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COMPETENCE ASSESSMENT AND COMPETENCE DEVELOPMENT

– CASE PORI ENERGIA



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Human resources can be seen as one of the key elements of a company. It is important to not only have employees, but competent employees. Mapping the competence level of personnel has become a valuable tool in order to develop the overall competence in the company.

The meaning of this thesis is to map the competence level of Pori Energia's power station personnel. Competence assessment for Pori Energia is part of its human resources strategy: Energiaa Kaiken Ikää. There has been a competence assessment earlier in the company but it was decided that now with the new human resources strategy it would be necessary to update the competence assessment. Personnel was also asked to fill the assessment in order to get the current information of the competence level.

In the theory part, the thesis examines how knowledge becomes competence by using theories of well-known researchers. Later the theoretical part will explain how to plan and execute a competence assessment and also some of the competence development programs that could be used in Pori Energia.

The empirical part of the thesis is the competence assessment that was assessed to Pori Energia's power station personnel. The competencies that were assessed were the professional competencies that are needed in order to work in a power station environment. The competencies were chosen by the director of the department with a group of power station personnel. This way the research minimizes the risk to assess completely irrelevant competencies which would not give any value to the end results.

The results of this assessment showed that there are some competence entities that are in a need of development. Also the number of expert workers in some areas of competencies is quite low which suggests that there should be more focus on certain skills. Based on the results of the assessment, it is possible to steer the competence development programs towards certain competence entities in order to fill so called competence gaps.

KEYWORDS:

Competence, competence assessment, competence development, quantitative research, evaluation

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OSAAMISKARTOITUS JA OSAAMISEN KEHITTÄMINEN, CASE PORI ENERGIA

Henkilöstöä voidaan pitää yhtenä tärkeimmistä tekijöistä yrityksessä. Pelkkä henkilöstö ei kuitenkaan riitä, vaan yrityksessä pitää olla osaavaa henkilöstöä. Henkilöstön osaamisen kartoittamisesta on tullut yksi merkittävimmistä työkaluista osaamisen kehittämisen suunnittelussa.

Opinnäytetyön tarkoituksena on kartoittaa Pori Energian voimalaitostyöntekijöiden substanssiosaamisen taso. Osaamiskartoitus on osa Energiaa Kaiken Ikää – ohjelmaa, jota voidaan pitää myös yrityksen nykyisenä henkilöstöstrategiana. Yrityksessä on teetetty osaamiskartoitus aiemminkin, mutta uuden henkilöstöstrategian myötä oli aika päivittää yksiköiden substanssiosaamiset ja pyytää henkilöstöä vastaamaan kartoitukseen, jotta saataisiin mahdollisimman realistinen kuva yrityksen nykyisestä osaamisen tasosta.

Teoriaosuudessa opinnäytetyö käy läpi kuinka tieto muotoutuu osaamiseksi tunnettujen tutkijoiden teorioihin nojaten. Myöhemmin teoriaosuudessa käydään läpi osaamiskartoituksen suunnittelu ja toteutus, sekä osaamisen kehittämisohjelmia joita kohdeyrityksessä voitaisiin käyttää.

Empiirinen osuus koostuu yrityksen voimalaitostyöntekijöille toteutetusta osaamiskartoituksesta. Osaamiskartoituksessa kartoitettiin voimalaitostyöntekijöiden tarvitsemaa ammattiosaamista, mitä tarvitaan voimalaitosympäristössä tapahtuvaan työskentelyyn. Kartoitettavat osaamiset valitsi voimalaitosyksikön johtaja sekä joukko voimalaitostyöntekijöitä. Tällä minimoitiin mahdollisuus irrelevanttien osaamisten kartoitus, joista tutkimus ei saisi minkäänlaista lisäarvoa.

Opinnäytetyön tulokset osoittivat, että voimalaitoksissa on tiettyjä osaamiskokonaisuuksia, joiden osaamistaso on huomattavan alhainen. Tuloksista käy myös ilmi, että tiettyjen osaamisten kohdalla, asiantuntijatasoisia osaajia on suhteellisen vähän. Tulosten perusteella kehittämisohjelmaa voidaan ohjata kohti tiettyjä yksittäisiä osaamisia, jotta niin sanotut osaamiskuilut saataisiin korjattua.

ASIASANAT:

Osaaminen, osaamiskartoitus, osaamisen kehittäminen, kvantitatiivinen tutkimus, arviointi

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1 INTRODUCTION

1.1 Background of the thesis

Competence and competence development is a current theme. The success for a company and for individual employees requires constant development. Individuals are the ones that create the foundation of every company and its competitive advantage. (Viitala, 2009, 170) Because of this, the scarce resource in organizations is not the amount of money anymore, but the people with the knowledge and expertise. This is what nowadays brings competitive advantage for companies. (Ojala, 2008 s. 15)

Probably every business student have heard the statement “personnel is the biggest asset in the company”. Managing competence and taking the full advantage of personnel’s knowledge is getting more important in the changing business environment. In order to develop competence there has to be a thorough assessment about the current level of skills and knowledge among the personnel. Competence assessment is a powerful tool that can be used in this type of research to find out the current state of professional competence in companies. In this research the subject was Pori Energia’s power station workers’ competence level and competence gaps.

