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Knowledge management initiatives and managerial activities

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Abstract

Knowledge is the essence to run IT projects. Managing knowledge in the project context can be contradicting with the limited resources and time span in the projects. Increased empirical research is made to explore the crucial factors influence knowledge management in projects. Even though the research domain is substantial on the subject, there is still limited amount of research of focusing relationship between managerial activities and knowledge management initiatives. This study is a further contribution to the area. We studied theoretical background of knowledge management and managerial activities in project context, where we build a research framework. The framework was used for guiding our research through our interviews, which was conducted with four project managers in three organizations.

The findings show that the types of knowledge and project managers' objectives affect the implementation of KM initiatives, which has direct impact on the managerial activities. It is found that there is a need to consider objectives that the KM initiatives are designed to achieve before get the complete picture on how the impact on managerial activities. The objectives are project compliance and competency development. The study also shows that the managerial activities are impacted by knowledge management initiatives in variety of ways.

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1. Introduction

The knowledge itself is considered a critical resource that organizations need to harness and manage in order to generate and sustain business value (Alavi and Leidner, 2001; Davenport and Prusak, 1998; Lindner and Wald, 2011) and in today's business environment, knowledge is the source of sustainable competitive advantage. Zack (1999) argues that factors such as competition, globalization and technology are extending organization capabilities to the limit, requiring effective management of knowledge to respond effectively to challenges. The effective management of knowledge is potentially an essential initiative for survival and creating competitive advantage, which is also crucial project resource that impacts the project's success. Knowledge is also a strategic resource that competitors in the business environment find hard to imitate and the competitive advantages related to management of knowledge makes the organizations sustainable in the long term (Conner and Prahalad, 1996; Tyre and von Hippel, 1997).

Many organizations are interested in knowledge management and many are launching knowledge management initiatives (Ajmal, 2009). Knowledge management is perceived as organizational practices that facilitate and structure knowledge sharing and learning (Hislop, 2009). Knowledge management is one of the critical activities that affect business activities and businesses are considering knowledge management as a critical success factor in today's dynamic society (Alazmi and Zairi, 2003). Knowledge management is considered as the management solution for organizational effectiveness. Knowledge management focuses on the importance of knowledge for organizations and its essential role in achieving competitive advantage.

Managerial support and leadership are considered (Davenport and Prusak, 1998; Holsapple and Joshi, 2000; Choi, 2000) as success factors for managing knowledge in organizations. Dutta (1997) argues that managing knowledge in organization is a challenge. It is due to the difficulties to identify value and organize the knowledge, which is crucial to gain competitive advantage. The management of organizational knowledge has hence become an increasingly vital requirement of business operations in the contemporary business environment. As a consequence, the field of Knowledge Management (KM) has gained recognition within the business as well as research fields as an important domain of discourse. KM initiatives are one of the most essential concerns in organizations and IT projects teams.

Therefore, Love et al. (2005) claimed that effective KM can be considered as an instrument in a project environment for reducing project time, increasing product quality and avoiding of making same mistakes and presents as a convincing strategy for organizations to improve their business processes and gain competitiveness (Chua and Lam, 2005). Furthermore, Karlsen and Gottschalk (2004) state that KM is more important than conventional resources, and there is a growing

interest in the business community that knowledge is a critical resource for organizations and projects. Managing knowledge in effective way in projects is crucial for gaining and maintaining competitive advantage (Ajmal, 2009). However there are barriers to the successful implementation of KM initiatives which needs to be recognized to enable successful implementation. Hence, there is limitation of understanding the impact of KM initiatives on managerial activities or management as a factor of KM initiatives implementation in organizations.

The thesis aims to contribute the growing body of knowledge about KM, and by its approach also to the field of managerial work and IT organization management research. Current research has been conducted on the enabler and barriers to implement KM initiatives from many different contexts and different perspective since Davenport's (1998) classical study of working knowledge. A review of the literature, however, shows that there is little research on the how managers actually involved with the KM initiatives in IT project teams. The thesis should be of interest both for KM practitioner in enhancing knowledge activities, and for actors within the area developing technology support for this type of organization and managers, and finally for policy-makers providing strategies and guidelines for the KM initiatives.

1.1. Problem Discussion

Many organizations implement IT projects to increase their competences. IT improves productivity through streamlining of process and enhances efficiency and effectiveness of individual workers as well as groups through connectivity that it offers (Al Neimat, 2005).

The challenge of global competition, the rapid growth of knowledge, and the constant changes of technology make it hard to predict what kind of skilled people will be needed. Most IT projects require a diverse range of skills. Many teams lack the breadth, and depth they require (Al Neimat, 2005). Furthermore, the larger the project, the more need there is also for people with excellent planning, oversight, organization, and communications skills; experienced technology skilled people do not necessarily have these abilities (Glaser, 2004).

