Van Bach LE

The development of a Process Management Model for Herman IT's Competency-Based Human Resource Management and Development Contents

Thesis

Kajaani University of Applied Sciences

School of Business

Bachelor Degree of Business Administration

06.12.2015

The aim of this thesis is to explore and develop the Process Management Model for Herman IT to ensure the identified competencies are implemented in compliance with the Competency-Based Human Resource Management Model and are continuously reviewed and developed on an ongoing basis.

The theoretical background concentrated on the relationship between the concepts of Human Resource Management (HRM) and Strategic Human Resource Management (SHRM) and how they are connected to the competency. The understanding of the Deming Cycle (PCDA) provides the layout to develop the Competencies Process Management Model. The research questions are built on the research objectives and theoretical framework and then the research is conducted to explore how to adapt the Process Management Model into the commissioning company.

The qualitative research method is employed in this thesis. The analysis of findings collected from the interview with the participants brought to light their opinions and expectations about the model, how they currently review and develop their competencies. The Competency Process Roadmap is built based on the Process Management Model combined with the data collected in the interview.

PREFACE

First of all, I want to show my huge appreciation to my supervisor, Ms. Ruey Komulainen. Without your encouragement and support during the last 8 months, I am hardly able to finish this. Thank you for being my mentor for the last three and half years. Your advice and experience that you shared are really valuable to me.

I also appreciate Mr. Kimmo Rusanen and his colleagues in Herman IT for taking time out of your busy schedule to support me during this journey. It was a pleasure speaking with you and I thoroughly enjoyed the time we worked together.

I want to say thank Ms. Päivi Auno for your support and advice. You guided me through the thesis process.

Next, I want to show my deepest gratitude to my family members, especially my parents who have encouraged and supported me during the journey of studying bachelor. As I look back on my life, I cannot help but notice how you two guided me step by step and gave me all the best you have so I can be who I am today.

Last but not least, I want to say thank all of my close friends and colleagues, who have supported and helped me a lot during the tough time. And I also want to thank Thien An, my soul-mate, for always been there for me.

Kajaani, winter 2015

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1 INTRODUCTION

1.1 Background and Problem Statement

In 2013, there were around three hundred thousand enterprises in Finland. 98.9% of them are SMEs (small and medium enterprises) which employs less than 50 people (Entrepreneurship in Finland, 2013). The role of SMEs is quite important in the Finnish community, which generates about 50% combined turnover of all Finnish businesses and contribute 16% to the export revenue. However, SMEs are often affected roughly by the internal and external factors, which force them to adapt and develop, especially in the IT industry. "How to identify the necessary competencies for employees?" and "How to develop and utilize all those competencies in the best way to achieve the goals of the business strategy?" are the questions have been arisen by the CEO of the commissioning company of this thesis during the meeting in April 2015. The commissioner is Herman IT, an IT company established on 2011, based in Kajaani, Finland and operating mainly in Data Center industry.

1.2 Research Objective and Questions

At this moment, Herman IT is exploring to adopt the Competency-Based Human Resource Management (HRM) Model into the context of the company and they also need a Process Management Model to ensure all the competencies are continuously identified, developed and kept up-to-date over time. Based on the visions of the next three years, Herman IT will reorganize its teams to match their goals in the business strategy. Reorganizing is a prolonged complicated process and the employees will acquire a new skill sets and abilities to achieve the objectives of the company. As a result, Herman IT wishes to have a Process Management Model to ensure the identified competencies are implemented in compliance with the Competency-Based Human Resource Management Model and are continuously reviewed and developed on an ongoing basis. However, currently there is no such an equivalent process and the Competency-Based HRM Model is still at the exploring stage and only may be introduced

in the near future. Therefore, the aim of this research is to explore how the processes of competency development can be managed in an effective and efficient manner.

Based on the statement of problems and research objectives, the research questions are:

- **RQ1:** How can Herman IT monitor, review and update their competency criteria over time to ensure it is matched with the changing internal and external environment of the organization?

- **RQ2:** How can this process model be implemented? What are the process steps?

- **RQ3:** What are the challenges to implement such a Process Management Model? How can they be overcome or mitigated?

- **RQ4:** How can the competencies identified be captured and updated into a Process Roadmap?

1.3 Structure of the study

Chapter 2 provides the fundamental knowledge about the Data Center industry in Finland and especially the Kainuu Region; information and structure of the commissioning company and their desire to change in the future.

Chapter 3 provides and discusses the key concepts and definitions of the research, which are Human Resource Management, Strategic Human Resource Management, how they are related to Competency and the benefits of Competency-Based HRM. Then the concept of Deming Cycle (PDCA): its popularity and benefits to develop a Process Management Model.

Chapter 4 explains in detail the Competency Process Management Model.

In chapter 5, the research method that was used to collect data to explore the expectations of the author, includes the data collection procedure, questionnaire, limitation, validity and reliability will be discussed.

Chapter 6 presents the empirical findings analyzed from the data in the interview to answer the research questions.

Chapter 7 proposes the incident challenges and advice to overcome those challenges.

Chapter 8 concludes the research by giving comments to the value of the research.

2 HERMAN IT AND DATA CENTER INDUSTRY IN FINLAND

2.1 Data Center Industry in Finland and Kainuu Region

Since the Internet has become a popular tool for everyone in the world, it has created a huge demand of sharing and transferring information among human. This revolution has increased the demand of digital infrastructure, especially in Data Center Industry, and Finland seems to enjoy a giant opportunity for a positive injection of economic growth by becoming a major European hub for digital infrastructure. (Finland's Giant Data Center Opportunity - From the Industrial Heartland to Digital Age, p. 1)

Finland meets all the required factors to be able to develop Data Center facilities: that Finland's national electricity network boasts an average 99, 9998% transmission reliability and that Finnish large-scale data centers benefit from the same low taxes policy as other energy-intensive industries. On the other hand, there is an abundant source of planned land which is proper for building large data center facilities, creating a safe geological location and solid bedrock soil which helps reduce the risk of damages to data centers. The typical cool climate of this Northern European country also helps to keep electronic equipment safe from overheating, thus prolonging the durability of the electronics. Compare to the other countries, corporate investors in Finland take advantage of the local regulations which are supportive to Data Center Industry as well as seek for the high-quality labor force who can speak English. Finland already attracted a number of investments from big corporations like Google, Yandex and Microsoft. Over the next decade, Data Center Industry is expected to create 32,000-50,000 places of employment and to generate a total economy impact of EUR 7-11 billion. (Finland's Giant Data Center Opportunity - From the Industrial Heartland to Digital Age, p. 10)

Especially, in this research the author wants to call attention to Kajaani, a city belonging to the Kainuu Region, located in the Central of Finland. Kajaani has gone through many significant changes in the IT industry in the region, especially in Data Center Industry in the recent years. Kajaani – Renforsin Ranta is one of the few places having the best conditions, as mentioned in the paragraph above, for the Data Center Business, not only in Finland but

also in Europe. Located next to the lake Oulunjärvi, it takes more or less 10 minutes from Renforsin Ranta Park to reach the airport, the city center of Kajaani, Kajaani University and other utilities. Besides the connection with the national power grid, there are also biomass power station and hydropower stations which can provide secure, inexpensive and renewable energy in a long term. Kajaani also has fiber cable connected to Russia and Germany, which positions Kajaani to become an internet exchange station. Because of this unique combination of good existing infrastructure, CSC - a non-profit, state-owned company administered by the Finland Ministry of Education and Culture) and Herman IT Oy – Commissioning Company of this research - decided to locate their data centers at Kajaani - Renforsin Ranta. (Invest In Kainuu, n.d.)

2.2 Background of Herman IT

Established in 2011, Herman IT Oy - a technology company owned by KPO (Kainuun Puhelinosuuskunta Oy) Group has approximately 40 employees up to present. In December 2014, Herman IT has merged with Ebsolut Oy, a software development company founded in 2000, which is based in Kajaani. Ebsolut Oy designs and develops information systems and offers subcontracting services. The purpose of this merging is to help new Herman IT become a new significant data center and cloud service provider in Finland. With the slogan "Stable – Secure – In Finland", Herman IT promises to bring their customer the most reliable and cost-efficient services provided by Finnish people. After merging with Ebsolut Oy, there are three core business sectors in the Herman IT: (Herman IT's presentation, 2015)

- IT Colocation: KPO Group, the owner of Herman IT has over 100 years of history in telecommunication business. By running four data centers in the region, they provide Herman IT with the experiences and resources to operate a modern data center. Based on the former infrastructure of a UPM paper mill site in Renfosin Ranta, with two different data center spaces totaling 350m2 and the existing power grid (about 1 megawatt) which proved their high reliability by many decades serving in the intensive industry, Herman IT can offer high-availability data center and

collocation solutions. They aim to expand the power grids up to 5 megawatts to become top-five in the data center services industry in Finland in 2018.

- IT Capacity: Being a partner with IBM, Herman It also uses the IBM Spektri to provide cost-effective and reliable services. They offer domestic IT outsourcing and data center services based on their existing data centers (server environments, virtual environments, capacity services and storage services).

- IT Concepts: Herman IT has experience in providing tailored services based on customer needs: Web solution and software development services; Office 365 from Microsoft's global cloud including 3 available packages based on the size of the customer's company; and web conferencing solutions that are based on the Finnish innovation. Those are all available in mobile devices and computers, which can support different purposes of the customer.