1.2 Case Introduction

In Finland, especially elderly workforce is growing in a quick pace. According to Findikaattori (2014) the second biggest age group from Finnish population is from 51 to 63 years, which means that most from this age group are still in the working life. This will cause problems because there is not enough young workforce to replace the ones that are going to retire in the near future. This type of demographic change will have a negative impact on firm’s productivity, competitiveness and competence of personnel. One way to prepare for this big change in an organization is proper age management. This research is part of a bigger entity

which is bound to Pori Energia's human resources strategy. The human resources strategy of Pori Energia focuses on age management.

Pori Energia's human resources strategy is called "Energiaa Kaiken Ikää" and it was launched in 2013. The strategy is divided in four different stages

- health and performance
- competence
- values, attitudes and motivations
- leadership, work community and work conditions

This research will focus on competence and competence development. The human resources strategy can also be seen as the company's age management program, as earlier mentioned. The main reason why the human resources strategy is focusing on age managements is mainly because of the age structure of the company. The average age in the firm is 45,5 and 50 employees out of 300 are retiring in the next 5 years. (Heliniemi, 2013) The purpose of the age management project is to identify threats and possibilities that the age structure is causing for the firm. Another goal of the project is to find a way to utilize all the gained information and experience from older workforce so it will not just disappear after they have retired.

Competence consists of education, gained information, skills and experience. Especially the information that has been gained along the experience is difficult to make visible and movable without certain methods. Therefore one critical part of the age management program in Pori Energia is the competence assessment. By assessing the existing competencies it will reveal the possible "competence gaps" and thus the planning of training and competence development is easier to execute.

1.3 Research objective

This research is conducted by the request of the client Pori Energia. During the time of competence assessment, there were 8 different competence assessments conducted for each department of the company. In order to limit the amount of data this research will only focus on competence levels of the company's power stations. This decision was done by the author of this research and the administrative director of Pori Energia. By performing the competence assessment it is possible to find out the potential training needs for the power station workers, whether the competence level is low at certain areas of expertise. By using the gained data, superiors, managers and the workers will have helpful information to support the preparation of the training plans. Another object is to create a competence assessment form that can be used also in the future. The competence assessment is a powerful tool to measure and compare the level of competence from time to time. It is recommended that competence assessment should be held every two or three years (Hätönen, 2014).

Therefore the research objectives are:

- To find out the current competence level among the power station workers of Pori Energia
- Give valuable information for superiors and workers to plan their individual training plans
- Create a tool for Pori Energia, that can be used in the future competence studies

1.4 Structure of the thesis

This bachelor thesis is divided in three main parts: theory, empirical part and the conclusion of the research. In chapter 2, the thesis explains how knowledge becomes competence by using theories of well-known researchers. In the chapter 3 the thesis goes through the different phases of creating a competence assessment and how to evaluate competencies. After this, in chapter 4, the thesis also

suggests how the organization can utilize the gained information from the assessment. Chapter 4 also will give few examples of competence development programs that could be used in the commissioning company.

In the 5th chapter the thesis focuses on research method that was used in this thesis and the data collection. Chapters 6 and 7 explains and analyzes the results of the competence assessment and whether the research objectives were achieved.

2 FROM KNOWLEDGE TO COMPETENCE

The ongoing change in business environment causes challenges for companies, and intellectual capital is becoming more important for achieving or maintaining competitive advantage in the field of business (Sydänmaalakka, 2007, 26). Intellectual capital includes three different types: human, structural and relational components. All these components are called intellectual capital or intangible assets because they are not physical assets; they cannot be seen, but they contribute in revenue creation. (Emerald Inside Staff, 2005, 5)

Structural and relational components include elements like clients, cooperation partners, intellectual property rights, processes, brand and organizational culture. Mainly all these resources are owned by the company and it can freely control these assets (Göös et. al. 2006, 14)

Human capital is probably the most obvious component of this division of intellectual capital. Intangible assets in human capital are for example know-how, knowledge, experience and abilities. This type of knowledge and skills belongs to the individuals, which means that the organization does not own the human capital but it can utilize it in order to create revenue. It differs from the structural and relational components in a sense of the ownership and that one cannot actually these intangible assets. For example making a contract between the employer and employee, the employee is willing to share his or her knowledge with the company. (Göös et. al. 2006, 13) In Pori Energia the sharing of knowledge between employee and the employer is certainly noticeable. According to Competence Compass –survey (2010) the company has innovated new products and services in order to sustain their competitive advantage. Also the company is a very attracting work place and the employees are willing to continue their careers quite long in Pori Energia. The current average career among the company's power station workers' is 20,37 years. (Competence Compass, 2010).

2.1 Knowledge

Davenport and Prusak (1998, 5) have defined knowledge as a “fluid mix of framed experience, values, contextual information, and expert insight that provides a framework evaluating and incorporating new experiences and information”. Sydänmaalakka (2007, 289) adds that knowledge is not only static but also dynamic.

Knowledge is something that you cannot touch or see, but you can observe its effects. Sometimes it is difficult to recognize the full potential of knowledge because it is intangible and companies are not fully aware of their employees' capabilities. (Darwin, 2003, 100-101).

Human capital is one of the key factors in order for a company to be successful. All employees are part of human capital no matter what kind of know-how, skills or abilities are needed in their work assignments (Emerald Inside Staff, 2005, 5). Skills, knowledge, know how, experiences and attitudes can be seen as a whole which can also be called competence (Ojala, 2008, 50).

