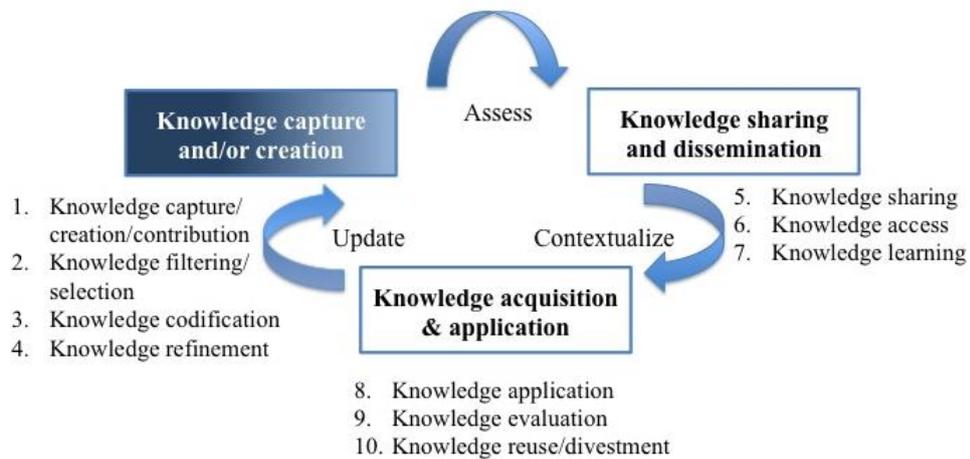


Figure 1    Integrated KM cycle adapted by Dalkir (Dalkir 2011, 51−54).

As shown in figure 1, knowledge content is assessed in the first to the second stage of the cycle. In order to be understood (acquired) and used (application), knowledge is made contextual. A cycle arises because the third step will feed back into the first to update the knowledge content. (Dalkir 2011, 53−54.)

The first stage of the KM cycle indicates the knowledge creation process, which has to be focus on in order to answer the research question. Knowledge capture is the identification and codification of existing internal knowledge (know-how) and external knowledge from the environment. Knowledge creation consist the development of new knowledge to produce innovation. In this manner, new knowledge is inventoried that did not have an existence in the company before. (Dalkir 2011, 53−54.)

To produce the expected knowledge management benefits and to have a better coordination of these major activities that contribute to knowledge creation, a conceptual framework has to be provided to operate within. Therefore, two major frameworks will be introduced in chapter 4.2.

## 3 TACIT KNOWLEDGE

### 3.1 Definition of Tacit Knowledge

*" We know more than we can tell."* − Polanyi (1966) (Dalkir 2011, 9.)

To understand the concept of tacit knowledge, it requires the understanding of the nature of knowledge. By trying to understand, the first question that arises in this context is: what is knowledge?

Nonaka and Takeuchi (1995) started with a more philosophical and traditional definition, which interpret knowledge as "*justified true belief*" and "*a dynamic human process of justifying personal belief toward the truth*". (Nonaka & Takeuchi 1995, 58).

Another consistent definition, which is still used is proposed by Davenport and Prusak (1998), who defined knowledge as "*a flux mix of framed experiences, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms*" (Davenport & Prusak 1998, 5).

In general, knowledge is categorized into two primary dimensions: tacit (implicit) and explicit knowledge (Nonaka & Takeuchi 1995, 8; Den Hertog & Huizenga 2000, 32−36; Young 2008, 4−5; Dalkir 2011, 9−11). Choo (1998) also discusses a third type of knowledge: cultural knowledge, which is not codified but diffused over relationships that connects a group. Although other authors such as Nonaka and Takeuchi (1995) do not mention cultural knowledge, they however distinguish between individual and collective knowledge, which can be related to cultural knowledge. (Popadiuk & Choo, 2006, 307).

Tacit knowledge, which is also known as implicit knowledge, is very difficult to articulate and is not that easily expressed in words or numbers. It is highly personal and therefore, difficult to formalize and communicate to others. By postulating, "We can know more than we can tell", Polanyi (1966) did refer to the not easily expressible aspect of tacit knowledge (Nonaka 1991, 5; Nonaka & Takeuchi 1995, 8−11; Dalkir 2011, 9).

A good example to explain tacit knowledge is probably the concept of riding a bicycle. For example, the demonstration of riding is not the difficult part but the explanation of riding, the action itself. As one can see, tacit knowledge is rooted in action. It is either inherent and tends to reside in the heads of individuals or practitioners. It finds its roots in contexts, experiences, practices, values, ideals, and commitments to a specific context as well as emotions. (Nonaka 1991, 5; Nonaka & Takeuchi 1995, 8−11.)

Moreover, tacit knowledge can be divided into further two dimensions, which enclose the technical and cognitive aspect of knowledge. The technical dimension covers informal skills such as know-how, whereas the cognitive dimension consists of mental models, beliefs, and all the taken-for-granted perceptions that cannot be easily expressed. These implicit models shape the way we perceive the world around us. (Nonaka 1991, 5; Nonaka & Takeuchi 1995, 8−11.)

In contrast, explicit knowledge signifies knowledge that has been captured in a written or tangible form. It is codified and expressed knowledge that comes from structured sources, such as database, documents or recordings. The following table summarizes the main characteristics of tacit and explicit knowledge (Nonaka & Takeuchi 1995, 8−11):

Table 1    Characteristics of tacit and explicit knowledge adapted from Nonaka & Takeuchi and Al-Khouri (Nonaka & Takeuchi 1995, 8−11; Al-Khouri 2014, 19−22).

| Characteristics of tacit and explicit knowledge | |
|---|---|
| **Tacit knowledge** | **Explicit knowledge** |
| Informal and unstructured | Formal and structured |
| In-grained – born with | Acquired |
| Sensory and perceptional | Objective and vivid |
| Subjective and personal | Codified |
| Uncodified | Storable |
| Not easily transmittable | Easily transmittable |

### 3.1.1   Two Dimensions of Knowledge

To facilitate the understanding of the above two dimensions of tacit and explicit knowledge, the author illustrates the two dimensions of knowledge based on the iceberg analogy:
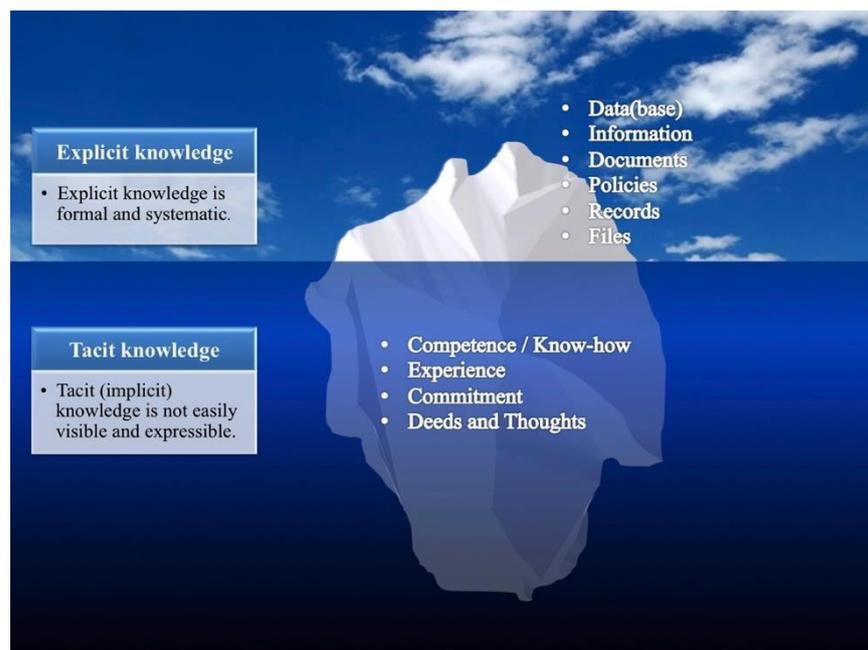


Figure 2    The two dimensions of knowledge based on the iceberg analogy adapted from Al-Khouri (Al-Khouri 2014, 20).

Nonaka and Takeuchi (1995) recognized that the formal and systematic knowledge represents only the iceberg's tip of the entire body of knowledge, which easily can be communicate and shared within an organization. However, the most challenging part is the invisible part of the iceberg that includes the organizational intangible assets such as competence respectively know-how, experience, personal commitment, deeds and thoughts. (Nonaka & Takeuchi 1995, 8.)

One of Polanyi's thesis is that all knowledge is tacit or rooted in tacit knowledge. This thesis obviously highlights the importance of sufficiently considering the tacit dimension of the iceberg, due the fact that approximately 80 percent of our knowledge is in tacit form as individuals, groups as well as organizations. This indicates that only 20 percent of the valuable knowledge is in an explicit form. In order to create knowledge and therefore produce innovation, the tacit/explicit knowledge mobilization and the individual/group/organizational sharing and diffusion have to take place. (Dalkir 2011, 61−62.)

It is important for any company to understand and distinguish between tacit and explicit knowledge, to enable knowledge creation within its own company. Additionally, it is to point out that tacit knowledge and explicit knowledge are not totally separate but equally complementary entities. To produce and enable creative actions, these two dimensions of knowledge should interact together and interchange into each other. It is assumed that knowledge can be created and expand through social interactions between these two knowledge dimensions, which is called "knowledge conversion". It is important to highlight the "social" aspect of this conversion that works only between individuals as a group. (Nonaka & Takeuchi 1995, 61.)

The question that arises in this chapter is how to set out tacit knowledge in a tangible form so that it can be transformed into explicit knowledge. Furthermore, it is to find out which mechanisms are needed in order to make tacit knowledge visible and available to all members of the organization, as it is an undocumented part of the company's property. These aspects as well as the aspect of knowledge conversion will be discussed below as well as in the following chapter 4.2 by exposing two well-known management models. The models will highlight the interaction and interchange between tacit and explicit knowledge, and therefore enable and promotes knowledge creation within an organization.

3.2    Making Tacit Knowledge Available for the Organization

As the tacit knowledge is evidence and the base of every knowledge, it has to be brought out somehow so it can be shared within the organization. The central activity of the knowledge and innovation creating company is therefore to make this tacit knowledge available to others to ensure competitive advantage (Sánchez et al. 2012, 388).

In business communities, there are several techniques and methods that can bring out individual's expertise such as learning by observation or example (perceiving, reflecting and imitating existing procedures), interviewing experts to capture best practices, work in group-pairs, creating models, analogies and metaphors, brainstorming sessions, learning histories, job rotation, mentoring and apprenticeship. (Nonaka & Takeuchi 1995, 64−70; Von Krogh, Roos, & Klein 1998, 236; Davenport & Prusak 1998, 81.)

There are several reasons observed in empirical findings that set barriers to knowledge transfer. The reasons can be find in the lack of common language and unaware of one's own knowledge (Haldin-Herrgard 2000, 361), lack of motivation as well as unwillingness to share tacit knowledge (Stenmark 2001, 12, 31).

According to Rainer & Pradhan (2004), knowledge transfer depends on time, scope, complexity, and strategic importance, as it defines the organization´s effort and resources. For e successful tacit knowledge elicitation, capturing and transfer, the organization need to consider pedagogical skills, teaching and learning capabilities as well as social networks. (Bajracharya & Masdeu 2006, 24.)

3.3    Organizational Culture

The evolution of tacit knowledge requires an open organizational culture as well as interactions between individuals (Sánchez et al. 2012, 388). Therefore, it is important to shortly emphasize the aspect of culture that can be seen as a premise to create a knowledge-based company.

Schein (1990) defines organizational culture as *"a pattern of basic assumptions, invented, discovered, or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore is to be taught to new members as the correct way to perceive, think, and feel in relation to those problems"*. (Schein 1990, 111.)

Also Choo (1998) emphasizes the cultural aspect of knowledge, which is embedded in an organization as artefacts, values, and underlying assumptions that connects people (Popadiuk & Choo, 2006, 307). Activities that especially revolve around socialization, which can be related to the aspect of knowledge sharing, require an understanding of one's own organizational culture (Schein 1990, 117-118).

# 4   ORGANIZATIONAL KNOWLEDGE CREATION

## 4.1   Knowledge Creation at the Organizational Level

The key idea of organizational knowledge creation drew on several studies of knowledge creation in innovative Japanese Companies, first published by Nonaka in 1991. Nonaka and Takeuchi (1995) emphasizes that it is essential to create new knowledge in order to produce innovation. According to them, organizational knowledge creation is defined as: "*The capability of a company as a whole to create new knowledge, disseminate it throughout the organization and embody it in products, services, and systems*". (Nonaka & Takeuchi 1995, 58.)

Innovation as a process does not simply contains "processing information" from the outside in perspective to solve organizational problems and adapting to a dynamic environment. Organizations usually create new knowledge and information from the inside out perspective. By doing this, organizations try to determine both problems and solutions, and thus to re-create their own environment. (Nonaka & Takeuchi 1995, 56−57.)

The following approach to organizational knowledge creation has its own "epistemology" (theory of knowledge). The cornerstone of Nonaka and Takeuchi's epistemology requires the distinction between tacit and explicit knowledge, which were presented in the previous chapter (Figure 2). The key to create new knowledge lies in tacit knowledge that has to be mobilized and converted. Furthermore, the theory of organizational knowledge creation has its own "ontology" as well, which involves four levels of knowledge creating entities – individuals, group, organization and inter-organization (Figure 3). (Nonaka & Takeuchi 1995, 56−57.)
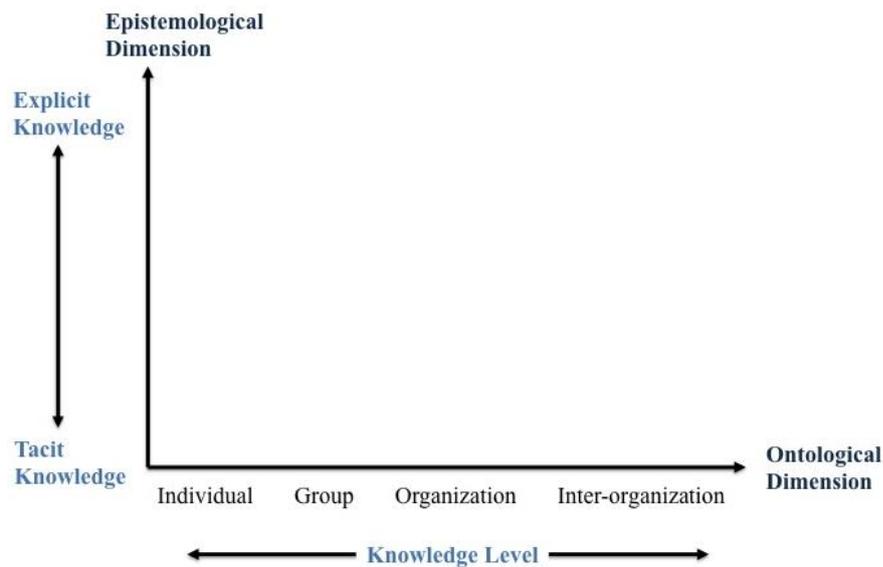


Figure 3      Two dimensions of knowledge creation (Nonaka & Takeuchi 1995, 57).

Figure 3 presents the epistemological and ontological dimensions of knowledge creation, in which a "knowledge-creation spiral" takes place. A spiral arises, when tacit knowledge dynamically interacts with explicit

knowledge and when this interaction elevates from a lower ontology level to a higher level. (Nonaka & Takeuchi 1995, 57.)

This approach stems from a more tacit-driven approach, which differs from a traditional Western culture based approach that focuses more on the expressible knowledge, and therefore considers the knower and the known as isolated entities. Within these two dimensions of knowledge creation, knowledge can also be seen as "group knowledge" that can be easily transformed, mobilized, transferred and shared. This view is also supported by Popadiuk & Choo (2006), who see knowledge as dynamic and relational, which depends upon the people involved rather than on absolute truth or artifacts (Popadiuk & Choo, 2006, 307). To develop new operational and cultural tools to facilitate knowledge creation within organization, it is vital to integrate the two approaches from the cultural, epistemological as well as the organizational perspectives. (Dalkir 2011, 65.)

