

**UNIVERSITY OF VAASA
FACULTY OF BUSINESS STUDIES
DEPARTMENT OF MANAGEMENT**

Suvi Aaltonen

**MANAGERIAL PRACTICES FOR ENHANCING WORKPLACE LEARNING
AND DEVELOPING CORE COMPETENCES**
Case ABB Oy, Medium Voltage Products

Master's Thesis in Management
Human Resource Management

VAASA 2013

TABLE OF CONTENTS	page
LIST OF FIGURES AND TABLES	5
ABSTRACT	7
1. INTRODUCTION	9
1.1. Purpose of the study and research questions	10
1.2. Research approach.....	12
1.3. Structure of the thesis, limitations, and central concepts	13
2. THE LEARNING PROCESS	15
2.1. Learning in general.....	15
2.2. Individual learning.....	18
2.3. Collective learning.....	22
2.4. Discussion.....	26
3. COMPETENCE DEVELOPMENT	28
3.1. Organizational and departmental development plans guiding competence development	28
3.2. Team competence development	30
3.3. Conscious planning and interaction as the basis of experts' competence development	32
3.3.1. Performance and development appraisals and personal development plans as the building blocks of competence development	32
3.3.2. On-the-Job learning enabling continuous development	34
3.3.3. Reflection enhancing learning and development	37
3.3.4. Development projects supporting organizational learning, development, and knowledge sharing.....	41
3.4. Other informal and formal development methods for supporting learning.....	45
3.5. Discussion.....	54

4. RESEARCH METHODOLOGY	56
4.1. Research approach	56
4.2. Data collection	58
4.3. Data analysis	61
4.4. Reliability and validity	62
5. CASE STUDY COMPANY	64
5.1. ABB	64
5.2. Medium Voltage Products	66
6. RESEARCH FINDINGS	67
6.1. Communicating and defining the core competences	67
6.2. Current state of core competence development	69
6.3. Different development methods	76
7. CONCLUSIONS	96
7.1. Answers to research questions	96
7.2. Limitations of the study and suggestions for further research	101
REFERENCES	102
Appendix 1. Preliminary interview questions.	112
Appendix 2. Questionnaire.	113
Appendix 3. Development method rankings by departments	115

LIST OF FIGURES AND TABLES

FIGURES

Figure 1. Research approach.....	13
Figure 2. Learning cycle.....	19
Figure 3. Collective learning.....	23
Figure 4. Linkages between tacit and explicit knowledge and core competence.....	25
Figure 5. Different development methods.....	34
Figure 6. ABB Finland organizational chart.....	65

TABLES

Table 1. Individual and interaction perspectives of reflection.....	38
Table 2. Respondents per departments.....	67
Table 3. Rankings of the development methods.....	77
Table 4. Frequency table: On-the-job learning.....	78
Table 5. Frequency table: Going over job related problems in team meetings.....	79
Table 6. Frequency table: Reading.....	80
Table 7. Frequency table: Training programs.....	81
Table 8. Frequency table: Development projects.....	82
Table 9. Frequency table: Courses on current topics.....	84
Table 10. Frequency table: Further studies.....	85
Table 11. Frequency table: Getting to know other people's jobs from the same department.....	86
Table 12. Frequency table: Getting to know other people's jobs from other departments.....	87
Table 13. Frequency table: Seminars.....	88
Table 14. Frequency table: Going through what was learned in training in team meetings.....	89
Table 15. Frequency table: Fairs.....	90
Table 16. Respondents per departments.....	90
Table 17. Supply management.....	91
Table 18. Product Management.....	92
Table 19. Channel Support.....	93
Table 20. Marketing & Sales.....	94
Table 21. Research and Development.....	95

UNIVERSITY OF VAASA**Faculty of Business Studies****Author:**

Suvi Aaltonen

Topic of Thesis:

Managerial practices for enhancing workplace learning and developing core competences. Case ABB Oy, Medium Voltage Products.

Name of the Supervisor:

Riitta Viitala

Degree:

Master of Science in Economics and Business Administration

Department:

Department of Management

Major Subject:

Management

Line:

Human Resource Management

Year of Entering the University:

2010

Year of Completing the Thesis:

2013

Pages: 115

ABSTRACT

The purpose of the study is to define practices for managers for enhancing workplace learning and developing core competences at five specified departments at ABB Oy, Medium Voltage Products business unit in Finland. Objectives of the study include finding out how the managers perceive their role in competence development, and how they find the current status of core competence development in the case study organization. A more thorough view on the current state of core competence development was formed by also including the personnel's opinions on it. The theoretical framework in this study starts with individual learning as it is central to learning and development. As core competences are defined as organization-specific assets collective learning is also discussed in the theory part of the study. Finally, theory on competence development and different development methods is presented as to give an idea of the vast area of different formal and informal development methods.

The study was a qualitative case study that also used quantitative methods in analyzing data. Theme interviews and a half-structured online questionnaire were used to collect the empirical data. Research findings show that managers perceive their role in core competence development crucial. They seem to require clear directions from top management and set of methods in order to be able to efficiently develop their employees. Lack of time and the project-nature of the work were identified as the biggest challenges for development activities. The most useful methods specified in the empirical findings were on-the-job learning, going over job-related problems in team meetings, reading, and training programs. According to the empirical findings the current state of core competence development in the case study organization can be said to have the foundations right and that they should focus on making the development efforts more systematic with proper planning and follow-up. Questionnaire answers especially showed the need for more focus on the managers' side to the learning and development practices.

KEYWORDS: Core competence development, individual learning, collective learning, development methods

1. INTRODUCTION

Changing competitive business environment, rapid technological advances, and especially the globalization of markets have increased the focus on competitiveness of the firms. Factors that bring competitive advantage are valuable, unique, hard to imitate, and non-substitutable. Knowledge meets these criteria and is thus now seen as a source of competitive advantage. Furthermore, focusing merely on superior products is not enough. Core competences are organization-specific competences that combine knowledge and skills in a way that offers the company a competitive edge. Indeed, to be successful in today's market companies need to focus on these competences and foster and invest in learning throughout the organization. Different methods can be used to facilitate individual learning which then links to organizational learning through knowledge sharing and knowledge of who knows what. (Long & Vickers-Koch 1995; Clark, Amundson & Cardy 2002: 218; Cabrera & Cabrera 2005: 720; Landaeta 2008: 29.) In general, two criteria need to be met in order for organizational learning to happen; individuals need to share their knowledge and the organization needs to support learning and knowledge sharing (Julian 2008: 43).

Especially in project organizations there is a need for developing professionals systematically. These professionals are experts in their areas thus already having vast knowledge on their field. This knowledge guides the experts' actions for example in problem solving situations. Developing their expertise further requires diverse opportunities for learning and allowing them to put the newly acquired knowledge to practice. (Simon 1991; van der Heijden & Brinkman 2001: 179.) The project organization characterized by multiple projects going on simultaneously requires these experts to respond quickly in the ever changing environment. In addition to the number of projects project organizations are characterized by these projects concerning multiple departments i.e. marketing and research and development (R&D), organization's tasks being accomplished through projects, professionals being involved in more than one project at the same time, and project managers leading the projects. (Landaeta 2008: 29 – 30.) The challenge faced by project organizations is that projects begin and end, and they overlap, thus the learning generally ends when a project ends. There is no time to learn from previous projects as the employees need to move on to a new project. (Julian 2008: 43.) Furthermore, even though many acknowledge the importance of learning, learning is not usually the focal point in project work (Sense 2003: 4 – 5).

1.1. Purpose of the study and research questions

This study aims to describe learning and the competence development actions in an organizational setting and help line managers by presenting them different tools and methods for facilitating learning and developing core competences. The purpose is to provide managers a vast understanding of the different factors in learning and development and this way present the methods and possibilities for developing the competences that best support the strategy and long term goals of the company. The theory part of the study starts with learning; what learning is and how it can be managed. The theory then moves on to discuss how individuals and teams learn. As it is crucial to know what to develop, the theory then moves on to presenting the importance of defining the strategic competences that bring about competitive advantage and linking these competences into the business strategy and vision. Moreover, how these competences should be communicated across the organization is also discussed.

After having covered what to develop and why as well as the theoretical bases for development and learning the study then moves on to presenting the *how* by providing different options and methods for competence development. The main focus is on personal development plans, knowledge sharing, on-the-job learning, development projects, and reflection as according to theory they are the ones that develop and benefit the expert organization the most. Other methods are also presented as to offer a wide view on the numerous possibilities for competence development and provide the managers a bag of tools for ensuring efficient learning in their teams. They are also presented for stressing the various possibilities of combining informal and formal methods, and enabling moving further from merely using traditional training courses for employee development.

The empirical part of the study focuses on two different aspects of core competence development. Firstly, how line managers wish to be guided in terms of the development targets set by top management and secondly, how the line managers and employees perceive the current situation and possibilities of core competence development. The objective is to present ABB Oy, Medium Voltage Products unit a thorough view on how to develop the core competences. The actual research problem is: what type of managerial practices and methods best support the core competence development. The focus is on managers' views on developing competences but also on employees' views on the development efforts. The study aims to answer the following question amongst others:

- How the managers perceive their role in developing the competences of their employees?
- How should the core competences be communicated to the managers in order to ensure efficient competence development activities?
- How the employees perceive the different methods of competence development?
- What are the problem areas, challenges, and development possibilities in competence development?
- What type of practices best support facilitating learning and core competences development?

The study is outlined to concern only five departments of the ABB Oy, Medium Voltage Products business unit; Channel Support, Product Management, Marketing and Sales, Supply Management, and Research and Development. The departments in question were selected by the case study organization. Focusing on the whole business unit would have made the study too wide. Furthermore, the departments included in the study are in the forefront of realizing the strategic objectives of the business unit hence enhancing their strategic importance. The study is important as there is currently no systematic way of developing competences besides yearly conducted performance and development appraisals nor is there a common understanding of the core competences that should be focused on. Issues that also impacted the selection of the objective of study was the top management's wish to unify and clarify the strategic goals and future aspirations of the business unit thus ensuring systematic progress and development towards these common goals.

The thesis is only one part of the business unit's process towards efficient and effective competence development for supporting the strategic business goals of the business unit. In 2012 the top management defined the individual core competences that are critical for the successful business now and in facing the future challenges of the market. The defined core competences are not discussed in this study as they are confidential by nature. They do, however, form a basis for one of the main research questions of the study; how should the top management define and communicate the core competences to line management in order to ensure they are clear and realizable by the managers. In fact, managers were asked for their opinion in this matter in the empirical research. They were also asked to define the biggest challenges they see in core competence development in their teams and how they would suggest the challenges should and could be overcome. Employees were asked to rate a few different development methods on how efficient and beneficial they perceive them to be in

regards to their development. The questionnaire also allowed for commenting on the methods in question as well as on competence development in general.

The interviews and the questionnaire are to provide insight into the current status of competence development in the different departments as well as the managers' and employees' views on how to improve it. By taking into consideration the views of the top management, line management, and employees it is possible to provide an extensive view on the subject of how things are and how they should be. By adding theory on how the actual learning happens and the different methods of facilitating learning and development a practical view can be presented on the process of developing competences that support the business strategy.

1.2. Research approach

Managers' job can be seen as including performance management and improvement related tasks as to ensure meeting organizational targets and customer needs, evaluating employee performance against organizational targets, and developing employee competence (Orth, Wilkinson & Benfari 1987: 67; Antonioni 2000: 28). In recent years managerial tasks have changed significantly. Indeed, the changing demographics of the workforce require more diverse management styles. The change from labor-intensive companies to knowledge-intensive companies requires the shift from industrial relations model to a learning organization. Moreover, as knowledge is more and more dispersed to many instead of just a selected few, managers are to act as information sharers instead of information brokers. (Brocato 2003: 18.) In fact, as the line managers are the closest to the employees it would make sense they are given more responsibilities in terms of the workforce. Indeed, the line managers' actions can be expected to be more immediate, appropriate, and effective than actions and practices of higher management or centralized HR for example. (Mcguire, Stoner & Mylona 2008: 77 – 78.)

Literature is fairly scattered around the issue. The matter of core competences and their strategic value is discussed in length, as is learning and different development methods. Also beneficial and efficient management styles have been in the focus on many studies and publications. In fact, several different management styles have been found to be effective; transformative, coaching, and facilitating just to name a few. However, these different research areas have rarely been combined leaving a gap in the discussion. Especially, literature on managerial styles hardly ever goes so far as to present

development methods, and theory on development methods does not include linkages to how the actual learning and development happens while in fact ensuring individual learning and collective learning could provide a source of competitive advantage.

This study aims to bring together learning and development methods, and especially managerial practices that best support strategic learning and development. Indeed, the purpose of this study is to provide managers an understanding of how to develop their employees, and especially the core competences most efficiently, and practical tools and guidelines for doing so. This approach to the research question is illustrated in Figure 1. Competences can be seen as a pyramid-like structure of which core competences form the top of the pyramid while other competences form the base for them (Long & Vickers-Koch 1995). Strategic development of competences requires an understanding of individual (A) and collective learning (B), and *how* (D) as a manager they can harness them for strategic development purposes and towards developing core competences (C). For better answering the *how*, different development methods are better discussed in the theory and also research in the empirical part of the study. Moreover, managerial implications and suggestions are discussed along the theory.

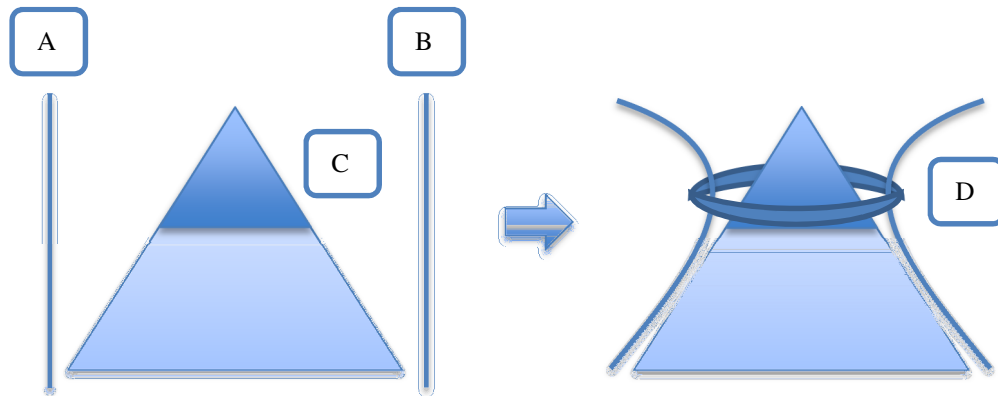


Figure 1. Research approach.

1.3. Structure of the thesis, limitations, and central concepts

The study entails seven main chapters introduction being the first of them. Introduction presents the purpose and factors behind the study in general. The following two chapters cover the theory used in this study. Theory on learning on the individual and team level is presented first followed by theory on competence development. The fourth

chapter presents the methodology and process of the study. The case study organization is presented in the fifth chapter and the results of the interviews and questionnaires in the sixth chapter. Finally, the seventh chapter includes the conclusion and suggestions for further study.

For the purpose of the study a few limitations were made. First of all, there are a number of ways to increase the competence of the organization. These methods can be divided into developing current competences, hiring new professionals, or using subcontractors. This study focuses only on increasing competences by developing them instead of acquiring them. Secondly, competences can be divided into categories according to their strategic nature starting from basic skills and competences and moving all the way up to the core competences. While necessary to focus on all of the competence categories for efficient operations this study only focuses on core competences; competences that bring competitive advantage in relation to the competition. Core competence can be defined as the combination of knowledge, skills, technologies, processes and methods that the competition find hard to imitate. (Viitala 2005: 134-142.) They are different from basic skills that can be defined as including the skills required just to be in the business. They can also be differentiated from critical skills, skills that bring about competitive advantage in today's markets as core competences are competences that bring about competitive advantage also in the future. (Long & Vickers-Koch 1995.) More importantly, it should be noted that core competences are not only possessed by individuals but are organization-specific thus entailing collective action (Nahapiet & Ghoshal 1998: 249).

Finally, as the study only focuses on five specific departments a few notions should be made about the subject employees and departments. All of the employees concerned are white collar worker, professionals and experts on their fields most of them with university level degrees (ABB Inside 2012b). In regards to the managers, terms managers and line managers are used to refer to the team managers as to differentiate them from top management.

2. THE LEARNING PROCESS

This chapter focuses on learning. Learning is first presented broadly in terms of general theories on learning, and how and why it should be considered as a strategic aid. The theory then moves on to specifically address individual learning and collective learning as people process information both individually and in collective groups in organizations. By understanding the underlining processes and principles of learning managers can better adjust their actions and behaviors to support and enhance learning in their teams. More importantly, as learning is in the core of development it should be discussed before moving on to the actual development methods presented in chapter 3. The purpose of this chapter is to present different views on how learning occurs, thus giving insight also into how it can be improved.

2.1. Learning in general

The psychological aspects of learning can be divided into behaviorist, humanistic, cognitive, constructivist, and situational views. According to the behaviorist view learning is a change in behavior that is a function of an external stimuli and the reaction that follows. Therefore people are considered being easily-influenced, passive receivers of knowledge who after attending a training event will act according to the training. Concept of reinforcement, according to which behavior can be modified through rewards and punishments, is an essential part of the behaviorist view. (Tynjälä 2002: 29 – 31.) Instead of seeing people as inactive toward learning the humanistic theory sees individuals as curious and goal-oriented learners by nature who only need external resources to support their learning. According to the view methods like mentoring promote learning the best. (Viitala 2005: 136 – 140.)

Cognitive theories focus on explaining learning through the individual's own thought processes. When the individual notices their knowledge on a subject is limited or lacking they begin to want to learn. At this point the individual requires support in their learning and they should be provided with opportunities to test and try out different options. According to the theory individuals would also benefit from possibilities for hands-on problem solving activities. The emphasis of the view is on one's own thought processes, and on the motivation to learn that stems from these processes. Therefore,

according to the cognitive view, training events are only useful if the person actually wants to attend them. (Viitala 2005: 136 – 140; Galbraith & Fouch 2007: 35 – 36.)

Constructivist and situational views emphasize even more the processes that are related to the actual learning. According to the constructivist theory individuals build their knowledge on previous knowledge. They compare, shape, and expand old knowledge with the new. The situational approach adds to the process the impact of the environment. According to this view individuals learn always in relation to other people and situations. Hence, the importance of work environment is emphasized in this view. Indeed, the individual does not simply receive information passively as suggested by the behaviorists, but instead builds meanings around them. Therefore it is crucial to the learner to understand how the to-be learned issues relate to the big picture. (Eteläpelto & Tynjälä 2005: 186 – 187.) For example, learning machine specifications by heart does not do any good unless they are also understood, or attending training will not have optimal results if the content cannot be linked to a bigger meaning. Furthermore, as the theories see learning as meanings to the individual the issues learned from even the same material can vary through learners. Therefore it is beneficial to discuss and compare these meanings. (Tynjälä 2002: 37 – 67.) Adding to this, the emphasis on the social interactions suggests that learning in groups is always more efficient than learning alone (Eteläpelto & Tynjälä 2005: 186). In fact, interaction with other people allows the individual to better explain, find out the cause and effect relationships, evaluate, and criticize the lessons, not only learn facts by heart. The situational view further emphasizes the importance of the surroundings and other people, as well as reflection in learning. (Tynjälä 2002: 37 – 67.)

Learning in an organization in general revolves around three central ideas. Firstly, there is an information sharing aspect in learning. Efficient learning depends on mostly tacit knowledge being shared within the organization. Secondly, learning and especially new knowledge creation is a result of combining diverse knowledge from multiple sources of information. Indeed, sharing knowledge between people and cooperating with others through formal and informal forums is important in learning (Anantatmula 2009: 223). The last idea emphasizes the need for change in routines and procedures in an organization that allow for sharing knowledge. As with any change in an organization there is a possibility of resistance to change. Resistance may occur if for example the increased knowledge sharing is seen as a time-consuming addition to the daily routines and busy schedules. Resistance is emphasized if the newly adopted processes for sharing knowledge are not understood and accepted by the employees. Increasing

understanding on the underlying reasoning behind the changes aids in reducing the resistance. Indeed, knowledge sharing should be perceived as important, as knowledge sharing part of the daily routines allows for better organization-wide use of knowledge and therefore brings diversity into thinking. Diversity in thinking then allows for more diverse and innovative ideas. (Lawson & Lorenz 1999.)

In fact, learning can be a valuable strategic asset. It can be used as such if the eleven conditions of strategic learning have been met. The first two characteristics of strategic learning are organization-wide commitment and top management's visible demonstrated support. Directors need to show that they are also continuously learning and encourage others to do so as well, on all organizational levels. Learning also needs to be linked to strategic direction and cultural change. As the employees are to support the company's strategic initiatives employee learning should be part of strategic planning. Fourth, development should be large-scale; developing just a selected few does not serve strategy as efficiently but instead leaves gaps in competence around the organization. (Cunningham, Dawes & Bennett 2004: 28 – 29.) Indeed, learning in isolation results in reinventing the wheel over and over again around the organization and inhibits learning from mistakes (MacNeil 2004: 95).

Furthermore, developing organizational capability, i.e. teaching managers to act more as facilitators, mentors, and coaches and enhancing peer group support for learning, are the main building blocks for strategic learning. Sixth characteristic of strategic learning is multi-functional development. Bringing together people from different functions allows people to get to know each other, form mental maps of where specific knowledge resides in an organization, and learn how to support learning in different functions. Moreover, it aids in networking and creating a learning culture. It should also be kept in mind that strategic learning is not a quick fix but requires long term commitment. Eighth, while strategic learning needs to start with the managers it should not stop there but involve other organizational levels as well. As the learning becomes strategic it forms a part of the organization's competitive advantage as the organization learns better and faster than its competition. Furthermore, collective learning and knowledge sharing also enhance the possibility of tacit knowledge becoming shared (MacNeil 2004:95). Adding to the strategic nature of learning and managerial support for it, the learning processes and methods should be made visible externally and internally recognizing their importance in strategy. Finally, integrating strategy and actions is crucial as any well thought out plan is unhelpful without a link to planned action. (Cunningham et al. 2004: 28 – 29.)

2.2. Individual learning

Different stages can be distinguished from adult learning. The first stage mirrors the behaviorist view on learning. In this stage the individual operates because some external party requires and rewards it. In the other phase the individual operates because they notice the positive consequences of their behavior, for example the increase in self-appreciation. In the third stage the individual operates because they have perceived themselves and the consequences valuable; they are internally motivated to act. Internal motivation can be enhanced by focusing on the employee's feeling of choices, feeling of one's own competence, feeling of importance, and feeling of progress. Indeed, adults strive to be independent in their learning (Galbraith & Fouch 2007: 34). The amount and quality of independence varies across situations and individuals. The importance of motivation and the requirement for an actual need for learning are emphasized in adult learning (Murphy & Golden 2009: 17). In fact, adults need a meaningful reason to learn and well-formed justifications for the set learning goals (Galbraith & Fouch 2007: 34). Also, learning is generally problem-based, and an adult uses their previous experiences as a point of reference and resource in their learning as described by the constructivist theory on learning. (Jones & Hendry 1994: 158 – 159; Viitala 2005: 140 – 145).

Adults learn both formally and informally. Formal learning generally is structured learning that involves the learner and a teacher. Informal learning is learning that happens for example through observations and experiences at work. Informal learning can be completely unconscious when it is for example the consequence of reacting to something that has happened or a by-product of some other activity (van der Heijden, Boon, van der Klink & Meijjs 2009: 21). Conscious learning is the most evolved level of informal learning. In conscious learning the individual consciously and systematically works towards learning something at their work. Therefore, informal learning can be increased and enhanced by increasing awareness. In addition to increasing awareness it is important to direct and support learning in order to make learning more efficient. Creating a culture that encourages learning, increasing employee-manager interaction, and widening the social networks of the employees also enhance informal learning (van der Heijden et al. 2009: 21). The most important thing in learning is however the individual's own ability and willingness to assess their own performance and develop based on it. Competence mapping and performance and development appraisals are useful aids in evaluating, controlling, and directing the learning process. (Viitala 2005: 142 – 146.)