Competence's relation to knowledge is close but it is important to separate these two terms from each other. According to Ojala (2008) competence is different from knowledge in sense of practical know how and skills. Knowledge can be seen as a basis of competence. The knowledge pyramid shows the simple hierarchy of the different values of knowledge starting from the data at the bottom to the wisdom on the top of the pyramid (Ojala, 2008, 48).

In Ojala's (2008) knowledge pyramid, Picture 1, the lowest section in the hierarchy is data. Huseman and Goodman (1999) have defined data as the beginning of every action, even the most complex business operations. For people without the knowledge of how to apply the data, it is useless. There has to be a receiver, human being, who can utilize the data in order to transform it into information. (Sveiby, 1990, 94; Huseman and Goodman, 1999, 105)

Information is in the second section of Ojala's knowledge pyramid. Huseman and Goodman (1999) states, that with information one is able to combine the different

points of data and put it in context. For example when companies give their annual reports, they translate the whole year's data (sales, turnover, growth etc.), into a more understandable form, so the shareholders would be able to get the needed information. (Huseman and Goodman, 1999, 105)

According to Ojala (2008) the next level, competence, is achieved when the information is used in practice. This research is focusing more on competence in the next chapter.

The last two sections of knowledge pyramid are expertise and wisdom. Both, expertise and wisdom, are usually associated with great and wide understanding of information. One has to know how to collect information and to analyze it in order to reach the expertise. Wisdom can be often assimilated with experience, which means that people who have reached the top of the pyramid are usually older employees and they hold lots of tacit knowledge. More about tacit knowledge in the next chapter. (Ojala, 2008, 50).



Picture 1 Knowledge pyramid (Ojala, 2008)

Sydänmaalakka (2007) thinks that organizations sometimes miss the full potential of their employees. He has asserted three problems that companies usually face when it comes to utilizing the existing knowledge in organization. The first problem is that the needed knowledge is probably already available somewhere in the organization, but because it is intangible it is usually difficult to locate. Another problem is that people in the organization does not know what to know. The third problem is to effectively share the existing knowledge with everyone in the company. Sydänmaalakka (2007) suggests that in order to avoid these problems the tacit knowledge needs to be transformed into explicit knowledge. (Sydänmaalakka, 2007, 175-176) By performing a competence assessment, it is possible that it will reveal some of the competencies of employees that has not yet been acknowledged in the management. Competence assessment will also be helpful to find the mentors for the mentoring program, which will be handled later in this thesis.

2.2 Tacit knowledge

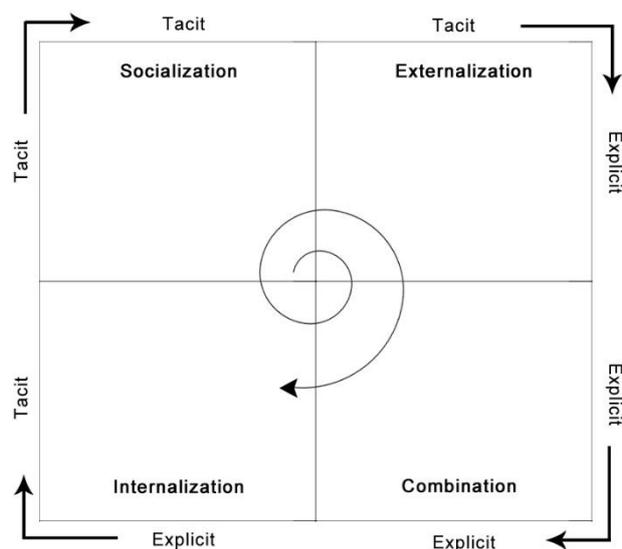
The pioneer of philosophy and the man behind the definition, Michael Polanyi, says that tacit knowledge is hidden and it is in the mind of a human being, therefore it is quite difficult to share with others (Cowan, R. et al., 2000). Tacit knowledge is usually gained through personal experience, not from the books. Cowan et al. (2000) also suggests that sometimes the holder of the tacit knowledge is unaware of the knowledge that he or she has, and therefore it is hard to measure or share (Cowan, R. et.al., 2000).

Toivonen and Asikainen (2004, 13) have gathered the main ideas behind Polanyi's three stages of knowledge:

- The one that can be articulated (speech, math etc.)
- The one that cannot be articulated yet, but after learning it, the knowledge could be articulated
- The one that cannot be articulated for some reason

The unarticulated knowledge becomes articulated when we receive new information or data and notice it. Every skill consists of both articulated (explicit) and non-articulated (tacit) knowledge. This is the main reason why it is difficult for an expert to explain how to do things like an expert does. This also limits the possibilities of an expert to share his or her knowledge (Toivonen, Asikainen, 2004, 14). Nonaka & Takeuchi (1995) have created a theory how tacit knowledge could be transferred into explicit knowledge.