The employees' arrangement of Herman IT is indicated in Figure 1 and 2:
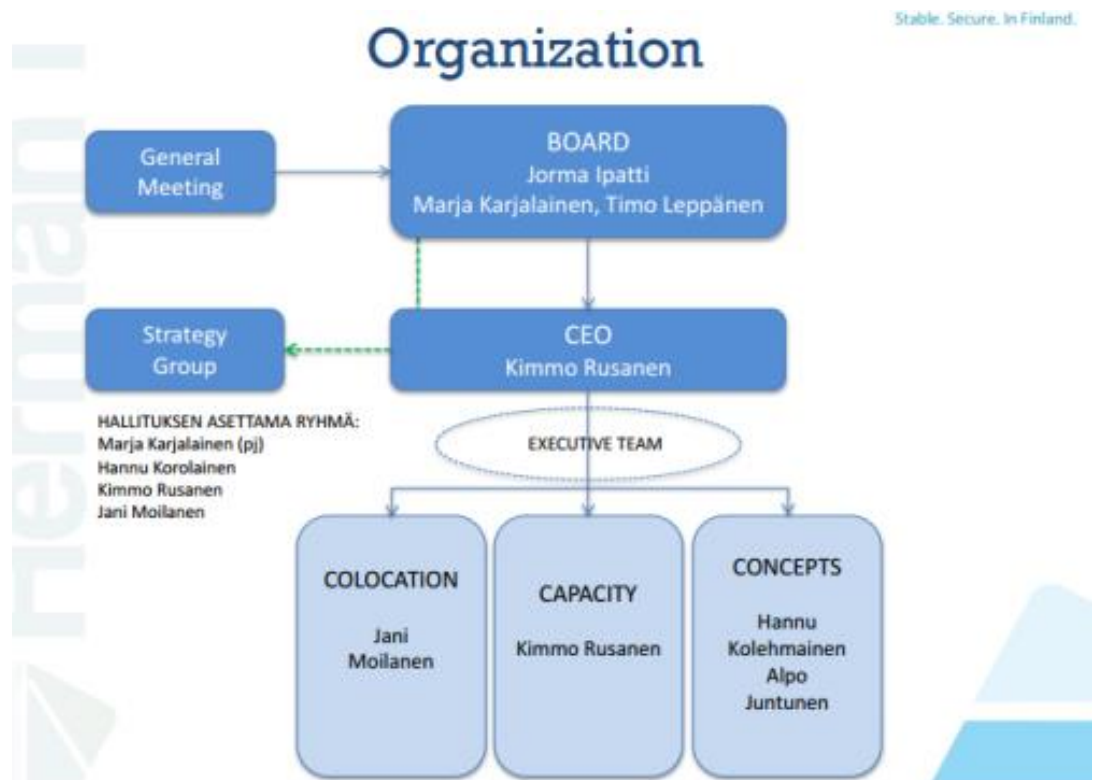
Figure 1 Herman IT Organizational Chart (Herman IT's presentation, 2015)
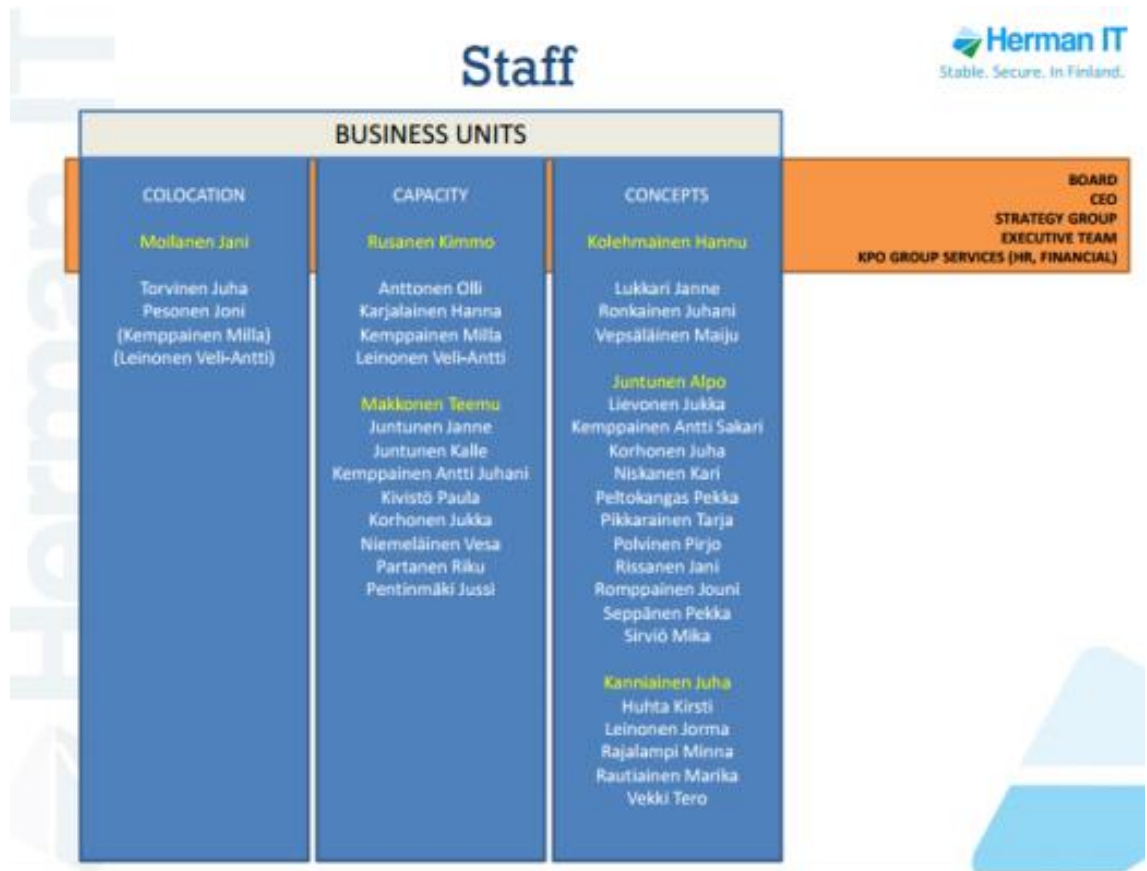
Figure 2 Staff in core business areas of Herman IT (Herman IT's presentation, 2015)

After the merger, more than a half of the employees in this company moved to the Concept team and most of them were ex-employees from Ebsolut Oy.

During the meeting in April 2015, the CEO of Herman IT presented about the business visions and missions in the next three years. According to the CEO, Herman IT aims to consolidate the Sales Team across three divisions to acquire more synergies across the businesses and also explore the possibility to mobilize people between the capacity and concept teams.

On the other hand, in the next three years, there will be a reorganization its teams in Herman IT. The Collocation Team is expected to grow three-fold and two-fold growth in the Capacity Team. The objective of the Concept team in the future is to develop the necessary competencies and skills for their staff to support the other team's growth. To achieve this, it is required a shift in the mindset, an acquisition of new competencies and skills together with one system that can track, improve and update those competencies promptly.

3 THEORETICAL BACKGROUND

3.1 Human Resource Management & Strategic Human Resource Management

According to Armstrong (2006), Human Resource Management (HRM) is a strategic and coherent approach to the management of the prime asset in a company – the people working there individually and collectively contribute to the achievement of its objectives. Storey (1989) defines HRM is a "set of interrelated policies with an ideological and philosophical underpinning". He suggests four aspects that constitute a meaningful version of HRM:

- a particular constellation of beliefs and assumptions;
- a strategic thrust informing decisions about people management;
- the central involvement of line managers; and
- reliance upon a set of 'levers' to shape the employment relationship.

The aim of HRM is to ensure that the organization obtains and retains the skilled, committed and well-motivated workforce it needs. This means HRM will take steps to assess and satisfy future people needs as well as to enhance and develop the inherent capacities of people – their contributions, potential and employability – by providing learning and continuous development opportunities (Armstrong, 2006, p. 9).

However, in his contingency theory, Armstrong points out that the definitions, targets, strategies, policies, list of activities and analyzes of the role of the HR department are only valid when they are related to the company's context. Contingency theory is essentially about the need to achieve fit between what the company is, what they want to become (its strategy, culture, goals, technology, employees and external environment) and what the company does (how it is structured, and how the processes, procedures and practices are implemented.) (Armstrong, 2006, p. 24).

While HRM is defined and bounded by the company's visions, business strategy and objectives, Strategic Human Resource Management (SHRM) is looking for the solutions

instead: how to plan, organize, control and develop the human capital to achieve the goals of the business strategy and make this non-imitable resource a competitive advantage. Schultz (1961) recognized human capital as "something akin to property" and more details, Rastogy (2002) conceptualizes human capital as 'knowledge, competency, attitude and behavior embedded in an individual' and (as cited in Bong, 2009, p. 3). Indeed, SHRM takes a broad and long-term view about how HRD policies and practices can support the achievement of business strategies. By including the HR processes, SHRM provides the rule for directing, using and developing the human capital in the organization. Walton (1999) described that SHRM involves introducing, eliminating, modifying, directing and guiding processes in the way that all individuals and teams are equipped with the skills, knowledge and abilities they require to undertake current and future tasks required by the organization (as cited in Armstrong, 2006, p. 534). Additionally, Manninen & Viitala (2007) comments that SHRM also reflects the goals of the HR in a strategy time (p. 39).

The fundamental aim of strategic HRD is to enhance resource capability in accordance with the belief that the human capital of an organization is a major source of competitive advantage. It is therefore about ensuring that the right quality people are available to meet present and future needs. This is achieved by producing a coherent and comprehensive framework for developing people. Within this study, Strategic Human Resource Management is considered as a foundation to understand the Competency-Based approach HRM, which is a strategic approach to recognize the human capital in the organization as a non-imitable competitive advantage. The following part will explain the definition of the competency and how it is integrated into the domain of SHRM.

3.2 Competency

The term competency was introduced to Human Resources Management in the early of 80's of the 20th century. For over three decades until now, competencies and competency models have become an inseparable part of Human Resource Management and have been widely used as means for increasing personal and organizational efficiency. When searching the dictionary, two words competence and competency will produce basically the same meaning. However,

the concepts of competence and competency are different. Competency denotes specific behaviors and skills an employee should possess in order to be able to achieve high-performance levels, meanwhile competence refers to a level of specific knowledge and skills necessary to carry-out a task (Competency Models - Benefits and Challenges, 2010, p. 4).

There are other definitions about competency. Draganidis & Gregoris (2006) defined that competency is a combination of tacit and explicit knowledge, behavior and skills that give someone the potential for effectiveness in task performance. Perrenaud (2000) described competencies as "the skills, knowledge, abilities and other characteristics that someone needs to perform a job effectively" while Intagliata et al. (2000) agreed that "competencies provide organizations with a way to define in behavioral terms what their leaders need to do to produce the results the organization desires and in a consistent way builds its culture. They should provide the 'North Star' by which leaders at all levels navigate in order to create synergy and produce more significant and consistent results" (as cited in Draganidis & Gregoris 2006, p.53). In this research, the author will use the term "competency" to denote a combination of experience, knowledge, skills and the attitudes necessary for the successful performance of a specific task or in a specific position.

Depending on different purposes, there are many ways to classify the types of competency. With the purpose of training and development, Gangani, McLean & Braden (2004) specified that there are three types of competency: fundamental competency, core competency and visionary competency. Fundamental competency includes essential elements that everyone shares across the board. Core competency includes functional elements that help to perform the current job effectively and visionary competency is those skills employees need for their next level job or for the future (Gangani, McLean, & Braden, 2004). Armstrong (2006) also has his ways to classify competency with similar meaning but in different names: behavioral competency which defines the behavioral expectations, also known as "Soft skills"; and technical competency, indicating what people have to know and be able to do (knowledge and skills) to carry out their roles effectively (Armstrong, 2006). Within this research, the author will use the classification of competency developed by Samar (2015) in her competency-based HRM model.

Although there are many definitions of competency and they may sound different from each other, they all share one viewpoint that competency denotes a combination of experience, knowledge, skills and the attitudes necessary for the successful performance of a specific task or in a specific position.