In general learning (L) can be described as a function of programmed knowledge (P) and questions asked for further knowledge (Q). Programmed knowledge is previous knowledge that can be attained by reading books or using other methods to access theory. In addition, reflection (R) and implementation (I) are required for effective learning: $L=P+Q+R+I$. (Grönfors 2002: 66; Clifford & Thorpe 2007: 29.) This function of learning can also be described as a circular process as done in Kolb's learning cycle in which new knowledge is compared with previous experiences, evaluated, understood, and then applied. The cycle presents four types or phases of learning as shown in Figure 2. On one hand learning happens through acting and understanding, on the other hand through acquiring and expanding knowledge. (Sydänmaanlakka 2000: 34 – 44.) Learning can start at any of the four parts of the cycle, and while most people rely on only two styles learning is maximized when all of the four styles are used (Wyrick 2003: 28). Using all four types of learning also enables learning in the shortest amount of time (Raelin 1997: 565).

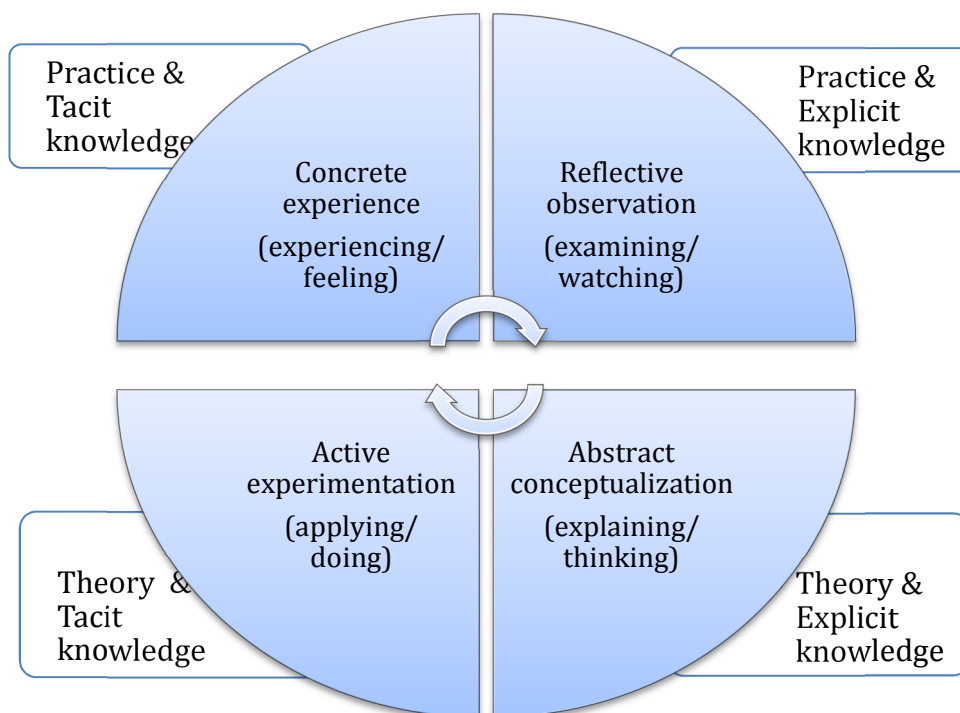


Figure 2. Learning cycle.

Concrete experience is one of the types of learning in the cycle. Experience teaches as the person draws on their previous experiences and tacit knowledge, and compares that to the event at hand. At this point learning is unconscious, and tacit knowledge is

created through practice. Practices that enable learning via concrete experience include problem sets, reading, simulations, observations, and field work (Hawk & Shah 2007: 4). In order for the learning to happen the person needs to be open to new experiences and confront them without bias. Learning turns to conscious learning when the person consciously starts to reflect on the event by making conscious connections from different perspectives to past knowledge and experiences. Indeed, reflective observation is another type of learning in the process. It is about examining what, why, and how something has happened. In a sense it is about combining practice with explicit knowledge. (Raelin 1997: 566 – 567; Sims 1983: 502-503; Taylor & Lamoreaux 2003: 53 – 55.) Practices that support reflective observation are for example questions, brainstorming, discussions, and documenting experiences (Hawk & Shah 2007: 4). Reflection is presented in more detail in chapter 3.3.3.

The third part of the cycle is abstract conceptualization; giving meaning to the event and planning further actions. At this phase the person needs to make logical connections between the newly acquired knowledge or theory and previous, explicit knowledge. This allows the person to see problems in a new light and in different contexts. Focusing on theoretical and explicit knowledge this type of learning is most closely related to that of formal development methods such as training courses, independent studying, and reading. Additionally, projects can be seen as enhancing learning via abstract conceptualization (Hawk & Shah 2007: 4). The fourth part of the cycle is active experimentation; testing the plan in action. The idea behind learning from experimenting relies on the premise that only doing something is not an efficient way of learning. Experimenting on different options on the other hand is a valid learning experience as theory is applied to actions turning it into tacit knowledge. In fact, via experimentation the newly acquired theoretical knowledge is tested on, and theory adapted and adjusted according to the results of the experience. Finally, it should be noted that what works in theory does not always work in practice, but it does provide for a learning experience starting the cycle all over again. (Raelin 1997: 565 – 566; Sims 1983: 502-503; Taylor & Lamoreaux 2003: 55 – 57.)

Supporting the situational view on learning, in addition to considering the types of individual learning, the environment is also a factor in learning. Work environments can be divided into four different types based on their characteristics. An affectively oriented environment emphasizes human interaction and personal involvement in situations. Employees working in such environments, i.e. sales people, benefit from learning via concrete experience. A perceptually oriented environment requires

employees to gather and organize information, to use diverse data from multiple sources, and is most familiar to research scientists. In these types of jobs reflective orientation is most useful as it enables observing and reflecting on phenomena and link causes with effects in order to come up with new and creative ideas. The third type of environment, symbolic oriented environment is characterized by experimenting with new ideas, creating new ways of thinking, designing experiments and testing theories and ideas. For people working in such environment, engineers for example, abstract conceptualization allows them to develop the required skills. Lastly, a behaviorally oriented environment requires people to make decisions, set goals, and control a wide range of activities, such as in project work. In this environment learning via active experimentation is beneficial. (Sims 1983: 503 – 504.)

Managerial support and authorization to pursue learning is vital in facilitating learning (Sense 2003: 10). Factors that further enhance the learning process are: employees' desire to learn new things, moments of clarity, being able to apply the learned into practice, and documenting what was learned. Learning can be improved by encouraging the employees in their learning efforts, and giving them time for reflection and discussion, connecting the newly learned with actual work and previous experiences, and allowing for more creative and diverse sources of learning, not only counting on formal training and lectures. (Merriam 2008: 97 – 98.) Indeed, it is necessary to use different tools for different phases in the learning cycle to facilitate efficient learning and to guide the learning process towards the agreed upon development goals (Grönfors 2002: 29).

Learning can also be improved by tackling issues that might hinder the learning process. In fact, barriers for learning can be found in each part of the process. Barriers for learning via concrete experience are low employee motivation, lack of clear learning goals, feelings of being in a rut and narrowness of one's own thinking, thick-skinness of the person, or insufficient sensitivity for receiving signals about one's own performance. For acquiring knowledge and reflective observation, barriers for learning come from lack of time due to schedules and heavy workloads, poor availability of information, conflicting, inconsistent and disorganized information, excessive amount of information, and inadequate documentation of knowledge. Indeed, when experiences have not been documented and they cannot be remembered or shared, and hence, learned from. Barriers in learning via understanding, the abstract conceptualization phase in the cycle are insufficient time for thinking things over, understanding not being considered as necessary and superficial knowledge being considered as being enough,

conclusions that conflict with previous knowledge, and too big a change between current and new knowledge. Indeed, instead of just stating something has happened or something has to be done in a certain way employees should be allowed to take time to question, critique, and understand what and why something changes (Kolb 1976: 30). Learning via expanding knowledge, active experimentation has possible barriers for learning in forgetting things due to insufficient documentation, if there are no possibilities for experimenting, if applying new ideas and knowledge is not supported, if things are not properly followed through, and if perseverance is lacking. (Sydänmaanlakka 2000: 34 – 44).

2.3. Collective learning

In addition to individual learning attention should also be paid to collective learning by combining individual learning with collective action and reaching common goals. This is done by expanding on Kolb's learning cycle where information gathering is now followed by linking that knowledge to organization's work environment and operations. Then the information is interpreted together in order to create shared meaning and understanding. (Kauhanen 1997: 128 – 130.) Kolb's view on collective learning is similar to Nonaka and Takeuchi's model of knowledge creation which uses the terms of socialization, externalization, combination, and internalization of knowledge. As acquiring, analyzing, creating, and sharing knowledge are in the center of collective learning it is important to state that knowledge can be divided into explicit and tacit knowledge. Explicit knowledge is knowledge that is easily communicated and articulated while tacit knowledge is harder to put in words. (Yoon, Song, Lim & Joo 2010: 252.) It is the pairing of tacit and explicit knowledge that results in new knowledge creation in a group setting (Clark et al. 2002: 228). Furthermore, this pairing of information from more than one source is the starting point for creating new knowledge and therefore requires social interaction and sharing (Nahapiet & Ghoshal 1998: 248). The collective learning process is described in Figure 3.

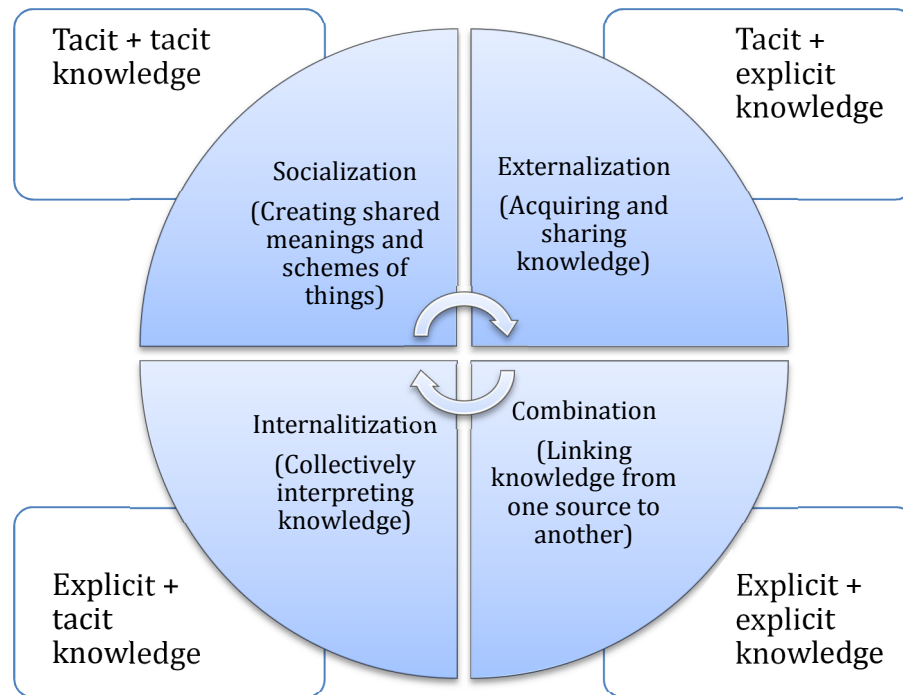


Figure 3. Collective learning.

In enhancing collective learning attention needs to be paid especially to the tacit knowledge. Tacit knowledge is acquired through practice and experience and it might be hard for even the individual who possesses it to acknowledge its existence let alone communicate it to others efficiently. Working together enables learning each other's tacit knowledge. It is also worth noting that if tacit knowledge is not articulated properly it might hinder learning by leading into a competency trap where the possibilities of learning anything new are reduced by the strong influence of tacit knowledge. Moreover, externalization of knowledge, communicating the tacit knowledge does not lead to collective learning straight as the communicated knowledge might not be understood by other parties. Therefore it is important to pay attention to the way and language used to ensure the effectiveness of knowledge transfer and enhancing the recipient's possibilities for combining the new information with their previous knowledge and them to internalize it. The importance of knowledge sharing is highlighted especially in the product development process. (Lawson & Lorenz 1999; Koners & Goffin 2007: 245; Yoon, Song, Lim & Joo 2010: 252.)

Knowledge transfer is in the center of collective learning. It can be accomplished by knowledge sharing, creation, assimilation, storage organization, verification, and

identification. (Landaeta 2008: 29.) Team learning in terms of knowledge sharing can be divided into different stages. The process begins with sharing tacit knowledge and is followed by others articulating their views on the issue. By communicating their knowledge the team members are forced to clarify their ideas and viewpoints in a form that is easier for others to understand. Increased level of understanding and new insights brought to the issue add to the personal knowledge base of the experts. (Tillema 2005: 85.) Indeed, shared knowledge then allows for the next stage of the process; combining the articulated knowledge. Finally, the newly acquired and modified knowledge turns into tacit knowledge and acts as a basis for future learning. (Lawson & Lorenz 1999.) Emphasizing dialogue instead of mere one-directional reporting enhances learning by allowing for discovering diverse ideas and viewpoints (Schein 2003: 30; Malina & Selto 2001). In addition, discussions, constructing conceptual ideas, and sharing what people have learned facilitate learning especially in professionals. Indeed, producing knowledge requires different viewpoints to be open for debate in order for them to become relevant in the experts' learning. (Tillema 2005: 82 – 83.)

Innovation and problem solving require a variety of insight and viewpoints. Furthermore, efficient organizational learning requires cross-organizational cooperation and continuous learning characterized by integrating multiple and diverse forms of expertise. (Andrew & Delahaye 2000: 798.) In fact, especially in project organizations the vast amount of projects provides the organization and individual employees diverse learning opportunities and possibilities for using existing knowledge to solve their current issues. However, if such knowledge is not shared in any way it will be hard to find leaving the project participants "inventing the wheel over and over again". Especially meetings, special teams, project reviews, mentoring, writing messages, project documents, and observations of deliverables and project operations have been found extremely useful in sharing knowledge in project organizations. (Landaeta 2008: 30 – 37.) Indeed, especially when talking about core competences bringing together the tacit and explicit knowledge of the organization is crucial. These connections are presented in Figure 4 by Bhanushali (2010: 260).

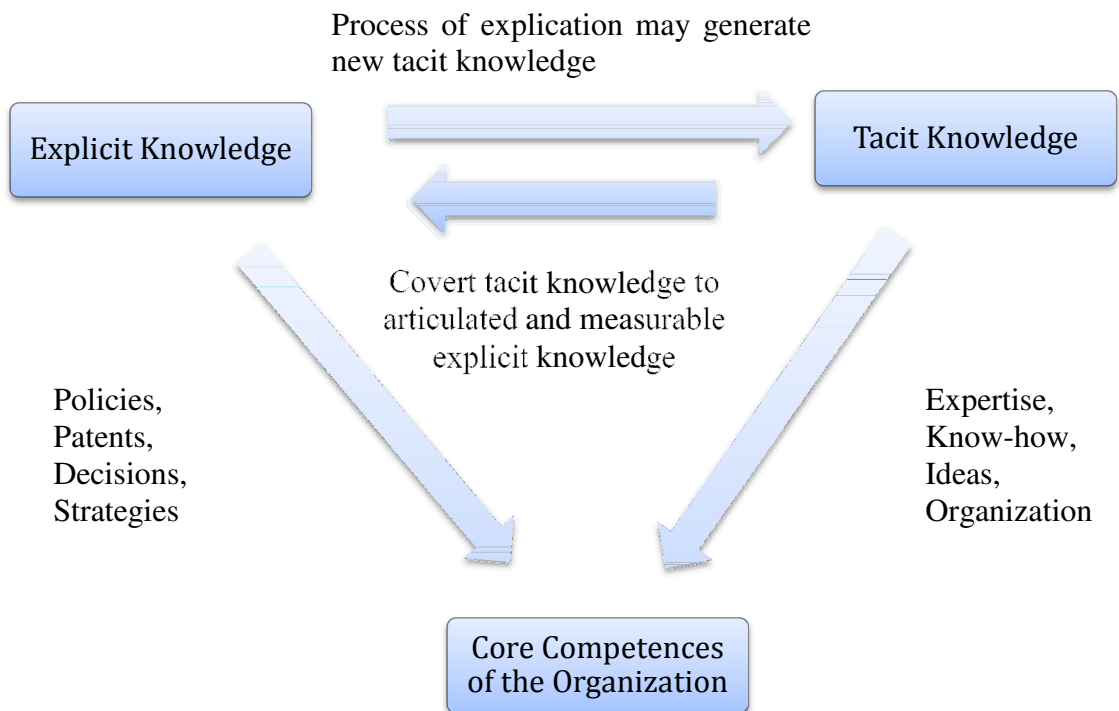


Figure 4. Linkages between tacit and explicit knowledge and core competence.

One of the most important elements in enabling collective learning is social support. This is affected by the attitudes and backing from top management, line managers, peers, and subordinates. Also, in order to facilitate collective learning managers need to focus on both internal and external factors. Internal factors that support collective learning are the diversity of team members, team processes, and attitudes toward learning. External factors include managerial support, training, feedback, and technology. Managers also need to focus on collaborative capability assessment, collaborative organizational climate and collaborative spaces. In assessing the collaborative capability of the organization managers need to understand the current state of learning and development in their teams. More importantly they need to assess the strengths and weaknesses of current learning and development behavior. This will allow them to define required development actions. Managers also need to ensure the company culture supports collaboration and learning and that the employees perceive learning as important. Setting specific goals and reducing employees' workloads for enabling them to focus on becoming familiar with their new skills and knowledge are especially important in supporting learning (Facteau, Dobbins, Russell, Ladd & Kudisch 1995: 5).

Lastly, managers need to provide forums for collaboration. Informal and formal discussions, information sharing via information systems etc. are ways to improve cooperation. Indeed, communication is essential in collective learning and managers need to support it by providing employees forums for gathering and sharing information, reflecting on work processes, and testing assumptions. (Digenti 1999: 47 – 48; Zellmer-Bruhn & Gibson 2006: 501 – 502; Landaeta 2008: 31.) Additionally, managers need to make sure everyone feels safe to talk, bring up issues, and to speak up about their ideas, concerns, and mistakes. Indeed, lack of social support, openness, and trust results in poor knowledge sharing and decreased motivation to learn. (Schein 2003: 33 – 34; Facticeau et al. 1995: 6; Edmondson & Nembhard 2009: 125.)

2.4. Discussion

Learning should not be perceived as a two-dimensional function of trainings taken and lessons learned. Nor should it be perceived as a result of merely receiving information. Instead, learning, and especially efficient learning, is a more complex function of experiencing, observing, conceptualizing, and experimenting on acquired knowledge. It requires reflection and implementation of newly acquired skills and knowledge. Taking into consideration also the social nature of collective learning and the required interplay between tacit and explicit knowledge learning cannot be assumed as something that just happens. At least it should not be considered as such if it is wished to be used strategically.

Indeed, from an organizational point of view the theories suggest a heavier focus on integrating a more diverse range of both informal and formal methods of learning for developing core competences. Combining both informal and formal development methods is essential in competence development as it combines both tacit and explicit knowledge. Simply put, only through practice theory can be made sense of, and practice only makes sense through reflection. It should also be noted that not everyone learns in a similar matter, and that the environment also plays a role in development either by enabling or by hindering it. This would also entail the importance of individualized focus on planning the development activities. Furthermore, as individual learning is tightly connected with collective learning the underlying principles of individual and collective learning should be kept in mind when creating development plans, planning development actions, and in everyday work life for that matter. Collective learning then enables organizational learning, improved problem solving, and efficiency. More

importantly, learning in an organizational setting and making strategic use of it requires immense attention from the managers as they are in a central role in enabling, enhancing, and supporting it. Furthermore, top management support is important as they can help in creating a culture of learning, and gaining wider acceptance and commitment for learning efforts with their perceived support for them. In conclusion, learning how learning works is crucial in laying down the ground works that allow for the development methods and actions to work efficiently, and for them to provide strategic advantage.

3. COMPETENCE DEVELOPMENT

This chapter focuses on the theory on developing competences and different methods of competence development. Top down approach is used when addressing the field of competence development. Top management's role in competence development is presented first then moving down to line managers and finally discussing different methods for developing competences. The most focal methods in developing experts are presented in length while other, supporting methods are presented in a little less detail. The purpose of the chapter is to provide managers with an understanding on the field of competence development and possible methods for improving it. Suggestions are also made for how managers can better ensure the competence development and the efficiency of such activities with their behavior.

3.1. Organizational and departmental development plans guiding competence development

Planning for efficient training begins with the company's strategy. An organizational development plan is based on the corporate business plan and on the analysis of subsequent development needs. It should not only be the output of top management but also include input from department heads and line managers. In fact, line managers have an advantage over top management as they are closer to the daily operations; they have knowledge of the organizational realities and issues that concern the implementation of the strategy and the employees concerned by it (MacNeil 2004: 96). After mapping out the long term business goals, an analysis of what capabilities and competences are required for realizing these goals should be made. In fact, proper planning is always done in regards to the present day situation as only after knowing the desired state and analyzing the current situation efficient development plans can be made for reaching the desired targets. The organizational development plan should state the business objectives, learning needs related to the objects, departments concerned by each object and learning needs, development activities, and a deadline or a schedule for the objects to be met. (Wentland 2003; Clifford & Thorpe 2007: 134 – 135.)

The organizational development plan should then be made clear to all of the concerned parties. In fact, communication is an important part of competence development. An understanding of important and less important issues and of how everything is linked

together and connected to each other is created through communication. (Viitala 2005: 285.) Simply put, poor communication can lead to poor performance (Malina & Selto 2001: 50). The strategic goals of the organization need to be communicated so that they are meaningful and realistic to the employees, and so that the employees can link the benefits of their development to the benefit of the organization and vice versa. Communication is also an important factor in creating trust, employee commitment, and perceived organizational support. Hence, it is essential that the strategic initiatives that are put in words are also followed through with actions. Moreover, getting everyone's input and taking their views into consideration conveys respect and trust, and therefore increases the acceptance and internalization of the vision. Shared vision also promotes commitment to accomplishing it and thus aids in contributing to it. Without consistency and integration of corporate, managerial, and business level communication confusion and misunderstandings grow hindering the results of any development activities. (Barker & Camarata 1998: 449 – 455; Antonioni 2000; Gunasekara 2003; Lewis, Schmisser, Stephens & Weir 2006: 120 – 128; Galbraith & Fouch 2007: 39.) Furthermore, organization's top management and line managers need to be committed to the vision and required actions as to ensure commitment from employees as well (Landaeta 2008: 36). In general, the following issues should be communicated on all organizational levels as to increase transparency of actions and shared understanding of the company's operations: vision, strategy and goals, principles and values, upcoming changes in operations, the economic situation and success of the company, development of the field of business, future prospects, volume of orders, new innovations, new customers, and new business areas (Viitala 2005: 285).

On the departmental level the strategic goals and development needs that are the most crucial in guiding the actual development should be broken down into department specific targets. It needs to be clear to every employee what is the meaning of their position, what are their most important tasks and key targets, what type of competence is required for them to reach the targets, and how everything relates to the big picture. (Sydänmaanlakka 2000: 143; Lewis, Schmisser, Stephens & Weir 2006: 122 – 126.) This is especially important as learning is best accomplished when the strategic goals of the company are aligned with the performance goals of individual employees (Leslie, Kosmahl Aring & Brand 1997). It should also be noted that sharing the vision across the organization does not mean micromanaging every aspect of it but clarifying the goals and expectations, as well as their importance, in order to provide structure and direction (Antonioni 2000). Constant and consistent communication reinforces and directs employee behavior towards accomplishing common goals. Furthermore, in order for the

communication to be effective it needs to be understandable and trustworthy; it needs to be stated in such terms that it can be understood at all organizational levels and it should be communicated as truthfully as possible and not in a polished manner. (Malina & Selto 2001: 49 – 51; Lewis, Schmisser, Stephens & Weir 2006: 119 – 121.)