Nonaka & Takeuchi introduced SECI model in 1995. SECI model is a matrix, Picture 2, that explains how tacit knowledge can be transferred into shareable knowledge and explicit knowledge. SECI stands for socialisation, externalisation, combination and internalisation. With socialisation the tacit knowledge can be shared in normal conversation or by watching when an expert is performing some sort of task. In the externalisation the one who just acquired new knowledge through socialisation is able to externalise it and share it with others. The tacit knowledge has transformed into explicit knowledge and it can be combined with other explicit knowledge. In the final phase, internalisation, the gained knowledge will become internal knowledge and transform into tacit knowledge again. (Nonaka, I & von Krogh, G., 2009)



Picture 2 SECI model (Nonaka & Takeuchi, 1995)

Disappearance of tacit knowledge has become current problem in Finnish organizations. This is due to the fact that the big age groups are retiring and thus the experience and knowledge leaves with them. This is why every superior should have a list of retiring employees and a plan how to transfer the tacit knowledge to younger employees. (Ojala, 2008; Toivonen & Asikainen, 2004)

In Pori Energia tacit knowledge is one key element in competitiveness. At the moment there are many workers who have been in the company for over thirty years and thus there are lots of tacit knowledge and expertise among these employees. The age management project (Energiaa Kaiken Ikää) is aiming to find solutions how to transfer the existing knowledge from the older employees to younger generations. From company's point of view it is important to keep the knowledge inside the building and not to let it disappear.

2.3 Competence

The competitiveness of a company can be measured from many angles. Capital assets like machinery, property or any kind of concrete asset that creates value for a company are a part of competitiveness, but the main creator of competitiveness is the competence of the employees. (Ojala, 2008, 15)

Even though competence is not the newest phenomenon, definition of competence still varies quite a lot between researchers (Awuah, 2006). Because of its intangible nature, everyone has its own picture what competence actually is. (Ojala, 2008, 37) (Awuah 2006, 1068). By defining competence, it helps to make the intangible assets more concrete and visible. It also creates common comprehension between people, which makes it easier to talk about. (Ojala 2008, 50.)

On one hand, Burgoyne (1989) defines competence as the ability and willingness to perform the work assigned. On the other hand Hayes (1979), Ojala (2008) and Boyatzis (1982) sees competence more as a combination of knowledge, motive, traits, skills, attitudes and personal attributes in order to make a great performance in job (Hayes, 1979, 2; Ojala, 2008, 50; Boyatzis, 1982). More detailed definition is "a cluster or related knowledge, skills, and attitudes that reflects a

major portion of one's job (a role or responsibility), that correlates with performance on the job, that can be measured with well-accepted standards, and that can be improved with training and development" (Parry, 1996, 50). The statement about measuring competence with accepted standards and intentions to develop competence (Parry, 1996) is the main goal of this thesis, and thus this definition applies the best with this thesis.

Skills and knowledge are learned from training, studying and experimenting different working methods. Personal attitudes and motivation have an effect how different persons, even with the exact same education, sees and experiences competence differently. This is one of the reasons why Awuah (2006) and many other researchers have different definitions on competence. (Ojala, 2008, 50-51)

Competence has become a remarkable factor for guaranteeing companies' success. In many different developing sectors of business, the current level of skills and knowledge, especially technical skills, is being outdated approximately in three years. If employees are incapable of using current technology their work efficiency drops dramatically which naturally has an effect on firm's overall competitiveness. (Ojala 1994, 13.)

This is why the needed components of competence, for example the required skills in the work, need to be assimilated inside companies so the development of skills and knowledge can be maximally utilized. It is irrelevant and costly to train unneeded and futile skills to an employee (Sandberg 2000, 9.).

Competence on individual level

Individual competence is something that individual employee holds. Sydänmaalakka (2007) states that it is important to understand that individual competence is not only knowledge. Competence is the ability to apply the gained knowledge in practice. Competence also requires the right attitude, motivation and experience in order to evolve in to deeper competence. (Sydänmaalakka, 2007)

Individual competence makes it possible for companies to utilize the opportunities of the future and keeps the organization competitive. The competence that individuals hold is the key resource in the organization and thus the required skills and knowledge is necessary for company's strategic success. (Nordhaug & Gronhaug, 1994, 89)

The organization is not the only one that will get the advantage of individual's competence, it is also really important for the individual itself. The higher the level of competence, the chance to succeed in work is also higher. This will boost the worker's confidence and trust on his/her own skills. Also co-workers will possibly notice the good employee and thus the worker will get reputation and status in work place. When the individual will get this type of recognition he/she will be more motivated to learn new competencies (Viitala, 2009, 178-181). Viitala (2009) also states that it is important that the individual is aware of its own competences strengths and weaknesses. By being aware of own strengths and weaknesses the individual will be able to develop itself. (Viitala, 2009, 180)

The competence that individual employee needs in work is called professional competence. Professional competence means the skills and knowledge that is needed in order to manage certain tasks in certain department (Viitala, 2009, 179). For example, for a power station worker the professional competence can be the ability to understand and use the operating systems that are used in controlling the production machinery or boilers. This research aims to find out the current level of Pori Energia's power station workers' professional competence and the possible development needs. By performing competence assessment, the workers will evaluate their individual professional competence. Like Viitala (2009) mentioned, in order to develop competence it is vital for the individual itself to be aware of own strengths and weaknesses, this way the development process is much easier to go through.