The competency-based approach HRM is not a new perception. In history, the early Romans practiced a form of competency profiling in attempts to detail the attributes of a "good Roman soldier" and this perception has been introduced under corporate environment since the 1970s and then has been rapidly developed. Throughout many years, competency-based approach has proved to be a critical tool and Draganidis & Mentzas have explained the reasons to use these approaches: "They can provide identification of the skills, knowledge, behaviors and capabilities needed to meet current and future personnel selection needs, in alignment with the differentiations in strategies and organizational priorities. They can focus the individual and group development plans to eliminate the gap between the competencies requested by a project, job role, or company strategy and those available" (Draganidis & Mentzas, 2006, p. 52).
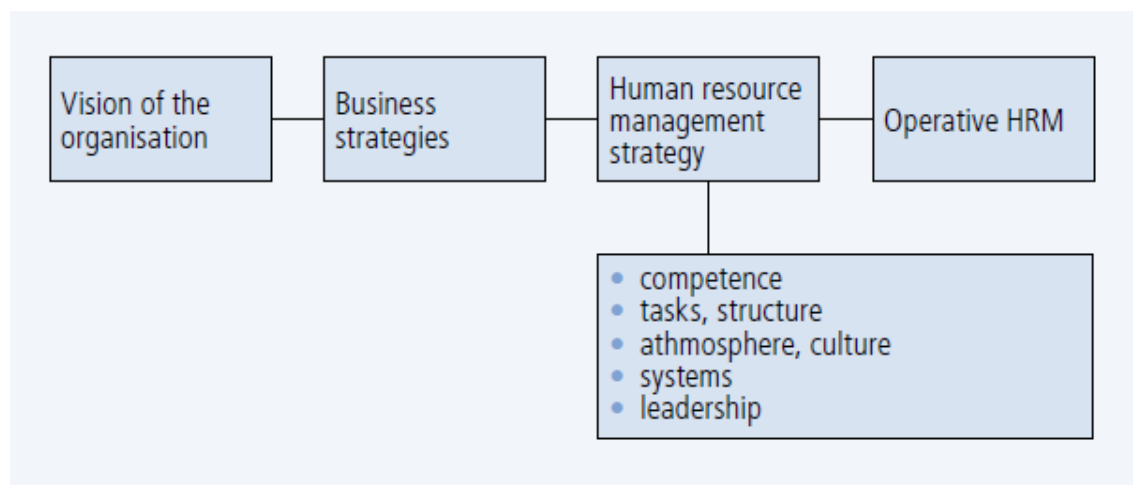
Figure 3 Vision and strategy provide the direction to HRM (Viitala, 2003) (as cited in Manninen & Viitala, 2007, p. 39)

3.3 Deming Cycle

Originally the PCDA (Plan – Do – Check – Act) was based on Shewhart Cycle and then was made popular by Edward Deming in 1950. Undergone several changes in decades, PCDA (Deming Cycle) has become a popular tool in the business environment when starting a new project; developing or improving the design of a process, product or service. There are four stages in the cycle (Wigmore, 2015):

- **Plan**: Define the problems, collect relevant data, and ascertain the problem's root cause.

- **Do**: Develop and implement the solution; decide upon a measurement to gauge its effectiveness.

- **Check (Study):** Carry out the theory and monitor or study the results. Build improvements into the system.

- **Act**: Document the results, inform others about process changes, and make recommendations for the problem to be addressed in the next PDCA cycle.
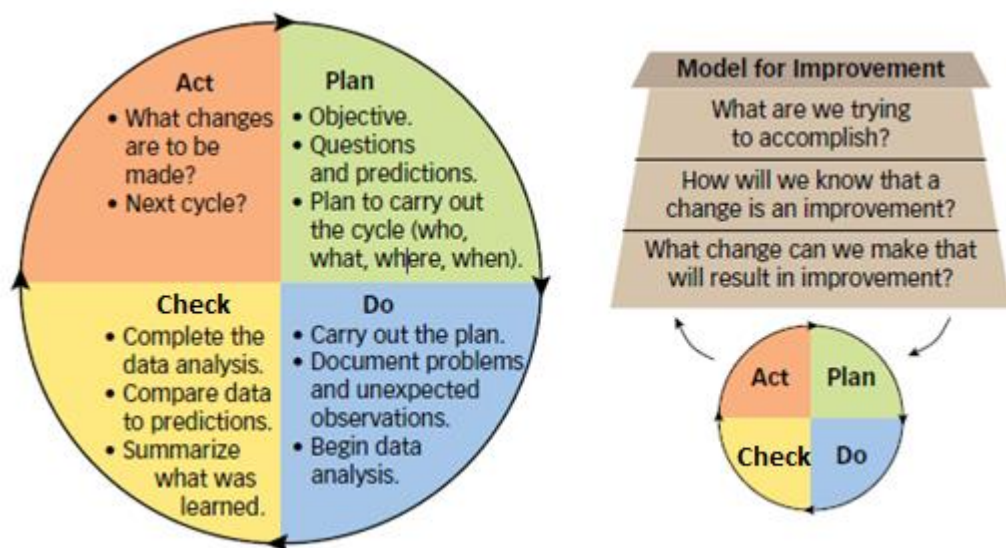
Figure 4 PDSA Cycle and Model for Improvement (1991-1994) *(Moen & Norman, 2010)*

4 COMPETENCY PROCESS MANAGEMENT MODEL

The Competency Process Management Model is developed based on the Deming Cycle (PDCA). The model is divided into stages which created a completed circular process to help the company maintain and develop the competencies over time. Competency Process Management Model nurtures and develops the competencies of the employee at all levels, which cover purposeful activities that foster, develop and produce the kind of competency required by the business strategy. According to Burtonshaw and Davies (2008), the competency management system should be fully integrated with the company. Thus, the Competency Process Management Model, which is transferred from the Deming Cycle, is integrated to the aims and policies of SHRM as well as the business strategy of the company. There are four stages in the model which include sub-activities in each phase.

Review: to assess the performance over the whole model against agreed standards, key performance indicators and the industry changing factors.

Feedback is to ensure all are kept up-to-date and thus improve the competence management system itself and ensure that competencies are being maintained and updated.

Analyze: aggregate and collect the information to develop the competencies then the organization can improve their employees' working efficiency and create a sustainable competitive advantage for rivals.

Assess: an initial evaluation of key competencies and the abilities to perform them in specific tasks.

Validate: is to test whether employees achieved the necessary competency after the training & development programs.

Test Readiness: to evaluate whether an individual can perform a specific task as required in the real world.

Develop: is a course of action intended to improved or maintained identified competencies.

Implement: is actions taken to improved or maintained identified competencies.

Act | Plan
Check | Do

Figure 5 Competency Process Management Model

4.1 Plan

In the first phase of the model, "Plan" aims to identify the competencies that need to be maintained, updated and developed to achieve the goals of the organization over time. Furthermore, the initial competency assessment of employees also needs to be implemented in this phase to understand the current situation of employees in the organization.

4.1.1 Analyze

First, the company needs to aggregate and collect the information to develop the competencies which are necessary to improve the working efficiency of employees and to create a sustainable competitive advantage for rivals. The information should be analyzed based on the visions and missions that designed by the managers and how the external factors will affect the company in the present and the future. To identify the necessary competencies to achieve the goals of the organization, the author wants to call attention to the Competency Based-HRM Model, which has been developed by Saima Yacoub in 2015 for Herman IT. The model arranges the competencies based on the functions and values of the company. The "Analyze" process is developed based on the modification of Armstrong's human resource planning, to make it adapt better with the initial aim: define the needs and gaps to improve and develop the competencies in Herman IT.
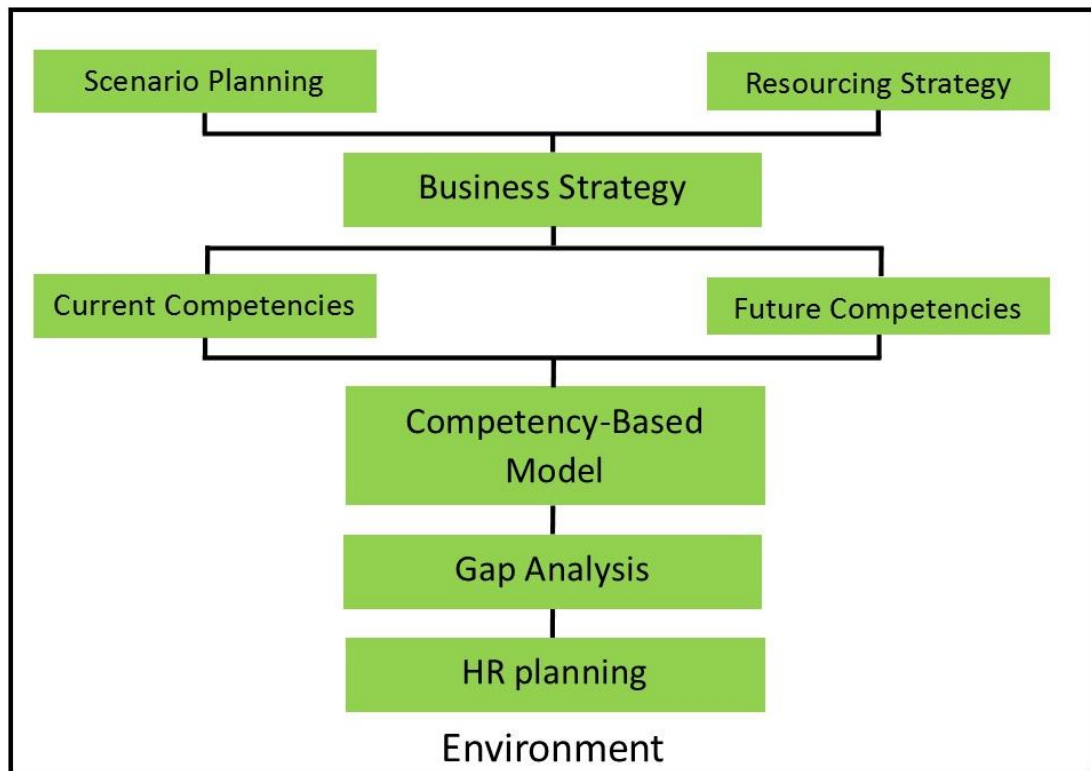
Figure 6 Analyze Model (modified from the process of human resource planning, Armstrong 2006, p.370)

- Business Strategy: is the means by which it sets out to achieve its desired ends, or it can simply be described as a long-fterm planning (Strategy theory, n.d.). According to Armstrong, business strategy is defining future activity level and initiatives demanding new skills (Armstrong, 2006, p. 369).

- Scenario Planning is a structured way for the organization to think about the future. A group of executives in the company can develop some scenarios about how the future might unfold and how this might affect an issue that confronts them (Scenario planning, 2008). Importantly, the point of scenario planning is not to predict the most probable future. Rather, the objective is to develop and test strategic choices under a variety of plausible futures. Doing this exercise proactively – essentially, rehearsing for multiple futures, strengthens an organization's ability to recognize, adapt to, and take advantage of, changes in the industry over time (Introduction to Scenario Planning, 2008, p. 2). Scenario planning work alongside strategic planning to make sure that

strategy takes into account the contextual environment in which it has to succeed:

- Resourcing strategy: planning to achieve competitive advantage by developing intellectual capital – employing more capable people than rivals, ensuring that they develop organization specific knowledge and skills, and taking steps to become an 'employer of choice' (Armstrong, 2006, p. 369).