3.2. Team competence development

After having defined the competences required for supporting the company's mission, vision, and strategic initiatives and defining what they mean on a department level, team level competence development can begin. As already stated competence development has three phases. First, the current state of competences needs to be defined after which that can be compared to the required or optimal state of competence. Last, there are the methods for developing the defined competences. Mapping out what is the current level of competences compared to the future required level of competences allows for better directing the competence development and supporting company strategy. (Strömmer 1999: 199.) After having defined the competences and the gaps between current and optimal levels individual team members' strengths and development areas can be defined. Individual development plans are then created according to the individual strengths and weaknesses to help with the development and aid in assessing and keeping track of their development. (Viitala 2005: 155.)

Managers direct the competence development in their teams. They support the realization of business strategy by communicating the corporate strategy and vision to their own team and stating what it means in terms of their team's performance and development needs. (Lewis, Schmisser, Stephens & Weir 2006: 119; Liao 2008: 1885.) Managers need to help their employees to clarify, understand, and remember the company's as well as the business unit's vision, strategy, goals, competences required to meet the targets, customers' needs, wishes and experiences, quality criteria of operations, and the situation and targets relating to the efficiency of operations. Managers are also to explain the background factors as well as the consequences and targets of operations, and create and systematize discussion around the issues. It is in fact the managers that clarify the direction for competences, create an environment that promotes learning, support the learning process, and lead by example. (Viitala 2005: 312 – 321.) Setting common goals, looking for ways to create common terminology and ways of thinking, and being on the lookout for misunderstanding due to differences in jargon or thought processes aid in establishing a shared vision and language (Abrams,

Cross, Lesser & Levin 2003: 67 – 69). Shared understanding also helps the teams in interpreting cues in a similar manner, making compatible decisions, and taking coordinated action (He, Butler & King 2007: 264). Therefore, managers need to tell their employees both what competences to develop and why it is necessary to develop these competences (Lewis, Schmisser, Stephens & Weir 2006: 118). For this, managers need a long term view of the company's goals in order to support it by developing their employees. (Leslie, Koshmal Aring & Brand 1997.)

Managers also need to show true interest in their employees' development. Showing commitment to the employees' development can be done by promoting educating, training, and learning and by committing to providing a variety of learning opportunities for the employees. (Leslie, Koshmal Aring & Brand 1997.) Employees need to be encouraged to attend suitable training programs, and they should be offered challenging tasks to aid in their development. Furthermore, managers are to ensure that training and development activities accomplished what they were supposed to, and that there are opportunities for the employees to apply their newly acquired knowledge and skills at work. Encouraging employees to coach each other in their development is also beneficial. Moreover, managers can empower their employees to take initiative in their own development by encouraging them to find development opportunities on their own. Helping employees learn from experience and acting as a role model also in terms of development are also signs of support for development. (Viitala 2005: 301.)

Especially in an expert organization managers need to create a favorable and supporting work environment for their employees that offers them opportunities to practice and receive feedback. They should also ensure there is enough time for the employees to develop themselves. More importantly, managers need to promote communication and participation, and offer different situations and channels for doing so. (Lewis, Schmisser, Stephens & Weir 2006: 118.) Like a coach the managers need to promote continuous development and the efficient utilization of competences. Coach-like managers help their employees by asking questions, refusing to give straight and complete answers, empowering their employees in their development, creating development plans with their employees, using examples and analogies, discussing courses of actions, asking about the employees' development, giving feedback, and organizing the feedback process. Coaches train and guide their employees, they communicate goals and targets, share knowledge and information, identify employees' level of competence, hold performance and development appraisals, and plan development programs together with the employees. They develop their employees'

skills, support the development of their expertise, assess their performance and give feedback on it, reward development, and support the employees in their work and its development in general. (Viitala 2005: 309.)

3.3. Conscious planning and interaction as the basis of experts' competence development

3.3.1. Performance and development appraisals and personal development plans as the building blocks of competence development

In the performance and development appraisal (PDA) the manager and the employee analyze the past and future periods focusing on work related issues. PDA discussions are an opportunity to give feedback from one to another and discuss job performance and future goals both from the company's and the employee's point of view. PDAs support the development of the individual's competence, as well as professional growth and career development. Creating a development plan for the following term in which the individual's aspirations are connected to the company's strategic objectives is part of the PDA process. (Viitala 2005: 267.) Indeed, strategic planning of employee development links the strategic goals of the company with the employees' career aspirations and professional development (Wentland 2003). It should also be noted that learning efforts that are planned and that have specific and clear goals are more efficient than unsystematic development activities (Cunningham et al. 2004: 131).

Employee's own objectives and expectations, business unit's targets, and the manager's expectations should all be considered in the PDA process. The personal development plan is then created to include the development needs and actions, as well as a long term development plan linked to career planning. (Viitala 2005: 363.) Performance appraisals are a perfect opportunity to review the employee's performance against the organization's competence framework. Development needs and actions should be based on the competence requirements for the current position, prerequisites for good results in the position, and issues relating to the employee's actions and behavior that hinder accomplishing tasks and targets. Indeed, individual development needs can be defined by measuring the gap between current competences and required competences. Skills matrixes can be used to better rate the employee's current skills in regards to the required skill level. A team specific skills matrix also aids in pairing up the less skilled with the readily proficient employees to help with their development. Furthermore,

development needs should be prioritized according to their importance, and development target specific development actions planned. It is also important to make sure the targets are attainable, schedule the targets realistically, and keep track of them. (Strömmer 1999: 200; Clifford & Thorpe 2007: 15 – 17.) PDA discussions held twice per year increase the visibility of competence development and tell the personnel what is expected of them now and in the future in terms of competences (Sydänmaanlakka 2000: 159 – 160).

For the long term plan the employee should be asked about their expectations relating to their work in the future, what type of characteristics and tasks it should include, and how much they are willing to devote to their development. These aspirations are then to be linked to the business unit's future prospects and needs in regards to personnel development. Employee well-being and work satisfaction should also be taken into consideration. This relates to the employee's energy, motivation, and willingness to operate and develop their competence. (Sydänmaanlakka 2000: 89.) In addition to increasing employee motivation by bringing their aspirations and needs into the discussion, the appraisal discussions allow for choosing the best development methods that best suit the development need and the interests of the employee in question (Cunningham et al. 2004: 131). Indeed, as willingness to learn is crucial in adult learning employee motivation for learning can be increased by selecting methods that suit the individual's learning style (Jones & Hendry 1994: 158). Development methods can be formal or informal, and they can be executed on individual or collective level. Viitala (2005: 261) has presented different development methods according to their informal and formal nature, and how individual or collective they are by nature. This presentation is shown in Figure 5. Formal learning methods are generally best suited for developing theoretical knowledge and informal methods for developing practical skills. Combining both types of methods creates conditions for reflective learning. Taking also into consideration that theoretical knowledge combined with practical skills forms competences, informal learning should be supported by formal methods and vice versa. Indeed, formal training and development methods should be designed to support informal training, and formal training activities should be backed up by informal learning for optimized learning and competence development. (Svensson, Ellström & Åberg 2004: 479 – 481.)

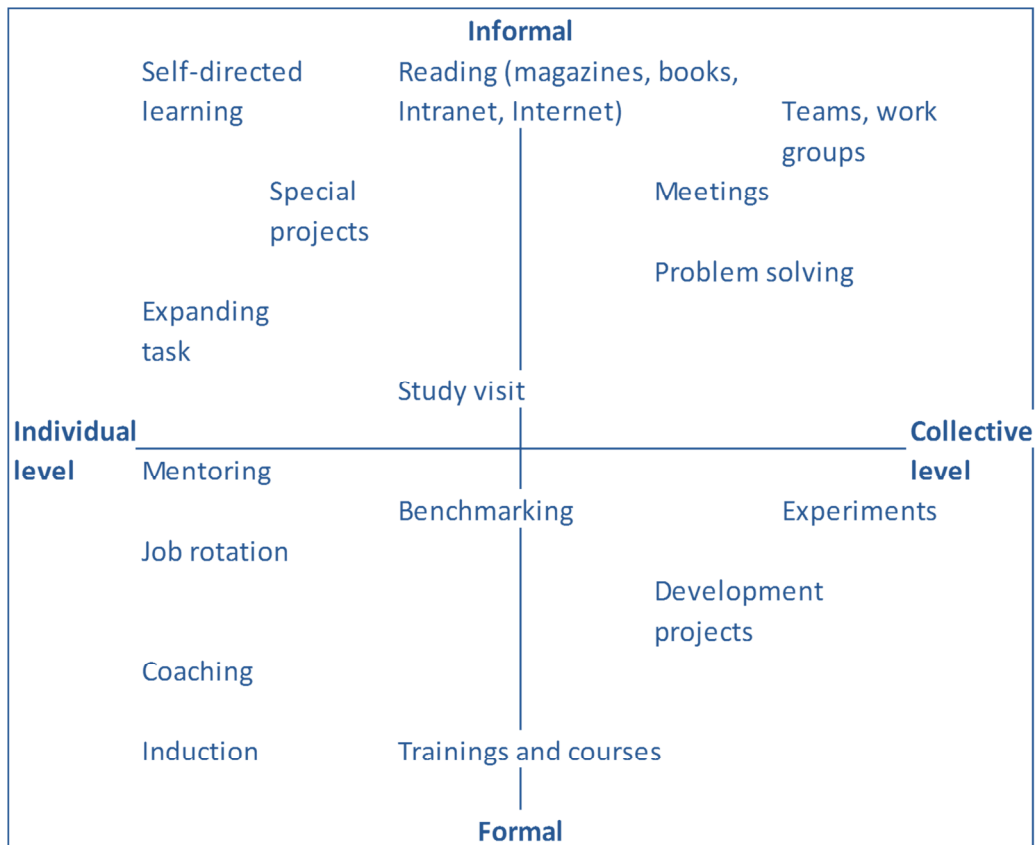


Figure 5. Different development methods.

3.3.2. On-the-Job learning enabling continuous development

On-the-job learning is systematic learning at the workplace where the individual practices and puts into practice something new in their work. In fact, workplaces facilitate learning and provide a perfect arena for combining theory and practice. Therefore, on-the-job learning is especially good for developing specific required skills and knowledge. Properly conducted it can also be used as a method for continuous development and self-managed learning. Indeed, it is one of the most efficient methods of learning as people learn more through doing and through opportunities to practice. The individual can also study the matter in some formal training program or other learning process in addition to just practicing it as a mere experience does not guarantee the development of competence. Formal mechanisms are also needed to ensure the efficiency of learning by experience. Indeed, individual's conscious efforts towards learning and reflecting on it as well as proper knowledge sharing tools and databases support the learning process (Margaryan, Coolis & Cooke 2004; Cunningham et al. 2004: 125 – 126; Viitala 2005: 270.) Furthermore, allowing the use of both informal and formal methods in learning, combined with the continuity in learning achieved by

on-the-job learning, enables employees to pursue a variety of learning methods that correspond to their individual learning styles and preferences (Chien 2004: 286). Moreover, the work environment and peers can support on-the-job learning by offering sources of helpful and additional information, as well as feedback that enhances learning. On the other hand, the working environment can also hinder learning by being unsupportive. (Cunningham et al. 2004: 126 – 127.)

On-the-job learning is a flexible method for development as the training sessions can be scheduled to suit the trainee and the trainer. Furthermore, it allows for modifying and choosing learning methods that best suit the learner (Berings, Poell & Simons 2008: 420). This characteristic of on-the-job learning results in increased learning as, as stated before, adults value autonomy in their learning. On-the-job learning is, however, a fairly slow method and can occasionally mean lower than acceptable performance and more mistakes as learning occurs. Hence, it is important to allow for possible delays in schedules and provide support for it. One of the positives of it is that mistakes, and the progress and process in general can be easily monitored and actions corrected before they become habits. Furthermore, as on-the-job learning utilizes existing resources it is a cost effective development method. And while it might be a fairly slow method for learning it is an effective one as the learning already happens in the organizational settings instead of a classroom which teachings should then be adjusted to fit the “real world”. Furthermore, as on-the-job learning happens in the work environment and in interaction with other employees it also has a collective learning aspect in it, and is not merely aimed toward individual learning (Berings et al. 2008: 420). Finally, it is an efficient method for very specialist tasks where other methods are not readily available. (Clifford & Thorpe 2007: 68 – 70).

On-the-job learning needs to be planned carefully. Learning goals as well as the actions required for reaching them need to be clear. By defining the competences required for the individual and team, the gaps in that competence can be identified, and a plan for competence development determined. Indeed, as mentioned before one of the benefits of on-the-job learning is that it can be used to meet job specific learning needs. Hence, the first step is to decide what knowledge or skills need to be gained in order to be able to reach the learning goals. Also, in addition to defining what should be development, the “why” question should be answered as well. Explaining *why* development is necessary in terms of organizational processes and results allows the employee to better understand the big picture, how their actions relate to it, and what consequences “wrong” or insufficient skills and processes have. The second step is to define how

these skills or knowledge is to be gained. An instructor should be appointed for the employee to help and support them in their learning. The instructor does not have to be a certified teacher but it can also be a more experienced colleague, the supervisor, or a peer. However, a fair amount of consideration should go into appointing the instructor as the person with the best knowledge on the issue might not be best suited to guide another person. In fact, with any trainer it would be beneficial to train them to train and facilitate. Lastly, in order to be able to measure the learning and development the manager and the employee should agree on how they will know if and when sufficient learning has happened. (Sydänmaanlakka 2000: 70 – 73; Cunningham et al. 2004: 126; Chien 2004: 286; Clifford & Thorpe 2007: 67 – 68.)

Planning is followed by action. Actions taken then need to be assessed by the employee themselves as well as others in order to get feedback on how and why the performance should be improved. Regular monitoring, evaluating, and reflecting are crucial for learning. The choices in evaluation criteria should be made early in the process as to ensure efficiency. Furthermore, as on-the-job learning is an optimal opportunity to combine theory and practice it would be beneficial to combine the practicing with other development methods, i.e. self-study or training courses. Fourth phase in on-the-job learning is understanding during which the employee should work toward a more thorough understanding of the task. A summary of the process in general should also be made on the basis of the evaluations. In the fifth phase what was learned is applied and tested in practice after which actions can be further evaluated and modified. The sixth phase is transferring the knowledge. What was learned needs to be documented carefully so that it can be better remembered and utilized in the future. Documentation entails transferring knowledge to other team members and entering information to the company's databases. (Sydänmaanlakka 2000: 71 – 73; Cunningham et al. 2004: 126; Clifford & Thorpe 2007: 67 – 68.)

Factors influencing the efficiency of on-job-learning are employee autonomy, availability of social interactions, and feedback. Employees should be allowed enough autonomy in learning the task, and timely information on their progress and performance for guiding and improving it. How challenging the activity to-be learned is, is also a factor as too difficult a task can be overwhelming for the employee while too easy a task does not offer enough challenges. (Poell, van Dam & van den Berg 2004.)

3.3.3. Reflection enhancing learning and development

Reflection has two different forms, reflection and critical reflection, and two perspectives can be separated from it; individual and interaction perspectives (Høyrup 2004: 443). Simply put, reflection is self-evaluation. In terms of learning reflection refers to knowing one's own learning style and the state of one's own competence. Reflection in a sense is studying past and present actions, and reflecting on what has previously happened. It should be extensive and should, in addition to the job and tasks include acknowledging the interrelationships between them and the factors influencing them in the company and work environment. (Viitala 2005: 147 – 148.) Indeed, the most efficient reflecting takes also into consideration the other parties that are affected by the individual's actions; coworkers, other departments, and especially, the customer (Eteläpelto & Tynjälä 1999: 118 – 119).

An experience on itself is not enough for learning to happen; it is the going over and reflecting on the experience, and understanding it that allows for learning to take place (Varila & Rekola 2003: 137). Especially for an expert it is important to handle problems and events in a way that expands their expertise through new insights and understanding and not only to try and minimize the problem via new information. Indeed, conscious and systematic reflection enhances skills, knowledge, and attitudes instead of merely teaches new techniques. (Eteläpelto & Tynjälä 1999: 107; Clifford & Thorpe 2007: 95.) Furthermore, reflection is a key factor in making tacit knowledge explicit as via better understanding of the information it allows for more efficient articulation of that information and knowledge (Tillema 2005: 83). Critical reflection is about evaluating the assumptions about the problem that affected the event and ideas in problem solving. It is also about the actual process of solving problems and techniques used in it. Finally, it concerns also the assumptions on what the problem was based on in the first place. Indeed, critical reflection starts with questioning, and comparing what has happened to internal and external standards. (Høyrup 2004: 444; Viitala 2005: 147-148; Julian 2008: 46 – 47.)

Through reflection the individual examines their own behavior in a certain situation. They focus on *why* they do what they do. They also contemplate on *how* they could improve their processes by weighing different methods and solutions. Thus, mistakes make a fruitful occasion for reflection. In addition to learning from mistakes, feedback, discussion, and sharing knowledge enable reflection as they allow for other points of view to be integrated with one's own. (van Woerkom, Nijhof & Nieuwenhuis 2003: 192

– 195.) The most common problem with reflection is that not enough time is allowed for it. Too often when solving a problem people rely on the simple, fast, and previously used solutions when they actually should stop to think what the problem really is, what is the real problem with it, how it is a problem, and what kind of effects it has in relation to other issues, etc. Indeed, instead of just asking what has happened and what is being done, more attention should be paid to why it has happened and why something is being done. (Grönfors 2002: 35.)

Reflection is also crucial in collective learning as it is part of creating a learning culture and maximizing learning and should thus be built into every activity and project (Clifford & Thorpe 2007: 95). In fact, another perspective on reflection is the interaction perspective; letting others in on the process. Characteristics of the individual and interaction perspectives as described by Høyurp (2004: 450) are further presented in Table 1.

Table 1. Individual and interaction perspectives of reflection.

Individual perspective	Interaction perspective
Situation that foster reflection: complex problem situations.	Organizational characteristics: climate of trust, support and visibility of feedback processes.
Distance to experience. Stop and think. Separation of thinking and action framing.	The practice of periodically stepping back to ponder the meaning of what has recently transpired to ourselves and to others in our immediate environment.
Thinking processes in reflection.	Vision sharing. Sharing knowledge. Collective planning, analysis and decision making.
Action. Inquiry and experiments.	Interaction. Experimentation. Asking for feedback. Learning from mistakes.
Emotional processes in reflection: attending to feelings.	Anxiety related to disclosure and making faults and threatening common values. Awareness of employability.
Integration. Synthesis of different kinds of experience.	Sharing knowledge.
Hunting assumptions. Questioning of the taken-for-granted (critical reflection).	Challenging groupthink. Assumption breaking.

The building blocks of efficient interactive reflection are critical opinion sharing, asking for feedback, challenging groupthink, learning from mistakes, sharing knowledge, and

experimenting. Interaction combined with reflection allows for bringing up opinions, views, and feelings of incidents that might have been otherwise overlooked. It forces employees to re-evaluate their own ideas, theories, and interpretations. As this kind of reflection requires freedom to challenge others and their ideas, managers should try and create a working environment that allows it. (Høyrup 2004: 448.)

Learning from mistakes is one of the central ideas in reflection as mistakes are seen as sources for improvement and learning. Acknowledging the mistakes and the actions that lead to the mistakes, and reflecting on them aids in identifying factors that hinder efficient processes (Tjosvold, Zi-you & Chun 2004: 1224). Employees should also be encouraged to share their visions, ask questions, and suggest improvements as making their ideas public is important and constructive for the entire organization. Another crucial aspect of reflection is knowledge sharing. Sharing knowledge promotes learning and enhances possibilities for improvement through more thorough understanding of issues. Challenging groupthink is a vital part of reflection and also possibly the hardest. Current assumptions should be questioned and broken in order to be able to create new ideas. Feedback is necessary as it allows people to learn from the consequences of their behavior and actions. And finally, experimentation is about testing the ideas in action and forming the grounds for another round of reflection. (Høyrup 2004: 449.)

Managers can assist reflection by ensuring that the five necessary conditions for it are met: autonomy, feedback, interaction with other people, pressure, and momentary solitude. Freedom and the option to structure one's own work are important for reflection as limiting the employee's autonomy also inhibits reflection. Indeed, while managers can make their employees do things, they cannot force their employees learn if the employees are not willing to learn (Ballé, Chaize, Fiancette & Prévot 2010: 2-3). Clarifying the expectations and learning goals and empowering the employee to work toward them also increase autonomy. Feedback should be provided about the consequences of the employee's actions. Sources of feedback should be both formal and informal and include the manager but also peers and customers, as well as the work itself. Interaction with other people entails interacting with skilled and knowledgeable people, having at least one caring person at work, and interacting with people who can provide new ideas and perspectives. More importantly, interacting with others can aid in learning from mistakes as more diverse opinions and points of view can be brought into the discussions (Tjosvold et al. 2004: 1225). Variety in personal contacts is beneficial for reflection and thus connections made with peers, customers, and suppliers are important. Creating a caring relationship with a superior, peer, mentor, or a friend that

provides mutual support enables reflection. This relationship can be that of the instructor and employee described in relation to on-the-job learning in chapter 3.3.2. Furthermore, connecting with people who think differently and will challenge the employees current assumptions will help. The pressure required for reflections comes from promotive pressures and directive pressures, in other words the performance demands resulting from time limitations and/or large amounts of new information, and performance demands that stem from visibility and importance of one's work. Promotive pressures can be created by establishing stretching deadlines and immersing the employee in large quantities of new information. Directive pressures can be enhanced by explaining the importance of learning to the employee in regards to the entire organization, making goals and timetables visible to all, and sharing the status of the work with different concerned parties. Indeed, emphasizing what the organization, teams, and individuals need to be able to do in the future instead of merely stating what currently can be done increases the directive pressure (Ballé et al. 2010: 3 – 4). Finally, employees should be allowed brief occasions at work or away from it to process the new information in solitude. Indeed, acknowledging the importance and value of processing knowledge in peace is important. (Seibert 1999: 55 – 64.)

It should be noted that as reflection is important on all organizational level it is especially important in Research and Development (Goffin & Koners 2011: 301). More importantly, though, reflection is highly beneficial in regards to project work. As projects are usually the sum of many different elements and not only the project management they provide an excellent source of learning from a vast number of viewpoints to employees in different functions. (Gunasekara 2003.) After each project there should be a structured post-project review in which the project members reflect on what was learned from the project; things and practices that worked, which did not, and what could be improved and how. Documented project reviews then aid in future projects. (Julian 2008: 44.) Post-project reviews that include reflective practices are especially vital in articulating tacit knowledge. In order for the post-project reviews to be efficient they should not be considered as an obligatory requirement but be framed an important learning opportunity for the entire organization. Indeed, they provide a learning opportunity on the individual, project team, and project-to-project levels. Managers should also attend such reviews as to emphasize their meaning, encourage informal interaction between project teams, and support the spreading of the knowledge to other project teams. (Koners & Goffin 2007: 256; Goffin & Koners 2011: 301.)

3.3.4. Development projects supporting organizational learning, development, and knowledge sharing

Development projects are about handling a specific issue or solving a problem. They are usually cross-organizational, comprised of experts from different position across the organization. This already on itself enhances communication between different departments and parts of the organization, and develops the participants' overall understanding of the company. (Strömmer 1999: 202.) Development projects are also highly beneficial in terms of learning and development. Learning via development projects is based on problem-based learning and happens when the participants draw on their past experiences, share knowledge, and are involved in reflection by interaction and social processes. Indeed, learning is enhanced as experts from different departments and teams each contribute to the issue by sharing their expertise. (Edmondson & Nembhard 2009: 125.)

If planned and conducted properly the structured while still highly interactive process of development projects ensures creative solutions. The workgroup built around the problem or object of development collects information and questions about areas concerning the issue they feel they need more information about. The aim is to come up with practical solutions to the issues. The group then goes through the collected information and raised questions together reflecting on their own behavior at the same time. Especially reflecting on past actions promotes learning. Being responsible for the results of the project forces the team members to find and share information and knowledge. Learning occurs as the peers teach each other, answer questions, summarize, clarify, prepare for future questions, and give feedback to each other. (Digenti 1999: 52; Tynjälä 2003: 164 – 168; Cabrera & Cabrera 2005: 724 – 725; Tillema 2005; Yeo 2008.) In a sense, learning that results from properly conducted development projects follows Kolb's learning cycle by providing learning opportunities for each of the stages of the cycle (Yeo 2007).