In addition to the two-dimensional aspect, it is to mention that several premises and conditions have to be given in order to enable the process of organizational knowledge creation. According to Nonaka and Takeuchi (1995), these conditions contain:

- *Organizational intention* such as an organization's aspiration and goals, which refers to the clear corporate strategy and vision;

- *Autonomy* of the entire organization's members to generate greater flexibility;

- *Fluctuation and creative chaos* that refer to the interaction between the organization and the external environment;

- *Redundancy* that promotes the sharing of tacit knowledge, and therefore speeds up the whole creation process;

- *Requisite variety* refers to the internal organizational diversity as well as the flat and flexible organizational structure, in which different units are linked together. (Nonaka & Takeuchi 1995, 73−83.)

## 4.2    Knowledge Management Models

In today's highly global and dynamic business world, a company's understanding of the management of knowledge and learning is strategically essential in order to create and maintain an effective learning process. Informal learning settings as well as learning in workplace in general could be supported with several knowledge management models, which build a robust theoretical foundation as a basis of any KM initiative (Dalkir 2011, 59).

According to Dalkir (2011), there are eight holistic existing theoretical approaches of knowledge creating and learning in use today, which are listed in the table below:

Table 2    Eight knowledge management models according to Dalkir (Dalkir 2011, 59−90).

| Year | Knowledge Management Models |
|------|----------------------------|
| 1995 | The von Krogh and Roos Model of Organizational Epistemology |
| 1995 | The Nonaka and Takeuchi Knowledge Spiral Model |
| 1993 | The Wiig Model for Building and Using Knowledge |
| 1998 | The Choo Sense-Making KM Model |
| 1998 | The Boisot I-Space KM Model |
| 2000 | Intelligent Complex Adapting System (ICAS) Models of KM |
| 2000 | The European Foundation for Quality Management (EFQM) KM Model |
| 2005 | The Inukshuk KM Model |

These eight KM models represent a conceptual framework that forms the infrastructure for all knowledge management activities (KM cycle), to ensure a clear coordination to produce the expected KM benefits. The previous eight listed frameworks are holistic approaches to KM that try to facilitate the understanding of the complex, subjective and dynamic nature of knowledge. (Dalkir 2011, 59−60.)

All mentioned KM models point out the aspect of knowledge creation considering the aspect of the two epistemological and ontological dimensions in a different but complementary way. Therefore, there is no prioritization of one model over another. So far, they all have been implemented and field-tested under high criteria such as reliability as well as validity (Dalkir 2011, 62).

However, in order to not exceed the framework of the thesis, the author's outline is limited to two models, namely the well widespread and established SECI model by Nonaka and Takeuchi as well as the Choo Sense-Making KM Model. The author, however, has priorities these two models among the eight named models, due the fact that they highly focus on the knowledge creation process, which is relevant and of great value in the context of the thesis.

### 4.2.1   Knowledge Spiral Model by Nonaka and Takeuchi

The centrepiece of Nonaka and Takeuchi's approach is the recognition that creating new knowledge is far from "processing" objective knowledge. Rather organizational innovation depends on tapping the highly subjective and tacit insights of individual employees' intuitions and hunches. (Dalkir 2011, 64.)

The main point is that companies or organizations should make those insights visible and available for their own use. The best way to do it is to describe those insights in the form of metaphors, symbols and slogans. Nonaka and Takeuchi's model is anchored in a holistic model of knowledge creation, in which two main spectrums are involved in order to create new knowledge and produce innovation. These two spectrums contain the "tacit/explicit dimension of knowledge" (the epistemological dimension) and the "individual/group/organizational/inter-organizational dimension of knowledge sharing and diffusion" (the ontological dimension). (Nonaka 1991, 3; Dalkir 2011, 64.)
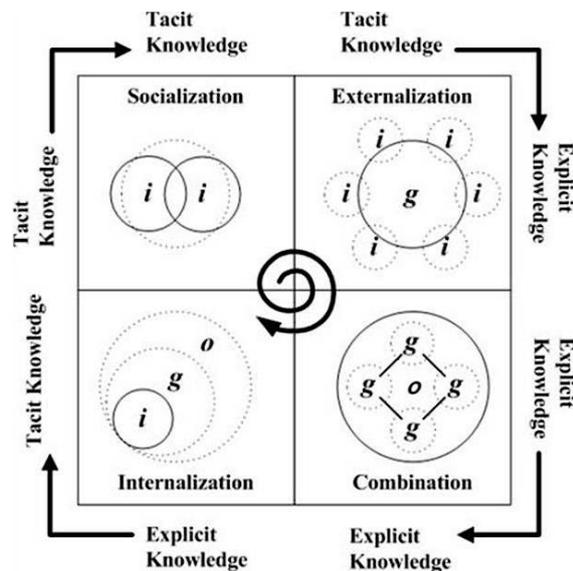


*Legend:*        *i  – individual*
                 *g  – group*
                 *o  – organization*

Figure 4      The Nonaka and Takeuchi Knowledge Spiral (Comindwork n.d.).

As shown in figure 4, there are four modes of knowledge conversion, which will be discussed in detail below:

1. From tacit knowledge to tacit knowledge: socialization;
2. From tacit knowledge to explicit knowledge: externalization;
3. From explicit knowledge to explicit knowledge: combination;
4. From explicit knowledge to tacit knowledge: internalization. (Nonaka 1991, 4−5.)
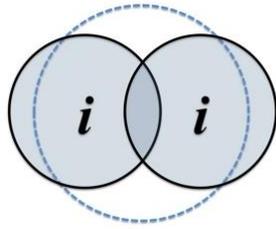
**Socialization** (from tacit-to-tacit): Nonaka (1991) argues that new knowledge always starts with the individual. It is an individual's personal knowledge, which transforms into organizational knowledge that is valuable to the organization as a whole. One individual often shares tacit knowledge directly with another without using languages. Nonaka & Takeuchi 1995, 62−64.)

Tacit skills can be shared through observations, imitation as well as practice. As a result of this "socialization" process, tacit knowledge can become one's own tacit knowledge base. In other words, one can be "socialized" into a craft. For example, in the business context, on-the-job training, brainstorming camps, knowledge days, knowledge cafés, and sharing experiences can be seen as a socialization processes. However, socialization primarily aims at the sharing aspect of tacit knowledge. It is more connected and related with group processes of sharing and organizational culture. Therefore, on its own, it is rather a limited form of knowledge creation. In this stage of mode, tacit knowledge does not become explicit, and therefore cannot be easily leveraged by the organization, as it is very time-consuming to disseminate. (Nonaka 1991, 4−5; Nonaka & Takeuchi 1995, 62−64, 70; Dalkir 2011, 67.)
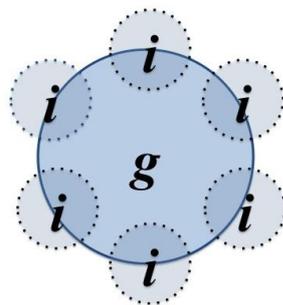
**Externalization** (from tacit-to-explicit): Externalization is the quintessential knowledge creation process of articulating the foundation of tacit knowledge into explicit knowledge. In this conversion mode, tacit knowledge becomes explicit in form of metaphors, analogies, concepts, hypothesis or models, thus it becomes possible to be shared and transferred. While conceptualizing an image, its essence is often expressed in language by writing it down. (Nonaka & Takeuchi 1995, 64−67.)

So "writing" is an act of converting tacit knowledge into articulable and expressible knowledge. But gabs and discrepancies may exist between images and expressions. Therefore, expressions are often inconsistent and inadequate. Nevertheless, these gabs and discrepancies may promote "reflection" and interaction between individuals, which produces new ideas and therefore new concepts that may lead to new products and services. Externalization is therefore typically related to the concept-creation process, which refers to dialogue and collective reflections. At this stage, an intermediary could be useful, due the fact that transforming one type of knowledge into another is a very difficult act. According to Nonaka and Takeuchi (1995), this mode of conversion is the key to knowledge creation, because it creates new and explicit concepts from tacit knowledge. A sequential use of metaphor, analogy and models enables tacit knowledge to be converted into explicit knowledge in an effective and efficient way. (Nonaka 1991, 5; Nonaka & Takeuchi 1995, 64−67; Dalkir 2011, 67−68.)
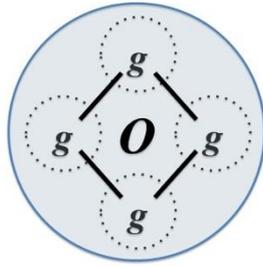
**Combination** (from explicit-to-explicit): According to the organizational theory, combination is anchored in information processing. This mode of knowledge conversion involves combining different pieces of available explicit knowledge into a new form. The process of combination can be supported through several media such as documents, telephone conversations, meetings, computerized communication networks as well as large-scale databases. (Nonaka & Takeuchi 1995, 67−69.)

New knowledge is created by reconfiguration of existing knowledge through sorting, adding, combining and categorizing. An example of combination is when a controller has to collect information from throughout the company to create a financial report. In that sense, the report consists new knowledge because it synthesises existing knowledge from several sources, which are added and combined as a new whole. In a formal education context, a Bachelor of Business Administration (BBA) education for example, often takes the form of this knowledge creation. It is not new knowledge, which is created per se, it is more a new combination of something which exists already. In the business context, middle management plays a big role in creating new concepts as the process of combination is usually seen as middle managers' duty to implement corporate visions and business or products concepts. However, combination has its own limit and does not really enable an extension of an organization's knowledge base. The main key lies in the interaction between tacit and explicit knowledge that can create something big and therefore produce innovation, which is of high importance for the organization. (Nonaka 1991, 5: Nonaka & Takeuchi 1995, 67−69: Dalkir 2011, 68−69.)
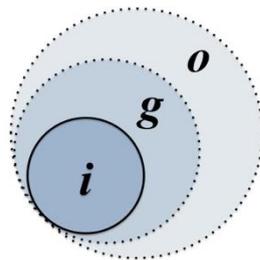


**Internalization** (from explicit-to-tacit): Internalization consists the process of embodying new explicit knowledge into tacit knowledge in the form of shared mental models or technical know-how. It is closely related to organizational learning, which contains "learning by doing". To convert explicit knowledge into tacit knowledge, verbalizations of knowledge into documents, manuals or oral stories are needed. (Nonaka & Takeuchi 1995, 70.)

Internalization of experiences can best be processed through documentation. Additionally, documentation helps to enrich one's own tacit knowledge and thus facilitate the explicit knowledge transfer to others.
In the business context, internalization can be found for example in "best practices" and action such as documentations of customer complaints, which are usually stored in an organizational database to "re-experienced" and therefore to produce and offer problem solutions. In addition to that, internalization works without "re-experiencing" other experiences. This is an example of success stories about the own company or leaders of the company, which are told to the organization's members. Stories have the power

to change experiences directly to a tacit mental model. By sharing this tacit mental model by the majority of the organization's members, tacit knowledge becomes part of the organizational culture. (Nonaka & Takeuchi 1995, 70.)

As one can see, innovation only can emerge when both tacit and explicit knowledge continuously interact together. Nonaka and Takeuchi argue that an organization cannot create knowledge by itself. As noted before in the socialization mode of knowledge creation, individuals' tacit knowledge is the foundation of organizational knowledge creation. (Nonaka & Takeuchi 1995, 72.)

As illustrated in figure 3, organizational knowledge creation is a spiral process, including the mobilization of tacit knowledge which is amplified through the four modes of knowledge conversion and which starts from its origin - the individual level that crosses communities and several organizational boundaries. (Nonaka & Takeuchi 1995, 72.)
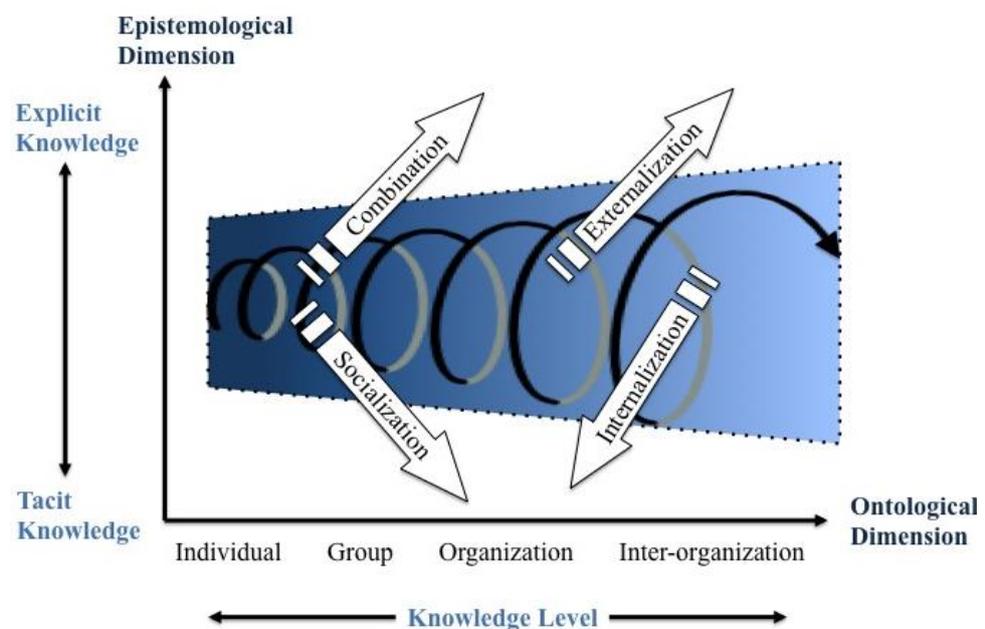


Figure 5     The spiral of organizational knowledge creation. Adapted from Nonaka and Takeuchi (Nonaka & Takeuchi 1995, 57, 73).

Creating a new product or new services contains interactions of various people with different backgrounds and mental models. The knowledge creation process should be understood as a social process in which knowledge conversion is interactive. In order to create organizational knowledge, and to successfully implement this knowledge spiral, the entire knowledge conversion process (socialization, externalization, combination and internalization) has to restart. However, the two steps that can be seen as the most challenging are those involving a change of the knowledge-type, namely externalization and internalization. These two modes of knowledge conversion contain several mental models, personal beliefs and values, a process of self-reinvention as well as a process of reinventing one's group and the organization, and therefore oblige a high degree of personal commitments. (Dalkir 2011, 70.)

## 4.2.2 The Choo Sense-Making Model

Choo (1998) adopted, based on Weick (2001), Nonaka and Takeuchi (1995) as well as Simon (1957), a sense-making approach that focuses on knowledge creation and decision-making. The Choo knowledge management model focuses on how information elements are fed into organizational actions, especially how individuals have to cultivate an understanding of the knowledge that is available in the organization. (Dalkir 2011, 73.)

According to Choo (1998), "knowing organizations" are those, which use information strategically in the context of three phases, namely, (1.) sense making, (2.) knowledge creation and (3.) decision making. Each of the three phases has an outside stimulus or trigger (Dalkir 2011, 73). These three phases are highly interconnected and therefore important to the company's vision, its knowledge creation potential, and its commitment into taking knowledge creation to the ultimate consequences (Neto et al. 2009, 595).
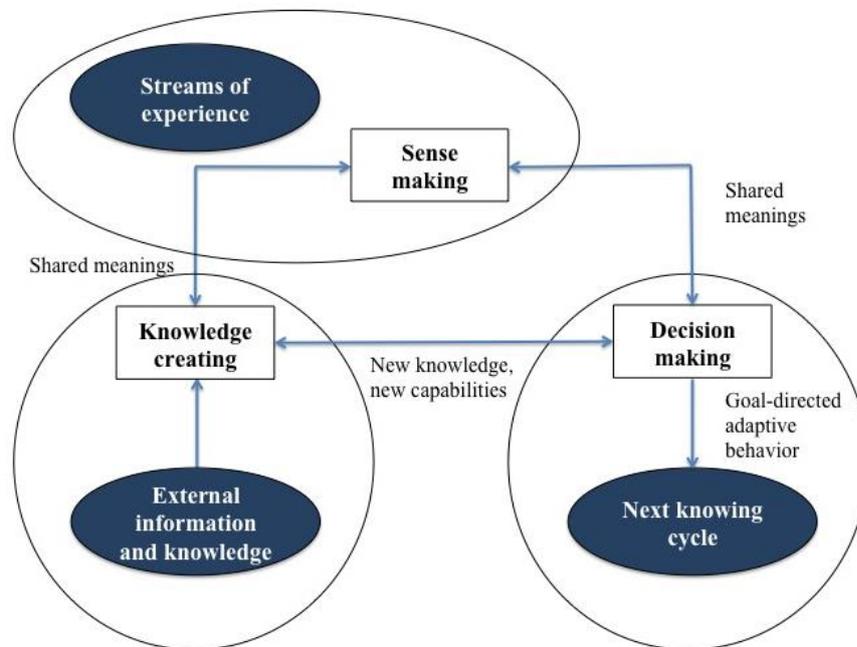


Figure 6     The Choo Sense-Making Model (Dalkir 2011, 73).