After the business strategy is reviewed, the company has to check whether the current status of competencies can help the employees to achieve the goals of the business strategy. In this case, the Competency-Based HRM Model is an effective tool to identify and update the competency criteria for the company:

- Competency-Based HRM Model (Competency Framework): According to Burtonshaw and Davies (2008), the management of competency should be supported

by the Competency Framework. This is the model that Samar Yacoub developed for Herman IT in 2015. Based on the company's strategy, the model defines the competencies into different groups: core competencies, functional competencies and specific competencies. According to Yacoub (2015), the model has five layers, and one layer symbolizes for each group of competencies. First, the core competencies are those which fit to the strategy, culture and values of the organization. Next, the functional competencies are defined by the functions of a team, business sector or a department in the organization. For example: in case of Herman IT, there are three groups of functional competencies: colocation, capacity and concept. Then the third layer are the specific competencies that individuals need to perform their specific task. The fourth layer is future functional competencies, which include the competencies, soft skills, behavioral skills needed in the future. The outer layer is the future core competencies, which fit the organization's objectives and visions in the future (Yacoub, 2015, pp. 22-23)
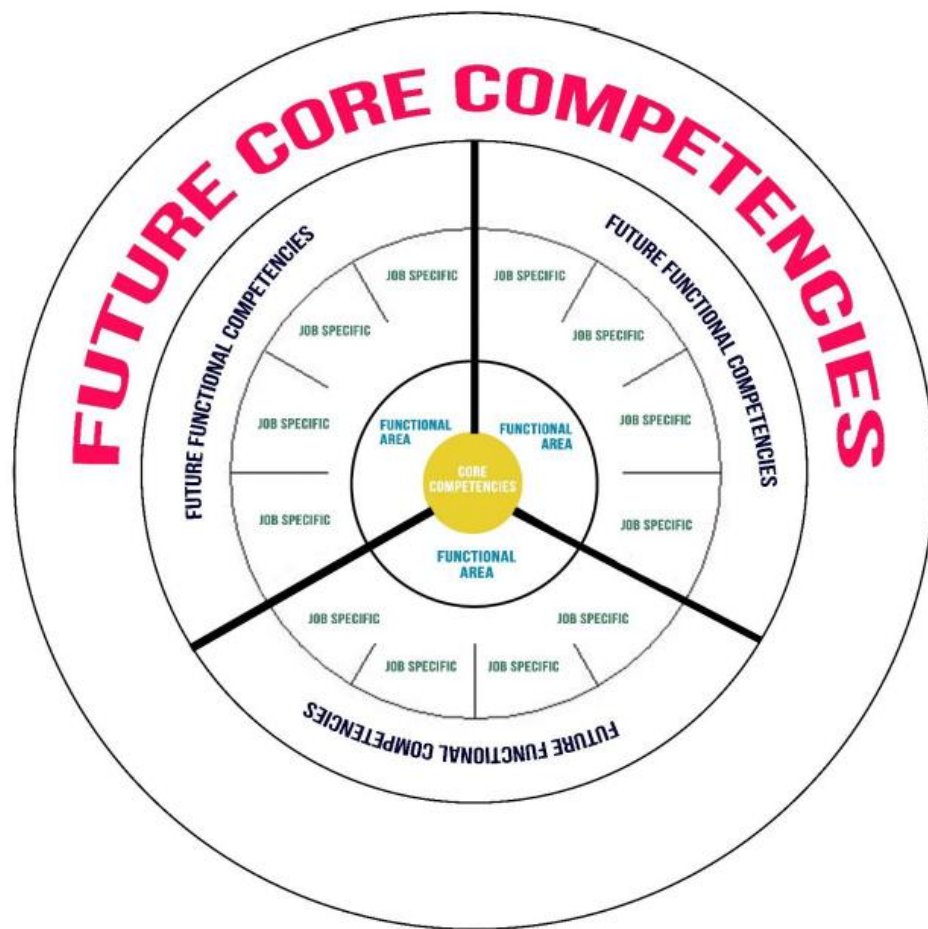
Figure 8 Competency-Based Model (Samar Yacoub, 2015)

- Gap Analysis: After considering all the issues which may have an effect on decision to change the competency criteria, the company can conduct the Gap Analysis. Gap Analysis can be described as identifying the gaps between the current situation and the future state that the organization tends to reach. In this research, the purpose of conducting Gap analysis is to identify the difference between the situations of current competencies with the vision-competencies. The Gap Analysis should be based on the Competency-Based HRM Model. The company may consider the issues that may arise from scenarios and the business strategy. For example: What new positions will be needed in the future? What competencies will be required in those positions? Have the employees possessed those competencies yet? What is the position of the organization at the moment? How can the company develop those competencies for its employees? By answering these questions that help the managers and subordinates

point out the competency gaps of skill of the employees, they will be able to set plans to close the gaps.

- Human Resource Planning (HR planning): the aim of HR planning is to attract and attain the number of people required with the appropriate skills, expertise and competencies. HR planning also develops a well-trained and flexible workforce, thus contributing to the organization's ability to adapt to an uncertain and changing environment. Additionally, by conducting an effective HR planning that can help the company to reduce dependence on external recruitment when key skills are in short supply by formulating retention, as well as employee development strategies.

After conducting the Gap Analysis based on the business strategy the external factors, managers in the company will have a clear understanding of their situation. Thus, it is possible for the managers to link the development of human resource to the company's vision and strategy, while they continually strengthen their competencies. (Manninen & Viitala, 2007, p. 35)

There is no exact time-frame or suggestion for the planning process. It depends on many factors such as company's strategy, re-organizing, the changes of the industry and legislation, etc. However, Manninen & Viitala (2007) has mentioned the study case of Fazer - the Finnish confectionaries. Every year, in February, Fazer has organized a day-long strategy seminar and the chosen representatives to give presentations about the changes of their orgaznisation in the next 1- 3 years. Then the participants will discuss the meaning of those changes. For example, if there is a need to work on the competencies through which these factors of success are achieved. If the answer is yes, then further discussions will focus to identify which competencies are needed most and how the competence goals relate to the current state of the organisation. Otherwise, if the goals do not match the current state, then the necessary actions will be formulated.

4.1.2 Assess

Dimension	Description
What	• an initial evaluation of key competencies and the ability to perform them in a specific task
Why	• to identify a baseline of strengths and weaknesses in the key competencies needed to perform a specific task • to apply a systematic, objective, and repeatable process • to provide insight into how to maintain or improve the performance of identified competencies

Figure 9 Characteristics of Assessment *(Behrens, Alberts, & Ruefle, 2012, p. 5)*

The organization should conduct the initial assessment of employees simultaneously while the company is analyzing the competencies on the basis of its previous success and visions in the future. Evaluating and mapping the competency of employees in the company is necessary, since it is the best way to achieve the best understanding of the current situation (Manninen & Viitala, 2007, p. 52). Furthermore, according to Behrens, Alberts and Ruefle (2012), the required knowledge, skills and competencies can be broad or specific, gradually or discretely acquired, relevant for long or short periods, or retained or lost over time, a baseline assessment of an individual's current knowledge and abilities is essential (Behrens, Alberts, & Ruefle, 2012, p. 5). The assessment activity also provides insight into which competencies need to be maintained or improved to achieve the best performance.

Another rationale for competency assessment is when a company grows bigger, there is likely some different parts of the company unaware of what competencies are available. The allocation of competencies can be difficult in facing new situations if there is no clear understanding which competencies of an individual are available. (Manninen & Viitala, 2007, p. 53)

Competency assessment is not only the job of managerial team, but it also requires the attention and effort of employees level. A company should have measurement standard to define what level of competency that individual can perform in certain time. A table below provides an example of levels of competency:

Sufficient	Good	Excellent

The competencies meet the standard. They come up to the basic minimum requirements.

The competencies exceed the standard. They are well distinctive and meet with the basic requirements over a longer period.

The employee has special distinctive competencies exceeding the job specification.

| 1 | 2 | 3 | 4 | 5 |

Satisfactory	Very good

The competencies come up to the basic requirements. The standard is completely met.

The competencies are above average. The requirements specification is completely met.

Figure 10 Levels of competency *(Eicker, Kochbeck, & Schu, 2008)*

Competency mapping is one way to assess the competencies of the individual. There are many ways to make a personal competency mapping. For example, such a map may simply involve a list of the competencies, a particular task requires, a competencies tree in which the competencies are broken down into smaller components, or a competencies circle in which the relative importance of the competencies is also taken into account. A competencies tree can be made to visually resemble a tree, or alternatively into a mind map, a chart or a table in which the next column always further specifies the competence in question (Manninen & Viitala, 2007, p. 56). Mapping competencies to job take a lot of time and effort. Therefore, it should be considered the extent to which detailed mapping is necessary. The competency mapping should also suit its purpose and make sure that the result is useful. In this model, the competency mapping is just a one-time process, but in the Human Resource Management aspect, it should be an on-going process, which keeps up-to-date information of the current trends. Manninen and Viitala (2007) also comment about the competencies measurement techniques that should be simple, understandable and be as transparent as possible.

One thing the organization should bear in mind is that the development of competency in several areas simultaneously is not possible, and long difficult lists do not provide a clear sense of direction for a person's development. Many companies after trying to make a detailed classification and having found this very time consuming and even frustrating. The simplicity and focus provide a better support to the HR department on the level of the entire organization. Thus, it is essential that the organization should discuss and identify their core

competencies on the top management level, which will result a depth-understanding of competencies and development areas. (Manninen & Viitala, 2007, p. 56)

4.2 Do

After the business strategy is unveiled and the competency gap analysis is conducted. The next step is to design and implement the actions to close the competency gaps, which means taking actions to improve, maintain and develop competencies of employees.

4.2.1 Develop

Dimension	Description
What	• a course of action intended to maintain or improve identified competencies
Why	• to specify an attainable path for maintaining or improving identified competencies • to communicate the path for maintaining or improving identified competencies

Figure 11 Characteristics of Develop *(Behrens, Alberts, & Ruefle, 2012, p. 5)*

In this activity, "Develop" will define the intended course of actions that individuals will need to maintain, improve and update their competencies. The extent of training, development requirements should be established. The responsibilities of those managing and operating the model are also defined, established and agreed. The managerial team who runs the operation of the model must understand its standards and requirements. They may also need to have their own standard for their competencies, to make sure those competencies are up-to-date and available for the activities that those managers are being asked to undertaken. The company should have the system to ensure whether the managerial team has adequate resources and experience to operate the model. The role of the managers will ensure the certification of the assessors and also the competency process management model (Developing And Maintaining Staff Competence, 2007). Alok Kumar (2014) has mentioned in his book about establishing a team to develop competencies in a company (p. 28). He explains clearly the mission and the role of each position in the team, thus this is a good example that organizations can refer when they need to establish a team for competency

Role	Description
Project Champion	• The role of the Project Champion is to support the development of Competencies in the Organisation. • It is the responsibility of the Project Champion to identify resources and funds that are available to support the development of the competency model. • Ideally, the Project Champion should be the Head of the Organisation.
Change Advocate	• The Change Advocate is responsible for implementing competencies. • The key responsibilities of the Change Advocate are: – Establish a team of Change Agents – Drive and lead the project management activities – Act as an expert who provides Organisational information/data required to contextualise and develop the Competency Model for the Organisation – Ensure that the milestones are completed in a timely manner • Establishing a fully functional team of Change Agents is essential as it will ensure that representatives are prepared and confident to support the development of Competencies • Ideally, the Change Advocate should be a member of the Core Group
Change Agents	• The Change Agents are a group of employees who will help to champion Competencies throughout the Organisation. • The role of the Change Agents is to: – Determine the critical needs of the Organisation and what are the competencies that will help employees achieve objectives. – Encourage individuals to challenge existing belief's and arrive at innovative solutions that will result in better outcomes for the Organisation. – Determine the process for implementation – i.e. focus groups, interviews, surveys, etc. – To ensure deliverables are completed on time. – Communicate status updates and final outcomes to the stakeholders.
Subject Matter Expert	• The role of the Subject Matter Expert is to: – Drive the competency model development process along with the Change Advocate. – Provide technical expertise, guidance, support, training and mentoring as the Competencies are implemented in the Organisation.