The development project process can be seen simply as having inputs, the process itself, and outputs. Inputs include the task at hand, level of the team's diversity, and possible external information sources. The process entails the different stages in the development project, especially dialogue and the level of shared knowledge. Outputs include individual as well collective learning, as well the solution to the problem in question. (Clark et al. 2002: 220.) The first stage of the development project process is forming the team and identifying the problem. Development projects should start with a simple

question of *what* are we doing. Also, questions such as Are we doing things right, and Are we doing the right things are beneficial when forming the issues to be solved. Insufficient forming of the issue at hand can result in lack of shared goals and unfocused efforts thus hindering the result of the process. Especially in a group views on the task at hand may vary and in order to achieve the wanted results the starting point should be agreed on. Also, too broad a scenario makes it hard to focus on the most relevant areas and too narrow a scenario makes the team unnecessary. (Clark et al. 2002: 221; Tynjälä 2003: 164 – 168; Tillema 2005; Yeo 2008.) Another beneficial question is What is stopping us from doing what we want to do. Different people have different points of view to the problem and hearing them all out provides a thorough list of possible issues. Therefore, managers need to ensure dialogue and feedback in the group at this stage. They also need to ensure the group keeps their focus on the main issue. (Clark et al. 2002: 221.)

The process then continues by coming up with ways to solve the listed issues. In addition to brainstorming multiple ideas the ideas also need to be analyzed. At this phase management support is needed for ensuring that the learning needs are linked with the expected outcomes. The group might also require additional knowhow and thus, the next step, the implementation analysis stage, is to map out the sources for that required information and knowledge. Diversity in the team means diversity in the external information sources as well ensuring multiple and diverse points of view to the task at hand. The individual team members are then required to find out more about the issue by self-directed learning. This stage requires managers to focus on action and process management. Moreover, managers need to make sure the acquired knowledge is documented and additional learning sources provided for the team. After given a sufficient time for self-directed learning the participants then meet up to discuss their findings and work toward a synthesis. (Clark et al. 2002: 221 – 223; Ramsey & Sorrell 2007: 43.)

The diverse views on the task or problem produced by the cross-functional team will form a shared knowledge base allowing for enhanced problem solving and decision making. By explaining their own findings and working towards understanding the perspectives of other team members the participants gain a better understanding of the entire project by viewing it through alternative eyes. (Edmondson & Nembhard 2009: 126.) While discussing the possible solutions to the issue it should also be asked who cares about the results of the project in order to find a solution that truly is what serves the end user, employee, organization, or customer the best. The last stage is situation

analysis. This phase requires managers to provide more feedback on the process and on the solution provided by the team, as well as to pay attention to possible new learning objects. Managers should also link individual reflection with professional development in order to enhance learning during the project. (Grönfors 2002: 88-90; Yeo 2008.) Indeed, the wide knowledge base created by the cross-functional team provides high potential for generating new learning at the individual as well the organizational level (Clark et al. 2002: 224).

As stated, efficient and effective development project require support and guidance from managers. First and foremost managers need to make sure the team members share the same vision, and they need to create a safe environment that allows for free knowledge sharing. Managers are to promote discussion, allow time for the project, and reward participation with feedback, recognition, or career development opportunities for example. (Grönfors 2002: 112 – 113.) Furthermore, feedback should be given throughout the process as if it is only given in regards to the final product of the project the participants will only focus on the final product not on the learning possibilities along the way. Moreover, by keeping the problem challenging, interesting, and valuable managers can ensure the participants work toward it motivated. Managers are also to make sure the participants have enough time for the project without their actual work overloading them. The group does also require a degree of autonomy in their work and managers should avoid limiting their work too much or micromanaging it. In fact, instead of managing the project work managers should facilitate it. Lastly, for the learning to be efficient managers need to frame the project as a learning process from the beginning. (Eteläpelto & Tynjälä 2005: 190 – 198; Edmondson & Nembhard 2009: 131 – 132.)

Development projects have many benefits. Examining an issue in a group means that for example problem solving is not left to one single person, and many different opinions and proposed solutions as well other emerging issues can be brought in to the conversation. Creating and using cross-organizational teams further ensures more diverse approaches to the issue, and builds the understanding of the attendants of it. It also enables networking within the company. Also, development projects promote high quality learning and change in organization by involving employees in it. Moreover, learning happens in different organizational levels and not only in selected individuals due to knowledge gathering and sharing. Regular and open interaction and communication are especially important in aiding sharing tacit knowledge. Documenting not only the results of the project but also the lessons learned promotes

collective learning. Hence, development projects can change the practices, strategies, and culture of the organization and develop the organization in itself. (Grönfors 2002: 103 – 112; Tynjälä 2003: 164 – 168; Yeo 2008; Edmondson & Nembhard 2009: 126; Goffin & Koners 2011: 302 – 303.) Indeed, development projects link competence development with work improvement (Poell & van der Krogt 2003).

Development projects offer benefits for the participants as well. They increase the understanding of operations in general, they improve learning capabilities and problem solving skills, and aid in facing the ever changing work environment. Furthermore, participating in development projects also develops the participant's expertise, the quality of questions and questioning processes, and the communication and cooperation skills of the participants. (Grönfors 2002: 103 – 112; Edmondson & Nembhard 2009: 132 – 133.) Through the diverse expertise and a wide range of aspects to the same issue each individual parts with a wider base of experiences and information beyond their own expertise (Clark et al. 2002: 231). This type of problem-based learning has been found especially effective when training experts (Eteläpelto & Tynjälä 2005: 188). When working efficiently problem-focused learning brings about competitive advantage in terms of collective learning (Yeo 2008).

Cross-organizational teams also have their challenges. The first challenge may arise if the project description is too complex. Difference in perceptions of the processes and targets related to the project hinder the results of the project as well as learning. Communication is also an issue as team members come from different backgrounds. Speaking up might be perceived as having the risk of appearing incompetent or confrontational if the team members do not acknowledge each other's expertise and their possible valuable contributions to the project. Therefore, creating possibilities for open and frequent communication is crucial in making the cross-organizational team work (Bunduchi 2009: 541). Furthermore, each profession has their own special terms and jargon that might not be understood the same way by other team members. Moreover, coming from different functions the team members can also approach the same issue from different points of view which can result in conflict (Bunduchi 2009: 540). The project's timeframe poses some issues as well. Too short a project does not allow the team members to get acquainted with each other enough to share knowledge effectively. Research also shows that for example in new product development teams that have been together for over three years their performance starts to decline stating the importance of mixing the teams up and even making a case for job rotation. Teams should also not be too focused on internal communication but also remember to use

expertise outside the team as well to prevent groupthink and bring in new ideas and perspectives. (Edmondson & Nembhard 2007: 127 – 130.)

3.4. Other informal and formal development methods for supporting learning

Training courses have historically been the main method of development in many organizations for various reasons. First, they are the most visible development method for the organization and reflect in clear numbers the organization's investment in employee development. They are also the easiest method from the managers' point of view as they require little input from them, especially if an outside training provider is used. From the employees' point of view they are the most familiar method as they mirror the training in educational institutes. Training courses are also fairly efficient as they allow for a wide range of material to be covered in a fairly short time, and they can be used to target a large amount of people. They also provide change by allowing employees to step back from their everyday work. Training courses can be, however, costly to attend and their benefits, the learning, might be hard to measure. Furthermore, not everyone prefers traditional trainings as a learning method (Murphy & Golden 2009:15). Moreover, the training courses might be too general in nature and might not meet the actual, specific training needs. (Clifford & Thorpe 2007: 109 – 115.)

Training courses are however a valid form of formal development. In fact, efficient workplace learning is an interactive process between formal and informal learning. Formal learning i.e. trainings and courses stimulate informal learning i.e. on-the-job learning, meetings, and documentation. Informal learning then again stimulates the formalization of learning. Furthermore, informal learning is often enhanced and initiated by employees with vast formal knowledge and knowhow thus efficiently working toward these common goals. (Leslie, Kosmahl Aring & Brand 1997.)

Training Courses

Training courses can be either short term or long term. Short term trainings are usually about updating knowledge or learning concrete skills that are needed at the job. It should be stated that short term trainings' effects on competences are fairly low and they are thus best suited for maintaining already existing skills. (Strömmer 1999: 204.) Long term trainings have their focus on developing and expanding on professional skills (Viitala 2005: 272). Training courses are especially good for developing basic skills,

concept systems, and problem solving skills, but only if the skills learned are also applied at work (Eteläpelto & Tynjälä 1999: 100). Training programs also reinforce current knowledge and the employee's perception of their competence and can thus aid knowledge sharing (Cabrera & Cabrera 2005: 726). It should be noted, however, that only 20% of learning occurs via formal training and therefore they should be combined with informal training activities as well (Yeo 2008).

In order to get the most out of formal training the training should be evaluated on four levels; how the participants perceive it, have the participants learned anything, was the learning transferred to the job, and did the training have the wanted results in employee performance. Even though participants might view the training as useful it does not necessarily mean the training was useful from the organization's point of view. Hence, attention should be paid to selecting courses to attend and their relevance should be made clear both to the attending employee and their manager. Transferring the lessons, actually using the acquired knowledge and skills on the job, is the most crucial point of realizing the benefits of trainings. Hence, in addition to planning for what trainings to attend, a plan should also be made about how the lessons learned are to be integrated into the employees work. Moreover, Kolb's learning cycle should be considered when planning participation in any training course as it provides a valuable tool for realizing the full benefits of the training. It should also be noted that managers play an important role in affecting the training outcomes as they can aid or hinder the learning transfer by reinforcing or punishing transfer activities. Furthermore, the perceived manager's negative attitude towards training complicates and hinders the transfer of training. Pre-training activities are also important in regards to trainings. Manager's involvement, attitude, and policies toward training affect the transfer of training. Finally, as with any development activity, feedback is important in enhancing the learning experience and assisting learning transfer. (Owens 2004; Clifford & Thorpe 2007: 109 – 111; Cheng & Hampson 2008.)

Job Rotations and Job Swaps

Job rotations and job swaps are lateral transfers between positions and functions within the company and can be permanent or temporary. Job rotations expand and diversify the employee's experience, understanding of the organizations' activities, and the system view of the company's operations. By moving from one position to another the individual expands their expertise while accelerating their development in the organization. Job rotation also aids in developing informal communication channels

within the organization and distributes the knowledge of other departments (Eteläpelto & Tynjälä 1999: 99 – 100; Cunningham et al. 2004: 119; Siqueira & Cosh 2008: 117.) Indeed, as job rotation increases the thinking and knowledge base of the individual it allows for increased organizational learning and development by increasing the individual's capabilities for sharing knowledge with a common language. Job rotations also have a motivational aspect to the employee in question as they promote career development. (Campion, Cheraskin & Stevens 1994: 1518 – 1523.) Furthermore, job rotations also increase and diversify the knowledge of the new coworkers and team (Song, van der Bij & Weggeman 2006: 176). As job rotations add to the diverse skills and understanding of the employee and the networks within the company it is also connected to innovation and competitive advantage (Siqueira & Cosh 2008: 117 – 119). Indeed, job rotations and job swaps generate multiknowledge employees who are more able to create new ideas by combining more than one areas of knowledge in their heads (Park et al. 2009: 89). Job rotations also add to the problem-solving skills of the employees as they gain understanding of the issues and process from different perspectives (Allwood & Lee 2004: 868).

For getting the full benefits from job rotation and job swaps they need to be aligned with organization's strategy and business needs. In addition to going through them in the employee's personal development plan, they should also be properly discussed with the host manager and team as to ensure peer support for the new employee. Possible setbacks of job rotation occur if the new position offers too little or too many challenges. If the new tasks are not challenging enough the learning outcomes might be too shallow while too challenging a job might restrict learning by being too difficult. (Cunningham et al. 2004: 120.)

Feedback

Feedback is an important element in all of the development methods. It increases self-knowledge and it can be used to direct and correct employees' behavior. When giving feedback it is beneficial to hear the concerned employee and their point of view on the issue and then explain the reasons of feedback. More importantly, the consequences, in regards to other affected parties and operational targets, of unsatisfactory performance should be explained to the employee. Corrective feedback should be given constructively and in private. It should be specific and not general, descriptive not evaluative, and directed toward issues and behavior that can be changed. In fact, poorly delivered feedback leads to employee defensiveness, withdrawal, and anger, and not to

the desired improvements. Also, the employee should be allowed to take charge in the feedback discussion and allowed to define the shortcomings in their performance and possible solutions for them. In addition to noting gaps and shortcomings in employee performance improved performance should also be acknowledged. (Orth et. al 1987: 72 – 73; Viitala 2005: 347 – 348.) In fact, positive feedback is important as it increases the employee's motivation to constantly improve their performance (Karlins, Hargis & Balfour 2012).

Feedback has four different dimensions; helpfulness, sign, frequency, and source. Helpfulness relates to the helpfulness of the feedback in meeting specific goals. Therefore it should include comments on current behavior and actions as well as helpful tips on how to improve them and achieve the set goals. The sign of the feedback is concerned with whether the feedback is positive or negative. The frequency of feedback refers to how often feedback is given. Feedback should be timely and given fairly often. However, too much feedback might decrease performance and development as its perceived value decreases. The source of feedback refers to the different possible sources of feedback. Naturally managers should be the main source when it comes to professional development. Other sources of feedback include coworkers and peers, the action itself, and the employee themselves as they reflect on their actions. (Van den Bossche, Segers & Jansen 2010.) Furthermore, in project organizations a useful form of collective feedback is post-project reviews that allow for objective reflection on the past project (Digenti 1999: 52).

Team Meetings

Team meetings are a perfect place for distributing and sharing knowledge and information (Ashton 2004). Meetings are especially useful in tacit to tacit communication where tacit knowledge becomes tacit knowledge in others as well through discussions and socialization. Tacit knowledge is also made explicit via dialogue and brainstorming with other team members. (Kumar & Thondikulam 2005/2006: 173.) Indeed, depending on the efficiency and openness of the meetings they offer the employees the opportunity to get information, modify or improve their thought patterns, and develop thinking. Through discussions different and diverse knowledge bases, tacit and explicit, are brought together and molded into new knowledge. (Strömmer 1999: 192; Clark et al. 2002: 227 – 228.) In an efficient meeting everyone has a chance to state their own point of view safely and freely, and influence the topics covered. Indeed, meetings do not have to be about one-way information

transfer from the manager to their employees but can be used as a tool for work and professional development. (Viitala 2005: 278.)

As meetings, and discussions in general, are part of everyday work life their potential in competence development tends to usually be ignored. Furthermore, discussions can sometimes turn into heated debates that do not benefit anyone. (Cunningham et al. 2004: 185.) Therefore, attention should be paid to the quality of the discussion; whether it is polemic, cumulative, or explorative. In polemic discussions disagreements and individual decision making are emphasized at the expense of constructive critique and suggestions whereas cumulative discussions are characterized by positively mirroring other's thoughts without any critique. In an explorative discussion people state their own opinions for others to contemplate on and offer well-founded views on the issues under consideration. People contemplate on the proposed points of views constructively criticizing them and work toward a common understanding on issues aiding learning with reciprocal discussions. (Tynjälä 2003: 156). Understanding the differences between the different types of discussions is important as while polemic and cumulative discussion might be efficient in holding the meeting they hinder the learning goals of the meeting (Eteläpelto & Tynjälä 2005: 192 – 194). However, debate and disagreement can also be fruitful as long as it is not perceived as personal attacks against other people (Schein 2003: 28). Furthermore, managers should encourage discussion and knowledge sharing, but also listening to others with respect and without resistance (Cabrera & Cabrera 2005: 729). Meetings can be enriched by getting other people outside the team to speak or present a topic in the meetings. This works toward taking the discussions further and bringing alternative perspectives on issues. (Viitala 2005: 278.)

Documented knowledge

Acquired and existing knowledge needs to be documented so that is easily accessible by all employees. Indeed, only distributed knowledge results in collective learning. (Digenti 1999: 52.) Developments in for example Lotus Notes and the Internet have increased the possibilities for sharing and combining knowledge (Nahapiet & Ghoshal 1998: 249). Databases are in fact the easiest solution for storing knowledge. For it to be helpful and useful information in the databases needs to be logically organized, reliable, and precise. Excessive, unreliable information is not useful and acts as harmful flood of information. Furthermore, the poor quality of information in such systems may lead to the person perceiving it as not worth their time to explore the system. General poor quality of the information also hinders any future actions to improve the quality of

information and bringing it up-to-date. (Sydänmaanlakka 2000: 173; Cabrera, Collins & Salgado 2006.) Documented knowledge is a way of turning explicit knowledge into tacit knowledge through combining existing external knowledge with one's own previous knowledge. It is also a form of explicit to explicit communication, sharing knowledge. (Kumar & Thondikulam 2005/2006: 173.)

Documentation is especially important in project organizations as it enables learning from previous experiences within the organization. Storing what has happened and what has been learned from projects allows for overcoming similar obstacles and challenges easier in following projects. More importantly, having access to detailed and relevant information aids in creating a learning culture and enables informal learning (van der Heijden et al. 2009: 24). Indeed, project members reflecting on their experiences and documenting their views on past events facilitates individual as well collective learning as the individuals and teams are linking taken actions and the outcomes that occurred. Indeed, it allows and forces individuals and teams to think about what worked and what did not. More importantly, learning is enhanced if the question *why* is brought to the process. Knowledge created through reflective documentation can then be easily transferred to following projects and it allows for better and more efficient problem solving in future projects. (Newell & Edelman 2008: 569 – 572.)

Reading and self-directed learning

Reading articles and books about one's own area of expertise can provide the reader with new information and a detailed and comprehensive understanding of an issue. Reading also helps in finding out answers to questions about specific facts, definitions, theories, and methods. Moreover, these materials can bring out new insights into complex issues and aid the reader in reflecting on their own opinions, views, and knowledge on that matter. (Cunningham et al. 2004: 219.)

While reading can be an activity performed at work aimed toward gaining better or more insights into an issue, self-directed learning is further studying that happens on the employee's own time. It can entail taking a single course or even a whole degree. Self-directed learning is a flexible option for gaining more knowledge on a subject as the employee can usually adjust their learning schedule not to interfere with work. More importantly, as learning happens on the employee's own time they are already internally motivated to learn (Guglielmino 1997: 11). Also, especially online courses usually allow for discussion groups to exchange ideas and viewpoints on topics thus enhancing

the learning experience. Self-directed learning, just like any other development method, requires support from the manager. The manager should help to ensure the balance between work and studying and also find possibilities for the employee to apply what they have learned to their work. Self-directed learning is especially useful for specialists who cannot be absent from their work too much, or people who enjoy further studies and research in their area of expertise. Moreover, it enhances the image of a learning culture by adding another option to the development methods in use. (Clifford & Thorpe 2007: 45 – 48.)

Intra-organizational networking

Communication and exchange of information are highly important factors in the learning process. Frequent and rich communication allows for knowledge sharing and thus collective learning. However, communication is only effective if it is done via common language which again requires for understanding of the other party's point of view. In addition to a certain level of understanding of each other's field of expertise, respect for that expertise is required as well so that all parties can see how the others' expertise relates to theirs and is indeed a valid addition to the issue. Indeed, especially in new product development projects where expertise is required from diverse sources it is important for the different parties to understand each other at least on some level. Marketing, for example might focus on product benefits and perceptual concepts while R&D might speak in quantitative terms, specifications, and performance values making communication and product development troublesome if the differences in their expertise are not understood and respected. Moreover, it is important to communicate the results of such projects organization-wide as to increase learning, and hence, the importance of a shared understanding and language is yet again enhanced. (Simon 1991; Lawson & Lorenz 1999; Abrams, Cross, Lesser & Levin 2003: 67 – 68; Park, Lim & Birnbaum-More 2009: 88 – 89.) Intra-organizational networking is especially important in Research and Development, and project work in general, for maximizing project-to-project learning, as well as for accessing and sharing knowledge (He, Butler & King 2007: 271; Goffin & Koners 2011: 316).

Each employee has their own expertise. Employees also know other employees with other expertise. As many processes in the organization require more than one person's expertise it is useful to know where such expertise may lie. Hence, pairing information and people results in learning, and better intra-organizational cooperation facilitates learning. (Clark et al. 2002: 226.) Indeed, no professional can know everything about

everything and thus organizations can only maintain learning if they build interdependence among their employees. Social ties between employees can help reformulate problems, validate ideas or courses of action, offer critical perspectives, and allow problems to be divided up through division of labor. Improved intra-organizational communication and collaboration result in improved employee skills at task, process, function, and organizational level. (Digenti 1999: 53; Anantatmula 2009: 233 – 235.) Especially in project organizations knowledge transfer and thus learning happens via informal and formal networks between systems and people. Direct relationships provide instant access to knowledge while indirect relationships provide information about different opportunities to access that knowledge. (Landaeta 2008: 31.) Indeed, knowing who knows what is a crucial element in coordinating learning as well as in the storage and retrieval of information among employees. Improved access to other expertise enables accessing a bigger pool of knowledge, better decision making, and more efficient problem solving. (He, Butler & King: 2007: 264 – 270).

Seminars and fairs

Seminars and fairs bring together people from the same field of business or expertise. This allows people to hear about and assess developments in products and services and gain insights and views on different options for dealing with specific situations. Networking with other people from the same field is also one of the benefits of attending seminars and fairs. They also raise awareness on current topics in their fields and provide insights to future trends and can thus refocus or reawaken interests in such topics. Hence, seminars and fairs are especially useful in broadening thinking and providing new ideas. They are also great places for networking and can act as a motivational factor for some employees by bringing change in their everyday work life. (Clifford & Thorpe 2007: 107 – 109.)

Benchmarking

Benchmarking, learning from best practices, is about learning from another company's, business unit's, or team's modes of operations. It is about studying how tasks and processes are handled somewhere else. (Viitala 2005: 281). Internal benchmarking increases and improves the development of process and system understanding amongst employees. Internal benchmarking also increases mutual respect and cooperative relationships, and aids in creating an environment of continuous improvement. Furthermore, comparing processes between teams, departments, or business units makes

it easier to spot objects for development and define development goals. (Cunningham et al. 2004: 154 – 155.) The benchmarking process starts with selecting the benchmarking partner and properly planning the process. The target of development and problems relating to it need to be identified and defined in detail as to ensure all the participants share an understanding of the issue and its current state. One of the benefits of internal benchmarking is that both parties of the process generally share an understanding of processes and have similar goals for the process (Knuf 2000: 64). After the benchmarking visit what was learned from it needs to be analyzed and documented, and an action plan formed according to the findings. (Viitala 2005: 372 – 376.) It should, however, be kept in mind that while some practices work in some situations they might not work in another and should thus be adjusted and evaluated accordingly. (Cunningham et al. 2004: 155.) Indeed, the benchmarking visit can result in vast amount of data and if it is not analyzed properly it can do more harm than good (Knuf 2000: 61).

Coaching

Coaching is based on the idea that the employee is in charge of their own learning and the coach only assists them. The importance of coaching is emphasized if the manager is also a mentor for the employee but even on its own coaching is part of effective employee development. Coaching is concerned with aiding employees in improving themselves and their performance over time. It can be aimed toward filling the gap between current and required level of performance, or about improving already excellent performance. Indeed, when faced with a problem or a challenge the coach offers the employee information, suggestions, challenging assumptions, recommendations, and resources. Moreover, coaching is about not about judging the employee and their actions or performance but about finding ways to improve it and help the employee to see and hear what they might not want to see and hear. While a mentor is a specific person, a coach might not be. In fact, coaching can happen between an employee and their manager, with a colleague, or other people in the person's network with the required expertise in the problem at hand. (Orth et al. 1987; Antonioni 2000; Cunningham et al. 2004: 107 – 108.)