In the context of IT project teams, KM needs particular attention. Due to the projects' temporary and unique nature, the project teams working with an environment characterized by discontinuous personal constellation and work content, a lack of organizational routines and a short-term orientation (Prencipe and Tell, 2011). The management of knowledge in the project team is hence an increasingly important and critical competitive factor. The absence of KM will make projects unable to contribute to any improvement of the organizational business processes. Lack of improvement will eventually lead to an obsolete business process (Becerra-Fernandez and Leidner, 2009). To achieve sustainable competitive advantage organizations need to consider what everyone in the organization knows and how they use their knowledge (Mas-Machuca and

Martinez, 2012). As organizations become aware of the significance of knowledge, KM initiatives have also increased proportionally (Cline et al., 2004).

Project managers need to undertake several types of activities in order to achieve the objective of their organization. They are responsible for many complicated knowledge-intensive activities such as planning, decision making and problem solving (Love, 2005). As project managers are extensively involved into the knowledge activities, the growing importance of learning knowledge can affect managerial activity significantly (Fleisher and Blenkhorn, 2001).

Managerial factors are generally considered (Davenport et al., 1998; Liebowitz, 1999; Holsapple and Joshi, 2000; Wong and Aspinwall, 2005) as critical factors for successful KM initiatives. In knowledge intensive context, such as IT project team, it has even greater benefits if they succeed in capturing and sharing of knowledge. IT project teams are the proper context to study, since they deal with highly knowledge intensive activities, such as system administration, support and software development. Together with the importance of role of managers in KM initiatives, and contemporary IT organizations need on managing intensive knowledge, this makes the scarce research on what impact of KM initiatives on managers' activities a bit unexpected.

1.2. Research question

Karlsen and Gottschalk (2004) ascertain that KM initiatives in a project management context encounter many challenges because IT projects are mostly different from one another. Essential diversities are present in information dissemination, personnel and material resources. Significant challenge for successful IT project is effective KM initiatives which involve creation, transfer and knowledge sharing. Becker (2001) state that managers in projects adopt different initiatives in order to deal with the challenges generated from the management of knowledge. Therefore, KM initiatives have implications for management on how projects are designed and implemented for improving the effectiveness.

Based on problem area discussion, the research question addressed in this study is:

How do Knowledge Management initiatives impact managerial activities in IT project teams?

This research questions aim is to describe how KM initiatives impact the managerial activities in IT project teams' context.

1.3. Purpose

The purpose of this research is to describe and explain KM initiatives relationship to managerial activities. The focus is on the impact of these initiatives on management. Thus, describing how KM initiatives are involved in management plans and strategy in order to improve management of knowledge in project teams' context.

The findings from the research are beneficial for organizations in order to gain competitive advantage and to help project managers to improve the understanding of KM initiatives, because the importance of knowledge grows rapidly in most IT projects (Karlsen and Gottschalk, 2004).

Project teams aim to deliver the result according to the demand. The project teams can be described as a system with types of input and output specified (Miner, 1971). Manager's role is to mediate the process and relate goals with behavior of the project team members. KM initiatives are parts of the process and behaviors. Hence the managerial activities are key points to study the KM initiatives. Managerial activities handle the management of knowledge and they need to take initiatives in order to capture, store and disseminate the knowledge between the members of the team.

Expected benefit of the research is to help project managers conceive and implement KM initiatives. Hence to provide information how KM techniques and improved knowledge sharing activities (initiatives) helps managers in their daily activities in IT project teams. KM may help improve communications and provide more informed knowledge to the project manager and project team (Liebowitz and Megbolugbe, 2003). It facilitates transferring and sharing the knowledge between the team members, thus the project objectives and project goals. KM initiatives assure a better sharing of best practice documents, lessons learned, project management experiences and strategic decisions taken from managers.

The expected contribution of this research is to contribute on the field of research by providing new knowledge and findings to future IS researchers who are interested in the field of KM initiatives influences from management perspective. The second benefit of this research is in the field of practice in the field of KM. This study aims to fill the gaps that the previous studies did not include, considering KM initiatives in managerial activities in IT project team context.

1.4. Delimitations

This study covers the IT project team from project manager's perspective. It is delimited to project managers' view points about the KM initiatives and the impacts to the managerial activities. Furthermore, the report focuses on the causes of the projects described by the project managers. The empirical data therefore only present the experiences of project managers about how they deal with KM initiatives in project settings.

The final delimitation concerns the scope of the KM initiatives used in projects. In this report, we will not consider KM initiatives that involve participants outside of the project team. It is delimited to see the KM initiatives and managerial activities only in project settings.

2. Literature Review

2.1. Knowledge Management

In this section, based on the research question the first step is to describe the definitions of knowledge and Knowledge Management (KM). The chapter continues with the explanation of the relationship between data, information and knowledge. This is followed by presenting the concept of knowledge transfer and sharing, KM approaches and KM initiatives. Last section presents the relationship between KM and projects.

2.1.1. *What is meant by KM*

Literature review shows that knowledge and KM are argued and considered from different perspectives. There are a variety of definitions for knowledge related to KM. Grant (1996) defines knowledge as it resides in the head of the individuals. Davenport and Prusak (1998, p.5) state that

“Knowledge is a fluid mix of framed experience, values, contextual information and expert insights that provides a framework for evaluating and incorporating new experiences and information”.