Competence on organizational level

According to Ojala (2008) the individual competence of each employee will transfer into organizational competence when employees share, combine and develop competence together. In this event, the competence will be transferred into common vision and common actions. (Ojala, 2008, 53)

Long and Vickers-Koch (1995) have divided organization's competence into three different sets of competence: core competence of organization, common competencies and the supporting competencies. Supporting competencies are the ones that are needed in every company, in order to be able to operate in the business. Domestic services of a company, like HR and financial management, are part of company's supporting competencies. Common competencies are the ones, that every company in the business will have, but with these competencies they cannot bring more value for their customers. Core competencies are the critical competencies that will bring more value for customers and competitive advantage for a company. Company's core competence consists of one or more strategic competencies that the company has. These strategic competencies can be for example the overwhelming acquaintance of markets or customers or better production efficiency than the competitors. (Viitala, 2009, 177; Ojala, 2008, 54)

In Pori Energia each department has its own strategic competence which is strictly involved with the company's strategy and vision. According to a study that was done in Pori Energia Oy in 2010, the core competencies of the company are well acknowledged among the employees and the organizational competence can be seen as strategic resource in a company. (Competence Compass, 2010)

3 COMPETENCE ASSESSMENTS

Competencies have to be managed and developed systematically in order to achieve the goals of the organization. The information of the current level of competence and possible future competence needs in the organization is vital for the planned development process (Ranki, 1999, 13).

The goal of every competence assessment is to find the possible “competence gaps” in company. Competence gaps are the differences between the desired level of competence and the current level of competence in the organization. By finding these gaps, it is easier to make a training plan for employees when the lack of certain skills or knowledge has been mapped. (Hätönen, 2004, 9)

3.1 Planning a competence assessment

According to Haapasilta & Saikkonen (n.d.), the aim of every competence assessment should be to identify the current level of competence and possible development needs for the future. The goal is to support personnel’s systematic development and long-term planning to follow the company’s vision and strategy. The competence assessment is done correctly if it gives tools to develop both organizational competence and individual competence. Haapasilta & Saikkonen states that human resources strategy should work as a basis for competence assessment. (Haapasilta & Saikkonen, n.d. 1-2) (Viitala, 2009, 181)

Haapasilta and Saikkonen (n.d.) have divided the planning of competence assessment into three different phases. The first phase is “defining the goals of the competence assessment”. In this phase the aims are defined both from the organization’s point of view and from the individual’s point of view. It is also important to decide how big of a scope is taken into account when doing the competence assessment. For example when planning a competence assessment one has to think, whether it is important to get a comprehensive view of all the available competencies in the organization, or is it enough to find out some of the

more common competencies that are available in the firm. (Haapasilta & Saikkonen, n.d. 3) In this thesis the aim was to map the professional competencies of power station workers of Pori Energia. These professional competencies are the ones that are needed in their daily work and the development of these competencies will increase the effectivity of work which is directly proportional to company's success.

The second phase is about mapping all the factors that may have an effect on the needed competence. In this phase one should translate firm's strategic goals into different areas of expertise by interviewing the management for example. It is also vital to get the opinions about the currently needed competencies from the workers themselves. Haapasilta and Saikkonen (n.d.) also mentions that in this phase it is vital to map all the documents and manuals that are used in a company as a guideline, in case they have an effect on required level of competence. (Haapasilta & Saikkonen, n.d. 3)

The third phase is including the forecasting into competence assessment and utilizing the results. In this phase one has to decide how the forecasting is made visible in the competence assessment. By forecasting, Haapasilta and Saikkonen (n.d.) mean the target level of certain competence in firm. It is also vital to think in this phase how the results are going to be reported in the firm and how the results are being handled and utilized (Haapasilta & Saikkonen, n.d., 3).

After careful planning and preparation it is time to execute the competence assessment. Usually there are simple forms or computer software used as a tool when executing the competence assessment. Often the individual employee is the one who is assessing his or her own level of competence in areas that has been chosen beforehand in the planning process. (Viitala, 2009, 182). Self-evaluation can sometimes lead to a faulty evaluation which is explained in chapter 3.3.

The biggest advantage of competence assessment is the possibility to make intangible assets visible. When there is awareness inside the firm of certain com-

petencies, it is easier to develop the whole business. Also the competence development becomes a lot easier, because now it is possible to see the areas that are in the need of development. Viitala (2009) says that with competence assessment it is possible to make more reasonable decisions in development areas. (Viitala, 2009, 182)

3.2 Competence levels

In order to measure competence, there has to be a scale which defines different levels of competence. Competence can be measured with a simple evaluation scale with numeric scale or with a written scale where each level is defined separately. Hyppänen (2013) sees that choosing the right scale is really important part of competence assessment. This choice should be influenced by the related goals of competence management goals, needs and expectations. Hätönen (2004) says, that the scale should be quite wide, from 1 to 5 or 1 to 7, in order to separate basic competence level from an expert level. The lowest level of competence is already a positive result and usually it is enough to perform well in certain tasks. The expert level is rare and usually it is reached alongside with experience. (Hätönen, 27, 2004) (Hyppänen, 2013) This is one of the key objectives in competence assessment in Pori Energia; to find possible expert level competencies from employees and then find out solutions how to transfer the expertise to other employees.

It is also important that the scale has a 0-level, which means that the individual does not have any kind of knowledge or skill for certain type of competence but the competence is still needed in daily job. Usually persons who have 0-level competence are new employees in the company and are still in the process of learning new skills. 0-level competence can also be found when there is completely new competence that is required from employees in the future. According to Hätönen (2004) the 0-level competence can be problematic because it is difficult for individuals to evaluate their competence to completely zero. (Hätönen, 27, 2004)

As earlier mentioned the competence levels can be measured with different scales.