The stage of **sense making** aims to make sense of the information streaming from the external complex and dynamic environment. At this stage, organizations identify and set their priorities to filter the relevant and needed incoming information from the outside world. (Dalkir 2011, 73−74.)

The main goal of this phase is to ensure that organizations adapt themselves in a dynamic environment through activities of mining, interpretation and retention of appropriate information as well as sense-making experiences. By filtering, respectively selecting and retaining relevant information, companies are gaining a deeper understanding of changes, trends or scenarios about their customers, suppliers, competitors as well as other external actors, and thus enable them to reduce uncertainty as well as ambiguity associated with unclear defined information. (Neto et al. 2009, 595.)

**Knowledge creation** can be seen as the transformation process of personal knowledge between individuals. This phase allows an organization to create, organize and process information, in order to generate new knowledge through organizational learning such as dialog, discourse, sharing and storytelling. Knowledge creation is directed by a knowledge vision of a current situation "as if" as well as a future, desired state "to be". Through provision of new knowledge and competencies, this phase amplifies the range of potential choices in decision-making. The new generated knowledge offers innovative strategies to decision-making process and therefore extends the organization's capabilities to make rational decisions. Choo (1998) draws upon the Nonaka and Takeuchi (1995) model for a theoretical basis of knowledge creation. (Neto et al. 2009, 595; Dalkir 2011, 74−75.)

**Decision making** is located in rational decision-making models, driven by the search for good alternatives rather than seeking for the optimal problem solution. This phase is about choosing the best and plausible option or decision based on the organization's own strategy. As advocated by Simon (1957), organizational decision-making is constrained by a bounded rationality principle (Simon 1957, 198). (Neto et al. 2009, 595; Dalkir 2011, 75.)

According to the bounded rationality theory by Simon (1976), individuals in a decision-making process can be limited by factors such as:

- Bounds in knowledge, skills, habits, and responsiveness;
- Availability of personal information and knowledge;
- Values and norms held by individuals that may be different from those of the organization. (Dalkir 2011, 76.)

The Choo Sense-making model finds its strength especially in the holistic treatment of key knowledge management cycle processes that highly emphasizes the aspect of organizational decision-making as well. Therefore, this model is seen as one of the more realistic models of knowledge management as the model represents organizational actions with high fidelity (Dalkir 2011, 76).

To sum up, each of the two presented models offers a valuable theoretical basis in understanding knowledge management in today's organizations. What the two models have in common is that they are holistic approaches. They also share a connectionist to facilitate the understanding of knowledge's nature as a complex adaptive system that contains knowers, the organizational environment and the organizational knowledge-sharing network (Dalkir 2011, 89).

## 4.3 Knowledge Capture and Codification Techniques

Following the given premises and fundamental frameworks (KM models), in which the KM activities (integrated KM cycle) have to operate, the demand of the methods used arises to carry out those activities in an efficient and effective manner. Hence, a higher focus in this chapter is addressed to the first stage of the integrated KM cycle that focuses on knowledge capture and creation. This chapter aims to offer a list of major techniques and tools used to elicit tacit knowledge as well as to trigger the creation of new knowledge at the individual, group and organizational level.

### 4.3.1 Techniques at the Individual and Group Level

In the knowledge capture stage, a distinguish needs to be made between existing knowledge in the organization and the unknown area of knowledge that allows a creation of new knowledge. It is also to point out that the capturing stage not simply contains the technological aspect. Nevertheless, information technology plays a small part. It is especially needed to ensure the availability of required information. The presented capturing approach depends more on an organization's culture, its process and the problem-solving aspect. (Dalkir 2011, 98−99.)

A number of methods used to capture tacit knowledge from individuals and groups are listed as follows:

Table 3    Knowledge capture techniques adapted from Dalkir (Dalkir 2011, 99−120).

| |
|---|
| • **Interviewing experts** |
| • **Learning by being told** |
| • **Learning by observation** |
| • Ad hoc sessions |
| • Road maps |
| • Learning histories |
| • Action learning |
| • E-learning |
| • Learning from others through business guest and benchmarking against best practice |

The tools enable knowledge creation, which has to be leveraged across various channels. Those channels may include for example discussion forums, e-mail, phone and other online channels. As one can see, the variety of the presented techniques stem not only from the KM field but also from fields such as sociology or artificial intelligence, more precisely, from the development of expert systems. Such systems are designed to allow an expert performance, particularly due the incorporation of know-how gathered from experts. The term "knowledge acquisition" refers to several tools correlated with developing an expert system, namely protocols, observations, structured interviewing, questionnaires and simulations. (Dalkir 2011, 99−102.)

In business settings, KM is about finding ways to convert tacit knowledge to explicit knowledge. Besides that, it also includes the process of creating

expert directories to promote knowledge sharing through group interactions. The main goal is to transfer valuable expertise from a knowledge source (e.g. expert) to a knowledge repository (e.g. corporate memory or intranet). (Dalkir 2011, 99−102.)

Nowadays, the baby boomers' retirement in many organizations raised the issue of continuity knowledge. To overcome this issue, the author is outlining the first three major approaches from the previous presented techniques, namely 1. Interviewing experts, 2. Learning by being told and 3. Learning by observation. These people-focused techniques can be used successfully for knowledge acquisition at the community of practice level (Dalkir 2011, 110). In order to help select the best technique combination for several capture situations, the following section presents a guideline on the advantages and downsides of each three tools.

### Interviewing Experts

Table 4    Two techniques to optimize the interviewing of experts. Adapted from Dalkir (Dalkir 2011, 104−110).

| Techniques | Description | Premises | Advantages | Disadvantages |
|---|---|---|---|---|
| **Structured interviewing** | • One of the most used tools<br>• Usually done when experienced staff near retirement age<br>• Interviewer outlines specific goals & questions (open & closed questions)<br>• Include reflective listening techniques (paraphrasing, clarifying, summarizing & reflecting feelings) | • Interviewers have to be skilled at communicating & conceptualizing<br>• Interviewees have to be introspective, patient and communicative | • Yields specific data that is often declarative in nature<br>• Clarifies & refines knowledge that has been elicited during unstructured interactions<br>• Open questions are broad & encourage free response<br>• Expert's use of key vocabulary, concepts, & frames of reference are observable | • Limited type, level & amount of information due to (strong) closed questions<br>• Follow-up sessions are needed (=> time consuming) to target a more detail level of knowledge content |
| **(Organizational) Stories / Storytelling** | • Detailed narrative of management actions, employee interactions & key events that are communicated within the company in an informal way<br>• A use of fables<br>• A tool for capturing, coding & transmitting valuable knowledge | • Authentic, believable & compelling stories<br>• Need to evoke some response<br>• Provide a moral such as "lessons to be learned"<br>• "True is better than invented" | • Rich context<br>• Remains longer in the conscious memory due to created memory traces<br>• Increase organizational learning<br>• Common rule sets & values can be communicated<br>• Create a sense of belonging | • Not all narratives are good knowledge-sharing stories<br>• Challenges in making a good story |

### Learning by Being Told

Table 5    Three techniques to optimize the learning by being told. Adapted from Dalkir and Pappas (Schank 1995.; Dalkir 2011, 110−112; Pappas 2016.).

| Techniques | Description | Premises | Advantages | Disadvantages |
|---|---|---|---|---|
| **Domain & tasks analysis** | • Characterizing an expert's key tasks considering the aspect of: required knowledge/skills, difficulty, criticality, consequences of error, frequency, interdependencies with other tasks & individuals | • Experts have to be motivated in expressing and refining their knowledge and skilled at communicating<br>• Requirements on the observer are analytical, communicative & conceptual skills | • Offers a comprehensive look at every aspect of key tasks & processes<br>• Reduces on-the-job mistakes and increases productivity<br>• Identifies the needed skills & resources for the key tasks<br>• Improve existing processes & procedures | • Effort and expenditure depends on the duration of the tasks<br>• Preparatory work needed: Analysing the tasks itself which is not always possible (=> interviews) |
| **Process tracing & Protocol analysis** | • Adapted from psychological techniques<br>• "Thinking-aloud-method while solving a problem or undertaking a task | | • Provides several types of knowledge such as the action taken, considered alternatives, decisions taken | |
| **Simulations** | • May include software tools, models & maps | • To increase the effectiveness, it is to use in later stages of knowledge acquisition ("learning by doing") | • Allows a validation, refinement & completion of the knowledge capture process | • Not always able to re-create real-life situation<br>• Simulators can be costly, requires software updates & maintenance |

### Learning by Observation

Table 6    Learning by observation. Adapted from Young and Dalkir (Young 2008, 56−58; Dalkir 2011, 113).

| Techniques | Description | Premises | Advantages | Disadvantages |
|---|---|---|---|---|
| **Learning by observation** | • Presenting a sample problem, scenario or case study to the expert, which he/she can solve<br>• It's about observing & identifying expertise through several mediums such as audio and/or video | • Requirements on the observer are analytical & conceptual skills<br>• Observer has to be attentive & communicative<br>• Trust between the participants | • Observation & identification of expertise (demonstration of knowledge application)<br>• Simple recording equipment (e.g. digital camcorders) can capture a big range of information & demonstrations<br>• Recordings can be mined repeatedly & used for future references | • Many individuals feel uncomfortable if they know they are being recorded<br>• Recording can make the interviewee guarded in what he/she says |

In practice, a combination of all three approaches is required to achieve the best results. All three knowledge acquisition techniques involve the key steps such as identification, conceptualization and codification. Codification means to transform valuable knowledge as validated content into an explicit form that can be shared throughout an organization. Recordings and transcripts should be therefore organized in a database (e.g. intranet), where existing and future staff can access to it. (Dalkir 2011, 110, 117−118.)

### 4.3.2 Techniques at the Organizational Level

The process of knowledge acquisition on the organization level differs from those previous presented tools in a qualitative way. The organizational knowledge capturing process takes place on a macro level. According to Malhotra (2000), there are four main organizational knowledge acquisition processes, which will be described in the following table (Dalkir 2011, 118−120):

Table 7    Four organizational knowledge acquisition processes by Dalkir (Dalkir 2011, 118−121).

| 4 organizational knowledge acquisition processes | Description and Examples |
|---|---|
| 1. Grafting | • Direct passing or migration of knowledge between organizations through mergers, acquisitions or alliances<br>• Gaining access to new tasks - or process-specific knowledge |
| 2. Vicarious learning | • Observation of other organization's procedures and techniques<br>• The obtained knowledge is more tacit than that one which occurs through grafting |
| 3. Experiential learning | • Knowledge-creation by doing and practicing<br>• Experiences are repetition-based<br>• Allows a simple codification and transferring of tacit knowledge |
| 4. Inferential processes | • Learning by doing, interpretation of events, changes and outcomes related to the undertaken activities and decisions |

The instruction also applies here again that the outcome of the previous four presented capture approaches should be organized in a knowledge repository, more precisely, in a corporate memory or archives. As seen in Nonaka and Takeuchi's first quadrant, socialization, knowledge sharing occurs all the time through personal interactions. The next stage of leveraging knowledge is the codification stage. But knowledge codification is also associated with costs and difficulties. These difficulties usually refer to the aspects of accuracy, understandability and credibility. However, codification of knowledge in a tangible way is essential and allows knowledge sharing. In order to maintain and improve knowledge as a part of corporate memory, it must therefore be codified. (Dalkir 2011, 121.)

The two-presented phases of knowledge capture and codification are critical when it comes to knowledge continuity within a company (Dalkir 2011, 133). Although, there are strong focuses on passing knowledge between individuals in many literatures, this thesis also takes the aspect of the group and organizational level into account that provides a broader spectrum of strategic implication of knowledge continuity. Further strategic suggestions provided by Field (2003) that may support the guarantee of knowledge continuity include:

- The set-up of knowledge profiles for critical workers;
- Fostering of mentoring relationships;
- Encouragement of communities of practice;
- Developing rewards and recognition for knowledge sharing;
- Protection of people's privacy;
- Creation of a bridge to organizational memory for a long-term storage of valuable knowledge. (Dalkir 2011, 133−134.)

## 4.4 Knowledge Creation and Innovation

Since the author is highly emphasizing the important aspect of innovation as a competitive advantage, this chapter is focusing on the main relation between knowledge creation and innovation.

Knowledge creation and innovation are closely bound together. They have a strong and complex relationship, even though their perspectives, principles and processes differ from each other. However, producing innovation requires an appropriate organizational environment and effective knowledge management that allows a company to ensure its technological, market and administrative knowledge creation. (Popadiuk & Choo 2006, 308−309.)

The following table 8 summarizes the key points of knowledge creation and innovation:

Table 8     Comparison of knowledge creation and innovation (Popadiuk & Choo 2006, 309).

|  | Knowledge creation | Innovation |
|---|---|---|
| **Definition** | Sharing mental, emotional and active knowledge in such a way that the results lead to aggregated value | Generating ideas and implementing the to produce value for the organization, suppliers and consumers |
| **Generic classification** | Tacit, explicit, (cultural) | Technological (product, process, service), Market (product, price, promotion, place), Administrative (strategy, structure, system, culture) |
| **Perspective** | Individual, group, organizational and inter-organizational | Technological-Market-Administrative |
| **Principles** | Sharing experiences and learning | Combination of resources and capabilities aiming at the generation of sustainable competitive advantage |
| **Process** | SECI Model: Creating concepts, justifying concepts, building prototype, cross-leveling knowledge | Idea phase, feasibly phase, capability phase, launch phase |
| **Drivers** | Planning, decision making, learning, sense making, understanding, adapting, interacting, need to be innovate, crisis | Competitive environment, dynamic of the market, leadership, positioning, differentiation, politics, strategy, effectiveness, changes, crisis |
| **Where does it happen?** | The whole company including technology, processes, management, implantation, culture, systems, structure | In functional areas of companies, more localized |
| **How does it happen?** | A continuous process of learning. Training, meeting, discussions, seminars, lateral thinking, brainstorming | Planned process considering the micro and macro social, cultural, political, and economic impacts. Meeting, discussions, seminars |
| **Enabling conditions** | Organizational intention, autonomy, fluctuation and creative chaos, information redundancy, requisite variety, core capability | Organizational intention, autonomy, fluctuation and creative chaos, information redundancy, requisite variety, core capability, systems, processes, structures, resources and capabilities |
| **Outputs** | New ideas, challenges, innovativeness | New concrete products, processes, services |

Innovation emerges through knowledge creation processes such as selection and implementation of new ideas, developments of new products and services as well as unexpected problem-solving processes. As mentioned in chapter 2.3, the process of KM strategy implementation involves the pro-

cess of creation, storage, distribution and application, which make up together the full organizational lifecycle of knowledge. The first knowledge processing steps of the cycle, namely knowledge capture/creation/contribution is remarkable closely related to innovation due the fact that they both indicate the application of intelligence, tacit knowledge and information. (Forcadell & Guadamillas 2002, 163; Popadiuk & Choo, 2006, 302−312.)