Knowledge is the combination of information and human context that improves the capacity of action (Cardoso et al., 2005; Davenport et al., 1998; Han and Anantatmula, 2007; Long, 1997; Wainwright 2001). Also, Alavi and Leidner (2001) and Beckman (1997) perceive the knowledge as reasoning about information to actively guide task execution, problem-solving and decision making. Moreover, knowledge is viewed also as a process or practice in organizations. Ajmal (2009) defines knowledge as embedded in documents or repositories and in organizational routines, processes, practices and norms.

Based on these definitions, knowledge can be considered or viewed from different perspectives. Firstly, as “know about” that refers to a state of knowing about facts, methods, principles, techniques, etc. Second, knowledge is regarded as “know how” as capacity to take effective action based on the knowledge. The knowledge is likely to influence future actions. Knowledge that is acquired through personal experience and resides in individuals heads is called *tacit* (Nonaka and Takeuchi, 1995). Third, knowledge is referred as codified, captured or accumulated in repositories. This is *explicit* knowledge that is independent of individuals and is organized in a way that is easy to access and retrieve that requires different strategies and technologies to

manage it (Nonaka and Takeuchi, 1995). The knowledge itself is considered a critical resource that organizations need to harness and manage in order to generate and sustain business value (Alavi and Leidner, 2001; Davenport and Prusak, 1998; Lindner and Wald, 2011). In organizations knowledge is embedded not only in documents or repositories but also in organizational routines, processes and practices.

KM is defined as a way of managing explicit and tacit knowledge in organizations. Alavi and Leidner (2001), in their studies about KM conceptual foundations, define KM as an organized process for acquiring, organizing and communicating tacit and explicit knowledge of employees so that others make use of it to be more effective and productive. KM is the processes of creating value from organizations intangible assets (Davenport and Prusak, 1998; Nonaka and Takeuchi, 1995). Furthermore, Civi (2000) has reviewed the research on KM as competitive asset and states that KM is about managing the process and practices that act upon tacit and explicit knowledge. From the management perspective, KM is defined as the process of selectively implementing knowledge from previous experiences of decision making to current and future decision making (Jennex and Olfman, 2006).

KM is driven from two perspectives or approaches: technology-driven perspective and people-driven perspective. Technology driven perspective is referred as codification, whereas people-driven perspective is known as personalization (Hansen et al., 1999). These approaches to KM are discussed in section 2.1.3.

The purpose of KM is to create and manage the environment that facilitates and encourages knowledge to be created, shared, disseminated, enhanced, organized and utilized for the advantage of the organizations. Ajmal (2009) studied critical success factors of KM initiatives in project context. He emphasizes that KM is an action discipline and knowledge that requires to be used and applied, in order for KM to have an impact. In order to better comprehend managing and sharing the knowledge, the role of management is to take initiatives and deal with the question of how to best leverage from the knowledge in organizations. KM in the context of a project teams is the implementation of principles and processes designed to make the required knowledge available to the project team. Ajmal and Koskinen (2008) related to the importance of KM in project teams ascertain that project managers use initiatives for preserving and utilizing knowledge within established practices in project teams. Implementation of these KM initiatives requires a clear understanding of the types of knowledge.

2.1.2. Knowledge Transfer

Knowledge transfer or sharing involves individuals sharing organizationally relevant information, ideas, suggestions, and expertise with one another (Bartol and Srivastava, 2002). Knowledge transfer is the process through which one unit is affected by the experience of another (Argote & Ingram, 2000). There are two viewpoints on knowledge transfer or sharing, formal and informal.

Davenport and Prusak (1998) emphasize the difference between the more *formalized* transfer mechanisms such as documents, databases, intranets and groupware and *informal* interactions which are more casual events that usually take place face to face i.e. in conversation.

The importance of the human or informal element of KM is emphasized in the literature. Davenport (1995) suggests that successful knowledge transfer involves neither computers nor documents but rather interaction between people. These informal interactions are important to the organizations success. Knowledge transfer frequently occurs on an informal basis when there is a requirement for specific knowledge that arises in the organization, however organizations have a large number of formalized processes that regulate the transfer and sharing of information. Individual approaches that are taken by managers in order to encourage such informal or spontaneous interactions, is one of the important components of KM (Alavi and Leidner, 2001).

2.1.3. KM approaches

The management purpose is to manage the process by which organizations leverage and extract value from their knowledge assets. The challenge for the managers is managing this several assets effectively so that they are able to deliver value to the organization and to the individuals who use these assets. (Kulkarni et al, 2006)

“Knowledge is embedded and flows through multiple entities within a firm, including individuals with domain expertise, specific best known methods, or lessons learned from similar experiences, documents, routines, systems, and methods.” (Kulkarni et al, 2006, p. 310)

KM approach is how organizations apply and implement KM initiatives and involves practices, motivations, controlling and factors that influence the adoption. The KM initiative purpose taken by managers is the management of knowledge in individuals (team members) or knowledge in processes or practices in the organization. Hansen et al. (1999) identified three approaches while applying KM initiatives. The first approach is automated KM or codification strategy where knowledge is carefully codified and stored in databases and later on is accessed and used easily by anyone in the organization. The support of this approach is to create and disseminate knowledge using technology such software systems and knowledge repositories. The second approach is personalization, where knowledge is perceived as closely attached to the person who develops it (Hansen et al., 1999). It is shared only by using face-to-face techniques or direct person-to-person contacts. The purpose is mainly to disseminate the knowledge between members in the organization. The third approach is when organization pursues both at the same time for implementing KM initiative (Hansen et al., 1999). It is the combination of codification strategy and personalization strategy, which is called socialization approach (Nicolas 2004). With this approach, a group of persons that have the same knowledge space are collaborating with each other through relationships, such as Wiki pages and the purpose of management is to collect and exchange the knowledge between persons.