Figure 12 Establishing a Team to develop Competencies *(Kumar, 2014, p. 28)*

development. Developing training and development methods, procedures and work instructions, those activities are not made by only HR people, because usually they don't know which job actually involves. Nor should they be left to managers, who don't always understand exactly what each member of their staff does every day. To understand fully, the company should have the reference from employees who actually perform those jobs (Thompson, n.d.). Furthermore, when designing the procedures and work instruction, the organization needs to bear in mind to make them clear and unambiguous to describe for everyone how all the task need to do to get the objectives of the company and the procedures should describe how the assessing competencies will be trained and updated to maintain the competencies criteria and how regular that the check and audit will be carried out (Developing And Maintaining Staff Competence, 2007, p. 21).

4.2.2 Implement

Dimension	Description
What	• actions taken to maintain or improve identified competencies
Why	• to reinforce strengths and address weaknesses in the ability to perform a specific task

Figure 13 Characteristic of Implement *(Behrens, Alberts, & Ruefle, 2012, p. 6)*

The "Implement" activity will define the actions that will be taken to obtain the knowledge or skills required to maintain or improve the identified competencies. This process is not only for the employees, but it can also apply for the managers who operate the model. Those actions should be agreed by the line managers, then the employees and the managers can be fully aware of the expectations and limitations. Depending on the job's complexity and requirements, multiple modalities can be used to develop, maintain and improve competencies. According to Manninen & Viitala (2007), development methods can be categorized with the help of two dimensions: individual-group level and informal-formal.
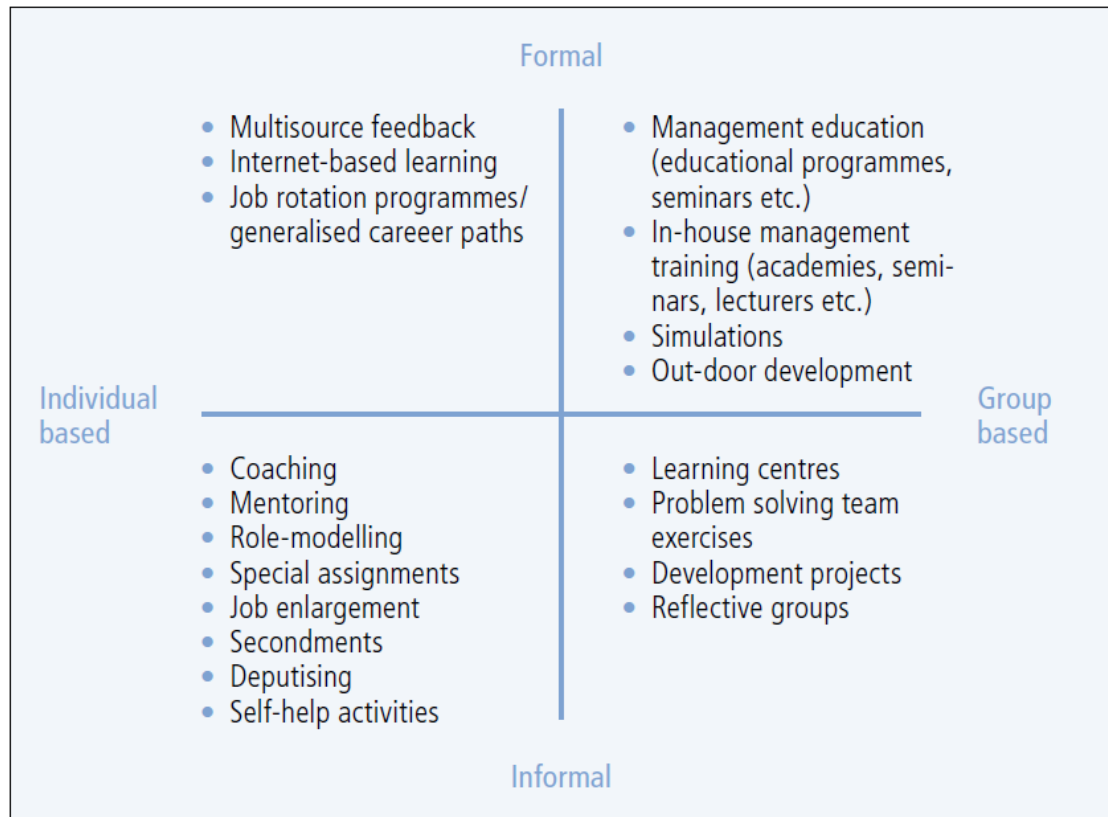
Figure 14 Example of different management development methods *(Manninen & Viitala, 2007, p. 76)*

4.3 Check

The aim of this phase is to test whether the individuals maintain the necessary level of commitment, skill, experience and knowledge to perform at an acceptable level in the environment in which they are operating, not only during the training environment but also in the real-world situation. There are two activities in this step:

4.3.1 Validate

Dimension	Description
What	• a measure of whether actions have addressed identified competencies
Why	• to ensure that identified competencies have been adequately maintained or improved

Figure 15 Characteristic of Validate (Behrens, Alberts, & Ruefle, 2012, p. 6)

The activity "Validate" is to measure whether the training and development actions achieved its initial goal, which is to help the employees address their competencies needs. A performance-based test can prove whether an employee has maintained or improved identifying competencies through his or her actions. There are also more methods to validate competencies, for example quizzes, performance on a simulation or other learning exercise, observation of employee demonstrating what was learned or target interview (by expert), etc. (Behrens, Alberts, & Ruefle, 2012)

However, the validation is only focusing on the knowledge and abilities of an individual needs to perform in a specific task. Be able to perform a task in the learning or training environment is different to the ability to perform the same task in the real world. Behrens, Alberts and Ruefle (2012) have mentioned this problem in their book: after the employees completed the training and development program, they were asked to test whether they had acquired the skills, abilities and knowledge needed to use. The employees successfully passed the individual test presented to them, and the manager starts to believe that his team members are ready for work. However, when working in the real situation, those employees got difficulties in performing their task adequately. They don't know where to begin or how to adapt what they had learned into real situations. All of the reasons lead to the next activity of this phase: Test Readiness.

4.3.2 Test Readiness

Readiness is the ability to apply a set of competencies into a real work task. Testing the Readiness is the activity to evaluate whether an individual can perform a specific task as required in the real world. However, this activity is often over grouped with validation. The

initial assessment and the subsequent validation can determine an individual's knowledge and experience in some certain competencies. Behrens, Alberts and Ruefle (2012) agreed that knowing the individual's current proficient in selected competencies is insufficient for predicting whether the individual is ready for performing a task. The ability to test the readiness of an individual is very important because it can reflect the effect of the training and development programs.

Dimension	Description
What	• a real-world evaluation of whether a specific task can be performed as required
Why	• to ensure that competencies can be appropriately applied to tasks

Figure 16 Characteristic of Test Readiness (Behrens, Alberts, & Ruefle, 2012, p. 7)

There are many methods to test performing readiness, for example real-world scenario, role-playing, observation of real-world task performance, etc. However, Sandra, Christopher and Robin (2012) again emphasized that readiness is best evaluated when using multidimensional, performance-based evaluation of task performance. The multiple dimensions used to test readiness need several inputs, for example the overcome from assessments and evaluations, interview with supervisors, interim job performance evaluations (For example: after 30 or 90 days of job assessment), ability to explain the concept of job tasks to newer employees, etc. Sandra, Christopher and Robin (2012) also said that to determine an individual's readiness, the entire task in its real-world must be presented so the individual can demonstrate strengths and identify areas that he/she may need additional development.

4.4 Act (Review & Feedback)

As the last step of Deming Cycle, this is the step to improve the solution fully; analyze the difference between actual and planned results to determine their root causes and determine where to apply changes that will include improvement of the process. If the intended results are not achieved then look back for what went wrong and where the improvement is needed and apply those improvements in next PDCA cycle. (Plan Do Check Act, 2013)

4.4.1 Review

In the Model of Competency Process Management, after the training and development actions are completed, the employees possessed the competencies which are acquired to perform their jobs, now is the time that the managers in the company need to take an additional step that to review and to give feedback to the Competency Process Management Model and the Competency-Based HRM Model. The purpose of this activity is to provide a continual improvement for the models and to check whether the models are running in the right way to achieve the goal of the organization.

A periodical review upon the models will ensure its effectiveness constantly. The review should assess the performance of an overall system against the agreed standards, key performance indicators and the industry changes (Developing And Maintaining Staff Competence, 2007, p. 54). A judgement should be made whether the assessment of employee's competencies was satisfactory, if the objectives of the model have been achieved and if recommendations made for improvements should be implemented. The review should be conducted by the company managerial department which applying the standards for the model.

4.4.2 Feedback

When the review is completed then the results and the recommendations are needed to be fed back into relevant stages of the process that lead to a systematic and regular updating and improvement of the both models. The changes that the review process recommends are needed to be well managed and communicated to all involved. Because both the models at this time are on the process to adapting to the context of Herman IT, thus, the feedback is really important for improving or making changes to help the models adapt better to the company and to ensure the identified competencies are updated and developed (Developing And Maintaining Staff Competence, 2007, p. 55)

5 IMPLEMENTATION OF RESEARCH

5.1 Research Method

The aim of this research is to develop the Competency Process Management Model and to explore the challenges that may occur when Herman IT tries to adapt the model into the organization's context. Therefore, qualitative research is chosen because this method is more suitable for the aim of the research. There are three reasons to choose the qualitative research. First, the process of Competency Management Model is still on the nascent stage at this time so making qualitative research is an appropriate approach (Kananen, 2011, p. 41). Second, the topic of this thesis requires analysis mostly of factors that are difficult to measure and more of opinionated nature. Therefore, according to Kananen (2011), the qualitative research method, which seeks to explore the question of the 'what' and the 'how', is useful (p.35). Third, this thesis is a commercial research paper. In other words, it is tailored to the wish of the commissioner. Herman IT wants a model to develop and update their employee's competencies and the aim of the research is to find out whether the model that the author developed, would work in Herman IT, and how managers of Herman IT can adopt the model as if there is any difficulty during adopting process.