According to Soo, Midglez and Devinney (1999), it is important to consider several aspects in the knowledge creation process, such as the organizational knowledge base, the acquisition of external information and knowledge, the integration of internal and external knowledge and its application to problem solving. It is to highlight that a company needs to continuously renew its knowledge base to ensure that its base does not become obsolete for innovations. New created knowledge, therefore, can be seen as the principal source or base of innovation that will constitute the future knowledge base for the organization and will contribute to the reformation and widening of the existing base. Many authors have already pointed out the importance of new created knowledge, which is needed to enable a development of improvements and innovations on products and services. (Forcadell & Guadamillas 2002, 163; Popadiuk & Choo, 2006, 302−312.)

A company's innovation process is characterized by a series of essential features (Pavitt 1990, 18). The process contains an implication of continuous and intensive cooperation and interactions between individuals, which are often specialist, both in a functional and professional. Furthermore, it contains several cumulative activities that differ in their nature in terms of their results. Nonaka and Takeuchi (1995) made it clear that innovation in an organization is a wide-ranging process. It involves the gathering of existing organization's knowledge base, the combination of information and experiences and the generation of new uses. In addition to that, Krogh (1998) underlines the essence of innovation by arguing that innovation should be produced in work teams or groups which share the clear objectives in relation to the organization´s products and services (Krogh 1998, 134). (Nonaka & Takeuchi 1995, 56−57; Forcadell & Guadamillas 2002, 163; Popadiuk & Choo, 2006, 302−312.)

# 5   KNOWLEDGE MANAGEMENT IN PRACTICE

## 5.1   Practical Implications of Knowledge Management

Switzerland and Finland has been ranked under the top five of the most innovative countries. So what are their factors that foster innovation and leads conclusively to their success?

Since 2011, Switzerland has still held onto its title as the world's most innovative country because of its knowledge-based economy and ability to turn innovative thinking into projects. According to the Global Innovation Index, it scores highly on government effectiveness, business sophistication as well as on creative goods and services. In contrast, Finland is hovering around the top five. It is especially recognized for its higher education, successful work in technology and research. (Weller 2016.; Myers 2016.)

Innovation based on new knowledge remains a key driver of economic growth. Therefore, this chapter provides the current state analysis of KM implications and an external benchmarking analysis across industries of three innovative and international companies, namely Nestlé S.A., KONE Corporation and Rovio Entertainment Ltd. In order to find out the key factor for knowledge management implication, this chapter will be followed by a direct theory-and-practice comparison as well as a comparison of best practices among the three companies.

By using the external benchmarking method, the author focuses on how strong the involved companies have taken knowledge management in account of their daily key business processes and the KM implications in general. Hence, the author highly focuses on specific indicators or dimensions such as strategies and business processes, including major KM activities and techniques contributing to KM and knowledge creation. As a result, the analysis should allow both a comparison between the theory and practice as well as a comparison between the three companies. Moreover, it should offer business insights, including failures and gaps as well as best practices to increase the performance of specific dimensions.

### 5.1.1 Nestlé S.A.

Nestlé is a Swiss multinational leading nutrition, health and wellness company, which was first established in Vevey in 1866. With approximately over 400 factories in 85 countries and around 335'000 employees, it is the world's largest food and beverage company. With science-based nutrition and health solutions, Nestlé aims to enrich all stages of lives. In order to maintain its world's leading food and beverage company position, Nestlé aims to build its businesses based on human created and shared values. This is the way the company aims to build trust over time. The company's growth in 2015 particularly refers through strong innovation, supported by the growing respect and trust by its consumers as well as on consistent performances in previous years (Nestlé 2015, 1, 52−53; UK Essays 2015.)

**Knowledge Management as a Corporate Strategy**

Even though, Nestlé does not explicitly mention the important aspect of KM within its corporate strategy, KM is indirectly integrated. KM processes can be seen as an integrated part of innovation and the Creating Shared Value perspective that belongs to Nestlé's defined strategies. (Nestlé 2015, 26; Nestlé 2016.)

As mentioned in the previous chapter, innovation requires an effective knowledge management and emerges through knowledge creation. The high importance of innovation was found in Nestlé's organizational structure as well. Innovation acts as a separate department within the organization's chart. The current organisational chart of Nestlé demonstrates a more or less decentralized organization that is structured according to the matrix structure. The department CTO, Innovation & R&D is split into further smaller departments such as HR Projects & Recruitment. Additionally, it consists HR & Centre Administration with four subfunctions such as Diversity & Inclusion, Integrated Talent Development, Talent Development EMENA (Zone Europe, Middle East and North America). As one can see, Nestlé clearly recognises the importance of strengthening its talent pipeline globally. For this reason as well as to overcome the baby boomers' skill gap, it also created the Global Youth Initiative. (Nestlé 2015, 36; The Official Board 2016.)

While digging deeper by having a look at Nestlé's current job descriptions, the existence of knowledge management aspects and requirements was also found. The aspect of knowledge management often appears in vacancies associated for higher positions such as "Associated R&D Specialist Product Integration" and "Business Processes Manager", evident in the appendix 1, whereas knowledge building and documenting are required skills.

**Nestlé's Business Processes and Techniques that Contribute to KM**

Nestlé strongly emphasizes the internal and external created and shared values that shape its everyday businesses. In the latest "Nestlé in society report 2015", the company has revealed that it successfully embedded Creating Shared Value learning into all the courses at its international training centre. One of its further strategies is to seek the same with its Corporate Business Principles. (Nestlé 2015, 39.)

To ensure a continuous learning within the company, Nestlé has created various programmes and initiatives. Almost a fifth of Nestlé's workforce is over the age of 50. The Global Youth initiative is precisely one of the newly created initiatives that are helping the company in overcoming this issue of baby boomers' retirement. (Nestlé 2015, 36.)

So far, the company has created more than 6'000 apprenticeships and trainee positions in Europe. Additionally, in order to strengthen this initiative, the company has created an "Alliance for YOUth" with closely 200 business partners. Nestlé does not only focuses on the continuous development of leaders by considering its own potential internal people, but also on knowledge acquisition from the outside. Furthermore it aims to balance its talent pool and teams while taking in account various important aspects such as diversity and gender balance. (Nestlé 2015, 36.)

Other methods or techniques used that contribute to KM and last but not least to the organizations objectives involve:

- *On the-job coaching* from team leaders;
- *Designed training*;
- *Sharing best practices* within small groups and teams;
- *Specialist coaching sessions* (Engineering Programme);
- *Simulations* (within Nestlé's Operations Strategies Unit);
- *E-learning* (planned by 2017). (Nestlé 2015, 39; Nestlé 2016.)

In order to manage its business processes globally, Nestlé is using Enterprise Resource Planning (ERP), more precisely SAP system, which was first installed in June 2000. With the roll-out of SAP, the company intended to centralize its supply chain and internal resources. (Worthen 2002, 1−2.)

The implementation of such SAP ERP system often encounters scepticism. The roll-out of that new system was associated with a lot of costs and change that touches Nestlé's decentralized corporate culture as well as the way people usually work. However, the company recognized the long-term benefit of such systems that facilitate data sharing and enable the company to use common standardized processes, systems as well as organization structures. In Nestlé's case, the implementation allowed the use of common databases that finally lead to more efficient and effective business processes. (Worthen 2002, 1−2.)

## 5.1.2 KONE Corporation

KONE is a Finnish global leader in the elevator and escalator industry, which was founded in 1910 in Espoo. With around 50'000 employees worldwide, the company is one of the largest manufacturer of elevators and escalators. It also provides automatic building doors and various solutions for maintenance and modernization. (KONE n.d.)

KONE has already received several acknowledgments for its design and in particular for its innovation potential. The well-known magazine Forbes ranked the company 56th in 2016 as one of the world's most innovative companies for the sixth year running. The company has established new areas due to current changes in market dynamics (e.g. urbanization) and technologies (e.g. digitalization). In order to maintain its continuous growth, it also has built new partnerships with companies such as IBM. (KONE 2016.)

**Knowledge Management as a Corporate Strategy**

Delivering the best people flow experience is KONE's vision and strategy. The way the company achieve its goal contains several development programs that also include a winning team of true professionals. Furthermore, the company emphasises the important aspect of its shared value to meet its vision. As Nestlé, KONE's culture is also built on shared values. (KONE n.d.).

The "Winning Together" value within its value definition might be the aspect that contributes most to KM. Winning together means that the company only can win by working together as a team by encouraging participation as well as sharing information and ideas. Trust, respect and recognition of good performance are other essential elements of this value. (KONE n.d.).

Another aspect that has been considered and strongly emphasized is the aspect of innovation. In contrast to Nestlé, KONE does not directly mention innovation at the heart of its corporate strategy, nor in its vision and strategy framework, although innovation has been at the core of KONE's business since decades. This is also evident in its organizational structure, which is characterized by a multidimensional matrix structure (Uusitalo & Uuskoski n.d., 9). The growing importance of innovation lead to a change in KONE's organizational structure, which is also associated with a recent change in the executive board. (KONE 2015.)

Lately in September 2015, KONE has just announced that it will establish a new Technology & Innovation unit. The new unit aims to bring together KONE's Research & Development and IT functions in order to accelerate the development of new services and solutions as well as to succeed in today's dynamic business environment. As Henrik Ehrnrooth, current President and CEO of KONE additionally mentioned in the stock exchange release published in October 2016, employee's commitment to develop this unit was essential (KONE 2016.). (KONE 2015.)

**KONE's Business Processes and Techniques that Contribute to KM**

As in the word of KONE, *"spreading and updating knowledge is a non-stop activity at KONE"* (KONE n.d.). To develop its employees' skills, KONE offers 24 training centres all over the world. Moreover, the company is assisted by four competence centres in order to grow its global knowledge base and share it with workers in the appropriate field. (KONE Great Britain n.d.)

With a deeper look at KONE´s current job descriptions, the author could also find the existence of KM associated with higher positions such as the position of "Solution Design Owner, Maintenance Solution" that can be found in the appendix 2. This position is associated with knowledge acquisition functions such as the codification of business and process requirements into information system concepts and functional specifications. Configurations of these functional solutions on SAP can be seen as the process of codifying valuable knowledge in a knowledge repository (e.g. database). As we can see, the implementations of strategic knowledge capture and codification within the company are given. (KONE 2016.)

To overcome the threat of impending retirement, KONE is endowed with several activities in capturing tacit knowledge from retirees. As a case in point, the author focuses on the case of KONE's U.S. organization provided by Roy Strauss, which was published lately in December 2015.

KONE U.S. is equipped with a learning and development team, which is in charge of instructional design, technical documentation and training content development. The team is made up of various long-standing employees with precious accumulated knowledge about the company's products and services as well as informal processes and procedures. As a pre-retirement anticipation, the company is identifying critical areas and pairing employees that allow the transition of key responsibilities. (Strauss 2015.)

These proactive initiatives of knowledge transfer process consist the following six main steps:

1. Identification of subject areas and knowledge items;
2. Prioritization of those knowledge items;
3. Development of each team's scheduled plan to transfer the knowledge item;
4. Training on several knowledge transfer tools (e.g. process flow charts, RACI charts and mind maps);
5. Content Capturing for each knowledge item by using the appropriate tools (e.g. interview experts, discussions and documentation of elicited information by apprentices);
6. Storage of completed tools in an accessible location (e.g. knowledge management systems, SharePoint, shared drives). (Strauss 2015.)

KONE's "knowledge teams" that follow the six-step knowledge transfer process outlined above are made up of experts and apprentices. With this pairing combination, the company aims to reduce the loss of key knowledge and skills. (Strauss 2015.)

Additional KM techniques used by the company are listed as follows:

- *Simulator training* (DeWitt 2013.)
- Use of *standardized knowledge modules* such as the KONE Modular Based Maintenance (MBM) (KONE Corporation 2009.)
- *KONE Academy* to ensure a know-how transfer (e.g. in Hannover) (KONE Deutschland n.d.)
- *Sharing and adopting best practices* (KONE Deutschland n.d.)
- *Job rotations* (KONE Great Britain n.d.)
- *Mentoring* within KONE and *Cross-Company Mentoring Programmes* (KONE Great Britain n.d.)

As Nestlé, KONE is also using SAP (ERP) and SAP Fiori system in order to generate a consistent management of its corporate tangible and intangible assets as well as its business processes globally (KONE 2016.). Just like Nestlé, it is evident that KONE recognized the advantage of such systems that facilitate data sharing as well as the use of common standardized processes across all its companies worldwide.

### 5.1.3 Rovio Entertainment Ltd.

Rovio Entertainment Ltd. is a global entertainment media company head-quartered in Finland, which was established in 2003 as a mobile game development studio. It is the creator of the globally successful Angry Birds franchise. It has developed various award-winning titles for several mobile platforms. Currently, the company employs more than 400 professionals in Finland, North America, China, Sweden, Korea and the UK. (Rovio n.d.; Shirute n.d.)

**Knowledge Management as a Corporate Strategy**

The company's mission is to create world-class entertainment experiences with its products such as games, animation and other businesses. Although innovation belongs to the company's daily core businesses, it is not explicitly mentioned in the company's strategy definition. As KONE, the aspect of innovation cannot be found in Rovio's vision and strategy framework. However, while taking a deeper look at the company's current organizational chart, which is characterized by a functional hierarchical structure, the "Development" division can be associated with activities that contribute to innovation (Rovio n.d.; The official board 2016.).

Furthermore, in contrast to Nestlé and KONE, Rovio does not even mention the aspect of shared values. The missing aspect of shared values that is strongly emphasized at KONE as well as at Nestlé can be seen as the main cause for Rovio's several negative headlines in 2015. According to the Finnish business weekly Talaouselämä, published in February 2015, the company had to face some serious problems related to its organizational culture. As in the word of a source interviewed by Talaouselämä, "*We grabbed all opportunities and the whole package grew explosively. If the package is not tight enough and there is* no shared vision *of what is being done and why, then all choices are not rational*" (Lappalainen 2015.).

The company also had serious difficulties with its corporate strategy and management. The firm's strategy has been inconsistent which led to several terminations of key personnel from top to middle management. Rovio is still suffering from a brain drain, due the fact that a large part of the people has left, who was responsible for the original success of Rovio. This problem had a huge impact on the company's declining gaming revenues in 2014. The main reason of Rovio's problem referred to a lack of shared vision on the top management level, which was caused by an inconsistent strategy as well as too much speed. (Lappalainen 2015.)

The problem mentioned above lead to a change in Rovio's organizational structure lately in January 2016, which is associated with restructuration as well as a recent change in the executive board. Nowadays, Rovio is operating with a new leaner and more agile leadership structure. The company's operational responsibility and decision-making are shifted into its two business divisions, namely Games and Media. Furthermore, the company fo-

cuses more on internal collaborations such as collaborations of several internal divisions in order to take the business to new heights again. (Rovio Entertainment Ltd. 2016.)

**Rovio's Business Processes and Techniques that Contribute to KM**

The gaming industry is a large and growing business sector that is characterized by a fierce competition landscape. Many companies have managed to succeed in these field exceptionally well. Rovio is a great example that has been firmly in the spotlight of Finland. The factors behind its success can be ascribed to its management of knowledge that enable rapid growth of several business opportunities in the short term. Rovio's success is based not least on its creativity in creating new games or animations, but notably in its management of information flow. (Palén 2014.)

So far the company has not presented its own investment in knowledge management on its website or in the public press. However, indications of the importance of KM can be found in the company's notified vacancies. Several job descriptions highlight the flow of information within the company. Indications are clearly evident in job descriptions for "IT Manager" and "Customer Service Specialist" that can be found in the appendix 3 (Rovio Entertainment Ltd. 2016.). This is also shown in the inquired analytical and strong communication skills in order to generate a higher level of expertise in supporting the firm's core business. Other job posts contain positions associated with activities such as the collection and transmission of data. Furthermore, Rovio focuses strongly on two main aspects, namely customer demand and brand development (Palén 2014.).