2.1.4. *KM initiatives*

Knowledge is perceived as “the most strategically important resource which organizations possess” (Grant, 1996, p. 376). KM initiatives are important if an organization wants to achieve a competitive advantage. As a result organizations need to adapt to, anticipate and promote changes (Claver-Cortes et al, 2007). These are preceded from the managerial activities in organizations and KM is recognized as a relevant management approach in organizations.

Liebowitz and Megbolugbe (2003) claim that as knowledge is captured, learning takes place and the knowledge is applied and embedded within individual and organizational processes. Management initiatives will affect how knowledge is created, shared and embedded within organizations. KM initiatives enable the knowledge flow from the team members (persons) that has the knowledge to the persons that need the knowledge throughout the organization, and during this process the knowledge is created and developed.

KM initiatives are attempts to make practical use of knowledge, to accomplish some organizational objective through the structuring of people technology and content (Davenport and Prusak, 1998). Gurteen (1998), in his conceptual paper about knowledge, creativity and innovation, states that KM in organizations is regarded as a set of operational principles and organizational design, processes, organizational structures, applications and technologies. The initiatives are taken to help the workers to influence their creativity and ability to deliver business value. The key concern of the management is how to accomplish these initiatives in organizations. This view has been supported in the study of Moffet et al. (2002) for KM factor analysis. They ascertain that many organizations are attempting to initiate KM and they are unsure for which approach to implement.

Davenport et al. (1998) qualitative study emphasized that the most important factors affecting KM initiative is management support in organizations. Furthermore, this view is also supported by Wong and Aspinwall (2005), in an empirical study of the important factors for KM adoption. Based on the order of importance of factors ranked from highest to lowest, the management leadership and support was in the first place.

2.1.5. *KM and Projects*

The prerequisite to understand the KM requirements for project is to identify the types of project related knowledge that the organization engages. Regarding the knowledge in projects, there are three types: knowledge about projects, knowledge from projects and knowledge in projects (Desouza and Paquette, 2011).

Knowledge about projects is high-level information about projects, such as: project requirements and schedule information which is useful for project managers in the project teams.

Knowledge from projects is lessons learned and documentation (codified tacit knowledge from projects) that occur as a part of project initiatives and which the project team creates and makes available to succeeding projects.

Knowledge in projects is the prerequisites for executing the project. Systems and tools are required so that team members in the project can manage and use this knowledge to solve tasks.

There also project relevant knowledge, such as *requisite knowledge* to fulfill the required craft skills to participate the project attached to individuals and the *process knowledge* to run the project lifecycles within the project team. The management and utilization of project knowledge is one of the main troubles that organizations have to deal and managers have to address. Petter et al. (2009) state that organizations and project managers investigate ways to lessen redundant spending that are generated from failures and plan overruns on IT projects. Disterer (2002) has studied management of project knowledge and experiences, and he found out that effective implementation of traditional project management tools is necessary but it is not sufficient for managing projects. Therefore the transfer, sharing and usage of existing knowledge is essential. In dealing with this project managers take KM initiatives to improve knowledge transfer and sharing between IT project members. Hence, the purpose is to deflect the repeating mistakes and use existing or transfer the knowledge from previous projects. Ajmal and Koskinen (2008, p. 9) state:

“The growing complexity of project work means that an increasing number of technical and social relationships/interfaces need to be taken into account by project managers in adapting knowledge and experiences from the daily work of a company and from earlier projects.”

Another problem that need to be managed by managers is the fragmented knowledge in IT project teams. Becker (2001), in the study about managing dispersed knowledge, emphasizes that in today's globalized economy, much of the activity in and between organizations is based on dispersed or virtual teams. Virtual teams are essential to many projects in current economy, where common practice is to acquire quality services and expertise at lower cost using outsourcing (Anantatmula and Kanungo, 2010). Dispersed teams whose members cooperate across geographical boundaries have important consequences for project managers and causes management problems. As a result project managers perform KM initiatives and strategies to deal with transfer and sharing knowledge to improve effectiveness. Becker (2001) argues that managers should not rely on one initiative or approach, but should have a number of them and to implement them selectively based on the settings in their project teams. Thus, dissemination and use of the knowledge in their project teams, impact their activities and they try to develop and implement managerial solutions to these challenges.

2.2. Managerial Activities

In this section we will describe the managerial role and activities definition along with activities taken by managers in project teams. This section ends with the discussion of the KM and managerial activities.