Coaching is a cost effective and easy method for development. It is informal and frequent by nature entailing short discussions between the employee and their coach. Also, they should be based on mutually agreed on expectations and performance goals between the employee and the coach. In fact, coaching can be seen as having seven

steps as presented by Antonioni (2000); making observations, conducting an analysis, giving feedback, engaging in inquiry, setting goals, planning action steps, and recognizing improvements. Indeed, coaching requires some attention to the way it is conducted; it should not merely be a teacher or instructor-like relationship between the two persons. In fact, the employee needs to be fully involved in the process and both persons need to focus on questioning and listening, and the possible learning outcomes of such discussions. Questions relating to how the work was performed and how it could be improved are especially important when coaching the employee. Furthermore, feedback should be specific and aimed toward behaviors and not for example the employee's attitude. Discussions about the employee's performance and action also enable the employee to rethink the problem, gain more insight to it, get into the specifics of the problem, and reflect on their performance. For the coach like manager it is also important to offer the employee specific learning and development opportunities in order for them to reach the set learning targets. Finally, following up to ensure agreed on actions have been taken, and acknowledging improvements made is essential in the coaching process. (Orth et al. 1987; Brocati 2003; Cunningham et al. 2004: 107 – 110.)

3.5. Discussion

Strategic competence development should start from the top management as they are the ones best suited for defining organizational strategy and the competences required for it. Moving down to the departments and teams the managers are to be included in the process by clearly stating and explaining to them the strategic vision, competences, and what the competences mean on the line managers' level. Only then can the managers define how they are currently doing in terms of these competences, where the performance gaps lie, and what should and could be done in order to be able to support the defined company strategy. More importantly though, only via thorough understanding of what is expected of the departments can the managers explain this to their employees without misunderstandings, ensuring everyone is moving to the same direction and working towards the same goals.

Top management support and the importance of development should also be communicated on all organizational levels for ensuring a supporting culture and positive attitudes toward development initiatives. Top management support could also allow for taking time from the managers' and employees' busy schedules for the variety of development activities. Indeed, managers need a more systematic approach to and

planning of development activities which requires time and effort on their part. Planning in general seems to be one of the most important brought up issues. In fact, properly planned on-the-job learning and reflective practices, for example, can save substantial training costs in the long run as the employees learn to help themselves and each other in a practical and timely matter. Also, they increase the employee effectiveness as they learn to learn from their own experiences and apply that in their daily work. Furthermore, as training based on theory and learning by doing have traditionally been separate, managers should pay more attention in combining the two; bringing together formal and informal learning methods, and thus tacit and explicit knowledge.

Employees then need to be encouraged to take time off from their work to reflect on events and share their knowledge and ideas. In fact, it would seem that even though there are a variety of different development methods they all tend to more or less rely on reflection and sharing insights. Furthermore, sharing knowledge by definition requires more than one participant and forums for doing so. In addition to increasing knowledge sharing within their own teams, managers might want to consider also enabling networking inside and outside the organization as who you know affects what you know. Moreover, feedback and guidance from the managers are also strongly present in the development methods. As many of the methods presented in this study, and especially the main methods on-the-job learning, reflection, development projects, and development planning require skills from the managers it might be useful for them to attend training on their own i.e. in how to facilitate learning and provide support for their employees to be able to coach them in their everyday development.

4. RESEARCH METHODOLOGY

The research process began in early 2012 after the ABB Oy, Medium Voltage Products unit had already begun forming their core competences. The competences were to be defined by the end of 2012. The business unit wanted to find out how to best support the development of core competences, and what would be the best methods and tools for line managers for doing so. The process for the thesis began with clarifying the business unit's objectives for the study and defining the methods for collecting data. This chapter presents the research method choices the research was based on, and conducted by. As the research was a case study the main focus is on qualitative study's methods for collecting and analyzing the data.

4.1. Research approach

Questions relating to the problem setting, philosophy of science, research strategy, and theoretical understanding form the basis of a good study. Due to the nature of a qualitative study the research questions were defined as fairly broad in the beginning of the project narrowing them down as the research process went on. The final research questions are introduced in the Introduction chapter. Any research, even a case study focuses on philosophical questions as they form the basic assumptions of the research. Such assumptions relate to people, the world, and ways to find knowledge just to name a few. These philosophical views are divided into ontology, epistemology, logic, and teleology and they aid, for example, in understanding the differences between a quantitative and qualitative study. Logic is concerned with reasoning and possible arguments related to it while teleology focuses on the end result and actions behind it. The both are more quantitative in nature and thus ontological and epistemological views are in the focus of this study. Ontology presents questions about the nature of reality; what is the nature of the researched phenomenon; what is real; what can be considered as evidence, and how all of this can be grouped according to similarities and differences. Epistemology deals with the origins and nature of knowing and how we construct knowledge; what type of relationship is there between the researcher and the object of the research, what is the role of values in understanding the phenomenon, and how thoroughly can the issue even be understood. (Hirsjärvi, Remes & Sajavaara 2008: 120 – 125.)

Research studies can be divided into theoretical and empirical studies. Theoretical studies focus on readily available theories while empirical studies connect theory with real life observations of a phenomenon. (Heikkilä 2005: 13.) This study is an empirical study. Research strategies can be divided into three traditional research strategies; experimental studies, survey studies, and case studies. An experimental study measures the effect of one factor to another whereas a survey study collects standardized data from a group of people. (Hirsjärvi ym. 2008: 130.) This study is a case study. The main objective of a case study is to find out detailed information from a small, single phenomenon. Information is gathered using multiple methods including observation, interviews, and documents and it can have characteristics of both, quantitative and qualitative study. The objective is to describe the subject of the research. (Koskinen, Alasuutari & Peltonen 2005: 154 – 157; Hirsjärvi ym. 2008: 130 – 131.) This study focuses on five departments; Supply Management, Product Management, Marketing and Sales, Channel Support, and Research and Development of the Medium Voltage Products business unit of ABB Oy, the current status of the core competence development in these departments, and possibilities for improvements in this area.

Research studies can further be divided into quantitative and qualitative studies. The differences between the two types relate mainly to the way information is gathered and presented. Quantitative study prefers numerical data collected from a large sample while qualitative study presents information in a more verbal or visual form and collects it from a smaller sample. A quantitative study focuses on answering questions such as what, where, how much, how often etc, and forms a description of the phenomenon based on numerical data. A qualitative study focuses on questions why, how, what type etc., and aims to understand the phenomenon according to softer information. However, in reality it is not that easy to differentiate between the two types as they are usually used together both complimenting each other. (Heikkilä 2005: 16 – 17; Hirsjärvi ym. 2008: 131 – 133.) This study while being mainly qualitative in nature also uses quantitative methods to provide a thorough analysis of the subject of the study.

Qualitative studies have seven general characteristics. First, research is comprehensive by nature and the data is collected in natural settings. Second, people are preferred as the sources of information. The empirical data for this study was collected from both the managers, and the employees of the studied business unit. Third, inductive analysis is used in analyzing data. In other words, the starting point is not to test theory or hypotheses but to study the empirically collected data thoroughly and in detail. Fourth, qualitative methods are used in collecting data. The methods used in this study are

described in detail in chapter 4.2. Fifth, the target group is selected carefully and not with using random sample. The target group for this study was selected by the case organization. Sixth, the research plan shapes as the research progresses. And finally, the cases are handled as unique and the data analyzed accordingly. (Hirsjärvi ym. 2008: 160.)

The basic principles of good research were considered when planning and conducting the study; validity, reliability, objectivity, efficiency, openness, privacy protection, usefulness, and proper schedule. Validity and reliability of the study are presented in more detail in chapter 4.4. Objectivity in research relates to keeping the findings and results objective, reporting both the negative and the positive, and not letting the researchers own convictions influence them. Efficiency and openness relate to the manner the data is collected for the study, and how they are analyzed. For example, respondents need to be informed about why and how the data is collected. In regards to this study, both the managers and the employees were told about the study for example by publishing the purpose and reasons behind the study on the business unit Intranet. Also, openness is increased by objectively presenting the research finding in the study and not leaving out findings that might be perceived as negative. It is also necessary to make sure the privacy of the respondents is not violated. No single respondent should be able to be identified from the research report. The study also needs to be useful and bring up something new. Finally, the schedule of the study is important in ensuring that the study offers the research findings when needed. (Heikkilä 2005: 29 – 32.)

4.2. Data collection

Research data can be gathered with a variety of methods depending on the nature of the research. The most common methods are surveys, interviews, observation, and documented information. Data can be gathered by using only one method or many, as usually done in a case study. While choosing the sources and methods for information it is necessary to consider the object of research as it does define the options for information and data gathering. (Heikkilä 2005: 16 – 17.) Interviews, surveys, and documented knowledge have been used as the sources of information in this research study. Using multiple methods and sources of information is time and resource consuming but does offer a wide view on of the object of the study (Koskinen ym. 2005: 131). Indeed, forming an extensive view on the subject of core competence

development at ABB Oy, Medium Voltage Products business unit is crucial in order to be able to analyze it and suggest improvements to it.

Documented knowledge entails using statistics, previous research and studies, reports, advertisements, and other printed information as a source of information (Koskinen ym. 2005: 131). Documented knowledge has been used in this study to form the theoretical base for core competence development and the description of the case study organization. Indeed, ABB's and Medium Voltage Products business unit's descriptions are based on their external and internal websites. Books on organizational theory and behavior, as well as psychology form the basic theory for learning and developing competences. Journal articles were included to provide a more thorough understanding on the subject and also to provide more detailed information on how to develop especially core competences and experts. Developing engineers and more importantly research and development engineers was a key determinant when selecting the journal articles as they form the biggest employee group in the MVP business unit.

Surveys and interviews were the most important source of empirical data for the study. Interviews in general can be structured, half structured, or deep interviews. A structured interview is basically a survey interview where the interviewer determines the questions and the answer options for them. A deep interview is the least structured interview allowing for getting the interviewee's point of view on a subject with the interviewer merely as stating the subject. A half structured interview is a compromise between a structured interview and a deep interview, and it is also known as a theme interview. In a theme interview the interviewer determines the questions but allows the interviewee to answer as they please. The questions might not be in the same order as planned, and there might even arise new questions to discuss about during the interviews. There is little structure to the questions. In fact, the predetermined questions are mainly there to ensure that the required questions are being asked and that the interview flows smoothly. The questions are open questions allowing the interviewee to answer them in their own words. The open questions also allow the interviewer to specify the questions if they are perceived as too hard to answer straight. The amount of questions in a theme interview should be kept between 5 and 12. A theme interview usually starts with a couple of warm up questions followed by the actual questions, and summary or closing question at the end of the interview. (Koskinen ym. 2005: 104 – 110.)

The interviews conducted for this study were theme interviews and they took place in late spring 2012 at ABB. The questions that formed the basis of the interviews are listed

in Appendix 1. After first being drafted they were then look through with the business unit HR Manager, and modified according to her views as to ensure their validity. The questions were then sent to the interviewees, the managers, with the meeting schedule. This would allow them to prepare for the interviews. The actual interviews were conducted as pair interviews and in groups of 3 or 4. The managers were asked to describe their tasks and departments as warming up questions. After the actual questions were discussed they were then asked if they anything to add to the topic of core competence development or to anything else for concluding the interviews.

The survey used in this study was an online questionnaire (see Appendix 2) distributed to all of the employees in concerned departments via an email link. As the population consists of white collar workers only all of them had access to a computer and Internet hence allowing for this delivery method to be used. The survey was created keeping in mind the qualities of a good questionnaire presented in the book by Hirsjärvi ym. (2008). The questions selected and their wording was as clear and specific as possible for ensuring the answers could be compared with each other. The questions we also kept as short as possible for reducing the possibilities of double meanings. Also, the questions were arranged so that the methods were presented first as a fast section to go through, and the open questions last as they were probably the hardest to answer. Furthermore, as the questionnaire listed possible methods for developing competences first the respondents could reflect on them and how they were applicable in their work. This way they were already thinking about the answers to the open questions making it easier for them to answer them. Also the questionnaire was looked through with the business unit HR Manager as to ensure the language used would suit the business unit personnel and questions asked the research objective. Peers' opinions were used in modifying the questionnaire more simple and clear.

Surveys in general can have three types of questions; open, multiple choice, and questions on a scale. The survey used in this study had open and scaled questions. Employees were asked to rate each presented development method, 12 in total, on how efficient they perceive it to be in regard to their core competence development. The scale was 1 to 5 Likert scale, 1 meaning the method is not useful at all and 5 it being highly useful. The concept of core competence was briefly described in the beginning of the survey for increasing the understanding of what was meant with core competence. After each competence there was an optional open field for explaining the reasons behind their answer. At the end of the questionnaire there were also 3 open questions relating to competence development. Open questions are beneficial as they allow people

to describe their opinions on the matters freely and in their own words. (Heikkilä 2005: 47 – 69; Hirsjärvi ym. 2008: 191 – 198.)

4.3. Data analysis

In an empirical study the collected data needs to first be organized in a way that supports its analysis. For a survey this means going through the answers and seeing if or not they are usable. In this study, one of the main points was to be able to organize the answers by each department. Hence, each usable form would have to have the cost center properly filled out in order for it to be categorized. No forms were disqualified. As the survey was an online survey the answers were easily available in the database allowing for better analysis of them. Interviews were taped and transcribed for analyzing purposes. (Hirsjärvi ym. 2008: 216 – 217.)

Quantitative analyzing methods were used to describe the different development methods in terms of their perceived usefulness. Having asked the respondents to evaluate the usefulness of each method on a scale from 1 on 5 allows for statistics to be used in their analysis. SPSS software was used in calculating the statistics. The methods were first analyzed as a whole, then by each department. Mean, standard deviation, skewness, and kurtosis were calculated for all of the different methods. The methods were then arranged in order according to the means from most useful to the least useful. Standard deviation was calculated to show how much the ratings vary around the mean. The larger the standard deviation the more the different ratings vary. Skewness and kurtosis further describe the ratings, and show how they differ from a normal distribution. Also, the frequencies of answers were presented for each development method as to better illustrate how the ratings were divided. For department specific analyses the minimum and maximum values were presented in order to give a more concrete idea how they ranged. (Heikkilä 2005: 82 – 88.)

Content analysis was used to as a qualitative method of analyzing the empirical data. Content analysis is about making interpretations and conclusions about the available text form data. Sources of data include narrative responses, focus groups, observations, printed media, and as with this study, open-ended survey questions and interviews. The analysis starts with coding and categorizing the data to meaningful groups according to similarities in content. The categories are to be clearly defined so that the data can be put into the groups. As this study is a case study with specific research questions given

from the case organization the initial categories were easy to define. For each different category smaller categories of possible reason and influencing factors were defined in order to better understand the situation. Indeed, content analysis is about gaining understanding and knowledge of the studied phenomenon. Furthermore, it aims to study the information systematically, objectively, and reliably. Finally, as the purpose of content analysis is to summarize the collected and categorized data and link it to a bigger context and previous studies, references to the covered theory were also made when presenting the empirical findings. (Hsieh & Shannon 2005: 1278-1283.)

4.4. Reliability and validity

Reliability in research refers to the repeatability and consistency of the study. In order for a qualitative study to be reliable it has to include enough information about how data was collected and analyzed. The research process, how the study was actually conducted, needs to be systematically described. Data collection and analysis as well as the research process are described in the preceding chapters. Also, how the material was checked, whether for example different methods were used to evaluate the consistency of the data should be described in the study. In addition to interviewing the managers on the subject a questionnaire was used to get another point of view to the research questions. Finally, the impact of different possible organizational factors on the data should be evaluated. As it is possible that the interviewed managers might not want present themselves in a bad light by noting all the negatives and shortcomings in their behavior, especially in a group interview, the questionnaire was to provide an anonymous forum for sharing also those aspects. This also works toward increasing the validity of the study. (Koskinen ym. 2005: 258 – 259.) It should also be noted that as the study is a case study and qualitative in nature generalization is not a concern. The purpose of the study is to describe the target business unit and the specified departments. Finally, taking the entire population as the sample increases the reliability of the study as well. (Heikkilä 2005: 30.)

The validity of research is concerned with whether the study studied what it intended to study and if the research findings describe the object of the research properly. Validity of the study is to be ensured by properly planning the data collection process. Attention needs to be paid especially to the structuring of the questions in interviews and surveys to make sure they help in answering the research questions. In this study the questionnaires as well as the interview questions were modified and adjusted several

times to ensure they met the expectations of the case organization and could provide valuable information for the research questions. They were also looked through by peers as to increase their validity. Furthermore, peer comments on them allowed for examining possibilities for misunderstandings and double-meanings. (Heikkilä 2005: 186.)

The validity of the study can also be examined by looking into internal and external validity of the study. Internal validity refers to the degree the surveys and questionnaires reflect the theory the research is based on. External validity relates to the degree other researchers would interpret the findings in a similar way. The questionnaire formed for this study was based on the development methods that were mentioned in the literature the most. Attention was also paid to the questionnaire as to make as simple as possible to avoid misunderstandings and double meanings, both from the respondents point of view but also to allow for better analysis of the results. Furthermore, the results and their analysis were presented in as much detail as possible for showing the reasoning behind the conclusions. (Sancheva 2009: 54.)

The sample for the study is the population i.e. all of the employees in the studied departments. This also increases the validity. Furthermore, the questionnaire that was sent to the entire population was to be filled out anonymously which ensures the privacy of the respondents and decreases the need to lie or make the answers more positive than they actually would be. The employees were also informed about the study and the data collection methods well before the interviews and the questionnaire for enhancing their readiness to answer the questions and for them to get acquainted with the topic. (Heikkilä 2005: 186; Koskinen ym. 2005: 254 – 257; Sancheva 2009: 54.)

5. CASE STUDY COMPANY

The case organization of this study, ABB, is a power and automation technology company whose products aim to enable their customers to improve their performance while lowering environmental impact. The company employs roughly 145,000 people in about 100 countries. (ABB Group 2012.) This chapter focuses on ABB Group in general, ABB in Finland, and on the company's Medium Voltage Products (MVP) business unit in Finland. Basic information on the company and the business is provided, as well as an overview of their strategies and personnel.

5.1. ABB

ABB was founded on January 5th 1988 when the Swedish Asea and Swiss Brown Boveri merged with a 50:50 ownership. ABB grew heavily during the following years with several acquisitions and investing in research and development ensuring their strong presence in all of their business areas. Today ABB is the world's leading power and automation technology group of companies. ABB's vision is: *As one of the world's leading engineering companies, we help our customers to use electrical power efficiently, to increase industrial productivity and to lower environmental impact in a sustainable way.* Improving performance, driving innovation, attracting talent, and acting responsibly are key points in ABB's mission. (ABB Group 2012.)

Innovation is one of the key sources of ABB's competitive advantage and more than \$1.3 billion is invested in R&D annually. Focus areas in today's research are integrating renewable power sources into the grid, enhancing power network efficiency, reliability and flexibility, improving industrial resource efficiency and asset productivity, and optimizing flexibility and reliability. Lowering environmental impact and costs is done by focusing on resource and energy efficiency of equipment over their life cycle. ABB also strives for excellence in personnel development, operational execution, business ethics, and work environment for attracting top performers. (ABB Group 2012.)

ABB comprises of five global divisions: Power Products, Power Systems, Discrete Automation and Motion, Low Voltage Products and Process Automation. Their product portfolio includes: electricals, automation, controls and instrumentation for power generation and industrial processes, power transmission, distribution solutions, low-

voltage products, motors and drives, intelligent building systems, robots and robot systems, and services to improve customers' productivity and reliability. ABB is headquartered in Zürich, Switzerland and the company has been noted in stock exchanges in Zurich, Stockholm, and New York. Joe Hogan is the company CEO.

In Finland ABB has almost 7,000 employees, and the company operates in over 30 locations. Factories are located in Helsinki, Vaasa, and Porvoo. Helsinki and Vaasa are the biggest places for operations in Finland with employing roughly 2800 and 2000 people respectively. ABB Finland's CEO is Tauno Heinola. The organizational structure of ABB Finland is presented in Figure 6. ABB Finland invested 163 million € in R&D in 2011, 17% more than in 2010, which on itself shows ABB's focus on creating state-of-the art technology and solutions for global business. Investments in personnel development were over 10 million euros in 2011 with management and leadership, processes and procedures, expertise, and occupational training being the focus points. (ABB Inside 2012a.)

ABB Oy, organization

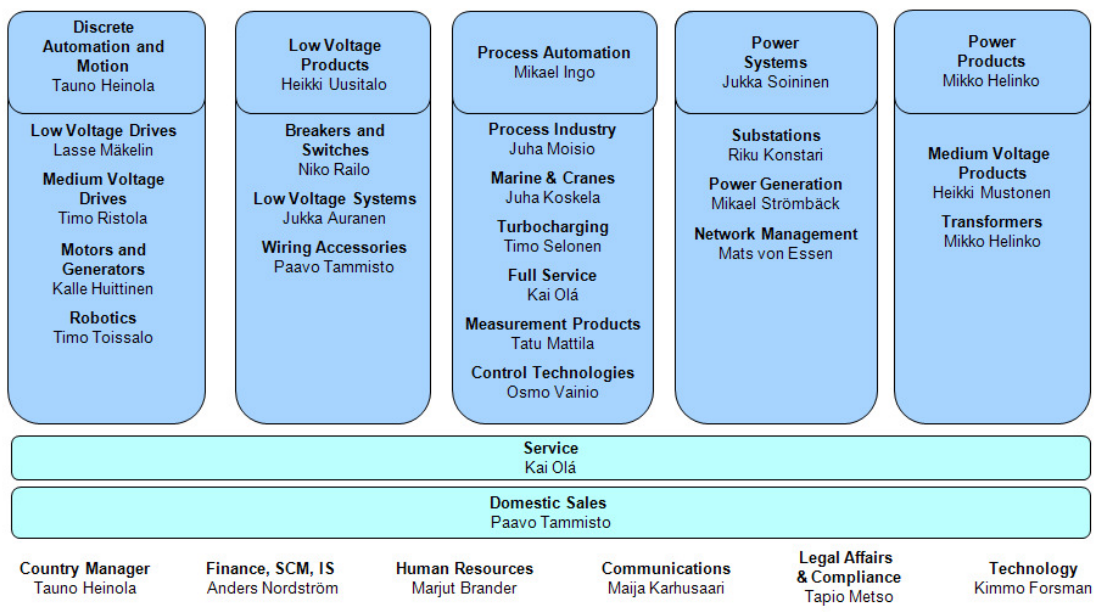


Figure 6. ABB Finland organizational chart.

5.2. Medium Voltage Products

Medium Voltage Products (MVP) business unit is part of the Power Products division. Heikki Mustonen is the local business unit (LBU) manager. The business unit focuses on developing, manufacturing, marketing, and delivering protection and automation products for the distribution of electrical power. The end users of their products include electrical utilities, power intensive process industries, and offshore operators. More than 90% of their products are exported and their sales network covers more than 70 countries. Moreover, MVP is in a central role in ABB globally as they have the global responsibility for the development, marketing, sales and production of their product offering that consists of protection and automation products for the distribution of electrical power. In addition to having global operations responsibility, they also have a global customer support and training responsibilities. They are located in Vaasa and Tampere in Finland. Vaasa's R&D unit is the global leader for new products and platforms within distribution automation and substation automation products. The business unit employs currently about 250 people in Finland. (ABB Inside 2012b.)

Customer needs are the driving force in their strategy. According to their website (ABB Inside 2012b) the MVP business unit strives to identify and develop the capabilities that are critical for their success in the ever changing business environment. Anticipation and fulfillment of the customer expectations, efficient utilization of new technology, and retention of competitiveness are the central challenges facing their strategy and its implementation. The objective is to get the whole organization moving towards the same goals and, at the same time, identify problems and spot improvement initiatives in order to eliminate problems and utilize new ideas. The aim is to get motivated and committed people and efficient and fast processes in an agile organization. (ABB Inside 2012b.)

6. RESEARCH FINDINGS

This chapter presents the empirical findings collected with interviews and the questionnaire while reflecting on the theory presented in the study at the same time. The aim is to find out how the employees and managers perceive the competence development activities in their departments and what kind of improvements should and could be made to the development methods and practices in their opinion. Managers' thoughts on how the core competence development goals should be communicated to them are also presented. Manager's views on how the top management should define the core competences form the basis of the future development activities and are thus presented first followed by the personnel's views on the current status of development activities. Finally, the perceived usefulness of different development tools and methods are presented with comments from the personnel on the subject as a whole.