5.2 Questionnaire

The interview questions are designed in English, based on the theoretical background and the Competency Process Management Model. After getting the approval from the supervisor and the CEO of Herman IT, the questionnaire is double check again by a senior International Business student who has done many projects which conducted by the interview methods and another student, her major also is International Business; with many years of working in a Finnish company that equipped her a proficient Finnish level. These two students are fluent in English, both in speaking and writing and they also came to the interview with Herman IT as assistants for the author to support the technical issues and the language barriers because all the participants are Finnish.

The questionnaire has 5 major parts, based on the research questions and designed by the stages of the Competency Process Management Model – which includes approximately 10 main questions and followed by many expansive questions. Most of the questions are open-ended questions which aim to collect lengthy and descriptive answers from the participants. Each question lasted 3-5 minutes and the estimated time for the interview will be approximately 2 hours. The interview questions are organized in the tables to answer the research questions as in Appendix 1.

5.3 Data Collection

The data collection of this research is conducted by the semi-structured interview. According to Laforest (2009), the semi-structured interview is suitable to work with small samples and are useful for studying specific situations (p. 1). Furthermore, Newton (2010) confirms that Semi-structured interview provides the opportunity to generate rich data and the language used by the participants was considered essential in gaining insight into their perceptions and values (p. 2). The interview was conducted with the participants from Herman IT. Instead of choosing interview individually, the author chose group interview because it's quite hard to arrange the interview with all the participants, especially when they are the top managerial members of the company. Thus the group setting will save more time than the individual's and it provides the comparison among the participants, and also the interaction of a group stimulates talking and makes it easier for the participants to open up.

As the original plan, there are 5 participants in The Business Steering Group, they are the senior members of Herman IT and some members were transferred from Absolut Oy. However, 2 participants did not come that day because of illness. The rest of three who conducted the interview currently are holding managerial positions in Herman IT and working in many sectors. Thus, they know Herman IT very well and because they are the core managers, they have more or less experience in human resource management.

The interview was conducted in the late of October, at the office of Herman IT. The participants of Herman IT on that day were including the CEO of Herman IT, the Team Leader from the Data Center Team and the Sales Manager from the Sales department.

Accompanied with the author on that day there were two students mentioned above to support technical issues and also the language barriers. The interview took place in a large conference room, which normally used to organize the meetings of the company. The interviewers and the participants sat opposite to the others, and before conducting the interview, the CEO invited everyone to watch a short video about the company and its technologies, services, etc. and it created a pleasant atmosphere for everyone. Coffee and karjalanpiirakat (Finnish rice cakes) were there and there was 5 minutes break during the interview. The interview took approximately 2 hours and it went smoothly. The content of the interview was recorded by mobile phones and camera by the approval of the participants.

5.4 Validity and Reliability

Validity is the extent to which any measuring instrument measures what it is extent to measure (Carmines & Zeller , 1987). In this research, the validity will be assessed by the content validity and this aspect of validity could be assessed through the theoretical framework, which is mainly based on the Competency Process Management Model. The success and validity of the interview rest on the extent to which the respondent's opinions truly reflected; the interviewee's voice, their communicating perspective. The semi-structured interview will provide a depth of information through the use of open-ended questions. It allows the respondents to talk freely about issues which need to explore and does not constrain their responses through the need to ask or answer predetermined questions. The interview is videotaped then the body language and face expression can be studied at a later date by the author.

There are many arguments about the role of the reliability of the qualitative research. Reliability concerns the extent to which an experiment, test or any measuring procedure yields the same result on repeated trials (Carmines & Zeller , 1987). Reliability is the concept used for testing or evaluating quantitative research, and if the idea of testing as a way of information elicitation then the most important test of any qualitative study is its quality. In this research, reliability can be established through the openness and transparency of the author about his

theoretical perspective and by allowing interviewees to comment on interpretations drawn from interview analysis (Newton, 2010).

5.5 Limitation

The limitation of this research is the sample size. Instead of five participants would come to the interview, there are only 3 participants who attended. If the interview was conducted in the presence of all the participants as intended, the author could get more different opinions from the other two participants to have a more detail picture about Herman IT. The second barrier is the language. Even though all the participants can speak English quite well, however, conducting the interview by English during 2 hours with the expertise vocabulary that may prevent the participants review their opinions completely.

6 FINDINGS

During the progress of exploring and developing the Competency Process Management Model, while the theoretical background is a solid foundation to develop the model, the interview plays an important role in answering the research questions. The success of this research only achieved when the research questions are answered:

- **RQ1:** How can Herman IT monitor, review and update their competency criteria over time to ensure it is matched with the changing internal and external environment of the organization?

- **RQ2:** How can this process model be implemented? What are the process steps?

- **RQ3:** What are the challenges to implementing such a Process Management Model? How can they be overcome or mitigated?

- **RQ4:** How can the competencies identified be captured and updated into a Process Roadmap?

This chapter will use the data collected from the interview with the participants from Herman IT to answer the research questions. The collected data is analyzed by the Jigsaw classification method to organize the opinions of the participants into different levels and then interpreting to explore unclear issues (as in Appendix 2).

6.1 Research Question 1: How can Herman IT monitor, review and update their competency criteria over time to ensure it is matched with the changing internal and external environment of the organization?

In the interview, the CEO of Herman IT confirmed that their company adapted to the competency-based quite well at the moment, and because of their strategy is focused on the data center services, therefore the employees' competencies will be related to the data center services. He also mentioned that the competencies of the employee in company are shaped

by the requirement of the technologies they are using; the trends of the industry and the needs of the customers.

According to the CEO, Herman IT reviews its business strategy annually. However, he pointed out the changes of the industry and the development of technology which affect the competencies will come more rapidly than the annual strategy review. Therefore, he prefers to review the needs of training and developing employee's competencies quarterly. In every quarter, the company will have a meeting to discuss about how the training and development programs in the next quarter will be, of course, the purpose of training will be shaped on the organization context; and also in that meeting, they will ask about their employees' intentions, needs or passions are in the near future, then they can work to solve out the best ways for their employee.

6.2 Research Question 2: How can this process model be implemented? What are the process steps?

The managers pointed out at this moment, Herman IT is only using the Competency-Based HRM Model as a tool for developing and managing competencies, not yet for the HRM purposes. They said they need more time to fill the model and get used to it before using the model for recruiting or training employees, and this process should take step-by-step. The CEO also confirmed that they used the scenario planning for their business purpose, however, because the industry is changing rapidly, he admitted that it's quite hard and unnecessary to predict the future needs to close the competency gaps.

About the training and development programs for employees, in the interview, the other two managers also mentioned about using the training programs from the other partners, for example: ITIL (Axelos), LEAN training, Solvelto or IBM. By the agreement on using subcontracting, the partners will design the tailored program for Herman IT in case of the program they need is not available. Besides the training programs are provided by the partners, Herman IT has itself many programs to let the employees achieved new skills and abilities. According to the Sales Manager, there is a policy called "the 2 hours rule", which means every employee can have 2 hours per week in the company to do what they are interested in or to

develop their own skills and what they do should be connected to the company or their work (for example: IT industry). The company also has an e-library (Herman IT's Wikipedia) so employees can access the abundant materials and e-documents to develop and educating themselves. Compared to other training methods, this electronic library is more cost-saving, according to the CEO. There is also the event called "Friday Happy Hour" that organized by employees in the organization. When an individual has new ideas or opinions that he/she thinks which may important, he/she can book a period of time on Friday to announce them to the others. However, until now, the CEO admitted that there is not any clear policy about training and development competencies for employees in the organization until the HR department will establish next year.

According to the CEO and the other two managers, after completed the training and development program, depends on the programs there will be different methods to assess outcomes of the employees. There may be a light-assessment from their team leaders by an exam with pass/fail result or the employees will work in a demo-environment first which is similar to the real tasks. This is very important especially when there are new technology which needs to apply in their production line, the employees can be stressful if they know only the theory but don't have any actual work experience. More importantly, the company may have to pay the extra-money for penalties if their employees cannot finish their job. The CEO also said besides the assessment by the team leaders, the company also receives the support from the other companies. For example: KaisaNet, IBM, these companies will guide Herman IT's employees to master their skills and new technologies.

Finally, all three managers agreed that it's necessary to review the models and also their strategy at the same time, after the training and development program is completed, to see whether we are in the right point at the right time. The business leaders and team leaders will work with key people annually to conduct the review and give feedback. Employees in the company can also contribute their ideas to improve the model works more efficiently.

6.3 Research Question 3: What are the challenges to implement such process management model? How can they be overcome or mitigated?

When the author asked for opinions from the managers about the model, they all agreed that both the models (Competency Process Management Model and Competency-Based HRM Model) have a good opportunity to be used in Herman IT. However, at the same time, they said it will take time to digest the models and to connect the models with the infrastructure of the organization. Until they use the models proficiently, they cannot point out or predict any challenges that they may meet when adapting the model into the context of the company. Thus, the author will propose some challenges which may arise while Herman IT adapting the model in the next chapter and also the advice to overcome those challenges.

6.4 Research Question 4: How can the competencies identified be captured and updated into a process roadmap?

By combining the data collected in the interview with the theoretical background, the author propose the Competency Process Roadmap, which is an approach to help Herman IT update and maintain their workforce competencies systematically over time. According to the interview, the CEO of Herman IT said what his company needs is to utilize all the competencies the best way to support business strategy's goals and needs; therefore, having a Process Roadmap can help the managers and subordinates in the company understand their gaps and optimize all the competencies of the employees in the organization. The Process Roadmap is built based on the Competency Process Management Model, including 4 stages Plan-Do-Check-Act. However, the 3 stages Plan-Do-Act will conduct quarterly, based on the business strategy of the company and also the external environment, including the changes of industry, the development of technology and the customers' need. The last stage – Act (review and feedback), will conduct annually as the same time to review the business strategy of the organization. The Competency Process Roadmap gives the explanation for each stage, including the activities that need to be done in each stage, the role of the staff in the company and the timeline for implementation.

Plan:

Analyze: collect information to develop employee's competencies.

External

Checklist:

- Technology changes

- Customer's needs involvement and changes

- Industry changes

Others:

Political factors, economics factors, legal factors, etc.

Strategic fit? - Refer to Figure 7

Internal

Business Strategy Review

Process & Owner

Who: Senior Managers

When: 6 or 12 months cycle

How: Scenarios Planning

Assess: evaluation of the current status of employee's competencies compared to the future target

Affect employee's competencies?
Refer to Samar's Model (Figure 8)

Core Competencies   Functional Competencies

Who: Competency Team (Senior Manager, Team Leader, all affected employees) - Refer to Figure 12

When: 6 or 12 months cycle, event triggered

Do:

Develop: a course of action intended to update or maintained identified competencies

Develop training procedures, policies and work instructions

Who: Managers, HR department, team leaders, affected employees

When: HR department established

Implement: actions taken to update or improve identified competencies

Training & development Program
- Refer to Figure 14

Internal   External

Who: 3rd parties (external); line managers, team leaders, employees (internal)

How: based on the needs of the organization and the job's complexity and requirements, training program will be designed with help of two dimensions: individual-group level and informal-formal.

Check:

Validate: is to test whether employees achieved the necessary competency after the training & development programs.