2.2.1. Manager's Job

The activities taken by managers and the impact of managerial performance on the effectiveness of the organization has received considerable attention in literature (O' Driscoll et al., 1991). However, there is general agreement that managers have an important role within organizations, although less consent has been reached on specific tasks they need to perform to be effective. Fayol (1949) specified the managerial activities as planning, organizing, commanding, coordinating and controlling the main operations of an organization. Moreover, Koontz and O'Donnell (1972) identified the classical management functions, planning, organizing, staffing, directing and controlling. Managers periodically revise the functions and recollect the relevant actions when performing the managerial tasks. Mintzberg (1975) categorized managerial activities into three roles or categories, such as interpersonal, informational and decision making. According to Mintzberg (1975), the interpersonal roles are related to leading, the informational roles are regarded with controlling and decision-making roles with planning and organizing of the activities.

Drucker (2006) claimed that a manager's job is to direct the resources and the efforts of the business toward opportunities for economically significant results. Also, Drucker (2008) stated that in order to achieve results, management and the organization needs to recognize employees as assets rather than liabilities, and that the manager's job was also to prepare and free people to perform as knowledge workers. Mintzberg (1975) argued that managers need to understand how to deal with three kinds of assets: actions, people and knowledge. Managers help organizations and units achieve their tasks, which is done by taking actions. They also deal with people taking action by motivating them, building teams, training them, in order to stimulate them to take more effective actions. Managers deal with knowledge and information that guides people as they take action.

2.2.2. Managerial Activities in Projects

Management of projects is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMBOK, 2008). Managerial activities involved in this process are systematic planning, organizing and controlling of allocated resources in order to

efficiently manage and deliver the project. This involves having the ability to select the best available team on a project and securing organizational resources by developing more diverse talent pool to form project and organizing the dispersed project team members (Desouza and Paquette, 2011). Also it includes directing or leading team members, by motivating and encouraging them to accomplish a series of work tasks within the project. The project manager is the person assigned by the organization to achieve the project objectives. The role of project manager is to decide the most proper technique of carrying out the project (PMBOK, 2008).

According to Ajmal and Koskinen (2008) project teams, including the project managers and team members, are in charge for the execution of each project. Once a project is finished, project team members go away from the project and get reallocated to other next projects. The environment of projects is complex and volatile. Desouza and Paquette (2011) argue that projects have moved from being simple phenomenon to manage to more complex entities that are dispersed in many geographical locations, multiple occurrences and different organizational affiliations. As a result, managing projects causes severe challenges and problems for project managers. In order to achieve effective project management and deal with these challenges, KM is of essential significance.

In project based teams, the role of management is to enhance their influence on development related decision making processes (planning) and, support and organize the access to knowledge. Ferguson et al. (2010) ascertains that if organizations want to improve their responsiveness to development challenges, it is essential to encourage awareness of the importance of the knowledge in their team based work. Thus, the importance of knowledge for management practices and how this can contribute to their efforts. Furthermore, if these organizations want to enhance the understanding of the link between knowledge and development impact, research on the implications of KM in the development area in project teams' context is a necessity.

2.2.3. *KM and Managerial Activities*

Davenport and Prusak (1998, p. 56) state that “effective knowledge management is neither panacea nor bromide”, and emphasize it as one of the components of good management. Managers need to include KM into their strategy in order to contend in the knowledge economy and this role is necessary in order to motivate employees to share knowledge (Mas-Machuca and Martinez, 2012). The objective of management in KM initiatives in organizations is to create new knowledge, leverage the organizations knowledge, and increase collaboration and therefore the skill level of employees (Bose, 2004) .

The organizational competitiveness in the contemporary economy has shifted from physical and tangible resources to knowledge (Wong and Aspinwall, 2005) and knowledge is perceived as one of the most important resources in any organization. Business that are able to capture the

knowledge embedded in their organizations and organize it into their operations and services will have a competitive advantage. KM is becoming essential business activity in organizations because they comprehend that competitive advantage is affected from the effective management of knowledge in organizations (Grover and Davenport, 2001). In order to achieve the competitive advantage, managerial activities is considered as one of the critical factors for KM. Furthermore, it is shown that that management is a critical success factor in implementation of KM initiatives (Davenport et al, 1998; Holsapple and Joshi, 2000; Liebowitz, 1999).

Knowledge that organizations acquire is a dynamic resource that is required to be sustained and managed carefully. Therefore, important is to aware managerial communities to understand the importance of how to create and use knowledge based resources effectively (Abd-Elaziz et al, 2012). Drucker (1993) emphasizes the importance of knowledge and the relation to managerial activities for improving effectiveness.

“Supplying knowledge to find out how existing knowledge can best be applied to produce results is, in effect, what we mean by management. But knowledge is now also being applied systematically and purposefully to determine what new knowledge is needed, whether it is feasible, and what has to be done to make knowledge effective.” (Drucker, 1993, p. 42)

From a managerial perspective KM is to understand and manage systematic, explicit and deliberate knowledge building, renewal, and application (Ajmal, 2009). The knowledge initiatives consist of several steps, starting with the creation of the knowledge, followed by the use of knowledge, the transfer, share and store of knowledge (Lindner and Wald, 2011).