The company seeks to gain useful data through focusing on customers' experiences. For example, Angry Birds at its early game stages did not support many older Android devices. This caused a lot of criticism, at which Rovio responded quickly with a more suitable version of the game. Brand development refers to several extensions of its products from simple mobile game to toys and distinctive character phenomenon. In both examples, requirements have been met through actively listening to customers' complaints and wishes. This user-generated form of knowledge allows the company to react to customers' need in a very short time. (Palén 2014.)

Another tool used to acquire knowledge from the outside is the use of app stores. It is certainly a useful tool from the organizational perspective as well as from the perspective of KM, as it allows the collection of players' direct feedbacks. These feedbacks facilitate the decision-making process and help in fixing problems. Additionally, it helps the company to learn from its successes and failures in order to improve its product and offer problem solutions. (Palén 2014.)

Additional valuable knowledge creation tools can be found in Rovio's previous job description for the position "Product Management Summer Trainee, Digital Services", posted in 2013 and evident in appendix 3. The company is using "Scrum" and other agile methods such as "Kanban".

These agile methods are often used in software industries, especially as project management tools. Scrum is a tool used in order to coordinate work in small pieces that can be completed by a cross-functional team within a prescribed period of time (called a sprint, generally 2-4 weeks). Kanban is quite similar to Scrum. However, the method differs in some practical applications such as scheduling, iteration and cadence. Nevertheless, both methods, Scrum and Kanban allow tasks to be completed in a more efficient way through strong collaborations, in which communication and knowledge sharing are taking place. Moreover, they place high importance on continual improvement and optimization of processes. (Palén 2014.; Trapani 2015.)

In overall, Rovio's techniques that contribute to KM can be listed as follows:

- *Actively listening to customers' wishes* (global user-generated data) => through its sustainability analyst, who is in charge of the consumer product value chain (Palén 2014.)
- *The use of app stores* (statistical data) in order to collect feedback directly from players (Palén 2014.)
- *Strategic Alliances* (Licence Global 2015.)
- *Continuous education* and *sharing knowledge across the Customer Service Team* (Rovio n.d.)
- *Mentoring, trainings & knowledge sharing events* (Palén 2014.; Rovio Entertainment Ltd. 2016.)
- *Adopting best practices* (Shirute n.d.)
- *Scrum & Kanban* (Palén 2014.)

In order to handle its big data traffic, the company is using Amazon Web Services (AWS). Since Rovio is a smaller company, compared to Nestlé and KONE, it makes probably more sense to use the technology and framework that works best for the company. In the company's eyes, AWS was the most advanced player in the cloud services. With AWS, the company can compute and storage its data. Furthermore, the company can refer to several commercial reporting toolsets. Peltola, former CEO of the company, measures success in the availability of such infrastructure that allows the efficient use and storage of organizational intangible assets. (Amazon Web Services n.d.)

# 6 ANALYSIS OF THE RESULTS

## 6.1 Theory and Practice Analysis

**Similarities between Theory and Practice**

In all three practical cases, the existence of KM could be found. This indicates that the capability to manage the organisational knowledge has become increasingly essential in today's knowledge economy and dynamic business environment.

Especially knowledge that is embedded in tacit knowledge is highly considered as valuable factor that defines the company's own success. In cases of the three companies, the importance of intangible knowledge is highlighted and clearly evident in well-defined visions and shared values (e.g. in the case of Nestlé S.A. and KONE Corporations) or in the companies' organizational structures and job descriptions.

Nestlé is strongly focusing in spreading its "Creating Shared Value-Strategy" across all its companies worldwide. As mentioned before, KONE's culture is also built on shared values. The "Winning Together" value specifies the aspect of organizational culture that focuses strongly on groups and teamwork associated with participation and shared knowledge.

As mentioned in the theory, Schein, Nonaka and Takeuchi emphasized the importance premise of the "Organizational Intention" considering the organisation's aspiration and goals, which refers to a clear corporate strategy and vision (Schein 1990, 117-118.; Nonaka & Takeuchi 1995, 73−83.). In this way, Nestlé and KONE are creating optional conditions that enable the process of organisational knowledge creation. As previous negative headlines about Rovio have shown, a lack of organizational culture and clear vision can affect a company's success. As a case in point, Rovio is a good example of what can happen when lacking on these fundamental aspects that leads to serious consequences associated with brain drain, and as a result of it, loss of valuable knowledge.

Other premises that have been taken into account in all three companies are the creating of "requisite variety" within the company. This means that the companies are seeking for internal organizational diversity as well as a more agile organizational structure, in which several units or divisions are linked together. (Nonaka & Takeuchi 1995, 73−83.)

Even though Nonaka and Takeuchi promote for autonomy in every level of the organization to foster knowledge creation, the condition cannot be found in all case companies. Hierarchies still exist in all company cases, still very strong in Nestlé, as communication and collaborations are restricted to the respective level to which employees belong (UK Essays 2015.). In contrast, the Finnish company KONE provides a less hierarchical leadership structure. It focuses on interdependent leadership related to strong engagement of its technicians in the decision-making processes (Snook, Nohria & Khurana 2011, 477−478).

With its new leaner and more agile leadership structure, Rovio is seeking in pushing empowerment through shifting decision-making as well as pushing internal collaborations within and across its units. The restructuring of its leadership structure shows that the company has learned from its mistakes and failures from the past.

As intellectual capital, especially tacit knowledge is of high importance in order to perform the core businesses, the case companies are using various tools to elicit and codify it. Several approaches covered in chapter 4.3 considering "Knowledge Capture and Codification Techniques", find its use in Nestlé, KONE and Rovio. The used tools vary from techniques from the individual and group level to organizational level.

The following table indicates a direct comparison between the techniques used in practice as well as the techniques provided in the previous theory section of the thesis.

Table 9    Knowledge capture and codification techniques in theory and practice, adapted by Dalkir (Nonaka & Takeuchi 1995, 64−70; Von Krogh, Roos & Klein 1998, 236; Davenport & Prusak 1998, 81; Dalkir 2011, 98−121).

| Knowledge Capture & Codification at Individual & Group Level and Organizational Level | Techniques used in practice that are provided by the theory | Used by case company | | |
|---|---|---|---|---|
| | | Nestlé | KONE | Rovio |
| **Individual & Group Level** | • Interviewing Experts (structured interviewing, Stories/Storytelling) | - | ✓ | - |
| | • E-Learning | ✓ | - | - |
| | • Road maps (frameworks and concepts etc.) | ✓ | ✓ | ✓ |
| | • Learning histories (e.g. from failures or successful stories) | - | ✓ | ✓ |
| | • Learning by doing (on-the-job coaching) | ✓ | ✓ | - |
| | • Job rotation | - | ✓ | - |
| | • Learning by being told (Simulations, Process tracing, Domain tasks analysis) | ✓ | ✓ | - |
| | • Learning by observation (Mentoring & Training | ✓ | ✓ | ✓ |
| | • Teamwork | ✓ | ✓ | ✓ |
| | • Documentation (reports and customer complaints) | ✓ | ✓ | ✓ |
| **Organizational Level** | • Grafting (e.g. through mergers, acquisitions and alliances) | ✓ | ✓ | ✓ |
| | • Vicarious learning (e.g. adopting best practices) | ✓ | ✓ | ✓ |

The table above indicates that Nestlé, KONE and Rovio not only focus on techniques of knowledge capturing and codification at the individual and group level, but also at the organizational level. Nestlé, KONE and Rovio also consider techniques based on various modes of knowledge conversion (socialization, externalization, codification and internalization). This shows that the companies have understood, consciously or unconsciously the importance of knowledge conversion and tacit knowledge mobilization considering the "epistemology" and "ontology". According to Nonaka and Takeuchi, knowledge conversion and knowledge mobilization are the key

to continuous knowledge creation (Nonaka & Takeuchi 1995, 56−57.). Tacit mobilization and knowledge conversion are supported through social interactions such as group works (Nonaka & Takeuchi 1995, 61). As one can see, the case companies emphasise group work and collaboration across divisions (e.g. KONE and Rovio) and across other companies through alliances.

Regarding all three companies, new knowledge is not only captured from the inside (e.g. from employees' know-how), but also from the outside (e.g. the environment or customers). This thought was supported by Dalkir as well, who assumed that knowledge creation consists also the development of new knowledge that has not an existence in the company before to produce innovation (Dalkir 2011, 53-54).

As in the case of Rovio, the company puts high effort in collecting knowledge from the outside (e.g. customers' feedbacks, wishes and complains). Documentation of customer needs or complaints refers also to the internalization mode of knowledge conversion mentioned by Nonaka and Takeuchi (Nonaka & Takeuchi 1995, 70). This is how the company tries to enrich its own tacit knowledge.

In the business context of KONE, internalization can be found in stories or storytelling. According to Nonaka and Takeuchi, stories have the power to change experiences directly to a tacit model. By sharing the tacit mental model within the company, it can become part of the organizational culture (Nonaka & Takeuchi 1995, 70).

Based on the table above, KONE covers the overall KM techniques that are similar to the theory. Among all case companies, it is the only one that raises the issue of "knowledge continuity" very publicly. With its proactive initiatives (the six-step-approach of knowledge transfer process), the company makes it very clear how it wants to overcome the threat of impending retirement. In this context, the author could find the practical combined implementation of the three major approaches at KONE that was provided by Dalkir. The three approaches to ensure knowledge continuity are again, 1. Interviewing experts, 2. Learning by being told and 3. Learning by observation. As Dalkir has mentioned, a combination of all three approaches in practice allows the company to achieve the best results.

**Differences between Theory and Practice**

The author could not find any of the above presented KM models, in which the case companies' KM activities operate. Moreover, there is a non-existence of use of several defined knowledge cycle approaches. Even though many theories start from the premise that such KM models are fundamental in order to initiate knowledge management, it seems that companies can carry out their activities without considering and implementing all detailed aspect of KM models. However, it cannot be excluded that Nestlé, KONE and Rovio support their KM activities by only implementing the basic idea of these KM models and KM cycle.

In the case of Rovio, the company is working with models such as Scrum and Kanban, which was not mentioned in the theory, but can be seen as an enrichment for the theory, as these models also consider the aspect of time. Time can be so far relevant, as the companies are competing within an extremely complex and dynamic environment. To get the right knowledge in the right place and at the right time, is essential and defines therefore the companies' success. Scrum and Kanban, both are also tools that help companies in managing their knowledge work within teamwork, especially in project management (Palén 2014.; Trapani 2015.).

To sum up, it can be said that there are a lot more similarities to the provided theory above than differences. One can assume that all three companies have taken the relevant steps of knowledge capture and creation (first stage of integrated KM cycle) in account of their daily businesses. These steps are rooted in various activities, evident in the companies' visions, annual reports and job descriptions. Based on the analysis, they have also taken steps in account that belong to the other two stages of the KM cycle, which are embedded in all four knowledge conversion modes (socialization, externalization, combination and internalization). However, with regard of the basic idea of the provided KM approaches, the companies have created a foundation that enable a continuous knowledge creation within the organization.

6.2    Comparison between the Case Companies

In order to evaluate the key factors of the three organizations, it was necessary to measure the similarities and the differences according to the dimensions comparatively as well as in consideration with the previous theory and practice analysis. The following external benchmarking analysis on page 41 is focusing on two main areas, namely the strategic aspect and the operational & methodological aspect. These aspects again are divided into several appropriate indicators or dimensions. The benchmarking table provides a summary of what was already mentioned in the previous chapter. However, the table allows a proper overview of the relevant dimensions and an easier comparison.

As the benchmarking table clearly indicates, the implementation and warranty of knowledge creation within an organization varies from company to company. This is not only because of the different branches, but also because of the different sizes associated with available tangible and intangible sources. However, the point is to consider "best practices" that are elementary for knowledge creation implementation that also can be adopted in any kind of organizations. The result of the comparison that is also taking the previous theory-and-practice analysis in account is summarized in the following conclusion.

**Conclusion of the Analysis**

Among all case companies, the author could find the following predominant similar aspects that are also covered by the provided theory. Therefore, these aspects can be seen as key factors or "best practices" in order to ensure a continuous creation of new knowledge within an organization:

- Open organizational culture (e.g. clear vision and strategies)
- Agile leadership structure (e.g. collaborations and teamwork)
- Specialist, leader and trainee positions are associated with high required communication and analytical skills
- Knowledge conversion and mobilization of tacit knowledge, which is the key to continuous knowledge creation
- Consideration of activities from the KM cycle that is embedded within the four knowledge conversion modes
- Use of various techniques that contribute to knowledge elicitation and codification
- Knowledge acquisition from the inside (employees' know-how) and outside (e.g. customers)
- Information technology infrastructure in order to ensure the availability of required information (database, intranet etc.)

At this point, it is to mention that even though there is an evidence of increasing importance of KM, it still hardly can be found as such in organisations' visions or at the heart of corporate strategies. Furthermore, companies replace knowledge creation through innovation, as they are closely bound together. This is clearly evident in their organizational structure and job descriptions, as one seldom can find divisions or positions with clear designations referring to KM. Instead, all case companies have R&D units or divisions. According to Popadiuk & Choo, producing innovation requires effective knowledge management that allows the company to ensure its technological, market and administrative knowledge creation (Popadiuk & Choo 2006, 308−309.).

Positions such as "Knowledge Manager" could not be found in the case companies. This indicates that there are no single key individual or unit that are charged with KM tasks. Instead, other designations exist such as "Associate R&D Specialist, Product Integration" (e.g. Nestlé), "Solution Design Owner" (e.g. KONE), "Product Management Summer Trainee" (e.g. Rovio). The latter numeration demonstrates that not only high positions are in charge with KM activities, but also lower positions such as trainees or apprentice. Therefore, Knowledge Management activities are distributed throughout all level of the organization. This was highly emphasized by Davenport and Prusak (1998) and Popadiuk & Choo (2006), who assume that every activity concerning knowledge creation take place within each individual as well as through interactions with other people (Dalkir 2011, 60−61.; Popadiuk & Choo 2006, 309).