20 managers were interviewed, some individually and some in pairs and some in groups of three. Only 2 managers were not available for interviews thus giving an answering percentage for the interviews of 91. The questionnaire was sent to 174 employees and 57 answered. The answering percentage of the questionnaire is therefore 33. Department-specific answering percentages are presented in Table 2.

Table 2. Respondents per departments.

Department	Total number of answers	Total number of employees	Answer percentage
Supply Management	3	10	30
Product Management	6	15	40
Channel Support	7	20	35
Marketing & Sales	7	36	19
R&D	34	94	36
Total	57	174	33

6.1. Communicating and defining the core competences

In the interviews the line managers were asked to describe how the core competences are currently communicated to them. Managers were also asked to describe how the core competences should be communicated to the managers for them to be able to begin

developing them. Nearly all of the interviewed managers noted that barely any message comes from the top management concerning core competences. Some remembered some vague descriptions about them. This is already alarming as the theory clearly emphasizes the importance of communication in development activities and especially in creating a shared vision. Few of the managers further supported the statements toward better communication by noting that they cannot fully support company strategy if they do not know what is required from them. However, top management clearly understands this challenge in core competence development as they spent months in 2012 trying to define and describe these competences in the most efficient and useful way. Furthermore, according to the business unit HR Manager they are holding workshops for the line managers for clarifying the competences and increasing understanding around them.

“On the business unit level there’s a strategy, and in order to support that strategy we need to have certain competence. And we are the only ones that can develop it. Someone should be able to make the right choices in every department as what to develop for us to be able to support the goals.” Interview, manager.

In terms of how the core competences should be communicated to them the managers emphasized a balance between details and direction giving in their answers. Managers hoped for a clear description about the core competences of the organization and how they relate to their own departments and teams as well as what is expected of them. The majority of them noted further that they want to be the ones who then decide on how to develop the competences as the top management is too far from the actual work. Furthermore, many emphasized the importance of a shared vision in order for them to support the unit’s strategy. Indeed, managers stressed the importance of getting insight into strategy and the competences that are important especially in the future. Hence, attention should be paid to the message about the strategy and that it is understood the same way by all of the managers. The workshops mentioned before were designed to also meet this requirement. Finally, managers hoped for a clear set of methods for developing core competences.

“For every manager to have such tools that they can stand in front of their team, that “your core competences are these and these, and that’s what we are going to develop”. It is the manager’s job to figure out what competence to develop and how.” Interview, manager.

In addition to providing the managers information about what to develop and a set of tools for developing them, a few managers stated another important reason for better and wider communication. For competence development to be perceived as important it should be communicated as such from the top down. Moreover, top management support for development activities could aid in employees as well as managers take time away from the hectic project schedule. As also touched on in the theory part of the study, organization-wide support and commitment to development is crucial for the methods and practices to be efficient. Furthermore, as increasing development methods and changing practices relating to them is about change, there is a possibility of resistance to change. Top management can with organization-wide communication on the importance of development decrease this resistance and further aid in creating a learning culture. Also, one of the characteristics of strategic learning was long term commitment to learning and developing. Indeed, communication and support for learning and development should not be a once in year review on the core competences but a continuous effort in developing them, clarifying them, and following up on their development both from the top management's and the line managers' side.

6.2. Current state of core competence development

An important part of the interviews was finding out what is the current state of competence development activities in the business unit from the managers' point of view. Managers were asked to describe how much time they spend thinking about developing their employees' competences and what are the methods of doing so. Majority of the managers acknowledged the importance of competence development and stated that it is constantly in their minds. However, for many it was an activity that gets their full attention if and when there is extra time; not too often that is. By stressing the importance of learning and developing, and clarifying the line managers' role in employee development top management could increase the perceived importance of development. Indeed, as the discussions around the communication of core competences revealed the managers' aspirations toward a central role in competence development and the acknowledged importance of it, the most important step toward more efficient core competence practices would be allowing more time for it. This would be something the top management could contribute to the development process.

At a minimum each manager is supposed to go through the performance and development appraisal (PDA) discussion with their employees once a year as required

by the ABB policy. However, while it is strongly encouraged to have the discussion, roughly 10% of white collar managers still do not have it with their employees (ABB Inside 2012b). It could be that not all the managers see it as a useful tool, or even important at all, but another bureaucratic practice that interferes with “actual” work. Surely this could be an exaggerated explanation for this, but it does bring up a question; if a manager does not even fulfill the minimum requirements for competence development, do they do much else in regards to it? Furthermore, even though all of the interviewed managers mentioned the PDA discussion in the interviews many referred to it as something that is done annually and only a couple of them mentioned having them bi-annually. Focusing on and properly preparing for the bi-annual PDA discussion would thus serve as another starting point for more efficient competence development. The discussions could also provide structure for further development efforts. Also, as stated before, the PDA discussions provide a forum for measuring the gaps and improvements in employee performance and an opportunity to discuss the thoroughly with the employees.

“Performance and development appraisals are a way to see which way to go next year. With trainings and courses you try to push your guys to that direction. And the follow up on them that what was agreed on gets done. Generally speaking too little time is spent on this.” Interview, manager.

Another development method that was mentioned in all of the interviews was training courses. Next to the yearly PDA discussions it would seem that training courses are the main method in competence development. In fact, a reason for the popularity of training courses mentioned in the theory part was also brought up in the interviews many times; training courses are a fairly easy method as many of the employees search courses to attend on their own. Also in the lines with the theory was that one of the perceived negatives of training courses was that they do not serve expertise development as efficiently as hoped. However, while many managers noted that it is hard to find a course that would suit their needs, some managers described it as being easy. This emphasizes the importance of manager-to-manager discussions in planning development activities. Sharing knowledge and practices is beneficial even in the managerial level and not just in employee-to-employee level.

One of the underlying reason for training courses to come up so often in the interviews could be that they have in fact traditionally been synonymous with development, and are as mentioned an easy and simple way of accomplishing it. PDAs then again are an ABB Group mandated policy and hence have a strong presence in the managers’ jobs, at

least a couple of times a year in theory. On these merits, the current competence development practices of the managers follow a more behaviorist and humanistic views of learning. Employees are self-directed in their efforts to learn and develop and will do so by just receiving information from a trainer. These approaches are entirely neglecting the constructivist and situational views on learning. This is concerning as they are the views gaining more and more support in learning. However, while traditional and easy by nature PDA's and training courses should not be abandoned as training methods. Instead, they should be combined, supported, and enriched by a variety of other methods thus enhancing their effectiveness.

Training courses and PDA discussions are, however, also the easiest answers, and as the interviews went on, a bigger and wider picture was formed on the current state of competence development. In fact, for a few managers competence development was a weekly issue in their meetings with other managers from the same department. Others occasionally addressed it in monthly meetings. Also, a few other methods were also mentioned as a way to secure competence in the team.

“Every Monday we spend an hour going through resources. Take a look at training events. See who needs training in some area and find them an easy task to start dealing with. Sometimes with someone but often alone. And of course the communication, that you need to develop in this area, they are quite self-directing.” Interview, manager.

“Now, at least for us, there's that when there's person A, who can handle something completely, person B is found for them who supports them in that action. The other one then learns that, so that if A leaves we are not left with nothing.” Interview, manager.

“People have different competence profiles and everyone has kind of a duty to uphold that competence area. It's pretty much like that when everyone's a higher official they each have a duty to get proper training for themselves. Of course I once in a while offer something but I haven't obliged them to anything. They are the type of people who are interested in their own areas. Once or twice a year we have workshops where we go through issues because I have the insight of the whole department but the individual persons have it on their area and maybe about the area of others. To discuss things in a group. It's not too big a group so there's a lot of synergy benefits. Everyone comments on their behalf. That's sort of the best training on its part. ... One on-the-job training form is to go overseas with some sales engineer or to some event. That teaches a lot. There are no courses for that but to go there yourself. If there's willingness to go I don't stop them. Everyone learns from that, the locals, the sales engineer and the person themselves.” Interview, manager.

Other development methods that were mentioned in the interviews were seminars, documentation and databases, after-project reviews, buddying, getting-to-know-the-customer initiatives, participating in projects, and tailored courses for a specific team. Networking inside the business unit and ABB Finland in general was noted as being important, and also mentioned as having improved. Therefore, the value of networking has clearly been acknowledged at least on some level if efforts on improving it have been made. Also, the variety of development methods could signal a change in the perceived usefulness of traditional means of development and a search for different methods, or at least it tells about openness to new ideas for increasing learning and development in the teams.

The scarcity of different development methods could also be a result of the managers not knowing all the possible methods, or not acknowledging something as a valid development method. It could be for example, that there is buddying, pairing a less-skilful employee with a more accomplished employee, going on in the teams but it is not perceived as a real and actual development method. It is just something that is done. This would then again stress the importance of increasing awareness on the other possible development methods and gaining more insight into how to make even the current development activities more systematic and thus more efficient. Indeed, core competence development does not necessarily have to be about bringing in new methods and practices but instead starting with making the currently existing ones work better and then moving on to new things. One way of enhancing the current practices is to pay more attention to how individual and collective learning functions and try to incorporate that with more thorough planning, execution, and follow up of the development methods and learning opportunities.

Interestingly though, while so many different methods were introduced they were hardly ever present for the same manager. In fact, the managers could benefit from internal benchmarking; discussing amongst each other to learn from the different development methods in use in other teams as the range of development methods was wide in general. Also, the most development efforts were aimed at securing the competences in the teams in case someone was to leave the team. In other words, the current state of competence development is resource-oriented instead of strategy-oriented. Moreover, the current efforts were aimed toward securing competence in the specific teams, and not in the company or even the business unit. In a sense, the current state of competence development in the departments is about securing competence not

supporting the company's strategy and future competitiveness with competence development. Hence, the need for more systematic and wider development plans and methods was evident.

Managers were also asked to describe the challenges in core competence development. The majority of them identified challenges related to the expert and project nature of the business unit and work. Similarly these challenges were identified in the introduction when talking about the needs for change. As the employees are already experts in their fields and the fields are so specific it is hard to find training and courses that would efficiently develop such knowledge. Time was another identified challenge. As multiple projects run simultaneously the managers do not have sufficient time to focus on competence development. Moreover, it is hard for the employees to take time for the development activities due to time and project pressures. As stated by the managers and supported by the theory, top management support in creating a culture and environment that allows, for example time for reflection is crucial in overcoming these challenges.

“Research before product development is challenging, and is just the thing that would develop the people the most. To research a little about what we're doing and what we should and could be doing. It requires that kind of creative time that you just don't have in today's work life. That's the challenge in competence development; how to turn mentally the time-hurry lever into that stage that you can think about it when some project manager is breathing down your neck.” Interview, manager.

In addition, insufficient communication especially between projects and departments was seen as challenging and frustrating.

“There's the thing, that in a way the departments are divided that in a way competence groups exist, but the information sharing is not always efficient. Still feels like that the invisible lines between departments and groups are actually kinda concrete that information's been shared poorly. Especially between projects. There's a lot of such things that might interest people on a larger scale, like what the neighbor does.” Interview, manager.

Some managers also specified the lack of communication in their own teams as a negative in competence development.

“There might be entirely new ideas behind the tacit knowledge. If we could get it open in conversations it could prove beneficial.” Interview, manager.

As knowledge sharing and making tacit knowledge explicit are in a focal role in competence development theory and in collective learning theory managers ought to focus on increasing and improving them. Working toward a culture of openness and sharing, and moving away from the mindset that everyone should just mind their own business and focus on their job-specific tasks would benefit the company especially in the long run. In fact, a lot of the development methods mentioned in this thesis, such as critical reflection, post-project reviews, documentation, development projects, meetings, and networking can aid in improving knowledge sharing. Also, using a variety of formal and informal development methods and providing different forums and opportunities for sharing knowledge and learning from others increases the interaction between employees and thus enables making tacit knowledge explicit.

In addition to discussing the current state of competence development with the managers, the questionnaire sent to personnel also included an open question about the current situation of core competence development, its strengths, and weaknesses. Positive aspects about competence development that were mentioned related to the employees being able to attend trainings and courses, and the good flow of information inside the department.

We get to go to trainings if we want (manager encourages)." Open answer, white collar worker.

"Knowledge sharing in the department, utilizing the special capabilities of team members." Open answer, white collar worker.

"Getting to know others' jobs gives good preparedness to solving problems. In other words, then you know where you can try and find a solution if your own knowledge isn't sufficient." Open answer, white collar worker.

"Right direction in the unit's strategy. Inter-departmental cooperation and knowledge sharing works well. Continuous development of tools." Open answer, white collar worker.

Critique towards the current state of competence development related to competence development or lack thereof in general. Many noted that as the core competences have not been defined clearly enough there is no common direction to be headed towards. Furthermore, many wished for a more systematic approach to competence development. Indeed, in addition to creating a shared understanding of the strategy and defining

development needs on the team level, development plans should also be made on the individual level. These plans and activities should then be better linked to career advancements. Moreover, the questionnaire answers also showed that while others felt the flow of information inside the unit was good, there was still a need for better knowledge sharing and intra-organizational cooperation. Especially R&D was mentioned in terms of possible source of learning, as interestingly also mentioned in the theory part of the study as one of the main sources of information. Furthermore, the need for better customer knowledge was apparent. In fact, as the business results rely on customers greatly it is easy to argue that more attention should be paid to learning from customers. And as all of the departments contribute to customer satisfaction with their efforts proper customer knowledge should not be limited to only the departments working most closely with them. Similarly to the discussions in the interviews, time and project pressures were present in the questionnaire answers as well.

“I haven’t encountered any competence development in this organization during past six years.” Open answer, white collar worker.

“Hard to name anything. I guess the attitude and presumption is a little bit like; but you guys already know all kinds of things. Everyone is named an expert in speeches.” Open answer, white collar worker.

“Perhaps competence development is not discussed about enough or it’s not that clear as a concept. Clear strategy is missing or it hasn’t been communicated clear enough.” Open answer, white collar worker.

“Competence development needs to be based on a plan. First one needs to think about the development targets and then decide on the best practices that get you to the target.” Open answer, white collar worker.

“Learning from each other for example SAP, procurement. Setting common priorities.” Open answer, white collar worker.

“In addition to giving tasks we absolutely need much more guidance and feedback. Then we can develop the right things independently as well. Maybe one could say it’s lack of mentoring.” Open answer, white collar worker.

“Resistance to development, in other words, the will to follow old methods, even though there’d be a need to develop the operations of a department. Managers don’t always support the career development possibilities of their subordinates.” Open answer, white collar worker.

Business unit strategy was also present in a few questionnaire answers illustrating the need for more and better communication on all organizational levels.

“The connection between the business unit -> function/process -> department is lacking.” Open answer, white collar worker.

“Identifying the core competences and the Group’s strategy. Do we want to be a product factory or a provider of solutions, is the point of view production or customer-oriented. What is the capability that separates us from the competition? Technical knowhow, manufacturing knowledge, logistics, marketing channels, customer-orientation or what? The emphasis between things and core competences. One of these is always more fundamental than others. Core competences form an extensive network that should be in tune with the company’s, business unit’s, department’s, and team’s targets and strategies.” Open answer, white collar worker.

There were a couple of comments that criticized the training budget and that it should be able to cover seminars and trainings outside Europe as well, but the focus was generally more turned to the non-costly methods. In fact, from the questionnaire answers there was a more evident need for better planning of development activities both in short and long term, more feedback and guidance to support on-the-job learning, and better opportunities for knowledge sharing. Therefore, instead of money the main concern currently in terms of competence development is the other scarce resource, time. Employees hoped for being able to use more time on development activities which could mean rearranging some tasks or building buffers into hectic project schedules. Managers were hoped to use more time on planning and selecting development methods, taking the time to guide and support learning, and creating forums for discussing and sharing knowledge. The answers laid heavy pressure on the managers to plan, organize, and lead competence development. In this regard, it is extremely positive that the interviewed managers did seem to view competence development as part of their managerial roles instead of a job for someone else. Already acknowledging their part in it would suggest they would take the criticism and suggestions constructively instead of neglecting them.

6.3. Different development methods

The questionnaire dealt mainly with different development methods. 12 different methods were listed and the employees were asked to rate their usefulness in core

competence development. Methods were to be rated on a scale from 1 to 5, 1 being not useful at all and 5 highly useful. It was also possible to comment on each method. The methods listed in the questionnaire were: *training programs, going through what was learned in training in team meetings, further studies, getting to know the tasks and jobs of other people in the same department, getting to know the tasks and jobs of other departments, seminars, courses on current topics, fairs, reading materials concerning one's own expertise (magazines, websites...), going over job related problems in team meetings, on-the-job learning and participating in development projects*. The questionnaire also included the possibility to name other methods as well.

Taking a look at all the ratings *On-the-job learning* was found to be the most useful development method followed by *Going over job-related problems in team meetings* and *Reading*. Table 3 shows the average ratings for all the development methods listed in the questionnaire. Frequency tables are also presented for each development method individually as to better illustrate how the ratings were divided.

Table 3. Rankings of the development methods.

Development Method	Mean	Std. Deviation	Skewness	Kurtosis
On-the-job learning	4,09	0,87	-1,18	2,06
Going over job-related problems in team meetings	3,70	1,05	-0,61	-0,05
Reading	3,65	0,94	-0,45	0,03
Training programs	3,61	0,92	-0,42	0,06
Development Projects	3,58	0,91	-0,24	0,06
Courses on current topics	3,44	0,85	-0,44	1,19
Further studies	3,30	1,03	-0,44	-0,40
Getting to know other people's jobs from the same department	3,30	0,84	-0,07	-0,75
Getting to know other people's jobs from other departments	3,26	0,99	0,12	-0,60
Seminars	3,07	1,03	-0,14	-0,43
Going through what was learned in training in team meetings	2,91	1,02	0,18	-0,77
Fairs	2,72	1,00	0,04	-0,26

On-the-job learning

On-the-job learning was ranked as the most efficient development method in core competence development for the respondents. Open comments also supported the

importance of on-the-job learning as the main competence development method. It was, however, criticized about being a fairly slow method for development. Furthermore, many wished for a more systematic approach to on-the-job learning and feedback to support it. The skewness and kurtosis values of On-the-job learning emphasize the perceived importance of it as a development method. In fact, 49,1% of the employees rated it as 4, and in third of the answers it was evaluated as a 5. The frequencies of ratings are presented in Table 4.

“In my opinion the most important part of core competence development. When you solve problems by yourself a more profound understanding develops.” Open answer, white collar worker.

“The most important of them all. This job can’t be learnt straight from school books but in addition to the theoretical background practice teaches a lot.” Open answer, white collar worker.

Table 4. Frequency table: On-the-job learning.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1,8	1,8	1,8
2	2	3,5	3,5	5,3
3	7	12,3	12,3	17,5
4	28	49,1	49,1	66,7
5	19	33,3	33,3	100,0
Total	57	100,0	100,0	

The slowness of the method was also brought up in the theory part of the study. In regards to making learning faster the theory on learning would suggest using all of the styles of learning in Kolb’s learning cycle. In addition to making learning faster, this would also make it more efficient. In regards to theory on the actual on-the-job learning the slowness was noted as being something that should be expected and accepted. Furthermore, the theory emphasizes the importance of proper planning when using the method, and, as also noted in the empirical findings, the importance of multi-source feedback. Having ranked first and the literature on individual and collective learning emphasizing the importance of combining informal and formal learning which on-the-job learning is optimal for, it should be focused on more.

Going over job related problems in team meetings

Going over job related problems in team meetings was ranked the second best method in developing core competences. Comments on it highlighted especially its function in sharing knowledge and experience, and deepening the understanding of issues. Only 7 people rated Going over job related problems in team meetings as 1 or 2. The main criticism for it was that it does not currently work as efficiently as it should and could. Therefore, the results clearly emphasize the need for managers to focus on the agenda and discussions in team meetings. Managers might also benefit from improving their facilitating skills more especially when the importance in of knowledge sharing is so highly emphasized in theory. The frequencies of ratings are presented in Table 5.

“Interaction, conceptualizing the problem helps in finding the solution, problem ”solves itself” when you tell it other.” Open answer, white collar worker.

“Too little of things related to this is gone through in general.” Open answer, white collar worker.

“Usually, a solution that you had never even considered can be found in a group.” Open answer, white collar worker.

“Why do the same mistake again.” Open answer, white collar worker.

Table 5. Frequency table: Going over job related problems in team meetings.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	2	3,5	3,5	3,5
2	5	8,8	8,8	12,3
3	15	26,3	26,3	38,6
4	21	36,8	36,8	75,4
5	14	24,6	24,6	100,0
Total	57	100,0	100,0	

Taking also into consideration the apparent importance of knowledge sharing in the literature it would seem that team meetings should be one of the critical focus points for the managers. Keeping in mind the requirements for helpful and fruitful discussions, i.e. explorative discussions, team meetings are an easy way of beginning creating a more open and supportive culture for knowledge sharing and interactive reflection. However, if the company culture has traditionally emphasized hard results instead of the value of softer ones, such as knowledge sharing and discussion, this could also prove to be fairly

troublesome. Therefore, managers could benefit from attending trainings on the matter, and try and improve their facilitating skills as to ensure fruitful instead of time-wasting discussions.

Reading

Materials on one's own expertise were noted to provide good information about new innovations and technologies. They were also found easy to access. A few comments were, however, made about them not being too profound in providing knowledge and that there is hardly ever time to spend reading. However, in addition to being fairly inexpensive and not too time-consuming a method, reading was also ranked high in the result. For those reasons one might stand to argue that reading should be considered a valuable method for developing competence, and that more resources, i.e. in terms of source materials and time, should be invested in it. Also, simply acknowledging it as a development method might allow for better usage of it. The frequencies of ratings are presented in Table 6.

"Is important because things develop so fast." Open answer, white collar worker.

"If only there was more time one could get more out of these." Open answer, white collar worker.

Table 6. Frequency table: Reading.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1,8	1,8	1,8
2	5	8,8	8,8	10,5
3	17	29,8	29,8	40,4
4	24	42,1	42,1	82,5
5	10	17,5	17,5	100,0
Total	57	100,0	100,0	

Reading is also mentioned in literature as bringing new insights into thinking and interestingly there were a comment made in the open answers about Google being a software developer's best friend. Even if the comment does not strictly define using Google as widening the thought patters of the respondent an assumption could be made

that it is used to find solutions and new ways of approaching a problem or a task. And if it does provide a faster or different resolution to an issue why not support its use?

Training programs

73,7% of the answer ranked Training programs as a 3 or 4 in terms of their usefulness in core competence development. The main criticism toward them was about them being too generic and not specific enough, a possible weakness also noted in the literature. There were also concerns about the employees not really being able to link training programs to the actual work and careers in general. In supporting the theory part of the thesis, while training courses might not be best suited for core competence development they were noted to work well in updating skills and meeting colleagues. Their efficiency should and could be improved by linking the training courses more into the actual work as well and allowing for the full Kolb's learning cycle to take place; i.e. also including experimenting, combining the new theory with practice and reflecting on the newly acquired information. The frequencies of ratings are presented in Table 7.

“Nothing being really offered that suits our needs.” Open answer, white collar worker.

“You can rarely apply the skills learned in training to a currently running project.” Open answer, white collar worker.

“Would be good to have a development plan in regards to future tasks. And respectively training should be such that its content could be applied in one's own work.” Open answer, white collar worker.

“Beneficial for meeting people working in similar positions.” Open answer, white collar worker.

Table 7. Frequency table: Training programs.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1,8	1,8	1,8
2	5	8,8	8,8	10,5
3	18	31,6	31,6	42,1
4	24	42,1	42,1	84,2
5	9	15,8	15,8	100,0
Total	57	100,0	100,0	

Indeed, focusing on the content of the trainings more, and making plans for allowing the lessons learned to be tried out also in practice would increase and actual and perceived value of trainings. Combining training with other forms of development, especially the informal ones would bring out the most benefits. More importantly, as training courses were ranked fourth managers should clearly rethink their development strategy and remove training courses as their first and only choice in development methods when planning actions for core competence development. Surely they are the easiest and most simple solution to learning new things, but as stated both in the theory part of the study and in the empirical findings training courses are not the most efficient method for developing core competences.