KM is perceived as a managerial activity or intervention to implement initiatives that enable knowledge creation, transfer and application among the project teams. Managers are influenced from this complex process because of the tacit dimension of knowledge that is needed to learn from the experiences and insights. Also, they encourage the willingness of the employees to share the knowledge. The concept of KM initiatives in organizations is not new. It involves training, employee development programs, organizational policies, routines, procedures, reports and manuals. (Alavi and Leidner, 2001)

Knowledge is perceived as complex and culturally embedded, subjective and related to emergent daily activities, and the role of managers is pushed to outside edge (Hoof and Huysman, 2009). Management activities involve promoting social relations and trust, that emerge from interactions and strengthening the social capital and heuristic knowledge that is the ability of team members to gain knowledge in order to fulfill their tasks (Ferguson et al., 2010) KM affects the managerial activities. The primary task of the management is to take initiatives that will facilitate and manage the knowledge flows within the team members. Furthermore, KM initiatives are calibrated through management interventions for achieving the project goals.

Desouza and Paquette (2011) examined the critical management components related to dealing with intangible items, such as knowledge. It is found out that managerial activities in IT project teams are crucial because the managers act as leaders and catalysts as well as establish necessary conditions for KM initiative. Managers also act as models to exhibit the desired behavior, encourage knowledge creation, sharing and use, and recognize the importance of KM for the organization. They use experiences and motivational aids to encourage members in the team to seek for knowledge and demonstrate the support for the KM initiatives.

Table 2.1 Managerial activities (Desouza and Paquette, 2011)

Component	Description
Planning	<ul style="list-style-type: none"> • A decision making process whereby a course of action is created to move from a current state to a desired state • Includes phases such as gathering information, choosing the best course of action, and designing and developing the plan to implement the course of action • Not usually a fixed or rigid series of steps, but rather a framework that can be adapted based on changes in the internal and external environment
Organizing	<ul style="list-style-type: none"> • Involves securing resources, including human resources, financial resources and physical resources, which are required to implement the plan • Requires good communication in order to justify needs and allocate scarce resources within an organization
Controlling	<ul style="list-style-type: none"> • The process of measuring and evaluating progress and outcomes, and taking corrective action as needed • Ownership, guidelines, and milestones must be established and clearly communicated to support effective measurement
Leading	<ul style="list-style-type: none"> • The ability to inspire shared vision and action among individuals or groups in order to achieve a common goal • Leadership traits include confidence and optimism, which leaders use to effectively inspire and motivate employees, especially during uncertainty

Management components related to dealing with KM initiatives in IT project based teams are categorized into following activities: planning, organizing, controlling and leading. Based on Desouza and Paquette (2011) the managerial activities are presented in the table 2.1.

Planning is best conceptualized as a decision-making process whereby a course of action is created to move from a current state to a desired state (Desouza and Paquette, 2011). Simon (1997), in the study of administrative behavior, identified three major stages on decision making, as intelligence, design and choice. In the intelligence phase, managers recognize that the decision is needed. Design occurs when managers have alternatives to achieve the objectives. At last, the most viable options are chosen from the various options. Plans can be categorized into three types: strategic, tactical and operational. In the project-based context, tactical planning and operational planning are more likely to be used to achieve the overall strategy can deliver the result. Strategic planning is at the highest level of the organization and conducted by the senior managers.

KM in project team's context is a process, as well as decision making activities, of selectively applying knowledge from previous projects into the next projects with the aim of improving the effectiveness of team members. Management takes into consideration initiatives to handle management of knowledge. Examples of such activities involve applying the appropriate knowledge to specific decision making and establish techniques for sharing the knowledge among employees and improve knowledge access. Better decision making and risk reduction can be achieved by effective management of knowledge (Jennex and Olfman, 2004). KM initiatives are implemented by managers. Managerial planning and actions need to be practiced in order to achieve effectiveness and these activities help organizations to maximize the effectiveness of their projects (Mas-Machuca and Martinez, 2012).

Organizing comes after the course of action has been determined by the strategic, tactical and operation planning. It aims to transform resources into business values by structure collaboration in the organization. In the actual process of transformation, collaboration, structure and relation are central elements (Jonker and Eskildsen, 2009). Thus, organizing relies on the efficient social interaction between actors. In a dynamic environment, organizations need to demonstrate its agility in how the resources are organized on the changes in the environment. Mature communication processes are critical to promote effective organization practices.

As the resources become globally distributed, technologies are used to replace or complement human information processing. The benefit is to increase the economic incentives and reduce the information transaction cost. Although Transaction Cost Theory proposes that the organizational structure should be shaped in such a way that the cost of the transactions – especially the information, co-ordination and the motivational costs – are minimal (Milgrom and Roberts, 1992), however, low information transaction cost does not dissolve the firm hierarchy into self-organizing units. Nonaka and Takeuchi (1995) show that it is actually the intellectual capital holding the organization together not the transaction cost. From a KM perspective, organizing also provides circumstances for the knowledge development (Brown and Dugui, 2000).