Table 10   External benchmarking analysis (Worthen 2002, 1−2; KONE Corporation 2009.; Snook et al. 2011.; DeWitt 2013.; Palén 2014.; KONE 2015.; Lappalainen 2015.; Licence Global 2015.; Nestlé 2015, 1, 36, 39, 52−53; Nestlé 2016.; Strauss 2015.; Trapani 2015.; UK Essays 2015.; KONE 2016.; Rovio Entertainment Ltd. 2016.; The Official Board 2016.; Amazon Web Services n.d.; KONE n.d.; KONE Deutschland n.d.; KONE Great Britain n.d.; Rovio n.d.; Shirute n.d.; Uusitalo & Uuskoski n.d., 9).

| Benchmarking according 2 areas | Dimensions | Nestlé S.A. (1866), (Switzerland) | KONE Corporation (1910), (Finland) | Rovio Entertainment Ltd. (2003), (Finland) |
|---|---|---|---|---|
| **Strategic aspect** | **KM mentioned in corporate strategy** | • Indirect<br>• Integrated within the aspect of innovation in strategy framework as well as in organizational chart (R&D) | • Indirect<br>• Integrated within the aspect of values and innovation in organizational chart (R&D) | • Indirect<br>• Integrated within the "Development" division |
| | **Organizational structure** | • Multidimensional matrix<br>• Organizational chart at the executive level (top, middle and lower management) | • Multidimensional matrix (several functions are divided according to geographical areas, business lines & activities) | • Functional organizational structure<br>• Organizational chart at the executive level (top, middle and lower management) |
| | **Organizational culture** | • Explicitly mentioned within the corporate strategy<br>• Embeddedness of Nestlé's strong culture and values across all companies<br>• "Creating shared value" for all stakeholders | • Explicitly mentioned within the corporate strategy<br>• KONE's culture is built on shared values => "Winning together" | • Not mentioned within the corporate strategy (lack of organizational culture)<br>• Lack of shared vision on top management level |
| | **Innovation** | • Highly innovative through strong R&D network<br>• More than 5'000 scientists work at Nestlé Research<br>• Collaborations with scientists from universities, biotech companies and start-ups<br>• International alliances with EpiGen Consortium | • Innovation has been at the core of KONE's business since decades but it is not directly mentioned in KONE's strategy framework<br>• Innovation through Technology & Innovation unit<br>• Collaboration with IBM<br>• 8 research & Development Centres, 7 in the global production base | • Innovation has been at the core of Rovio's business but it is not directly mentioned in Rovio's strategy<br>• "Development" division |
| **Operational & Methodological aspect** | **Leadership** | • Decision making process is more or less decentralize (e.g. Nestlé headquarters in Switzerland are responsible for the development of new product)<br>• Few levels of management (=> still hierarchical culture)<br>• Formal / rule based management | • Interdependent leadership & strong engagement of technicians | • New leaner and agile leadership structure<br>• Operational responsibility & decision-making are shifted into two business divisions such as Games and Media |
| | **Technology** that supports knowledge creation/codification and sharing | • Computer based system such as SAP (ERP) that manage internal & external resources including tangible assets, financial resources, materials & human resources<br>• Intranet<br>• Corporate directories tools<br>• Embrace digital: Creating consumer connection through e-commerce channels, real-time listening, engagement and dialogue | • Computer based system such as SAP (ERP), SAP Fiori that manage internal and external resources including tangible assets, financial resources, materials and human resources<br>• Intranet (e.g. SharePoint) | • Amazon Web Services (AWS) such as Amazon Elastic Compute Cloud (for its compute and storage) & Amazon Simple Storage Service<br>• Commercial reporting tools<br>• Strong focus on automation & scalability of recourses |
| | **Business processes, Tools & Techniques** used that contributes to KM | • Strategic roadmap as a framework<br>• Team work (e.g. sharing best practices within small groups & teams)<br>• Networking, communication<br>• cooperation & alliances<br>• On-the-job coaching from team leaders<br>• Designed training<br>• Structured in class training programme<br>• First-rate mentoring programme<br>• Global youth initiative<br>• Specialist coaching sessions (Engineering Programme)<br>• Experts involvement (from all over the world)<br>• Use of nutritional and consumer insights<br>• Simulations (Operations Strategies Unit)<br>• E-learning (planned by 2017) | • Strategic roadmap as framework (e.g. flow charts, mind maps)<br>• Team work (participation, sharing information & ideas)<br>• Expert interviews (e.g. through "knowledge teams" consisting of experts and protégés)<br>• Building trust, respect & recognition of good performance<br>• Sharing and adopting best practices<br>• Cooperation, partnership and alliances<br>• Designed learning programmes to promote collaborations and cross-cultural knowledge<br>• Global training standards<br>• Simulator training<br>• Job rotation<br>• Cross-Company Mentoring programmes<br>• Standardized knowledge modules (e.g. Modular Based Maintenance (MBM))<br>• Dialogue and storytelling (in order to create public learning) | • Framework<br>• Actively listen to customer wishes<br>• Use of app stores in order to gain statistical data<br>• Team work (e.g. Projects in small groups)<br>• Strong focus on Customer Relationship Management (CRM)<br>• Adopting best practices<br>• Strategic alliances<br>• Collaboration of various internal divisions<br>• Continuous education & sharing knowledge across the Customer Service Team<br>• Mentoring, training and knowledge sharing events<br>• Scrum & Kanban |

# 7 RECOMMENDATIONS

Nestlé, KONE and Rovio are obviously aware of the advantage concerning capturing tacit knowledge and codifying explicit knowledge. This is evident as their successful products and services would not be possible without appropriate expertise associated with their workers' valuable tacit knowledge. However, there are still boundaries that firstly have to be eliminated in order to ensure an optimal and sustainable continuous knowledge creation process. At this point, the author is providing recommendations based on the theory above, which is linked with pragmatic approaches that have been adopted by many organizations.

**Nestlé**

By starting with Nestlé, the company should enhance its leadership structure. As Nestlé is such a big company, it is justifiable and rational to choose the matrix structure, which does not follow the typical hierarchical model. However, it is advisable for the company to seek for a more agile structure throughout its company by fostering collaborations across divisions. A certain grade of autonomy throughout divisions should also be generated. They should be however free to make own business decisions that affects their daily businesses. These actions would allow a more effective and efficient knowledge creation process, as the company does not have to coordinate and process all the information from its headquarter based in Switzerland. Empowerment would therefore facilitate and accelerate the decision-making process in each Nestlé companies, as long distances of information processing are shortened or eliminated.

In terms of the tools used to elicit and codify tacit knowledge of existing employees, Nestlé should not only adopt on-the-job trainings, but also job rotations and expert interviews, as on-the-job training is a limited form of knowledge creation (Nonaka 1991, 4−5; Nonaka & Takeuchi 1995, 62−64, 70; Dalkir 2011, 67.). Job rotation helps the company to leverage knowledge transfer within the company. Moreover, it allows the company to train employees in appropriate fields to become a multi-expert. This proactive tool would help the company to ensure knowledge continuity. As the existence and success of "interviewing experts" (externalization of expertise) is evident at KONE, Nestlé should foster group pairing, constituted of an expert and protégé.

**KONE**

Among the case companies, it seems that KONE is investing the most in knowledge continuity and knowledge creation. However, it should put KM at the heart of its strategy framework, which guides the company through its daily businesses. Furthermore, it should consider holistic KM frameworks that allow its KM activities to operate within. Considering valuable theoretical models does not mean that the company has to adopt every single provided step. Already basic ideas of these holistic KM frameworks allow a better understanding of knowledge's nature as a complex adaptive system

that contains knowers, the organizational environment and the organizational knowledge-sharing network (Dalkir 2011, 89). This recommendation concerns Nestlé as well as Rovio.

**Rovio**

In contrast to Nestlé and KONE, Rovio still needs to work on its organizational culture and shared vision in order to ensure an optimal condition in which new knowledge can be created. It has to build a condition that encourages shared assumptions and at the same time, promotes open discussion and reflection on failures in the past. It has to understand that shared values are the key to the company's success, as it creates an open culture, in which trust and communication can take place. These elements are fundamental to ensure the transmission of tacit and explicit knowledge.

The company has lately improved itself through a leadership restructuration. Seeking for a more agile leadership structure that foster decision-making processes is the way it should go. However, it still has the traditional hierarchical structure, which is still unlikely in gaming industries (Palén 2014.). As the company acts in an extremely changing environment, it should seek for a flatter hierarchy that enables more transparency and open internal communication that speed up the information flow. This of course can raise the challenge, as it requires individual initiatives and commitments associated with a strong and open organizational culture. In terms of the tools used to elicit and codify tacit knowledge, it should not only focus strongly on knowledge acquisition from the outside (e.g. customers' feedback and app stores), but also from the inside. As in the case of Nestlé and KONE, Rovio should focus on practices such as interviewing experts, on-the-job training and job rotation.

On the whole, although the benefit of knowledge creation is obvious to the case companies, it might be unclear to the companies' employees, more precisely, the owners of such valuable tacit knowledge. Sharing valuable knowledge by impending retirees is not something the case companies should take for granted. The popular proverb "knowledge is power" may indicate the challenge for all three companies to instil their workers on the meaning of retaining their valuable accumulated knowledge within the company, when they are not part of the organization anymore. Therefore, the aspect of appropriate recognition and rewarding knowledge sharing should be pointed out. A well-established organizational culture can already help to increase and strengthen employees' commitments and therefore cannot be emphasized enough. Furthermore, it is not about processing all kind of tacit knowledge within the case companies. It is about knowledge acquisition of the right knowledge in the right amount. Additionally, key knowledge in order to carry out the companies' key businesses should always be accessible for the whole company in a database. Nestlé's, KONE's and Rovio's knowledge base (or organizational memory) should always be monitored according aspect such as validity, actuality and most importantly in consideration of employee's intellectual privacy. These actions should ensure a long-term storage of valuable knowledge and help the company to adapt itself in a dynamic environment and thus gaining competitive advantages.

# 8   CONCLUSION

The purpose of this bachelor thesis was to clarify and highlight today's required knowledge management implications as well as the key factors that ensure a continuous knowledge creation process. Moreover, the objective was to increase knowledge management of multinational organizations based on existing best practices in literatures and current state analysis of Swiss and Finnish case companies from various branches and sizes. The three investigated case companies are namely Nestlé S.A., KONE Corporation and Rovio Entertainment Ltd.. The current state analysis was followed by an external benchmarking analysis, which allowed a direct theory-and-practice comparison as well as a comparison between the case companies. The author could provide recommendations based on theoretical and pragmatic best practices and current gaps of the case companies. By summing up all the relevant point, the author will provide a conclusion based on the prior defined objectives in section 1.2.

*Evaluation of the Theory*

The overall evaluation of various theories shows that knowledge management within companies is evident in order to compete successfully in today's dynamic environment. Knowledge management provides an integrated methodology of identifying, capturing, evaluating, retrieving and sharing all of a company's knowledge assets in order to ensure innovation and to gain competitive advantage. These assets contain explicit and tacit knowledge as expertise in individual employees.

The theoretical part of this thesis was primary focusing on contrasting existing KM approaches and knowledge creation techniques that have become essential in the business practice. In case of this thesis that highlights the aspect of tacit knowledge, the author was focusing on two common KM models, namely the SECI Model by Nonaka and Takeuchi and the Choo-Sense-Making Model by Choo. Nonaka and Takeuchi's SECI Model contains the four modes of knowledge conversion that allows a continuous knowledge creation: socialisation, externalization, combination and internalization. Choos' Sense-making model completed the later model with two further aspects such as sense- and decision-making. These two holistic models provide a fundamental framework in which the integrated KM cycle should be carried out in a more effective way. Techniques to capture tacit knowledge were primary focusing on knowledge continuity practices provided by Dalkir. These are namely, 1. Interviewing experts, 2. Learning by being told and 3. Learning by observation.

*Current Situation*

The current state analysis of Nestlé, KONE and Rovio shows the existence of KM implications, which are mostly embedded in defined visions, strategies, annual reports and job descriptions. In all cases, KM could not be found directly as such but rooted in the aspect of innovation that emerges through processes of knowledge creation. Techniques used in order to elicit and codify tacit knowledge at the individual, group and organizational level contain: storytelling, e-learning, use of road maps and concepts, learning by

doing, job rotation, on-the-job coaching, mentoring and training, teamwork, documentation, acquisitions, alliances and adaptation of best practices.

*Evaluation of the Analysis*

The theory-and-practice analysis shows more similarities than differences. All three case companies have taken the relevant steps of the KM cycle in account, which are embedded in all four knowledge conversion modes. The companies have created a foundation that enables a continuous knowledge creation within the organization. "Best practices" or key factors covered by existing literatures and practices as well as the result of the benchmarking analysis are listed as follow:

- Open organizational culture
- Agile leadership structure
- Specialist, leader and trainee positions are associated with high required communication and analytical skills
- Knowledge conversion and mobilization of tacit knowledge
- Consideration of activities from the KM cycle that is embedded within the four knowledge conversion modes
- Use of various techniques that contribute to knowledge elicitation and codification
- Knowledge acquisition from the inside and outside
- Information technology infrastructure in order to ensure the availability of required information

*Recommendations*

Provided recommendations are based on theoretical and best practices as well as current gaps within Nestlé, KONE and Rovio. In order to improve KM implication and the overall process of continuous knowledge creation, the case companies should take several essential aspects into account: a well-established organizational culture, appropriate recognition and reward for knowledge sharing, focus on key knowledge and the constantly monitoring of organizations' database in consideration of employee's intellectual privacy.

The importance of an open organisational culture cannot be emphasized enough as it enables an optimal environment, in which knowledge creation can be carry out. Trust between employees, transparency, and open internal communications are essential aspects that have to be encouraged within the companies. Activities that especially revolve around socialization and thus related to tacit knowledge sharing usually require an understanding of one's own organizational culture.

Appropriate recognitions and reward of knowledge is another aspect that has to be pointed out, as the benefit of tacit knowledge sharing is not always obvious to the companies' workers. Rewarding and creation of worker's commitment through a well-established culture are solutions in order to face the challenges to instil workers on the meaning of retaining valuable accumulated knowledge within the company.

# SOURCES

Aarresaari (2013). Product Management Summer Trainee, Digital Services. Retrieved 10 December 2016 from http://www.oulu.fi/yliopisto/sites/default/files/Rovio_Digital_Services.pdf

Al-Khouri, A.M. (2014). Fusing Knowledge Management into Public Sector Corporates Excellence Culture: A Review of the Field and The Case of Emirates Identity Authority. *Journal of Knowledge Management, Economics and Information Technology,* Vol. 4, No. 3*, 19-22. Retrieved 26 October 2016 from http://www.slideshare.net/alkhouri/fusing-knowledge-management-into-public-sector-book-format

Amazon Web Services (n.d.). AWS Case Study: Rovio's Gaming Service Platform. Retrieved 16 December 2016 from https://aws.amazon.com/de/solutions/case-studies/rovio-gaming-service-platform/

Bajracharya, P., Masdeu, N., R. (2006). *Tacit Knowledge Transfer In Small Segment of Small Enterprises*. Dissertation. Retrieved 24 November 2016 from http://www.diva-portal.org/smash/get/diva2:21701/FULLTEXT01.pdf

Comindwork (n.d.). SECI Model of Knowledge Dimensions (Ikujiro Nonaka). Retrieved 26 October 2016 from http://www.comindwork.com/weekly/2015-04-27/productivity/SECI-model-of-knowledge-dimensions-Ikujiro-Nonaka

Coyote Creek (2016). 3 Reasons to Switch to a Knowledge Management Center or Wiki. Blog post 07/2016. Retrieved 26 October 2016 from http://www.coyotecrk.com/3-reasons-to-switch-to-a-knowledge-management-center-or-wiki/

Dalkir, K. (2011). *Knowledge Management in Theory and Practice*. London: The MIT Press.

Davenport, T., & Prusak, L., (1998). *Working knowledge in organizations: how organizations manage what they know.* United States of America: Harvard Business School.

Den Hertog J. F. & Huizenga, E. (2000). *The Knowledge Enterprise. Implementation of Intelligent Business Strategies*. London: Imperial College Press.

DeWitt, J. (2013). Kone technical training center opens its doors. Published 04/2013. Quad City Times. Retrieved 03 December 2016 from http://qctimes.com/business/kone-technical-training-center-opens-its-doors/article_55f17000-9bb9-11e2-b456-0019bb2963f4.html

Drucker, P. F. (1999). *Management Challenges for the 21 Century*. New York: Harper Collins.