- 0 = does not know about the competence
- 1 = beginner
- 2= learner: knows the basics and routines
- 3 = skilled: knows the task, but needs guidance and support
- 4 = pro: can operate individually
- 5 = expert: can develop and give guidance

Picture 3 Evaluation of competence level with 6-step scale (Hyppänen, 2013)

6-step scale by Hyppänen (2013) is one of the most common scales to evaluate competence. The scale starts from 0-level competence and ends with the expert level competence in level 5. These type of scales are common because they are simple and clear, this is also one of the main criteria in choosing the right scale for evaluating competence. If the same scale is used in the whole organization in different departments, the definitions of each numeric level should be general enough so they can be used in defining different competencies. (Hyppänen, 2013).

3.3 Evaluating competencies

As mentioned in the earlier chapter, the evaluation is crucial part of the competence assessment. One can say that the evaluation is the basis of every development process. By evaluation we mean analysing the benefit or value of the desirable target, in this case competence. According to Hätönen (2004) evaluation may relate to any human action in firms and it has natural tendency to achieve as reliable result as possible. It is also normal that when evaluating competencies, there are certain desired goals in firms what the competence should be. (Hätönen, 2004, 40) In Pori Energia the desired levels of different areas of competence has been set by the executive committee.

In evaluation the comparison is made between the gained results and the target set. Evaluation creates information that steers development process in the right direction. There are several ways to evaluate competencies in companies, which usually includes superiors' and subordinate's evaluation of current level of competence (Hätönen, 2004, 40).

Self-evaluation

Usually the evaluation of our knowledge, actions and competence is evaluated by someone else, for example superior or colleagues. During the past ten years the self-evaluation in organizations have become more common as a part of the complete evaluation process. Self-evaluation is evaluation where person has to review his or her own learning and skills in the working environment. Self-evaluation requires critical thinking towards own competence and work performance and also readiness to evaluate how the defined criteria, e.g. job description, in work is met by the person. (Hätönen, 2004, 40)

Hätönen also states that self-evaluation is not as easy as it may sound. Self-evaluation is personal and the results of self-evaluation can be affected by the person's self-esteem. Hätönen prolongs that many suspects the results of the self-evaluation, because often the evaluation is either too good or too modest. (Hätönen, 2004, 41) One of the main factors which can have an effect on self-evaluation is the nature of the survey. Are the respondents answering anonymous or can they be identified. This topic will be discussed later in the chapter 5.

Performance appraisal

Performance appraisal is a good basis for a systematic competence evaluation. From the employees point of view the performance appraisal is an opportunity to express own ideas and impressions and discuss about one's own positions and development in the organization. (Jalava, 1999, 104-105)

In performance appraisals the main purpose is to evaluate employee's competence, plan individual's development, set certain development goals and define ways how all these can be achieved. Official performance appraisals should be held twice a year. In addition there should also be an ongoing theme of development and competence in discussions. (Jalava, 1999, 104-105)

From strategic competence development's point of view the performance appraisal is a management tool which gives a possibility to map organization's current level of competence in different departments. (Jalava, 1999, 104-105)

360-evaluation

360-evaluation is a combination of self-evaluation, performance appraisal, evaluation of colleagues and even and evaluation from other stakeholders. This type of comprehensive evaluation gives valuable information to individual when one can contrast own evaluation to others. Hätönen says that especially differing evaluations may generate a development process that might have been otherwise missed. (Hätönen, 2004, 44)

According to Hätönen (2004), Edwards and Ewen (1996) found out that the accuracy of the 360-evaluation is the main advantage compared to the self-evaluation and performance appraisal. Because of the variety of assessors the 360-evaluation reveals employees competencies as an individual, as part of a team and as a part of the organization. Hätönen states that usually 360-evaluation is arranged for people who work in positions, where wide expertise is required and therefore the employee's supervisor isn't any more capable of evaluating the competencies of the individual on his/her own. (Hätönen, 2004, 44)

In this research the participants will do the self-evaluation. But as we can notice, the self-evaluation can be used in other evaluation methods also as a comparison.

4 COMPETENCE DEVELOPMENT PROGRAMS

As stated earlier, organization's competitive advantage depends the most on what kind of competence is available among the employees, how the competence is used and how fast it is possible to learn new skills and knowledge. (Viitala, 170, 2009)

Competence management can be seen as an action which includes operations to develop, secure and acquire competence that is important to achieve the company's strategy. The main goal of competence management is to develop the competence level of the employees and utilize the existing competence as efficiently as possible. In staff planning the competence management raises certain questions that has to be thought thoroughly before the execution of hiring or training: (Viitala, 170, 2009)

- What kind of competence is needed to be able to meet with the commercial goals of the company?
- What competence should be kept on ourselves and what competence should be bought from third party?
- How much and when certain type of competence is leaving from company and how to avoid the competence loss?
- What competence is outdated and should be relinquished? (Viitala, 170, 2009)

In Pori Energia, one question from the list above is current and it has been taken into serious consideration. As mentioned earlier, in few years there are many employees that are going to retire and thus lots of expertise level competence is leaving from the company. In Pori Energia, this can be avoided with the upcoming mentoring program which helps transferring the tacit knowledge of the elder workers to younger generations.