Controlling is managerial activity that has an important impact on the members of the team in IT projects in order to share their knowledge. Control is defined as an effort by management in order to increase the possibility that the individuals will act in a ways that will result in realization and fulfillment of project success and organizational goals (Stajkovic and Luthans, 2001).

Two kinds of controlling are applied from the management in IT project groups based on Perlow (1997) and Nair (1998). Perlow (1997) studied about the knowledge workers in software development groups where the management of the organization introduced a rigorous way of controlling the employees. The organization enforced strict demands by monitoring the employees, by observing them closely and regularly checking up on the employees. Management of the organization has introduced mandatory meetings, deadlines of the projects and extra work to ensure that the team members were working in the best interest of the firm. On the contrary management in some organizations, uses a different approach or flexible way of motivating their team members and managers need to introduce team-based management styles if they desire to get the most of their employees and increase the productivity (Nair 1998).

King and Marks (2008) found that the influence of control had a positive relationship to the frequency of contributions for sharing the knowledge. When management provides encouragement of certain actions, knowledge sharing behavior is positively related to outcomes that mean that this managerial activity is important for the project outcome. Managers also need to measure the impact of KM initiatives on their organizations and team performance.

Measurement of the KM initiatives provides a basis for management to emphasize what is important and help managers on how KM initiatives needs to be implemented and designed for integrating knowledge into organizational processes (Alazmi and Zairi, 2003; Wong and Aspinwall, 2005)

Leading people is the most difficult component of management (Drucker, 2001). Pendleton and Furnham (2011) describe leadership by single verbs into five tasks: inspire, focus, enable, reinforce and learn. Leader's critical tasks include setting the overall vision and strategy, and hiring and retaining the very best talent for the team. In the project scope, leaders need to fulfill a task which is characterized by time limit, complexity and relative novelty (Grosse, 2007). In the case of stable project team structure, the manager also has limited choice on who should be placed in the project, when the project is different from the previous one, because the options for the best talent only exist inside the team. Some studies explored IT project leadership based on roles perspective by Mintzberg (1975). Based on topology of management roles, in successful projects, project managers are able to adopt a leadership profile adapted to project characteristics. (Gottschalk and Karlsen; 2005)

Abdullah and Othman (2005) recognized the role of leadership in KM via organizational culture. The role of leadership in organizational culture and the role of organizational culture in KM have been reviewed in order to show the strong influence of leadership on knowledge-management initiatives. It is also found out that leadership is one of the most important managerial influences on KM (Handzic and Zhou, 2005). Strong leadership can guide the adoption of KM and managed knowledge resources for maximum benefits. Anantatmula (2008) has explored the leadership role in making effective use of KM and identifies two functionalities that leadership has on KM. The first is the transparent environment builder that constructs the trust between stakeholders. Second is the strategic planner that makes sure the employee understand goals and routines.

2.3. Summary of Research Framework

Research framework is based on the research question and the purpose of this research for KM initiatives impact on managerial activities. We summarize the theoretical findings from literature review in Figure 2.1.

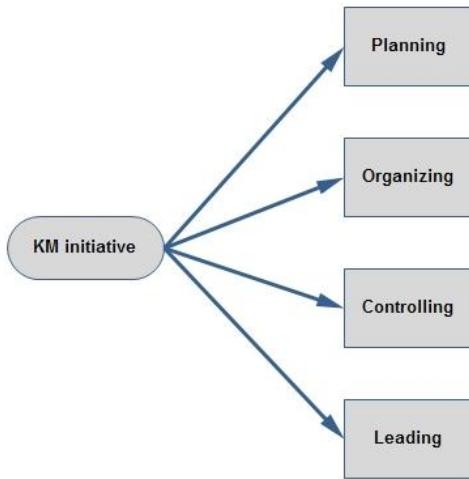


Figure 2.1 Research framework

The research framework includes the different managerial activities which are important to answer the research question. The reason for choosing these four managerial activities is based on the overview of literature related to managerial activities. Research on managerial activities has revealed four main components, such as: planning, organizing, leading and controlling (Desouza and Paquette, 2011; Fayol, 1949; Koontz and O'Donnell, 1972; Mintzberg, 1975). Additionally, these were selected based on the activities of managers in project teams, which is the unit of analysis in this research. Managerial activities involved in the projects, based on the Project Management Body of Knowledge (PMBOK, 2008) are: planning and identifying the project

requisites, organizing resources, leading, and controlling in order to be able to manage and deliver the project.

Understanding the concept of management is crucial to anyone investigating the complexity of management and use of knowledge in organizations. Management involves motivating resources, both human (employees) and artificial (technologies) to work in a coordinated fashion toward the achievement of organizational goals and strategies (Desouza and Paquette, 2011). Project managers are important because they have tactical operations that involve implementing the strategy presented by organization. They can give detailed and critical responses to questions on their work or managerial activities, organizational changes and initiatives that they take to manage knowledge. Managers are one of the important assets in organizations. To fulfill the organizational goals, managers manage effectively their human resources and in order to do this managers need to know exactly what they should plan and organize, respectively the knowledge in order to operate effectively. The managers determine the tasks to be completed, systematize the organizational environment, make decisions about the needs of their team members and match the job tasks with the skills and knowledge. Therefore the managerial activities are impacted from knowledge required to support their operations. It is an important challenge because knowledge is essential and is required to support the organization effectively (Wu et al. 2004).