Forcadell, F., J. & Guadamillas, F. 2002. A Case Study on the Implementation of A Knowledge Management Strategy Oriented to Innovation. Knowledge and Process Management. *Wiley InterScience*, Vol. 9, No. 3, 163. Retrieved 02 November from
http://www.academia.edu/4259757/A_case_study_on_the_implementation_of_a_knowledge_management_strategy_oriented_to_innovation

Frost, A. (2010). What is Knowledge Management?. Blog update 09 February 2015. Retrieved 02 November 2016 from
http://www.knowledge-management-tools.net/knowledge-management.html

Frost, A. (2014). A Synthesis of Knowledge Management Failure Factors. Blog update 09 February 2015. Retrieved 26 October 2016 from
http://www.knowledge-management-tools.net/A%20Synthesis%20of%20Knowledge%20Management%20Failure%20Factors.pdf

Frost, A. (2014). Lack of a Universal Definition of Knowledge Management. Blog update 09 February 2015. Retrieved 02 November 2016 from
http://www.knowledge-management-tools.net/nodefinition.html

GiantKONE (n.d.). GiantKONE Elevator Co., Ltd. Retrieved 07 December 2016 from
http://www.giantkone.com/en/about-giantkone/company-profile/

Haldin-Herrgard, T., (2000). Difficulties in diffusion of tacit knowledge in organizations. *Journal of Intellectual Capital*, Vol. 1 No. 4, 361. Retrieved 07 October 2016
https://www.researchgate.net/publication/200773019_Difficulties_in_Diffusion_of_Tacit_Knowledge_in_Organizations

Knowledge-Management-Online (2005). Why KM – The importance of knowledge management. Retrieved 26 October 2016 from
http://www.knowledge-management-online.com/the-importance-of-knowledge-management.html

KONE (n.d.). KONE IN BRIEF. Who we are. Retrieved 02 December 2016 from
http://www.kone.com/en/company/

KONE (n.d.). Vision and Strategy. Retrieved 02 December 2016 from
http://www.kone.com/en/company/vision-and-strategy/

KONE Deutschland (n.d.). KONE ACADEMY. Retrieved 07 December 2016 from
http://www.kone.de/unternehmen/kone-academy/

KONE Great Britain (n.d.). Career development. Retrieved 07 December 2016 from
http://www.kone.co.uk/about-us/careers/we-offer/default.aspx

KONE (n.d.). Continuous training. Retrieved 07 December 2016 from
http://www.kone.co.uk/maintenance/how-we-deliver/training-excellence/

KONE Corporation (2009). KONE Service Technicians – true professionals. Retrieved 07 December 2016 from
http://cdn.kone.com/www.kone.co.uk/Images/kone-service-technician.pdf?v=2

KONE (2015). KONE Corporation: Changes in the Executive Board – KONE establishes a new Technology & Innovation unit. Press release 09/2015. Retrieved 02 December 2016 from
http://www.kone.com/en/media/press-releases/kone-corporation--changes-in-the-executive-board---kone-establishes-a-new-technology---innovation-unit-2015-09-17.aspx

KONE (2016). KONE listed as one of the World's Most Innovative Companies by Forbes for the sixth year running. Press release 09/2016. Retrieved 02 December 2016 from
http://www.kone.com/en/media/press-releases/kone-listed-as-one-of-the-world-s-most-innovative-companies-by-forbes-for-the-sixth-year-running-2016-09-02.aspx

KONE (2016). KONE Corporation: Interim Report of KONE Corporation for January-September 2016. Press release 10/2016. Retrieved 02 December 2016 from
http://www.kone.com/en/media/press-releases/interim-report-of-kone-corporation-for-january-september-2016-2016-10-26.aspx

KONE (2016). Job Descripion. Solution Design Owner, Maintenance Solutions. Posted date 11/2016. Retrieved 02 December 2016 from
http://www.kone.com/en/careers/apply-now/default.aspx

Krogh, G. Von. (1998). Care in knowledge creation. California Management Review 40: 134. *University of California Press* 1998. Retrieved 25 October 2016 from
http://cmr.ucpress.edu/content/40/3/133.full.pdf+html

Lappalainen, E. (2015). Rovio's ex-managers reveal: Serious problems with strategy and management. 02/2015. Talouselämä. Retrieved 10 December 2016 from
http://www.talouselama.fi/uutiset/rovio-s-ex-managers-reveal-serious-problems-with-strategy-and-management-3471144

Licence Global (2015). Rovio Sets Sights on Asia. Blog post 10/2015. Retrieved 16 December from
http://www.licensemag.com/license-global/rovio-sets-sights-asia

Livingston, G. (2013). Five ways companies can address a shortage of skills. Blog post 04/2013. The Globe and Mail. Retrieved 26 October 2016 from
http://www.theglobeandmail.com/report-on-business/careers/careers-leadership/five-ways-companies-can-address-a-shortage-of-skills/article11616220/

Myers, J. (2016). These are the world's most innovative economies. *World Economic Forum* 08/2016. Retrieved 14 November 2016 from
https://www.weforum.org/agenda/2016/08/these-are-the-world-s-most-innovative-economies/

Nestlé (n.d.). Strategy. Retrieved 25 November 2016 from
http://www.nestle.com/aboutus/strategy

Nestlé (2015). Bericht zur Corporate Governance 2015. Vergütungsbericht 2015. Allgemeine Organisationsstruktur der Nestlé AG 31. Dezember 2015. Retrieved 02 December 2016 from
http://www.nestle.com/asset-library/documents/library/documents/corporate_governance/corp_governance_report_2015_de.pdf

Nestlé (2015). Nestlé Annual Review 2015. Retrieved 02 December 2016 from
http://www.nestle.com/asset-library/documents/library/documents/annual_reports/2015-annual-review-en.pdf

Nestlé (2015). Nestlé in society. Creating Shared Value and meeting our commitments 2015. Retrieved 03 December 2016 from
http://www.nestle.com/asset-library/documents/library/documents/corporate_social_responsibility/nestle-in-society-summary-report-2015-en.pdf

Nestlé (2016). Job Description. Associate R&D Specialist Product Integration (160007WN). 09/2016. Retrieved 02 December 2016 from
https://nestle.taleo.net/careersection/3/jobdetail.ftl

Nestlé (2016). Job Description. Business Processes Manager - Warehouse & Transport Management Markets (160009WN). 11/2016. Retrieved 05 December 2016 from
https://nestle.taleo.net/careersection/mobile/jobdetail.ftl?job=160009PW

Nestlé (2016). International Programmes. Retrieved 02 December 2016 from
http://www.nestle.com/jobs/graduates-entry-level/international-programmes

Nestlé (2016). Engineering and R&D. Retrieved 02 December 2016 from
http://www.nestle.com/jobs/experienced-professionals/engineering-research-development

Neto, R, C, D, de Alvarenga, Souza R, R, Queiroz J, G & Chipp H. (2009). Knowledge Management Implementation: A Process Design Proposition at Brazil's ONS (National Operator of the Interconnected Power System). *Electronic Journal of Knowledge Management,* 595. Retrieved 01 November 2016 from
http://www.ejkm.com

Nonaka, I. (1991). The Knowledge-Creating Company. *Harvard Business Review,* 08/2007, 1-5. Retrieved 21 September 2016 from
https://hbr.org/2007/07/the-knowledge-creating-company

Nonaka, I. & Takeushi, I. (1995). *The Knowledge Creating Company. How Japanese companies create the dynamics of Innovation*. New York: Oxford University Press.

Palén, A. (2014). Knowledge Management in the Gaming Industry. Blog post 02/2014. Retrieved 12 December 2016 from
http://akselipalen.blogspot.fi/2014/02/knowledge-management-in-gaming-industry.html

Pappas, C. 2016. Conducting A Successful Task Analysis: 6 Benefits You Cannot Overlook. eLearning Industry 2016. Retrieved 25 November 2016 from
https://elearningindustry.com/conducting-successful-task-analysis-6-benefits-cannot-overlook

Pavitt, K. (1990). What we know about the strategic management of technology. *California Management Review*, 18. Retrieved 26 October 2016 from
http://cmr.berkeley.edu/search/articleDetail.aspx?article=4292

Popadiuk, S. & Choo, C. (2006). Innovation and knowledge creation: How are these concepts related?. *International Journal of Information Management*. Retrieved 02 October 2016 from
http://choo.ischool.utoronto.ca/FIS/ResPub/IJIM2006.pdf

Rovio Entertainment Ltd. (n.d.). About us. Retrieved 10 December 2016 from
http://www.rovio.com/about-us

Rovio Entertainment Ltd. (2016). New leaner leadership structure at Rovio. Press release 12/2015. Retrieved 10 December 2016 from
http://www.rovio.com/new-leaner-leadership-structure-rovio

Rovio Entertainment Ltd. (2016). Customer Support Specialist. 12/2016. Retrieved 28 December 2016 from
http://www.rovio.com/careers/vacancy/customer-support-specialist

Rovio Entertainment Ltd. (2016). IT Manager. 12/2016. Retrieved 28 December 2016 from
http://www.rovio.com/careers/vacancy/it-manager

Sánchez, J., H., Sánchez, Y., H., Collado-Ruiz, D., Cebrián-Tarrasón, D. 2012. Knowledge Creating and Sharing Corporate Culture Framework. Retrieved 02 November 2016 from
http://www.sciencedirect.com/science/article/pii/S1877042813004588

Schank, R. C. (1995). What We Learn When We Learn by Doing. Technical report No. 60. *Northwestern University, Institute for Learning Science*. Retrieved 25 November 2016 from
http://cogprints.org/637/1/LearnbyDoing_Schank.html

Schein, E., H. 1990. Organizational Culture. Sloan School of Management, Massachusetts Institute of Technology. *American Psychological Association, Inc.*, vol, 45. No.2. Retrieved 02 November 2016 from
http://www.machon-adler.co.il/readers/reader56.pdf

Shirute (n.d.). Rovio. Shirute helped the angry birds utilising big data in their business. Retrieved 15 November 2016
http://www.shirute.com/en/case-clients/rovio/

Simon, H. (1957). *Models of Man: Social and rational*. New York: John Wiley.

Snook, S., Nohria, N., Khurana, R. (2011). The Handbook for TEACHING LEADERSHIP, Knowing, Doing, and Being. Retrieved 10 December 2016 from
https://books.google.fi/books?isbn=1483305953

Stenmark, D. (2001). Leveraging Tacit Organizational Knowledge. *Journal of Management Information Systems*, Vol. 17, No. 3, 9-24. Retrieved 25 October 2016 from
https://pdfs.semanticscholar.org/1de5/a8a256e0f9bc31e369c3c506099106dfe363.pdf

Strauss, R. (2015). 6 Steps to Take Before Key Employees Retire. 12/2015. Retrieved 07 December 2016 from
https://www.td.org/Publications/Blogs/Human-Capital-Blog/2015/12/6-Steps-to-Take-Before-Key-Employees-Retire

Szulandski, G. (1996). Exploring Internal Stickiness: Impediments to the Transfer of Best Practice Within the Firm", *Strategic Management Journal*, Vol.17, 31. Retrieved 02 November 2016 from
http://www.jstor.org/stable/2486989?seq=1#page_scan_tab_contents

The Official Board (2016.). Rovio. Last update 11/2016. Retrieved 10 December from
http://www.theofficialboard.com/org-chart/rovio

Todorov, K. (2014). Handbook of Research on Strategic Management in Small and Medium Enterprises. Hershey: IGI Global. Retrieved 12 December 2016 from
https://books.google.fi/books?id=TQ6XBQAAQBAJ&hl=de&source=gbs_navlinks_s

Trapani, K. (2015). 3 Differences between Scrum and Kanban you need to know. Blog post 02/2015 on cPrime. Retrieved 16 December 2016 from https://www.cprime.com/2015/02/3-differences-between-scrum-and-kanban-you-need-to-know/

UK Essays (2015). Develop A Knowledge Management Strategy For Nestle Information Technology Essay. 03/2016. Retrieved 02 December 2016 from
https://www.ukessays.com/essays/information-technology/develop-a-knowledge-management-strategy-for-nestle-information-technology-essay.php

UK Essays (2016). Nestle System and Organization Structure. 06/2016. Retrieved 02 December 2016 from
https://www.ukessays.com/essays/management/nestle-system-and-organization-structure.php

Uusitalo, H., O., & Uuskoski, M., S. (n.d.). *Improving Supplier and Customer Relationship Management through Organizational Learning*. Retrieved 26 December 2016
www.impgroup.org/uploads/papers/6737.pdf

Von Krogh, G., Roos J., & Kleine, D. (1998). *Knowing in firms. Understanding, Managing and Measuring Knowledge*. London: SAGE publications.

Weller, K. (2016). Sweden and Finland are ranked amongst the 15 most innovative countries in the world. *Business Insider Nordic* 08/2016. Retrieved 14 November 2016 from
https://nordic.businessinsider.com/most-innovative-countries-in-the-world-2016-8?r=US&IR=T

Wiig K. M. (1997). Knowledge Management. Where Did It Come From and Where Will It Go?. Manuscript for article for the Fall 1997 issue of the *Journal of Expert Systems* with Applications, Vol. 13, No. 1, 1-14. Retrieved 26 October 2016 from
https://www.researchgate.net/profile/Karl_Martin_Wiig/publication/222455916_Knowledge_Management_Where_Did_it_Come_From_and_Where_Will_It_Go/links/5635396408aeb786b702c4a9.pdf

Worthen, B. (2002). Nestlé's Enterprise Resource Planning (ERP) Odyssey. Retrieved 02 December 2016 from
http://www.cio.com/article/2440821/enterprise-resource-planning/nestl--s-enterprise-resource-planning--erp--odyssey.html

Young, T. (2008). *Knowledge Management for Services, Operations and Manufacturing*. Oxford: Chandos Publishing (Oxford) Limited.

# NESTLÉ´S JOB DESCRIPTIONS

2.12.2016          Associate R&D Specialist Product Integration

FAQs

**Job Description**

**Associate R&D Specialist Product Integration( 160007WN)**

**Description**

**Associate R&D Specialist Product Integration**

**"Market-leading products and headline-making projects"**

**System Technology Centre, Orbe, Switzerland     Undefined period of time contract**

**act rate 100%**

The Nestlé System Technology Center in Orbe is Nestlé's leading competence center for the design, development and deployment of Nestlé systems, offering expertise in machines, packaging, and products for in-home and out-of-home.

To complete our Product Integration department, we are currently looking for an **Associate R&D Specialist Product Integration.**

In this role, your main responsibilities will be to participate in a strategic project to achieve and safeguard superior end-product quality out of a system. You will also contribute to design and validate the products/system elements in order to optimize end-product quality and system performance.

**Key responsibilities**

- Achieve best end-product-quality delivered by the system according to requirements of the business.
- Contribute to establishing the necessary system performance criteria and associated testing protocols, carry out the required validations in collaboration with all entities, perform bench scale trials on system rigs in collaboration with R&D Specialists.
- Autonomously organize and prepare bench scale trials by managing raw materials supply, as well as define equipment needs & installation.
- Consolidate data and report results in dedicated files or in data acquisition, summarize results, draw preliminary conclusions for decision making and propose continuous improvement options.
- Contribute in presentations to stakeholders inside and outside of STC.
- Participate proactively in the development and improvement of laboratory procedures and methodologies to measure system performance parameters and characterize end product quality.
- Collaborates within the project team in close interaction and collaboration with the various specialists, within the System Technology Centre and across other R&D Units.
- Build and document knowledge, share latest methods, trends and developments in relevant field of activity.
- Organize and plan technical activities with other Competences, STCs and NPTCs

**Education and experience**

- Master degree in Food Science or Technology or similar field, such as Chemistry, Biology
- From 1 to 3 years in an R&D environment or/and operating /factory experience.
- Working experience in food industry and fast paced environment
- First significant experience in Project Management for R&D projects.
- Solid experience in laboratory testing and creation of test procedures
- Good track record in methodological approach
- Strong communication skills
- Fluent in English
- Any other language is a plus.

Show us that you have the excellent technical, collaboration & communication skills coupled with a good resilience to time pressure we are

https://nestle.taleo.net/careersection/3/jobdetail.ftl      1/2

2.12.2016                        Associate R&D Specialist Product Integration

looking for. Your problem solving mindset. Your dynamic personality as well as your courage and positive attitude will be your main assets for this role. If you are interested in this role, please apply in English at www.nestle.com/jobs.

The Nestlé Group is the World's leading Nutrition, Health and Wellness Company with 88,8 billion Swiss Francs in sales in 2015, more than 335,000 employees worldwide and 436 factories in more than 85 countries. We offer an attractive and dynamic international working environment with constant opportunities for development, reflecting our conviction that people are our most important asset. Learn more about our Group and reasons to join us on www.nestle.com.

**Primary Location** Switzerland-VD-Orbe
**Job** Research/Development
**Organization** Nestec S.A.
**Schedule** Full-time
**Posting Date** Sep 28, 2016

Figure 7      Nestlé's Job Description: Associate R&D Specialist Product Integration (Nestlé 2016.).