Competence development programs are structural capital which helps to develop competence to correspond with the organization's desired level of competence.

Usually strategic competence development programs are created for such competencies that are in a need of development. (Ojala, 2008, 2013)

In the next part I will go through some of the competence development programs that could be suitable for Pori Energia in order to develop competence and maintain the competitive advantage. Also these methods can help transferring tacit knowledge in the company as Nonaka & Takeuchi (1995) have suggested.

Mentoring

Mentoring is a widely used method in competence development. The methods of mentoring are used for developing and transferring the skills and competence for teams and individuals. Mentoring aims to increase the level of competence and skills and utilize all the available competence that is available in the organization. (Lankinen, et al., 83, 2004)

Mentoring means the interaction process between the more experienced employee, the mentor, and younger employee with less experience, also called the actor. Mentoring has two purposes: psychosocial purpose (encouraging, support and approval) as well as work development and career promotive purpose. The meaning of mentoring is not to give straight answers to the younger employee but to help and guide to find the best solutions for the actor. The mentoring works if there is a personal, open and confidential relationship between the mentor and the actor. (Viitala, 2009, 192)

Master-apprentice –method

According to Ojala (2008) the master-apprentice -method is one of the best ways to transfer tacit knowledge from one to another. The idea of master-apprentice –method is that the younger employee follows the work of more experienced worker and through that absorbs different working methods. It is also important for the apprentice to ask lots of questions. Ojala (2008) states that lots of tacit knowledge is transferred by observing the master. (Ojala, 2008, 224)

Otala (2008) also reminds that it is important to acknowledge that master-apprentice is really effective but also really clumsy development method. It requires that the master and the apprentice are constantly in the same place and time which makes the development process really slow and expensive. Additionally, the master-apprentice method does not leave any concrete information or data which could be used later with the future trainees. (Otala, 2008, 225) The master-apprentice method can only be used in scenarios, where the employer is sure that the all the drawbacks are acknowledged.

Work rotation

In work rotation employee changes his/her position inside the company. By this method the competence gained by experience can be spread inside the company from a department to another. According to Otala (2008) work rotation allows the sharing of tacit knowledge, creation of new knowledge and information and possibly even finding a way to change the tacit knowledge into concrete information. (Otala, 2008, 224)

Viitala (2009) adds that work rotation not only develop new competencies for employees but also adds flexibility for a company. Work rotation improves productivity because in possible bottleneck scenarios there is enough competent work force to help certain department. This type of multi-competence is also meaningful for employees because it brings variation and challenges to work. Also moving from department to another is made easier and the value of multi-competent employee in the organization and in the labour market raises. (Viitala, 2009, 192)

5 METHODOLOGY

5.1 Research methods and data collection

This research was commissioned by Pori Energia and the aim of this research was to gather data about competencies in power stations and analyze the results.

The research objectives are:

- To find out the current competence level among the power plant workers of Pori Energia
- Give valuable information for superiors and workers to plan their individual training plans
- Create a tool for Pori Energia, that can be used in the future competence studies

In order to achieve the research objectives the most suitable data collection method was a survey. Surveys are commonly used when research is aiming to find answers to questions like who, how many and how much. Surveys also makes it possible to gather large amount of data from a substantial population in an economical way and usually they are easy to explain and to understand. By using survey as a method of data collection, it allows easy comparison between the results and the desired competence levels of the company. (Saunders et. Al. 2009, 144)

By using survey strategy in data collection, the results are usually quantitative data. Quantitative data is:

- Based on meaning derived from numbers
- Collection results in numerical and standardized data
- Analysis conducted through the use of diagrams and statistics

5.1 The execution of competence assessment

Personnel answered for the assessment in company's HR system Sympa, where each employee has their individual login credentials. The competence assessment was held between the December of 2014 and January of 2015. The deadline of the assessment was delayed due to troubles in personnel's login credentials. Personnel had complained while trying to log in to the system, about wrong username/password which incurred quite a lot of work to sort out. This gave vital experience, because these sorts of problems may cause resistance among the employees to respond to the whole assessment.

Another reason that could have caused resistance was the chosen style of the survey. Because every employee logs into the system with their individual credentials, the answers for the assessment were nominal. As mentioned earlier in chapter 3 this could lead not only to unwillingness in participation but also to a faulty evaluations (Hätönen, 2004). However these risks were acknowledged before the assessment by the researcher and the commissioner. The main reason behind the nominal survey was the fact that the results of each individual competence assessment can be used in individual training planning or it can be used in the performance appraisals or other evaluation methods that were discussed earlier. By using the results of competence assessment, it can bring the discussion to a new level in performance appraisal or in other evaluations.

Competence assessment was done by using quantitative method and the questions were structured. Every question has a scale from 0 to 4. This scale follows mainly the guidelines of the 6-step evaluation scale by Hyppänen that was introduced in chapter 3 (Hyppänen, 2013). Only exception was that level 0 competence is marked as leaving the answer empty and the highest competence level is marked as 4. This type of scale will give wide enough scope for participants to evaluate their current level of each competence. The competence levels in this assessment are:

- Empty = I don't have competence and I don't need the competence in my current work

- 1 = I don't have competence, but I need the competence in my work
- 2 = I have the basic qualifications. I can perform individually but I need to consider the steps of the task. I am lacking entirety of the competence.
- 3 = I can perform the tasks individually and I have a routine for this competence.
- 4 = I am an expert. When needed, I can give guidance to coworkers.