Development projects

Development projects' importance in learning was widely acknowledged and a few comments were made about them being the only thing that can teach about the future. It was also pointed out that they offer the possibility to influence the outcome of the project if one can be involved in them from the beginning. They were, however, found to usually be fairly time consuming raising the lack of time once again as one of obstacles in developing core competences. The frequencies of ratings are presented in Table 8.

“Developing something new in a group encourages/motivates to learn new things (learning on the job).” Open answer, white collar worker.

“A very good way to learn new, testing limits, creating new, learning through success and failure” Open answer, white collar worker.

Table 8. Frequency table: Development projects.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1,8	1,8	1,8
2	4	7,0	7,0	8,8
3	22	38,6	38,6	47,4
4	21	36,8	36,8	84,2
5	9	15,8	15,8	100,0
Total	57	100,0	100,0	

As development projects are listed as one of the most efficient methods in the theory part of the study and they did rank fifth in the empirical findings they should be invested in more. Furthermore, development projects should not only be limited to new product development projects but should entail projects on other areas as well that need improvement. As with many other methods, proper planning, managerial support, and feedback are in the center of making this development method as efficient as possible. Also, development projects should not just be about finding a solution to a problem or developing a specific problem but instead should also be framed as a learning opportunity for the participants.

Courses on current topics

The kurtosis value for courses on current topics implies a heavy emphasis in some ratings and in fact 84,2% of respondents evaluated it as a 3 or 4 in their answers. According to the ratings courses on current topics are a fairly useful method. However, comments were made about Courses on current topics not being useful in core competence development but only for updating skills and knowledge. In other words, they do not bring about strategic advantages but do ensure correct practices. In a sense they do then support business strategy but do not offer additional strategic value for it, and would thus focus more on maintaining the basic skills required for efficient operations. Furthermore, a couple of comments made were to suggest that their usefulness would vary according to job functions. The frequencies of ratings are presented in Table 9.

“In our role we need to know about the future trends not current topics if we want to be successful.” Open answer, white collar worker.

“Courses on such topics where fast changes happen are useful. Such as standards.” Open answer, white collar worker.

“For example training on new product released necessary, for R&D however a “nuisance”.” Open answer, white collar worker.

Table 9. Frequency table: Courses on current topics.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	2	3,5	3,5	3,5
2	2	3,5	3,5	7,0
3	27	47,4	47,4	54,4
4	21	36,8	36,8	91,2
5	5	8,8	8,8	100,0
Total	57	100,0	100,0	

Further studies

Further studies as a method was commented on the most in the open answers. They were found to be extremely useful; as long as they do not entail a whole degree. A higher university degree was for example perceived as too broad in terms of the courses included and thus not that useful in especially core competence development. Many also noted that the employer does not support further studies. Time especially was yet again an issue. As further studies did rank fairly high as a method and there were so many comments on it managers ought to bring it up with their employees for example in the PDA discussions. In addition to going over the ABB provided incentives for independent studying managers could make arrangements of their own for making further studies possible for their employees, e.g. by rearranging tasks and workloads. Indeed, as further studies were mentioned in the literature for the thesis as a fairly flexible method that by itself entails internal motivation to learn they should be supported more. The frequencies of ratings are presented in Table 10.

“Further studies especially in IT would be especially important in order to keep on with development. Unfortunately, however, this is independent action that the employer does not really support.” Open answer, white collar worker.

“In R&D a suitable degree/ further studies is a good way to develop competence.” Open answer, white collar worker.

“This would be good if only the employer would make time for it.” Open answer, white collar worker.

“Otherwise you don’t learn anything new.” Open answer, white collar worker.

“Content is essential. Important when it relates to the work substantially.”
Open answer, white collar worker.

Table 10. Frequency table: Further studies.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	3	5,3	5,3	5,3
2	10	17,5	17,5	22,8
3	16	28,1	28,1	50,9
4	23	40,4	40,4	91,2
5	5	8,8	8,8	100,0
Total	57	100,0	100,0	

Getting to know other people's jobs from the same department

Getting to know other people's jobs from the same department was perceived useful as it allows for better understanding of others' areas of expertise thus enabling better communication. It also aids in resourcing, but does not necessarily offer strategic advantages in terms of developing core competences. Interestingly though, no one rated it as 1, not useful at all. However, many noted that they are already fairly familiar with each other's tasks and would therefore not perceive it as a useful method in regards to their core competences. In that regard, getting to know other people's jobs from the same department could be considered as serving the basic skills of employees and not the competitiveness-bringing ones. The frequencies of ratings are presented in Table 11.

“Creates a wider range, supports the whole, learns to communicate about things, to bring out the essential.” Open answer, white collar worker.

“Just to know roughly what type of work others do.” Open answer, white collar worker.

“We have a very little department so for backups it's important to know what others do.” Open answer, white collar worker.

Table 11. Frequency table: Getting to know other people's jobs from the same department.

	Frequency	Percent	Valid Percent	Cumulative Percent
2	11	19,3	19,3	19,3
3	21	36,8	36,8	56,1
4	22	38,6	38,6	94,7
5	3	5,3	5,3	100,0
Total	57	100,0	100,0	

Getting to know other people's jobs from other departments

Getting to know other people's jobs from other departments' main credit was increasing the understanding of the big picture; how everything relates to everything. It was also seen as an efficient way of sharing knowledge. There were however some criticism about it not being that important for core competences and about its time consuming nature. As many emphasized the importance of understanding the big picture but shied away from knowing other's tasks too deeply managers might want to bring guest speakers in on their team meetings. Presenting their own department or function these guest speakers could tell about their work and how their work is impacted by the actions of the team. This would then increase the employees' system view of operations and while not strictly affecting core competences could improve operations. The frequencies of ratings are presented in Table 12.

"Our work influences the work of also other departments so it would be extremely important to know we are doing things right." Open answer, white collar worker.

"If these jobs touch on closely to own work then maybe. Otherwise there's enough to learn in our own jobs." Open answer, white collar worker.

"It would be important to get the whole picture about how your own part shows to the end user. And to learn to understand what things are essential and what not." Open answer, white collar worker.

"In this job extremely beneficial because I have to cooperate with different functions." Open answer, white collar worker.

"Important! To understand more about what things affect the next stage in the order-delivery chain." Open answer, white collar worker.

Table 12. Frequency table: Getting to know other people's jobs from other departments.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1,8	1,8	1,8
2	12	21,1	21,1	22,8
3	22	38,6	38,6	61,4
4	15	26,3	26,3	87,7
5	7	12,3	12,3	100,0
Total	57	100,0	100,0	

Furthermore, increasing knowledge of who does what in the organization enhances efficiency by lowering the threshold of asking other people for advice and opinions. Indeed, as discussed in the theory part intra-organizational cooperation facilitates efficiency and collective learning. It is also a method for getting acquainted with others in the company and creating better means of communication and language. It is also an important factor in knowledge sharing. Finally, learning about what others do does not have to be too thorough but a superficial understanding of jobs and processes will do fine in creating a mind map of who to turn to when faced with different situations.

Seminars

Seminars were commented on being too general and that the topics covered can usually be found on the Internet as well. Positive aspects mentioned about seminars were the chance to meet other top experts of a certain area, the possibility of networking, and the opportunity to broaden thinking through new points of view. Similar benefits for seminars were also identified in the literature. The frequencies of ratings are presented in Table 13.

“For too big groups, as in, too hard to get to tell the needed issues at a required level.” Open answer, white collar worker.

“Needed to see what is going on in the market.” Open answer, white collar worker.

“One learns generally always something new in these things or at least is refreshes the memory.” Open answer, white collar worker.

Table 13. Frequency table: Seminars.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	4	7,0	7,0	7,0
2	12	21,1	21,1	28,1
3	21	36,8	36,8	64,9
4	16	28,1	28,1	93,0
5	4	7,0	7,0	100,0
Total	57	100,0	100,0	

Going through what was learned in training in team meetings

Going through what was learned in training in team meetings was rated second to last. It was also the method most skewed to the left with 35,1% of respondents rating it as 2 on a scale from 1 to 5. The biggest downside of this activity is according to the questionnaire answers that it takes up too much time. Few comments were also made about how it does not work currently but that it might be useful if properly managed. Again, focus was turned to the managers' abilities to lead discussions and facilitate knowledge sharing. However, although sharing lessons learned got such a low score on the rating many positive aspects of it were still found. Most of them related to sharing knowledge and increasing understanding on issues. The frequencies of ratings are presented in Table 14.

"The team leader should have an idea how to conduct this efficiently so that it won't be just chatting." Open answer, white collar worker.

"You can't always connect all of the things to practice by yourself. In addition, in meetings you hear other points of view to the issue." Open answer, white collar worker.

"If the things learned benefit the whole team then then." Open answer, white collar worker.

"Could be good but we haven't done this." Open answer, white collar worker.

"Learning is more efficient when you attend a training personally. If the knowledge comes from some other person the knowledge might change." Open answer, white collar worker.

“You don’t have time to attend all trainings yourself and it would be useful to share the most important lessons.” Open answer, white collar worker.

Going through what was learned in team meetings is also closely related to reflection and collective learning. Indeed, instead of just having employees repeat or summarize the lessons learned the individual and the team might benefit from a short description about how and why the topics covered in the training course could be implemented in their work or what new insights they offered to daily operations or practices. This could also be enhanced by getting the team members views on the presented ideas and reflect on them further.

Table 14. Frequency table: Going through what was learned in training in team meetings.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	3	5,3	5,3	5,3
2	20	35,1	35,1	40,4
3	16	28,1	28,1	68,4
4	15	26,3	26,3	94,7
5	3	5,3	5,3	100,0
Total	57	100,0	100,0	

Fairs

Fairs ranked last in comparison to other listed methods. Also, only two respondents rated fairs as 5, highly useful. According to the comments fairs do not provide for deep competence development, and are often pointless and too general. Even though they are a good forum for hearing about latest innovations they are not beneficial in regards to core competences. The frequencies of ratings are presented in Table 15.

“Scratches the surface. Google knows better :)” Open answer, white collar worker.

“You meet people from same area of expertise and see new products but it doesn’t affect core competence in my opinion.” Open answer, white collar worker.

“Innovations, broad knowledge of one’s own area.” Open answer, white collar worker.

“For good motivation and you get some little new knowledge out of them too.” Open answer, white collar worker.

Table 15. Frequency table: Fairs.

	Frequency	Percent	Valid Percent	Cumulative Percent
1	7	12,3	12,3	12,3
2	15	26,3	26,3	38,6
3	24	42,1	42,1	80,7
4	9	15,8	15,8	96,5
5	2	3,5	3,5	100,0
Total	57	100,0	100,0	

Development method rankings by different departments

Even though the research questions related strongly to core competence development in general it could be beneficial to take a look at the different development methods and how their rankings vary across different departments. Besides, there have implications about a need to individualize the development efforts more. Therefore, providing insight into the variations of rankings can allow the managers to understand why there cannot be a simple one-size-fits-all answer to core competence development. Departments and the number of answers from these departments included in this research are listed in Table 16. The department specific answer percentages are in the lines with the overall answer percentage with only Marketing and Sales falling behind a bit. Each development method and how they rank in relation to the different departments is presented in Appendix 3. In addition to listing the means and standard deviations for the development methods within each department, the lowest and highest ratings are also presented as to provide more insights into the ratings.

Table 16. Respondents per departments.

Department	Total number of answers	Total number of employees	Answer percentage
Supply Management	3	10	30
Product Management	6	15	40
Channel Support	7	20	35
Marketing & Sales	7	36	19
R&D	34	94	36
Total	57	174	33

Supply Management

According to the questionnaire results Supply Management would benefit the most from Going over job related problems in team meetings. Participating in development projects and Getting to know other people's jobs from other departments are highly important for them also. These rankings emphasize the need for increased knowledge sharing and cooperating inside the business unit, not only inside their own department. The leading method in the overall ratings, on-the-job learning, was ranked seventh in for the supply management department. Fairs and Going through what was learned in training in team meetings were ranked the lowest in their answers. The minimum and maximum values, as well as means and standard deviations are presented in Table 17. The respondents were fairly unanimous in their ratings with the biggest difference only in Going through what was learned in training in team meetings.

Table 17. Supply management.

	Minimum	Maximum	Mean	Std. Deviation
Going over job-related problems in team meetings	4	5	4,67	,577
Development Projects	4	5	4,33	,577
Getting to know other people's jobs from other departments	3	5	4,33	1,155
Courses on current topics	3	5	4,00	1,000
Further studies	4	4	4,00	0,000
Getting to know other people's jobs from the same department	3	5	4,00	1,000
On-the-job learning	3	5	3,67	1,155
Reading	3	4	3,67	,577
Training programs	3	4	3,67	,577
Seminars	3	4	3,67	,577
Going through what was learned in training in team meetings	2	5	3,33	1,528
Fairs	3	3	3,00	0,000

Product Management

According the Product Management specific ratings they would benefit the most from Seminars, Going over job related problems in team meetings, and On-the-job learning. Interestingly Seminars is ranked first while for other departments it is among the three

least useful methods. This signals the stronger need for product management to focus more on what is going on outside the company as well, and maybe form a wider understanding of the markets, competitors, and customers. Going through what was learned in training in team meetings got the lowest ranking, but also had the biggest range in ratings (see Table 18); some found it highly useful while others not at all useful. Clearly in addition to there being large differences in preferred methods between departments differences can also be found inside the same departments. Hence, it is important to pay attention to finding out the preferred individual styles for learning and plan development actions and methods accordingly. PDA's would be the best forums for finding out what methods interest the employees the most and they might truly resent. Participating in development projects and Getting to know other people's jobs from other departments were also ranked lower than other methods in the questionnaire. In addition to sharing what was learned in trainings, Training programs and On-the-job learning also had bigger standard deviation values and showed most variety in the ratings.

Table 18. Product Management.

	Minimum	Maximum	Mean	Std. Deviation
Seminars	3	5	3,83	,753
Going over job-related problems in team meetings	3	5	3,83	,753
On-the-job learning	2	5	3,83	1,169
Reading	3	4	3,50	,548
Training programs	2	5	3,33	1,211
Further studies	2	4	3,33	,816
Getting to know other people's jobs from the same department	2	4	3,17	,983
Courses on current topics	2	4	3,17	,753
Fairs	2	4	3,17	,753
Getting to know other people's jobs from other departments	2	4	3,00	,894
Development Projects	2	4	3,00	,632
Going through what was learned in training in team meetings	1	5	2,33	1,366

Channel Support

On-the-job learning, Training Programs, and Participating in development projects would seem to be the most useful for Channel Support as illustrated in Table 19. Fairs and Seminars are found the least useful in terms of developing core competences. All of the methods except for On-the-job learning vary in their ratings. Clearly On-the-job learning should be focused on in detail in Channel Support and others methods used to support it according to employee preferences. Indeed, managers could focus their development efforts around on-the-job learning, making proper plans for it, and provide supporting informal and formal methods of learning to enhance it. As the ratings do vary so much, these supporting development methods require individualized attention from the managers.

Table 19. Channel Support.

	Minimum	Maximum	Mean	Std. Deviation
On-the-job learning	4	5	4,29	,488
Training programs	2	5	4,00	1,155
Development Projects	2	5	4,00	1,000
Going over job-related problems in team meetings	2	5	3,86	1,345
Courses on current topics	2	4	3,43	,787
Going through what was learned in training in team meetings	2	5	3,29	1,113
Getting to know other people's jobs from the same department	2	4	3,29	,951
Getting to know other people's jobs from other departments	2	5	3,29	1,113
Further studies	1	4	3,14	1,069
Reading	1	4	3,14	1,069
Seminars	2	4	2,71	,756
Fairs	1	4	2,57	,976

Marketing & Sales

On-the-job learning and Further studies are the most useful development methods for Marketing & Sales followed by Reading and Going over job-related problems in team meetings. Respondents were fairly unanimous about the top 4 methods in their ratings (see Table 20) giving a good idea what methods should be focused on when creating

development plans for the Marketing and Sales personnel. Seminars, Fairs, and Going through what was learned in training in team meetings were found to be the least useful methods. There was also most variety in their ratings.

Table 20. Marketing & Sales.

	Minimum	Maximum	Mean	Std. Deviation
On-the-job learning	4	5	4,14	,378
Further studies	3	5	4,00	,577
Reading	3	4	3,86	,378
Going over job-related problems in team meetings	3	5	3,86	,690
Training programs	2	5	3,71	,951
Development Projects	3	5	3,71	,756
Getting to know other people's jobs from the same department	2	5	3,57	,976
Getting to know other people's jobs from other departments	2	5	3,43	,976
Courses on current topics	3	4	3,43	,535
Going through what was learned in training in team meetings	1	4	3,00	1,155
Fairs	1	4	2,86	1,069
Seminars	1	4	2,71	,951

Research and Development

On-the-job learning is clearly the most useful method for core competence development in the R&D department as illustrated in Table 21. Also, Reading, Training programs, Going over job-related problems in team meetings, and Participating in development projects are ranked high in their answers. Seminars, Fairs, and Going through what was learned in training in team meetings were ranked as the least useful methods. It should be noted, that the R&D respondents show the most diversity in their answers thus not offering a simple solution for developing the personnel in whole. Surely this could be due to a number of factors such as the sample being larger than for the other departments, or that the department on itself is larger than the others and could thus include more diversity in the employees' job description and their personalities. Whatever the reason, ratings ranging from 1 to 5 on almost all of the development

methods emphasize the need for properly conducted PDA discussions and individualized development plans.

In a sense these results also comply with the shortly mentioned notion about learning environments in individual learning theory. A statement was made that R&D personnel learn in a perceptually oriented environment and in order for efficient learning they require information from multiple sources of data. Furthermore, this would strongly support the notion of the importance of combining multiple and diverse methods of learning and development. In this regard, the results would also entail heavier emphasis on the line managers' duties in enabling, offering, and supporting learning as clearly there is no simple answer for developing R&D personnel, besides the fact that a versatile and all-round approach would yield the best results.

Table 21. Research and Development.

	Minimum	Maximum	Mean	Std. Deviation
On-the-job learning	1	5	4,12	,946
Reading	2	5	3,74	1,053
Training programs	1	5	3,56	,860
Going over job-related problems in team meetings	1	5	3,53	1,107
Development Projects	1	5	3,50	,929
Courses on current topics	1	5	3,44	,927
Getting to know other people's jobs from the same department	2	5	3,21	,770
Getting to know other people's jobs from other departments	1	5	3,18	,968
Further studies	1	5	3,12	1,122
Seminars	1	5	3,03	1,114
Going through what was learned in training in team meetings	1	4	2,88	,880
Fairs	1	5	2,62	1,074

7. CONCLUSIONS

The purpose of the study was to find out *what type of managerial practices and methods best support the core competence development* at the case study organization. The research findings show that the building blocks of efficient core competence development are already present in the organization. These include the top management's interest in developing core competences, the line manager's acknowledging and accepting their role in core competence development, and the employees' need for better development practices. Focus just needs to be paid in making the practices more systematic and effective. Empirical findings allowed for determining shortcomings and areas of improvements in current practices, but also suggestions for improvements. Managerial implications for efficient development practices were also specified within the theoretical framework of the study.

7.1. Answers to research questions

Individual learning is about combining practice and theory and collective learning is about the interplay between tacit and explicit knowledge. Core competences are the result of this interplay. As core competences are a collective asset focusing on merely developing the individual employees is not enough. Therefore, both individual and collective learning should be the focal concern in core competence development. Also, as the core competences are to be defined by top management they need to be clearly defined and communicated to the line managers so that they can then efficiently pass down the message to their employees. Managers, as they know their employees the best, are then to define the development methods and practices best suited to fit the defined competences and the individual employees and teams. Furthermore, line managers are in a central role in supporting and leading the development activities for which they require the support of top management. Finally, the company culture and work environment should not be neglected as it can either support or hinder development efforts. The linking between all the factors is illustrated in Figure 7.

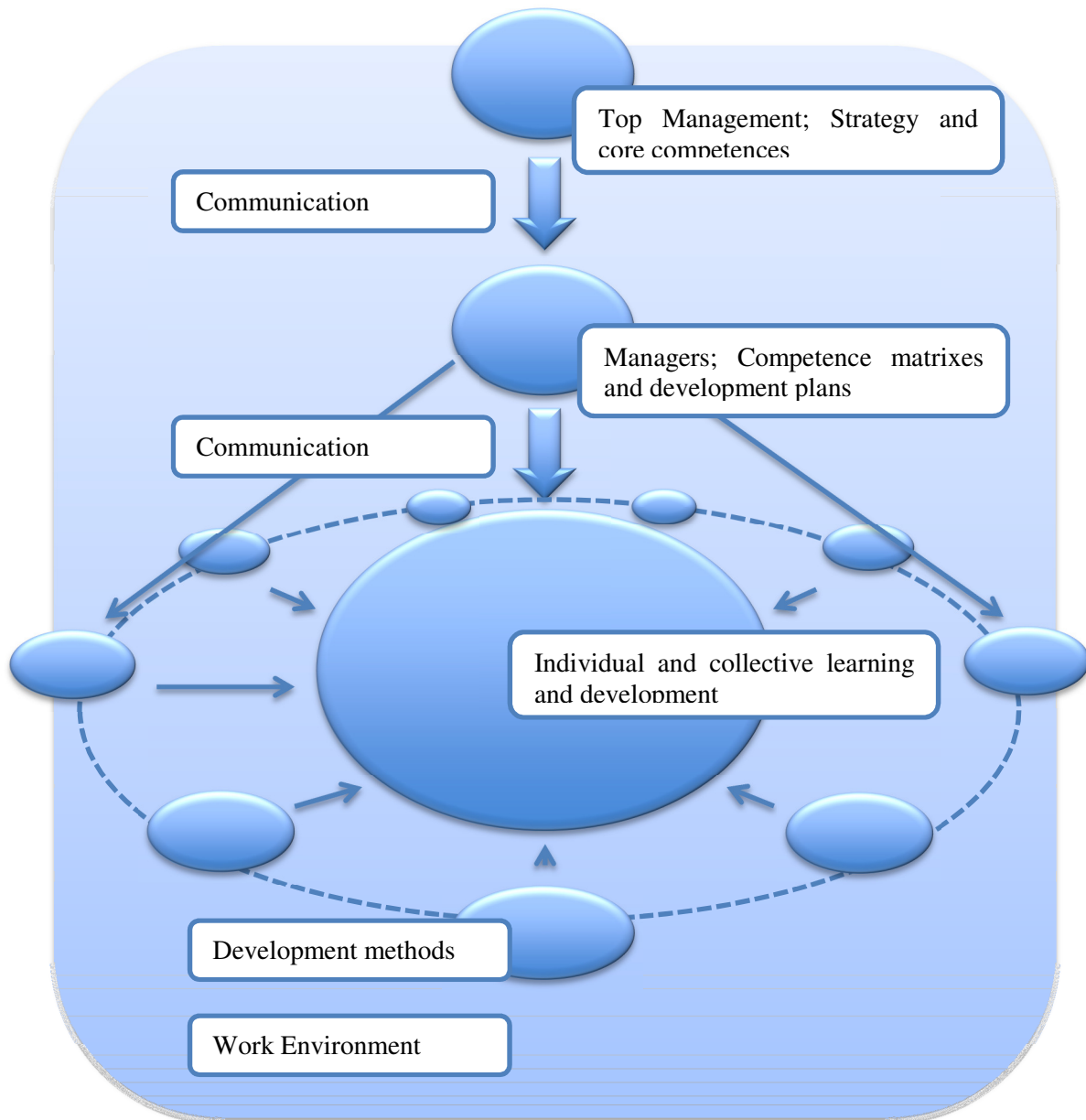


Figure 7. Core competence development.