# Managing Organizational Knowledge

**Job Description**

## Business Processes Manager – Warehouse & Transport Management Markets( 160009PW)

**Description**

**Business Processes Manager – Warehouse & Transport Management Markets**

**Nestlé Skin Health has launched an ambitious business transformation program to support its strong profitable growth. This program is a key business priority with the objectives to implement best-in-class and lean business processes, standardized data management, within an automated and integrated solution. The program will leverage on GLOBE\* capabilities and capturing Pharma requirements, while integrating business and process insights combining with the best information technology.**

\*Nestlé IS/IT Function

*Temporary contract (18 months) - Lausanne based*

**Core mission**

As part of the Spring program in Nestlé Skin Health, you are fully integrated in the Planning & Logistics stream and report to the Head of Business Processes Planning & Logistics. In close collaboration with NSkinH Supply Chain, Manufacturing, Finance, Customer Service and Nestlé GLOBE Organization, you define and formalize best in class harmonized processes for Physical Logistics, with a strong focus on Warehouse and Transport Management processes once the goods have left the factory. Implement them across Nestlé Skin Health Distribution Centers and Affiliates until third Party Logistics and Co-packing partners, in a GMP regulated environment, giving a special attention to change management. The solution hereby defined will constitute Globe Health Solution, the pharma solution embedded into GLOBE landscape.

**Duties and responsibilities**

- Quickly gets on board in the program and in the key deliverables of the stream Planning and Logistics : gets familiar with existing blueprints of the stream Planning and Logistics
- Understand key success factors and get actively involved to create the conditions for success.
  - Identify key show stoppers / stakes, set up action plans and escalate as appropriate.
  - Play an active role in change management & communication.
- Coordinate with the Head of Business Processes Planning & Logistics and with the other BP Managers cross streams to propose an effective design in SAP solution for Warehousing and Transport management in NSH DCs and affiliates, until interfaces with 3PLs and co-manufacturers
- Collect Business needs from NSkinH DCs and affiliates, working with other Business Processes Managers, identifying leverage with Nestlé and adding the compliance dimension. Make sure that Galderma needs are defined in an exhaustive, adequate and timely manner so that the ERP design and deployment can be done "right the first time".
- Establish a common set of best in class processes and sub processes for Warehouse and Transport Management, adaptable to each region.
- Contribute to the definition of business requirements and functional design in SAP solution
- Contribute to the different phases of the project on a daily basis
  - Write User Requirement Specifications, Functional Specifications and review Technical Specifications
  - Participate in SPRING team training delivery (prepare end-user training material, train-the-trainer)
  - Define Test Scenario and Tests Scripts  in order to perform Functional Tests, Integration Tests and User Acceptance Tests
  - Review and check instructions for system configuration and RECIF developments (reports, enhancements, conversion, interfaces, forms)
- Ensure the regular information of the Head of BP P&L as well as the other stakeholders in their respective location
- Support rollout and continuous improvement
- Identify needs for evolutions in the organization, and make sure of their full consideration to the upper level,
- Support the implementation of changes and provide training when necessary.
- Make sure that the evolutions of Globe Health Solution meet the needs of the other business streams (Commercial Operations, Finance, and Manufacturing, with a focus on process efficiency) on P&L point of view

**Profile:**

- University Degree in Supply Chain, Science or Business Administration, or significant experience,
- At least 8 years of professional experience in Logistics as Supply Chain Analyst / Distribution manager / Warehouse manager, in an international company,
- Good experience in project management, with robust contribution/participation to global ERP implementation(s)
- Warehousing processes and best practices in a Distribution Center, in GxP environment (both European and North American)
- Transport Management processes and best practices, in GxP environment (both European and North American)
- Relationship management with 3PLs, both from a business and a technical point of view (EDI connections), in a GxP environment.
- Good knowledge of Pharma specificities : GMP /GDP / Serialization
- Knowledge of triangular invoicing flow (via a principal entity) is a plus
- Very good ability to write project documents (process flows, specifications, Standard Operating Procedures, Training Material…)
- Strong knowledge of warehousing and Transport KPIs
- Hands on experience and knowledge with warehouse and Transport management software and databases, preferably with SAP
- Fluent English mandatory oral and written – French and German are assets.

Nestlé Skin Health's mission is to enhance quality of life by delivering science-based solutions for the health of skin, hair and nails. As one of the category's leading companies, Nestlé Skin Health conducts ground breaking product research to provide both the healthcare community and the consumer with an ongoing progression of innovative technologies and products to protect, serve and enhance skin health.

For more information, please visit www.nestleskinhealth.com

**Primary Location** Switzerland-VD-Lausanne
**Job** Supply Chain
**Organization** Galderma
**Schedule** Full-time
**Posting Date** Nov 28, 2016

Figure 8    Nestlé's Job Description: Business Process Manager – Warehouse & Transport Management Market (Nestlé 2016.).

KONE'S JOB DESCRIPTIONS

**Solution Design Owner, Maintenance Solutions**

**Job ID:** 29625

**Country:** Finland

**Region:** Finland

**City:** Espoo

**Date posted:** Nov 30 2016

**Job Posting Category:** Information Technologies

**Employment Type:** Full-time

**Contract Type:** Permanent

**Application Closing Date:**

About us

KONE IT is an organization of process development and IT experts responsible for developing KONE's processes and managing cutting-edge IT solutions worldwide.

We are looking for

KONE IT is looking for a Solution Design Owner for applications supporting our Maintenance Business Solution on SAP. These applications assist our personnel to manage Sales for Maintenance and Repairs, Customer Service, service order billing and Planned Maintenance area.

As a Solution Design Owner you will be responsible of functional solution design for these solution areas. You will work closely with Business process owners and other stakeholder to capture and manage the business requirements and formulate these into information system concepts and functional specifications.

You will work in close co-operation with technical configuration team(s) and solution providers in order to create alternative solution options analysis, ensure solution technical fit for purpose and participate in capacity planning.

Your responsibilities include:

- Formulate business and process requirements into information system concepts and functional specifications
- Requirements collections and management
- Ownership of functional solution designs and documentation
- Provides advanced non-technical support during use phase; provides know how on concept, related applications and processes
- Collect end user feedback

Skills, Education and Experience

We expect you to have

- Experience in working in business-IT interface
- Understanding and experience in IT projects
- Bachelor or Master's degree in IT / Business Administration / Engineering
- Knowledge of CS/SM (Customer Service/ Service Management), PM (Plant maintenance , SD ( sales and distribution ) SAP module .
- Variant configurator in SAP and ability to understand coding is a plus
- Two years or more experience in working in an international environment with ability to perform in virtual and matrix organizations
- Basic business process modeling skills
- Highly motivated team player
- Basic project management skills
- Excellent written and oral communication skills
- Service focused approach and attitude
- Willingness and ability to travel

We offer

At KONE, we are focused on creating an innovative and collaborative working culture where we value the contribution of each individual. Employee engagement is a key focus area for us and we encourage participation and the sharing of information and ideas. Sustainability is an integral part of our culture and the daily practice. We follow ethical business practices and we seek to develop a culture of working together where co-workers trust and respect each other and good performance is recognized. In being a great place to work, we are proud to offer a range of experiences and opportunities that will help you to achieve your career and personal goals and enable you to live a healthy and balanced life.

If you think this could be your next inspiring challenge, please submit your application by December 18, 2016 to www.kone.com/jobs, the ID number of this position is 29625. For additional information, please contact Giovanna Frenda via e-mail:Giovanna.Frenda@kone.com

Figure 9    KONE's Job Description: Solution Design Owner, Maintenance Solution (KONE 2016.).

## ROVIO'S JOB DESCRIPTIONS

Aarresaaren työpaikkailmoitus (www.aarresaari.net)

**Product Management Summer Trainee, Digital Services**

Rovio has been growing rapidly after the phenomenal success of Angry Birds, and our growth is continuing at a strong pace. Our Digital Services unit is focused on creating new products and services extending our offerings in games and beyond.

We are looking for a Product Management Summer Trainee to join our Digital Services Product Management team based in Espoo, Finland. In this role you will be responsible for assisting the Digital Services Product Management team in early stage product management tasks with a specific focus on new business concept development, validation and documentation for digital services & products. Core focus is on user uptake and creation of new business opportunities.

Requirements:

- Recently graduated or studying towards a relevant degree (business/technical)
- Understanding of digital and mobile business domains (business and technically)
- Excellent social and co-operation skills.
- Analytical mindset with a capability of crea! ting professional analysis and "what-if" models
- Good presentations skills and ability to perform in sales.
- Good overall product management and related framework knowledge.
- Understanding of unique and good quality User Experience.
- Good skills in general Office tools (Powerpoint, Word and Excel).

Not compulsory but seen as a plus:

- Experience in creating/ coordinating /managing digital concepts.
- Experience in Service Delivery Management (e.g. service development & planning, Sales support, customer service support)
- Knowledge of business case analysis, conceptualization, P&L planning, developing or operating (business, not technical operations) mobile and web services and systems.
- Any experience working in or in close cooperation with an agile (Scrum/Kanban) seen as a big plus
- General interest in the game industry and passion for games

In order to be our ideal candidate you are a startup minded person with an interest and dri! ve to learn new things and create new business. You are passio! nate for improving your customers' lives with a focus on end-user value instead of developing features. You may also have experience or are familiar with such concepts as "actionable metrics", "lean startup", "customer development", "service design", "A/B testing" and "crossing the chasm" and are able to leverage this knowledge in assessing different options in developing digital service business concepts.

The role requires ability to work on multiple projects simultaneously, excellent organization, communication, and interpersonal skills. Excellent written and oral skills in English are essential. You enjoy working in both individual and team settings.
Being part of Rovio's Digital Services Product Management team you have the possibility to work in a really inspiring fast-growing environment. We encourage and cherish an innovative culture - Rovio is the right place for development minded people who enjoy working in a fast-paced and

dynamic environment full of opportunitiesIf you have the right qualifications we are looking forward to hearing from you right away

Please note that this position will be filled as soon as a suitable candidate has been found, so apply already today by filling the online application form at http://www.rovio.com/en/careers/Open-positions/view/310/product-management-summer-trainee-digital-services

========================================================

Työpaikan katuosoite: Keilaranta 17, 02150 Espoo
Työn kesto:
Palkkaus:

========================================================

Työnantaja: Rovio Entertainment Ltd.
Yhteyshenkilö:
Osoite:
Puhelinnumero:
Sähköpostiosoite:
WWW-osoite: http://www.rovio.com/en/careers/Open-positions/view/310/product-management-summer-trainee-digital-services

========================================================

Viimeinen hakupäivä: 29.5.2013
Ilmoitus nro: 54276

Figure 10    Rovio's Job Description. Product Management Summer Trainee, Digital Services. (Aarresaari 2013.).

**ROVIO**

### Customer Support Specialist

**+ESPOO, FINLAND**   19.12.2016

Like ⟨ 0 ⟩

We're looking for a service-minded Customer Support Specialist to join Rovio Games´s Delta Studio in Espoo, Finland!

Working within our Delta Studio, you will be a focal point for communications with our players whilst being responsible for maintaining and developing various feedback channels to our game teams. As well as working closely with the QA leads and developers across Rovio, you will also experience first-hand the various operational duties that Delta Studio undertakes in bringing games to the world, from early-stage market insights to going live in the app stores.

Your key tasks and responsibilities:

- Answering customer emails concerning technical problems and usability issues in all games across different platforms in a timely and polite manner.

- Ensuring Rovio's quality standards and reputation are upheld with regards to customer satisfaction

- Liaising with QA teams and reporting game issues in a prompt way

- Using of Rovio and third-party cloud tools to handle progress, IAP and game account issues

- Leading or participating in short-term projects concerning internal process development, communications improvements, systems development etc, when needed

- Continuous education and sharing of knowledge across the Customer Support team to enable the team to work within fluid modular groups depending on present demands for support across different game titles and services

- Updating of FAQs and macros in a timely manner to provide valid information to customers

- Fostering a positive attitude and working in co-operation with other teams

- Coordinating and facilitating the work of our partners

Sounds like a lot? Well it is! But you're up for it, right?

We'd love you to have these feathers in your cap:

- Experience in customer support, preferably over email. Technical support is an advantage

28.12.2016                    Customer Support Specialist | Rovio.com

- Bachelor's degree and some form of formal training is considered as an advantage

- Fluent skills in English. Chinese or German fluency are a plus.

- Familiarity with and interest in smartphones in general from a player perspective

- Patience with facing difficult issues

- Ability to process large amounts of information quickly and sort the technical details of it through all the feedback

- Packaging information for QA and reporting according to agreed ways of working

- Willingness to roll-up your sleeves and get your hands dirty

What you get when you join us:

- We give you the best support we can, we help you grow and achieve your professional goals

- We do have fun! We are a family-like community that is hands-on, open, collaborative and ambitious

- You will get to work in truly international environment: you will hear a number of languages in our workplace and can join a variety of activities that we come up with together

- Great opportunity to work with top talent in the gaming industry!

- Competitive benefits such as a cell phone of our top models, a laptop you feel comfortable with, lunch and sport vouchers, breakfast, gaming area, gym, sauna and more

- Oh, and we've got good coffee. And fresh fruits. And free soda :)

Slingshot your application over now - we look forward to hearing from you!

**External vacancy link**

Field: Other

Level: Staff

**Applying ends:** Applying starts: 2016-12-19 08:00 - Applying ends: 2017-01-08 23:59

JOIN THE FLOCK

# Subscribe to our newsletter

Click here for all the news that's fit to fly - delivered straight to your inbox! You can opt out anytime.

SUBSCRIBE

http://www.rovio.com/careers/vacancy/customer-support-specialist                    2/3

Figure 11    Rovio's Job Description. Customer Support Specialist. (Rovio Entertainment Ltd. 2016.).

IT Manager | Rovio.com

**ROVIO**

## IT Manager

**+ESPOO, FINLAND** 21.12.2016

Like ⟨ 0

Rovio is a global leader in mobile entertainment of more than 400 employees with its headquarters in Espoo, Finland and several offices abroad. Rovio is a server-free environment operating the IT in close partnership with world-class cloud services providers in an MPLS environment.

We're looking an IT Manager with excellent skills in IT infrastructure, security and support services. In this role you'll be responsible for IT architecture, common platforms, end-user and partner support, application maintenance and development. A key objective is to effectively manage stakeholder and partner relations to ensure full satisfaction of all Rovio business units in the area of centralized IT management.

What you'll take under your wings:

- Responsibility for IT infrastructure, security
- Responsibility for enterprise IT architecture and platforms
- Responsibility for user support in the area of IT software and hardware, networks and connections
- Responsibility for IT program and project portfolio
- Managing internal stakeholder relationships
- Leading IT team (of 5) to pursue constantly improving performance
- Managing relationships with cloud services and security providers
- Preparing and managing group IT budget with an objective of value for money IT solutions
- Managing application maintenance and development

We'd love it if you have these feathers in your cap:

- 5-10 years of working experience in IT field
- Fluent English and Finnish language
- Hands-on system administration
- Very strong enterprise architecture, infrastructure and security skills
- Proven background on application maintenance and development
- Project and program management
- Vendor and partner management

28.12.2016            IT Manager | Rovio.com

- Strong communication skills and ability to motivate the team

- Cost management skills in your area of responsibility

What you get when you join our nest:

- We give you the best support we can, we help you grow and achieve your professional goals

- We do have fun! We are a family-like community that is hands-on, open, collaborative and ambitious

- You will get to work in truly international environment: you will hear a number of languages in our workplace and can join a variety of activities that we come up with together

- Great opportunity to work with top talent in the gaming industry!

- Competitive benefits such as a cell phone of our top models, a laptop you feel comfortable with, lunch and sport vouchers, breakfast, gaming area, gym, sauna and more

Slingshot your application over now - we look forward to hearing from you!

**External vacancy link**

Field: Other

Level: Manager

**Applying ends:** Applying starts: 2016-12-21 08:00 - Applying ends: 2017-01-04 23:59

JOIN THE FLOCK

# Subscribe to our newsletter

Click here for all the news that's fit to fly - delivered straight to your inbox! You can opt out anytime.

SUBSCRIBE

http://www.rovio.com/careers/vacancy/it-manager        2/3

Figure 12    Rovio's Job Description. IT Manager. (Rovio Entertainment Ltd. 2016.).