It was also possible to mark the desired future level, after 1 year and 3 years, of each competence. This way the respondent could easily communicate his/her own interest in developing certain competence. In the future it would be possible to compare whether the desired competence level has been reached during the time between the assessments, because all the data of the assessment are saved into the system.

The overall number of workers in power station environment is 56. The amount of responses was 41 which means that the response rate was 73%. Due to the response rate being 3/4 of the personnel, the level of competence does not give the perfect picture of Pori Energia's power station competence. However the results are directional and will give important information about the current competencies in power stations.

The amount of responses differs between each competence because the assessment had a possibility to leave the answer empty, which means that person does not need that competence in his/her work. The empty answers does not have an effect on the averages because it would distort the real average level of each competence.

5.2 Research Reliability, Validity and Generalization

The author of this research thinks that the research reliability is rather high. This is mainly because all the literature that was used was academic and the assessment consisted of competencies that were chosen by the director of the department and group of power station personnel themselves.

Participating for the assessment required individual login credentials that each employee has. This way, the possibility of giving misleading answers was minimized and all the data got securely stored in the HR system. Also the participants were given enough time to respond to the assessment and the superiors were reminded few times to pass the information about the assessment to their subordinates, in case they had missed the announcement in the company's weekly bulletin.

This research also had its limitations. Saunders et. Al (2009) have stated that "the data collected by the survey strategy is unlikely to be as wide-ranging as those collected by other research methods" (Saunders, et.al. 2009, 144). In this research, the research objective was to find out the current competence level, so the author and the commissioner of this research decided to use survey strategy, because the results would give accurate enough information. At this point, there was no need for wider-ranging data from the power station worker's competence.

Another limitation was the answer rate. Even though every employee was notified about the assessment and they had a possibility to use computer in work, the answer rate did not reach 100%. Therefore the results of this research are not able to demonstrate the actual level of competence, but it will give a directional overview of the competence levels.

The competence assessment also does not take into account the competence level differences between different age groups due to the limitations of the software that was used in survey. This information is valid for the age management program, *Energiaa Kaiken Ikää*, and hence this issue was solved by using the nominal questionnaire. This way each superior can track down the responses of their subordinates who are about to retire in the near future, and make conclusions whether there is competence that should be transferred to other workers.

6 COMPETENCE ASSESSMENT IN PORI ENERGIA

6.1 Confidential

7 CONCLUSION OF THE RESEARCH

7.1 Confidential

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Appendix

Assessment request

Osaamiskartoitus

Pori Energia-konsernissa toteutetaan henkilöstön osaamiskartoitus osana *Energiaa kaiken ikää – ohjelmaa*. Vastaaminen tapahtuu Sympassa ja vastausaika on 1.12 - 14.12. Pyydämme teitä osallistumaan kyselyyn alla olevien ohjeiden mukaisesti.

Ohjeet osaamiskartoitukseen vastaamiseen:

1. Mene osoitteeseen www.sympahr.net/porienergia ja kirjaudu sisään Sympan tunnuksillasi. Jos et tiedä tunnuksiasi, voit kysyä tunnuksia esimieheltäsi tai henkilöstöhallinnosta.
2. Kirjauttuasi sisään, paina sivun alalaidassa olevaa **Näytä kaikki** nappia.



3. Valitse ja täytä sivun oikealta löytyvästä **Profiilit** pudotusvalikosta **Pori Energia Konsernin yleisosaaminen** sekä **oman yksikkösi** substanssiosaaminen.

Klikkaamalla **Nykytila** painiketta, saat näkyviin millaista osaamista kukin numero asteikolla 1-4 vastaa. Voit myös jättää kohdan tyhjäksi jos koet, ettet tarvitse kyseistä osaamista työssäsi.



4. Kun olet täyttänyt **yleisosaamisen ja oman yksikkösi taulukot**, **Tallenna** vastaukset painamalla nuolen osoittamaa nappia.



Appendix 2

Competence assessment

Profiilit 2014 b) TEKNIKKAYKSIKON SUBSTANSSIOSAAMINEN, VOIMALAITOS ▾

Tulosta Tallenna 

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automaatiojärjestelmien vianhakuvalmiudet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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sähkö/automaatiokeskustöiden hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
prosessisähköasennusten hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
sähkökäyttöjen hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
sähkölaitteiden vianhakuvalmiudet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
varaston ylläpitovalmiudet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
säteilylähteiden hallinta (ml.kunnossapito)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kriisitilanteen toiminnan hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Järjestelmäosaaminen							
SAP-toiminnanohjausjärjestelmän käytön hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arttu-järjestelmän käytön hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kronodoc-dokumenttien hallintajärjestelmän käytön hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ifix kaukokäyttöjärjestelmän käytön hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Esmikko kulunvalvontaohjelmiston käytön hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Efecto tuotannonohjausjärjestelmän käytön hallinta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Powermaint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SOVELIA- dokumenttien hallintajärjestelmä	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Alma- dokumenttien hallintajärjestelmä	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	