In addition to defining company strategy the top management should also define the core competences that support this strategy and drive it. Core competences are to clearly defined especially in terms of what they entail, how they link to the company strategy, what is required for them in terms of learning, what type of methods might enhance develop these competences, and when should the learning targets be met. Shortly put, they are to be presented and discussed about so that a shared understanding of them can be formed. Too vague descriptions do not allow for efficient development and leave

much to the individual manager's imagination about what was meant with them. This can then result in flawed and divergent impressions about the competences. Also, giving a too detailed a description can hinder the results as clearly stated by the interviewed managers. In the interviews managers were, in fact, quick to note that too detailed a description would not be beneficial as top management is in a sense too far from the actual work. Also, the line managers are rightfully expected to know their teams better, the current competence of their team, and the learning styles of individual team members. All in all, after having defined the core competences and giving clear guidelines and explanations about them top management should leave the actual development to the line managers.

As illustrated in Figure 7 line managers are in a center role in competence development. In fact, they are the strategic link between company strategy and the employee learning and development. Therefore, top management communication has to be clear enough that the line managers can then communicate it further to their employees and promote creating a shared vision. In addition to the strategic direction about which way to take their departments and teams, managers need support from top management. Indeed, top management support and encouragement towards developing competences is crucial. It is important to note that while line managers are in a central role in developing the core competences of their employees there are other factors that affect it as well, such as top management actions and peer support. Indeed, top management can aid in developing and creating a culture that commits to and fosters development not merely hard business results. The empirical findings would, however, support limited involvement from top management to the actual development actions. In fact, many managers stated that top management should trust the line managers in selecting the development methods and deciding on the actual practices. This would entail the line managers accepting competence development as part of their managerial role. The fact that the majority of managers acknowledged they should do more in terms of planning for development is already an implication that the managers are ready to take on more responsibility in employee development. For enhancing this top management could more strongly build employee development into the managerial roles so that the managers feel more comfortable and ready in encouraging their employees to learn, and support and coach them in their development.

After having discussed the core competences through with top management the managers should then define those in terms of what they mean in their areas of responsibilities. Competence matrixes both on team and individual levels as stated are a

useful tools when defining the current state of competence and the gap between current and required. Without a thorough analysis of the current situation no efficient plans can be made for development. Also, how can the development be measured if the starting point is not clear enough? The learning and development needs along with the strategic objectives behind them should then be communicated to the employees as understanding the objectives is as important for the employees as it is for the managers. Furthermore, linking individual and collective learning targets with the strategic goals of the company increases commitment to the targets. Finally, individual development plans should be made and as with the core competences in general, the learning and development needs need to be communicated in terms of the reasoning behind them, with specific and attainable targets, and tied to a schedule.

As stated, managers are also in a central role in implementing learning and development practices and selecting the development methods that best suit the employees. From the empirical findings it can be noted that even though there were a couple of exceptions who already seemed to have a range of development tools in their pockets for the majority the area of competence development was too big and abstract an area to fully grasp. Relying on mostly on training courses and ABB Group dictated practices the managers lacked a proper starting point for further development. In choosing and developing the practices managers should take into consideration both the individual and collective learning processes and try and link them together. As noted in the theoretical framework learning can be enhanced and increased by using various development methods, preferably a combination of both informal and formal methods. More importantly, managers should focus on creating continuous learning opportunities instead of just merely relying on the annual PDA discussions and formal training courses. Indeed, there should be a move from the traditional training and development mindset towards a more learning and development mindset.

Interestingly also, many of the introduced methods seem to overlap and complement each other. Hence using them in conjunction with each other should make the learning experiences more powerful. Furthermore, as core competences are defined first and foremost for the organization managers ought to think about the entire organization even in the individual development plans. Core competences are a shared good not relying on a single employee or team or department. Therefore, in regards to job rotation for example, the managers should encourage it instead of not encouraging it in fear of losing a competent employee. Increasing the knowledge base and widening the understanding of an employee through job rotation benefits the entire organization,

promotes trust in employees, and perceived possibilities and even employee motivation. In fact, if the employees are required to come up with more innovative and better solutions and products, can they do this by only focusing on their own individual single-sided area of experience?

In addition to being in a central role in defining these methods, offering them, enabling them, supporting them, and integrating them into the employees work and work schedules is an important part of developing competences efficiently and effectively. Finally, people do not learn in a vacuum and merely accept new knowledge as it is. People learn in a social context, in an environment, that can aid, support, or hinder learning. All of the players affect it from top management to line management and peers with their actions and attitudes towards learning and especially towards the center parts of collective learning; reflection and knowledge sharing. Furthermore, various managerial implications for enhancing learning and development have been made along the thesis but they all come down to these things; systematic planning and execution, collaborating and combining multiple sources of information, reflection, and sharing knowledge. Planning what should be developed and how lays the foundations for development. Naturally these plans should be formed according to accurate measurements or assessments of current and optimal levels of competence. Combining multiple sources of information relates to the informal and formal learning, and explicit and tacit knowledge, but also to multiple sources of feedback on behavior and progress. Especially current research seems to value reflection highly in developing experts. In fact, based on its presented merits it would be beneficial to include reflection to even everyday work and promote it as valuable tool in development. Specifically project work could benefit from it, and reflective practices should be included in projects already in the planning stage and not only as suggestion for behavior along the project but actually as scheduled events. Finally facilitating discussion and knowledge sharing in general is essential. Indeed, managers should encourage curiosity, inquiry, and diversity of thought and encourage people to challenge, innovate, and experiment. In fact, even in the empirical findings both the managers and the employee noted that the status of knowledge sharing should and could be better.

In conclusion, the current state of competence development in the case study organization is average, both from the managers' and the employees' point of view. However, top management efforts in defining the core competences and investing in the development initiatives show concern but also commitment to improving the situation. Furthermore, managers' willingness to contribute to the development and commitment

to their role as driving the development was evident in the interviews. It could also be argued that as there was fairly much dissatisfaction stemming from the employees side they would be receptive to improvements on the area. The situation therefore is not a bad starting point for more systematic and improved development practices.

7.2. Limitations of the study and suggestions for further research

As this study has been case study concerning only white collar workers in five departments in a single business unit the research findings cannot be generalized. Even taking the findings at face value in different departments can be troublesome. However, they can provide a valuable point of reference for planning for development activities for other white collar workers. Furthermore, even if the focus of the study has been on developing core competences, the development methods and practices listed in the study provide a useful guideline when developing other skills and competences. Although, in this case the rankings of the methods would probably not be the same. It could be interesting though to study how these findings would compare to similar functions in other ABB business units.

Also, as this study was conducted to provide managers with tools for developing core competences it can be seen as a starting point for creating more efficient practices for learning and development. Adding to this, it might be useful to research the potentials of a learning organization and how transforming the current organization to one could happen.

REFERENCES

- ABB Inside (2012a). *Our profile* [online]. ABB. Available from World Wide Web: <<http://fi.inside.abb.com/cawp/gad00091/1df7e46b9d32de33c2256b9000426ea2.aspx>>.
- ABB Inside (2012b). *Medium Voltage Product: Profulimme* [online]. ABB. Available from World Wide Web: <<http://fi.inside.abb.com/cawp/gad00335/ff00138cde86e865c2256d9c003b51e1.aspx>>.
- ABB Group (2012). *About ABB* [online]. ABB. Available from World Wide Web: <<http://new.abb.com/about>>.
- Abrams, L., R. Cross, E. Lesser & D. Levin (2003). Nurturing interpersonal trust in knowledge-sharing networks. *Academy of Management Executive* 17:4, 64-77.
- Allwood, J. & W. Lee (2004). The impact of job rotation on problem solving skills. *International Journal of Production Research* 42:5, 865-881.
- Anantatmula, V. (2009). Designing Meaningful KM Processes to Improve Organizational Learning. *Trends in Information Management* 5:2, 219-245.
- Andrews, K. & B. Delahaye (2000). Influences of Knowledge Process in Organizational Learning: The Psychosocial Filter. *Journal of Management Studies* 37:6, 797-810.
- Antonioni, D. (2000). Leading, Managing, and Coaching. *Industrial Management* 42:5, 27-33.
- Ashton, D. (2004). The impact of organisational structure and practices on learning in the workplace. *International Journal of Training & Development* 8:1, 43-53.
- Ballé, M., J. Chaize, F. Fiancette & E. Prévot (2010). The Lean Leap: Lean as a Learning Accelerator. *Reflections* 10:3, 1-16.

- Barker, R. & M. Camarata (1998). The Role of Communication in Creating and Maintaining a Learning Organization: Preconditions, Indicators, and Disciplines. *Journal of Business Communication* 35:4, 443-467.
- Berings, M., R. Poell & P. Simons (2008). Dimensions of On-the-Job Learning Styles. *Applied Psychology: An International Review* 57-3, 417-440.
- Bhanushali, S. (2010). *Managing twentyfirst century organisation*. Mumbai: Himalaya Publishing House. ISBN 978-93-5024-540-8.
- Brocato, R. (2003). Coaching for Improvement: An Essential Role for Team Leaders and Managers. *Journal of Quality & Participation* 26:1, 17-22.
- Bunduchi, R. (2009). Implementing best practices to support creativity in NPD cross-functional teams. *International Journal of Innovation Management* 13:4, 537-554.
- Cabrera, Á., W. Collins & J. Salgado (2006). Determinants of individual engagement in knowledge sharing. *Internatinal Journal of Human Resource Management* 17:2, 245-264.
- Cabrera, E. & A. Cabrera (2005). Fostering knowledge sharing through people management practices. *International Journal of Human Resource Management* 16:5, 720-735.
- Campion, M., L. Cheraskin & M. Stevens (1994). Career-related Antecedents and Outcomes of Job Rotation. *Academy of Management Journal* 37:6, 1518-1542.
- Cheng, E. & I. Hampson (2008). Transfer of training: A review and new insights. *International Journal of Management* 10:4, 327-341.
- Chien, M.-H. (2004). The Relationship between Self-Directed Learning Readiness and Organizational Effectiveness. *Journal of American Academy of Business* 4:1/2, 285-288.

- Clark, M., S. Amundson & R. Cardy (2002). Cross-Functional Team Decision-Making and Learning Outcomes: A Qualitative Illustration. *Journal of Business & Management* 8:3, 217-236.
- Clifford, J. & S. Thorpe (2007). *Workplace Learning & Development*. Philadelphia: Kogan Page Limited. ISBN 13-978-0-7494-4633-8.
- Cunningham, I., G. Dawes & B. Bennett (2004). *The Handbook of Work Based Learning*. Burlington: Gower Publishing Company. ISBN 0-566-08541-0.
- Digenti, D. (1999). Collaborative Learning: A Core Capability for Organizations in the New Economy. *Reflections* 1:2, 45-57.
- Edmondson, A. I. & Nembhard (2009). Product Development and Learning in Project Teams: The challenges Are the Benefits. *Journal of Product Innovation Management* 26:2, 123-138.
- Eteläpelto, A. & P. Tynjälä (1999). *Oppiminen ja asiantuntijuus. Työelämän ja koulutuksen näkökulmia*. Helsinki: WSOY. ISBN 951-0-23666-7.
- Facteau, J., G. Dobbins, J. Russell, R. Ladd & J. Kudisch (1995). The Influence of General Perceptions of the Training Environment on Pretraining Motivation and Perceived Training Transfer. *Journal of Management* 21:1, 1-25.
- Galbraith, D. & S. Fouch (2007). Principles of Adult Learning. *Professional Safety* 52:9, 35-40.
- Goffin, K. & U. Koners (2011). Tacit Knowledge, Lessons Learnt, and New Product Development. *Journal of Product Innovation Management* 28:2, 300-318.
- Grönfors, T. (2002). *Työstä oppiminen - Action Learning. Työssä oppiminen - e-learning*. Vantaa: Facile Publishing. ISBN 952-5428-00-1.
- Guglielmino, P. & R. Murdick (1997). Self-directed learning: The quiet revolution in corporate training and development. *SAM Advanced Management Journal* 62:3, 10-18.

- Gunasekara, C. (2003). Project-based Workplace Learning: A Case Study. *SAM Advanced Management Journal* 68:1, 37-49.
- Hawk, T. & A. Shah (2007). Using Learning Style Instruments to Enhance Student Learning. *Decision Sciences Journal of Innovative Education* 5:1, 1-19.
- He, J., B. Butler & W. King (2007). Team Cognition: Development and Evolution in Software Project Teams. *Journal of Management Information Systems* 24:2, 261-292.
- Heikkilä, T. (2005). *Tilastollinen tutkimus*. Helsinki: Edita Prima Oy. ISBN 951-37-4135-4.
- Hirsjärvi, S., P. Remes & P. Sajavaara (2008). *Tutki ja kirjoita*. Keuruu: Otavan Kirjapaino Oy. ISBN 978-951-26-5635-6.
- Høyrup, S. (2004). Reflection as a core process in organisational learning. *Journal of Workplace Learning* 16:8, 442-454.
- Hsieh, H.-F. & S. Shannon (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research* 15:9, 1277-1288.
- Jones, A. & C. Hendry (1994). The Learning Organization: Adult Learning and Organizational Transformation. *British Journal of Management* 5:2, 153-162.
- Julian, J. (2008). How project management office leaders facilitate cross-project learning and continuous improvement. *Project Management Journal* 39:3, 43-58.
- Karlins, M., A. Balfour & E. Hargis (2012). Danger: Competent Workers!. *Advances in Management* 5:3, 64-65.
- Kauhanen, J. (1997). *Henkilöstövoimavarojen johtaminen*. Juva: WSOY. ISBN 951-0-21337-3.
- Kolb, D. (1976). Management and the Learning Process. *California Management Review* 18:3, 21-31.

- Koners, U. & K. Goffin (2007). Learning from Postproject Reviews: A Cross-Case Analysis. *Journal of Product Innovation Management* 24:3, 242-258.
- Koskinen, I., P. Alasuutari & T. Peltonen (2005). *Laadulliset menetelmät kauppatieteissä*. Tampere: Vastapaino. ISBN 951-768-175-5.
- Knuf, J. (2000). Benchmarking the Lean Enterprise: Organizational Learning at Work. *Journal of Management in Engineering* 16:4, 58-71.
- Kumar, S. & G. Thondikulam (2005/2006). Knowledge management in a collaborative business framework. *Information Knowledge Systems Management* 5:3, 171-187.
- Landaeta, R. (2008). Evaluating Benefits and Challenges of Knowledge Transfer Across Projects. *Engineering Management Journal* 20:1, 29-38.
- Lawson, C. & E. Lorenz (1999). Collective Learning, Tacit Knowledge and Regional Innovative Capacity. *Regional Studies* 33:4, 305-317.
- Leslie, B., M. Kosmahl Aring & B. Brand (1997). Informal Learning: The New Frontier of Employee & Organizational Development. *Economic Development Review* 15:4, 12-18.
- Lewis, L., A. Schmisser, K. Stephens & K. Weir (2006). Advice on Communicating During Organizational Change. *Journal of Business Communication* 43:2, 113-137.
- Liao, L.-F. (2008). Knowledge-sharing in R&D departments: a social power and social exchange theory perspective. *International Journal of Human Resource Management* 19:10, 1881-1895.
- Long, C. & M. Vickers-Koch (1995). Using Core Capabilities to Create Competitive Advantage. *Organizational Dynamics* 24:1, 6-22.
- MacNeil, C. (2004). Exploring the supervisor role as a facilitator of knowledge sharing in teams. *Journal of European Industrial Training* 28:1, 93-102.

- Malina, M. & F. Selto (2001). Communicating and Controlling Strategy: An Empirical Study of the Effectiveness of the Balanced Scorecard. *Journal of Management Accounting Research* 13, 47-90.
- Margaryan, A., B. Collis & A. Cooke (2004). Activity-based blended learning. *Human Resource Development International* 7:2, 265-274.
- Mcguire, D., L. Stoner & S. Mylona (2008). The Role of Line Managers as Human Resource Agents in Fostering Organizational Change in Public Services. *Journal of Change Management* 8:1, 73-84.
- Menguc, B., S. Auh & Y. Kim (2011). Salespeople's Knowledge-Sharing Behaviours with Coworkers Outside the Sales Unit. *Journal of Personal Selling & Sales Management* 31:2, 103-122.
- Merriam, S. (2008). Adult Learning Theory for the Twenty-First Century. *New Directions for Adult and Continuing Education* 119, 93-98.
- Murphy, M. & D. Golden (2009). Basic Training. *Journal for Quality and Participation* 32:1, 15-19.
- Nahapiet, J. & S. Ghoshal (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review* 23:2, 242-266.
- Newell, S. & L. Edelman (2008). Developing a dynamic project learning and cross-project learning capability: synthesizing two perspectives. *Information Systems Journal* 18:6, 567-591.
- Orth, C., E. Wilkinson & R. Benfari (1987). The Manager's Role as Coach and Mentor. *Organizational Dynamics* 15:4, 66-74.
- Owens, J. (2004). An Evaluation of Organisational Groundwork and Learning Objectives for New Product Development. *Journal of Enterprising Culture* 12:4, 303-325.

- Park, M., J. Lim & P. Birnbaum-More (2009). The Effect of Multiknowledge Individuals on Performance in Cross-Functional New Product Development Teams. *Journal of Product Innovation Management* 26:1, 86-96.
- Poell, R. & F. van der Krogt (2003). Learning strategies of workers in the knowledge-creating company. *Human Resource Development International* 6:3, 387-403.
- Poell, R., K. van Dam & P. van den Berg (2004). Organising Learning in Work Contexts. *Applied Psychology: An International Review* 53:4, 529-540.
- Raelin, J. (1997). A Model of Work-Based Learning. *Organization Science* 8:6, 563-578.
- Ramsey, J. & E. Sorrell (2007). Problem –Based Learning. *Professional Safety* 52-9, 41-46.
- Sachdeva, J. (2009). *Business Research Methodology*. Mumbai: Himalaya Publishing House. ISBN: 978-81-84881-62-2
- Schein, E. (2003). On Dialogue, Culture, and Organizational Learning. *Reflections* 4:4, 27-38.
- Seibert, K. (1999). Reflection-in-Action: Tools for Cultivating On-the-Job Learning Conditions. *Organizational Dynamics* 27:3, 54-65.
- Sense, A. (2003). Learning Generators: Project Teams Re-Conceptualized. *Project Management Journal* 34:3, 4-12.
- Simon, H. (1991). Bounded Rationality and Organizational Learning. *Organization Science* 2:1, 125-134.
- Sims, R. (1983). Kolb's Experiential Learning Theory: A Framework for Assessing Person-Job Interaction. *Academy of Management Review* 8:3, 501-508.
- Siqueira, A. & A. Cosh (2008). Effects of Product Innovation and Organisational Capabilities on Competitive Advantage: Evidence from UK Small and Medium

- Manufacturing Enterprises. *International Journal of Innovation Management* 12:2, 113-137.
- Song, M., H. van der Bij & M. Weggeman (2006). Factors for improving the level of knowledge generation in new product development. *R&D Management* 36:2, 173-187.
- Strömmer, R. (1999). *Henkilöstöjohtaminen*. Helsinki: Oy Edita Ab. ISBN 951-37-2812-9.
- Svensson, L., P.E. Ellström & C. Åberg (2004). Integrating formal and informal learning at work. *Journal of Workplace Learning* 16:8, 479-491.
- Sydänmaanlakka, P. (2000). *Älykäs organisaatio. Tiedon, osaamisen ja suorituksen johtaminen*. Jyväskylä: Gummerus Kirjapaino Oy. ISBN 952-14-0223-7.
- Taylor, K. & A. Lamoreaux (2008). Teaching with the Brain in Mind. *New Directions for Adult and Continuing Education* 119, 49-59.
- Tillema, H. (2005). Collaborative Knowledge Construction in Study Teams of Professionals. *Human Resource Development International* 8:1, 81-99.
- Tjosvold, D., Y. Zi-you & H. Chun (2004). Team Learning from Mistakes: The Contribution of Cooperative Goals and Problem-Solving. *Journal of Management Studies* 41:7, 1223-1245.
- Tynjälä, P. (2002). *Oppiminen tiedon rakentamisena. Konstruktivisen oppimiskäsityksen perusteita*. Helsinki: Kustannusosakeyhtiö Tammi. ISBN 951-26-4419-3.
- Van den Bossche, P., M. Segers & N. Jansen (2010). Transfer of training: the role of feedback in supportive social networks. *International Journal of Training & Development* 14:2, 81-94.
- van der Heijden, B., J. Boon, M. van der Klink & E. Meijs (2009). Employability enhancement through formal and informal learning: an empirical study among

- Dutch non-academic university staff members. *International Journal of Training & Development* 13:1, 19-37.
- van der Heijden, B. & J. Brinkman (2001). Stimulating lifelong professional growth by guiding job characteristics. *Human Resource Development International* 4:2, 173-198.
- van Woerkom, M., W. Nijhof & L. Nieuwenhuis (2003). The relationship between critical reflection and learning - experiences within Dutch companies. In *Facing up to the learning organisation challenge. Selected European writings*, 184-198. Ed. Barry Nyhan. Luxembourg: Office for Official Publications of the European Communities.
- Varila, J. & H. Rekola (2003). *Mitä on työssä oppiminen. Teoreettisia ja empiirisiä näkökulmia työssäoppimiseen*. Joensuu: Joensuun yliopistopaino. ISBN 952-458-281-3.
- Wentland, D. (2003). The Strategic Training of Employees Model: Balancing Organizational Constraints and Training Content, *SAM Advanced Management Journal* 68:1, 56-63.
- Viitala, R. (2005). *Johda osaamista!* Keuruu: Otavan Kirjapaino Oy. ISBN 952-5123-62-6.
- Wyrick, D. (2003). Understanding Learning Styles to be a More Effective Team Leader and Engineering Manager. *Engineering Management Journal* 15:1, 27-33.
- Yeo, R. (2007). The dialectic of Problem-Based Learning in workplace contexts. *Journal of General Management* 33:2, 41-56.
- Yeo, R. (2008). How does learning (not) take place in problem-based learning activities in workplace contexts? *Human Resource Development International* 11:3, 317-330.
- Yoon, S., J. Song, D. Lim & B.K. Joo (2010). Structural determinants of team performance: the mutual influences of learning culture, creativity, and knowledge. *Human Resource Development International* 13:3, 249-264.

Zellmer-Bruhn, M. & C. Gibson (2006). Multinational Organization Context: Implications for Team Learning and Performance. *Academy of Management Journal* 49:3, 501-518.

Appendix 1. Preliminary interview questions.

1. What is the core competence of your team? Competence that brings about competitive advantage?
2. How should the core competences be defined and communicated by the board of directors for the managers to be able to develop it? How in detail should it be defined? Do you, as a manager, wish to have something to say in terms of what to develop?
3. How do you currently develop the competence of you team? How much annually do you spend planning the development?
4. What challenges or problems do you see in competence development?
5. How could these challenges be dealt with?

Appendix 2. Questionnaire.

Questionnaire about developing core competences

Core competences are knowledge and know-how that the individual or group handle better than others.

This questionnaire is part of a Masters Thesis written for the University of Vaasa. The purpose of the questionnaire is to find out about core competence development in ABB Oy, Distribution Automation unit.

Answers will be handled in confidence and the identity of the respondents will not be disclosed at any time.

It takes 5-10 minutes to fill out the questionnaire.

Thank you for your trouble!

Basic information

Job title	<input type="text"/>
Cost Center	<input type="text"/>
Education (degree)	<input type="text"/>

Methods for developing competences

Please, evaluate on a scale from 1 to 5 (1 not useful at all, 5 highly useful) how useful the following tools are in developing your own core competencies

	1	2	3	4	5	Why?
Training programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Going through what was learned in training in team meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Further studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Getting to know the tasks and jobs of other people in the same department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Getting to know the tasks and jobs of other departments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Courses on current topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Fairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Reading materials concerning ones own expertise (magazines, websites...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Going over job related problems in team meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
On-the-job learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Participating in development projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

Other?

Open questions

In your opinion, what works well in terms of developing core competencies in your team/department/business unit?

What should be improved and how (in terms of management/ work place /tools/ other point of view)?

Additional comments regarding developing core competencies?

Proceed

Save

Thank you for your time and answers!

Appendix 3. Development method rankings by departments.