Validate the outcomes of employees

HOW:

- Self-assessment

- Exam with certification or pass/fail result

- Observation of employee demonstrating

WHO:

- Team leaders, managers, employees

WHEN:

- After the training & development programs

Need to test Readiness?
If YES

Test Readiness

HOW:

- Test Lab

- Demo-environment

- Guidance and support from 3rd parties

WHO:

- Team leaders, managers, employees, 3rd parties

Test Readiness: to evaluate whether an individual can perform a specific task as required in the real world.

Act:

Review & Feedback: to assess the performance over the whole model and to ensure all are kept up-to-date. Thus improve the competence management system itself and ensure that competencies are being maintained and updated.

Review & Feedback

HOW:

- The review should be given based on the agreed standards, key performance indicators and the industry changing factors.

WHO:

- Senior Managers, Team Leaders, Employees
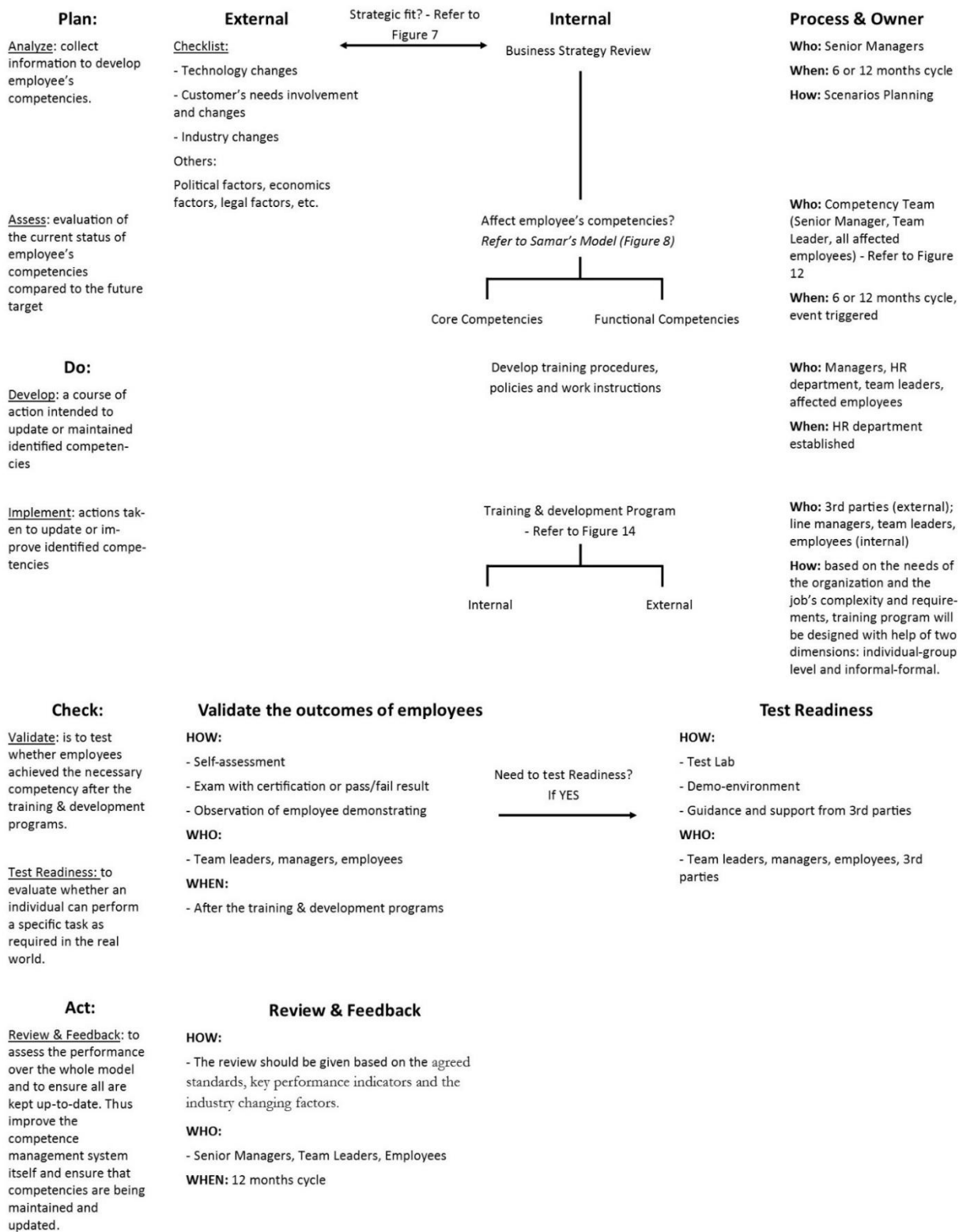
WHEN: 12 months cycle

Figure 17 Competency Process Map (Based on Figure 5: The Competency Process Management Model)

7 IMPROVEMENT PROPOSAL

7.1 Challenges and Solutions

The Competency Process Management Model of course will offer many advantages to Herman IT, which allows the company to manage the human capital efficiently over time, helps the managers understand the competency gaps of employee and contributes to achieving the goals of the business strategy. However, adapting the model into the context of a company will require great effort and time to carry-out in-depth analysis and overcome a variety of challenges.

The first challenge is related to the achieving a clear alignment between the competencies of the employee and the company's business goals. The managers need to be precise about the definition of purposes that the company aims to achieve by introducing a competency model during the planning phase. The purposes determine to a great extent the selection of approach, areas of application, target group, the level of detail and types of competencies. They must show in the model the consistency between competencies and avoiding the overlap of content as well as reflecting the company's culture. The other issues that company may face is the difficulties in achieving the clarity and also the achievement of applicability of competencies. (Competency Models - Benefits and Challenges, 2010, p. 7)

The second challenge is the human factor. If the employees in the company are not ready to change, the objectives of the model may be very difficult to obtain. Besides the business goals of the company, the Competency Process Management Model should also be integrated with the personal development goals. The managerial teams should arrange the time to meet with the employees to discuss their career and professional development and perform a yearly assessment of the needed knowledge, skills, and abilities for performing job functions satisfactorily. The managers will also have to define the target group - the employees to which the competencies will be applied. In case of applying the model to only a few individuals, specific groups or all the employees, the company needs to prepare a good communication plan, messages and initiatives to help the employees understand fully the purpose of the

model, how they can contribute to the organization and also develop themselves by following the model. (Competency Models - Benefits and Challenges, 2010, p. 16)

The company can also face with the insufficient understanding of the managers about the advantages of the model and also the resistance of employees to accept the model. In this case, the company should analyze the advantages and disadvantages of the model and choose the optimal approach, also taking into account the specifics of business, the history of the organization and the availability of the internal capacity. On the other hand, conduct the analysis about the attitudes towards the introduction of a competency model in the company, identify the reasons for any impossible resistance (from the different groups) and planning specific steps for overcoming it. (Competency Models - Benefits and Challenges, 2010, p. 29)

As a part of the Competency Process Management Model, it is very important to have a good Competency Framework (Competency-Based HRM Model). The organization which possesses the Competency Framework in greater detail (including the title and descriptions of competency, the observable behaviors and levels of demonstration) will use the model much more often for specific HR activities such as recruitment and selection, training and development, talent management or employees' feedback comparing to the organization that presents their competencies just by the titles and descriptions only. (Competency Models - Benefits and Challenges, 2010, p. 22)

It's undeniable the benefits of training and develop the new competencies for employees, which can promote the job satisfaction and, instill loyalty and commitment from good employees and also make the business run better. However, training programs will take time and resources, the managers need to consider the benefits between the training programs and the available resources.

8 CONCLUSION

In the conclusion, the author wants to remind that the aim of this thesis is to develop and explore a model which can help the commissioning company to review, update and develop the competencies for its employees over time, then later provide practical and sounded suggestions to make the model adapt better in the context of the commissioning company. The theoretical section showed a brief overview of the relation among the business strategy to HRM, then explained how the competency can help the employees to achieve the objectives of the business strategy. The Deming Cycle which including 4 stages (Plan-Do-Check-Act) is a premise to develop the model of Competency Process Management, go along with the business strategy and the trends of the IT industry. The Competency Process Management Model is a fundamental framework that the commissioner can use for their company.

During the interview with the managers of the commissioning company, many key issues of the model have been revealed. Even though both the models have a potential to become a tool which can be used to review, maintain and update the identified competencies for employees. On the other hand, to attain that there are still a lot of work that the commissioning company needs to do. In an effort to improve the model to help the company that can easily adapt the model into its context, the author put the Competency Process Management Model into the Competency Process Roadmap, with the detailed description of each stage, the role of the staff and also the timeline to implement. In the improvement proposal, the author put forward suggestion on achieving the clear alignment between the employee's competencies and the business goals; analyzing carefully the advantages and disadvantages of the model to choose the optimal approach; considering to connect the Competency Process Management Model to the personal development plan of the employees.

Until now in the market, there are not so many available materials about reviewing and developing competencies for SMEs. Large enterprises usually have their own programs to develop their competencies. The thesis is the first place aimed to explore the problems and give the commissioning company the Competency Process Management Model and the practical suggestions. And the nature of the model and suggestion is that it may work or not work. However, with 99.8% enterprises in Finland are SMEs, there is a huge possibility for

the future research based on this thesis, to test the suggestion that put forward on this research.

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10 APPENDICE

Apendix 1. The the questionaire to conduct the interview with Herman IT

Apendix 2. Intepreting & analyzing the colleted data by Jigsaw method

Apendix 1. The the questionaire to conduct the interview with Herman IT

Research Questions		
RQ1: How can Herman IT monitor, review and update their competency criteria over time to ensure it is matched with the changing internal and external environment of the organization? RQ2: How can this process model be implemented? What are the process steps? RQ3: What are the challenges to implementing such a Process Management Model? How can they be overcome or mitigated? RQ4: How can the competencies identified be captured and updated into a Process Roadmap?		
RQ	**Main Questions**	**Purpose**
1,2	How often do you review your corporate and business strategies?	Self-formulated based on (Armstrong, 2006, p. 370)
1	When the organization strategies are updated, how will these changes affect your employees? (Functional activities? Their skills, ability, knowledge?)	Self-formulated based on (Armstrong, 2006, p. 24)
1,2	EXPLAIN the Competency-Based HRM Model. Do you review the training and development needs of your employees? • IF YES, how have you done it? On what basis? Can you briefly explain the existing process? • IF NO, how do you ensure your employees' skills, ability and knowledge are up-to-date and supporting the strategic changes? • Will you consider to use competency-based HRM as a basis for your HRM processes, so that your employees'	Adopted from (Behrens, Alberts, & Ruefle, 2012, p. 5)

	abilities, knowledge and skills to match against the needs in the new strategy?	
2	EXPLAIN Scenario Planning. Have you used scenario planning before? • IF YES, how have you used? • IF YES, have you used this tool to analyze competency gaps for your employees when there is a change in the strategy or functional activities which affect the employees' skills, ability and knowledge requirements? • Do you think this tool can be applied to analyzing the competency needs when there is a change of strategy? • IF NOT, HOW do you think the competency gaps can be effectively identified?	Based on (Armstrong, 2006, p. 24)
1	WHO do you think should conduct scenario planning and gap analysis of your employees' knowledge, skills and ability?	Based on (Armstrong, 2006, p. 24)
1,2,4	WHEN do you think such analysis should take place?	Based on (Armstrong, 2006, p. 24)
1	When you know the skills, knowledge and competencies that employees need to improve or update…How do you think you could help them close the competency gaps? • Have you used any kind of training & development programs before for such purpose? • If YES, how have you used? On what basis to design those program? • If NO, how can the employees acquire the new skills and knowledge? (in other words competencies)	

1,3	After you identify the competency gaps, WHO do you think should design the training & development programs to close these gaps?	Adopted from (Behrens, Alberts, & Ruefle, 2012, p. 6)
	• Will you consider the involvement of employees in designing the training programs for competencies?	
	• If YES, HOW can employees can help you to design the training & development program?	
	• If NO, is it possible to let team managers and HR executives to design the training & development programs?	
3	Training will cost money. How is your opinion about whether the organization has a specific funding for training and development program?	Self-formulated based on (Kumar, 2014, p. 28)
3	Do you think training to increase the competency of the staff brings more benefits compare to the cost / resources spent?	Self-formulated based on (Kumar, 2014, p. 28)
1	HOW do the managers support such training?	Self-formulated based on (Kumar, 2014, p. 28)
	• Will they allow their team members to go to the training during working hours?	
	• If YES, how many hours do you think are acceptable per year?	
	• Are there any legal requirements in the labor law or union collateral contract?	
	• If NO, how can employees achieve the competencies?	

1,2,4	When the training and development program is completed, HOW do you measure the success? • WHAT techniques will you use to validate? • WHO will you think should validate the outcomes of the training program?	Adopted from Behrens, (Alberts, & Ruefle, 2012, p. 6)
1,2,4	WHAT is your opinion about testing the Readiness of an individual after his training program? EXPLAIN the term Readiness • If YES, HOW will you test the individual's readiness? • If YES, WHEN will you test? • If YES, WHO in your opinion should conduct the Readiness test? • If NO, how can you evaluate whether that individual can perform well in the real task?	Adopted from (Behrens, Alberts, & Ruefle, 2012, p. 7)
2,4	Do you review and give feedback to the model after the competencies of the employee are updated? • IF NO, how will you ensure the model is running on the right way to meet the organization strategies? • If it's necessary to review the model, WHO do you think will conduct the review and later give feedback to the model? • HOW can you review the model? On what basis will the model be review? • If YES, WHEN will you review and give the model feedback? • Can employees get involved in reviewing and giving feedback to the model?	Self-formulated based on (Developing And Maintaining Staff Competence, 2007, pp. 54, 55)

3	Are there any issues that we have not discussed which you think should be considered in developing a good and dynamic process to ensure the model is up-to-date to support the changing strategy of the organization? • Do you want to add anything to the model to make it more adaptable to Herman IT or especially to your team?	Opinion from participants about the model
3	What do you think about applying this model into Herman IT? • Are there any challenges do you think Herman IT will be faced when adapting this model? • What is your opinion to help Herman IT overcome these challenges?	Opinion from participants about the model

Apendix 2. Intepreting & analyzing the colleted data by Jigsaw method

K, L, M: participants   Positive = green   Neutral = blue   Negative = red

Meaning / opinion 1. level	Coding positive / developmental / neutral 2. level	Compression / classification 3. level	Is there more abstract level? 4. level
K: We are quite well adapted to the competency-based at the moment.	Positive	Company had experience in competency-based management	Competency Process Management
K: Our competency requirements are based on the industry and the customer's needs.	Neutral	Factors will affect the employee's competencies	External factors
K: We review our strategy annually, we also have another review every 6 months, but the annual review is the basic.	Neutral	When to review the strategy	Strategy review
K: I think the changes of the industry that affect	Neutral	The need of competency review	Competency review

the competency criteria of the employee comes more rapidly than the annual review.		comes faster than the annual review	
K: Besides the general needs of the organization, the competence of employees changes and develops due to the customers' needs and technologies we use.	Neutral	Factors will affect the employee's competencies	External factors
K: When we invest to the new technologies, the employees need to learn and train the new skills and abilities to adapt those technologies, and it happens faster than the annual review.	Neutral	The need of competency review comes faster than the annual review	Competency review/External factors
K: When we invest to the new technology, we also have to train for the employees.	Neutral	Factors will affect the employee's competencies	External factors
K: I can say at the moment we train our people well and quite often.	Positive	Company had experience in competency-based management	
K: Money and time are two factors that we considering when developing the skills for employees.	Neutral	Resources need to spend for training	Available Resources
T: We ask them more frequently, 2 or 3 months, it depends on the needs of the organization	Neutral	Evaluate the needs for training & developing program	Competency Review
K: We have the meeting quarterly to discuss how the training in the next quarter will be, of course	Neutral	Design the training program	Training program

it will be based on the big picture, in the organization context.			
K: We discussed with everyone about what their needs, passions are or where they think they are good at, so we will find the best place for our employees. Of course in the most cases, the need of the employees still should fit with the need of the organization and also the customers' needs.	Neutral	Design the training program	Training program
K: We also buy services from other companies, for example: KAISAnet.	Neutral	Training program from 3rd companies	Training program
L: We also have what called the "2 hours rule", the employees can have 2 hours/week in the company to develop their own skills or what they are interested in or educating yourself.	Neutral	Self-development	Training program
K: Everyone has the right to have 2 hours/week to educate themselves and develop what they are interested in but somehow it must be connected to the company or something connect to their work	Neutral	Self-development	Training program
L: And we also have a library for employees in the organization. If you want to get new books or materials or new interesting topics, we have the website for the library, where you can	Neutral	Self-development/ Training Method	Available resource

order your books or materials.			
K: I think it's really good if the employees want to learn from the fields they are working on, because study like this does not cost a lot, for example: e-books are not very expensive, compared to the other kinds of studies.	Positive	Self-development/ Training Method	Available resource
K: For the competency-based model, now, we are only using it as a tool for developing and managing competencies, not for the HRM purposes yet.	Neutral	Competency-Based Model just in its nascent stage	Competency-Based Model
K: Of course when we have filled this model, we can use it for HRM purposes, but at the moment, we are just taking the first step of using this model, later when we are more mature with this, and when we identify the future functional competencies or future core competencies, we can use it for training and developing, recruiting or head-hunting purposes.	Positive	Competency-Based Model has essential to become a tool for competency management	Competency-Based Model
K: We are using the scenario planning in the business of course, but we have not used it for competent development.	Neutral	Scenario Planning is only use for business, not for competency development	Competency Process Management Model
K: Because of the industry is changing so	Negative	Evaluate the needs for training &	Competency Review

rapidly, therefore it's hard for us at the moment to predict the future's needs.		developing program	
L: We have to see if our partners or our projects to see if they have available sources to fill our gaps.	Neutral	Design the training program	Training Program
K: We also think about 6 months or one year ahead for what we are planning or training now.	Neutral	Design the training program	Training Program
K: With the training program, we will review it on the quarter-based.	Neutral	Design the training program	Training Program
T: The program is designed based on the technology we are using. The other factor is the business environment. Currently, we use ITIL courses to learn how to provide service management or LEAN management training for our employees.	Neutral	Design the training program	Training Program
L: We have Friday "Happy hour" training for employees, if we have new products or something new that we learn from the others. But it's not compulsory, if the employees have time, they can come.	Neutral	Training Method	Training Program
L: We also have the internal Wikipedia ourselves and there are a lot of materials and document there, then the employees can assess to	Neutral	Self-development/ Training Method	Available resource

this internal Wikipedia and learn from it.			
K: During 3 years, we are using services from the 3rd training provider.	Neutral	Using services from 3rd companies	Training Program
K: We have the agreement that we use subcontracting, if they don't have available courses for our needs, we can have tailored courses from them.	Neutral	Design the training program	Training Program
K: I think what we need today is how to utilize all the competencies and how to make them work the best way to support our strategic goals and needs	Neutral	How to utilize the competencies to achieve the goals	Competency Process Management
K: One good thing of operating in Kajaani is the change of our employees is slow. People come to us and they stay here, they don't change their work so often. And we can invest in our employees and we can realize that our people will stay here.	Positive	Human factor – competitive advantage	People
K: Actually we have a lot of students come from Kajaani University, and we usually ask them what their dreams are, or where will they be in the next 5 or 10 years. When we know exactly the goals of the employees, we can help them to develop their paths.	Neutral	Human factor – competitive advantage	People

K: Now we don't have such kind of policies. But in the next year, we will have the Human Resource Department, and up to that time, we can decide whether it will be their duties.	Negative	No policy available for training people	Competency Process Management
L: We let the employees do the self-assessment or some courses we have exams so the employees can achieve the certificate or pass/fail result.	Neutral	Evaluating people	Competency Process Management
T: We have our own test lab here and my team members are really interested in many things in the test lab.	Neutral	Evaluating people	Competency Process Management
K: The employees will take the training courses for the new technology, then they can train in our demo-environment, kind of similar work task environment	Neutral	Evaluating people	Competency Process Management
T: We can also get help from KaisaNet or guidance from IBM, and we can practice under their guidance.	Neutral	Evaluating people	Competency Process Management
K: We give the employees an opportunity to train for some period, then we can get the help from KaisaNet or IBM to work with them in the next case, and the next one they will do in their own. It's really stressful if you	Neutral	Evaluating people	Competency Process Management

know the theory only and you have to work by yourself, we may have to pay the penalties for the customers if we break something.			
K: We have to review the model as we review our strategy goals at the same time to see whether we are in the right point at the right time.	Neutral	Reviewing model	Competency Process Management
K: Our business leaders and team leaders will work with the key people to conduct that. And I would say it will be done annual, not quarterly.	Neutral	Reviewing model	Competency Process Management
K: It's a bit early to say about the contribution of employees until we adapt the model.	Neutral	Contribution of employees to the model	Competency Process Management
K: The model helps us to think and manage things. Of course, we need these kinds of tool, framework and model.	Positive	The adaptable of the model into the company's context	Competency Process Management
K: The short answer is yes, but the long answer is we only know after we tried it.	Neutral	The adaptable of the model into the company's context	Competency Process Management
T: I don't think we have the answer now, we need time to think about it.	Neutral	Challenges the company may meet when adapt the model – not sure	Competency Process Management
L: After we start to use then those challenges or development things will arrive. It's hard to say forehand.	Neutral	Challenges the company may meet when adapt the model – not sure	Competency Process Management

K: I think we should spend the time to work with those competencies, combine with our infrastructure and take a look at what our current competencies and the gaps between those with the future competencies, then we could fill those gaps.	Neutral	Challenges the company may meet when adapt the model – not sure	Competency Process Management
K: I think the model could help us. It can help us to identify kind of competencies, which are general to all of us, or some competencies are only for specific teams. But at the moment, I can't say if the model has any challenge yet.	Positive	Challenges the company may meet when adapt the model – not sure	Competency Process Management