3. Research Method

3.1. Procedure

Research procedure was divided into three stages. The *first* stage was literature review and developing research framework. Literature review helped in gathering knowledge about the chosen research subject. Based on literature review we defined the KM initiatives in IT project teams' context and identified the managerial activities. The managerial activities were divided into four categories regarding planning, organizing, controlling and leading. The KM initiatives impact on these managerial activities is the developed research framework for this research that was presented in figure 2.1.

The *second* stage of the research included the development of interview guide, conducting the interviews for gathering empirical data and interview analysis. Interview guide was developed from the research framework. The next step was conducting the interview with the chosen informants that implement KM initiatives in their IT project teams. The detailed data collection and analysis process is discussed in sections below. The empirical data was analyzed and coded, and then summarized in chapter four.

The *third* stage in this research was analysis of the empirical results, discussions and conclusions. Analysis of empirical findings and discussions were used for answering the research question and are presented in chapter five. Finally in the last chapter we summarize the research with some conclusions.

3.2. Data collection process

This section discusses the approach we have selected for collecting empirical data and includes motivations for their relevance for the research study. When there is an issue to be explored and we need a complex, detailed understanding of the issue, the qualitative research can be conducted (Creswell 2007). Qualitative research method allows the informants being studied in a given context, to give detailed answers and descriptions to questions based on the interview guide and provide valuable insights which might have been neglected by other methods.

Data collection circle is a series of interrelated activities with the purpose of gathering information with good quality to answer the research question (Creswell, 2007). To answer our research question we collected empirical data based on the data collection circle. Creswell (2007)

states that data collection process is a circle that consists of seven activities such as: locating individuals, gaining access and making report, purposefully sampling, collecting data, recording information, resolving field issues and storing data.

The data collection process was started with determining the unit of analysis and searching informants that are suitable for our study. Next step was trying to gain access to and establish contacts with informants. The important step in this process is determining a strategy for the purposeful sampling of individuals and it involves choosing appropriate informants that can best inform the researcher about the studied research question (Creswell 2007). For our research, the strategy was to choose experienced project managers that can provide empirical data and rich descriptions of their managerial activities in order to answer the research question. After decision for the informants and the unit of analysis, the next decision was about the data collection approach or technique. Collecting empirical data is very important step and is based on data collection technique that has its own detailed design steps in order to do it right. A semi-structured interview is chosen as the main technique for data collection and follows on the seven stage design according to Kvale and Brinkmann (2009). The purpose is to have to have individual interviews with the project managers in IT companies which use KM initiatives in IT projects teams in order to investigate the influence on managerial activities. The motivation of chosen semi-structured interview is discussed in section 3.3 Data collection techniques. The next steps, the recording of information and storing data, in Creswell (2007)'s data collection process relay to the chosen data collection technique and are described in that section.

In the following sections we describe and motivate our selection of unit of analysis, locating the participants, sampling strategy, selection of informants and gaining access that provided the empirical data for our research.

3.2.1. Unit of analysis and selection of informants

Unit of analysis of the research is important to determine in order to answer the research question and the purpose of the research. IT Project team knowledge and experiences are bound to the members who are involved in the corresponding problem solving processes that are not a part of project documentation and they are transferred to other team members during the way of the project. After completing their tasks in the project, project team members take their new experiences and knowledge with them (Argyris, 1999). The purpose of the management is to avoid the risk of a knowledge loss that is a serious problem for organizations by organizing and planning KM initiatives in their agenda. The management of IT project teams requires improvements with regard to the KM initiatives and without the managements leadership these initiatives will remain ineffective (Schindler and Eppler, 2003). IT project teams are the context of managerial activities that are conducted and KM initiatives are employed. So, it is proper to choose IT project teams as the unit of analysis in the research.

In order to explore the problem area and as sufficient as possible, at least two project teams shall be selected as the study cases. Creswell (2007) emphasizes the importance of determining the

right sampling strategy in order to select the right participants. If there is further need to converge the knowledge into a point, more cases will be selected. So far, there are four IT managers that are interested in having interview in the study.

3.2.2. Sampling strategy, selecting and gaining access to informants

Sampling strategy is important as well as the selection of best suitable organizations for qualitative interviews, which has a great significance for the findings of the research (Seale, 1999; Creswell, 2007). Selection criteria for the choosing the organizations for qualitative interviews is as follows: organization is using the KM initiative and is applying these principles in IT projects teams. Project managers should have applied the KM initiatives in IT project teams, who can provide a new insights and beneficial knowledge for exploring and describing the framework for KM initiatives impact on managerial activities.

After selection of the study unit as IT project teams that have perform KM initiatives from management perspective, the next step was selecting the informants which provide empirical data for qualitative research. KM initiatives are taken from managers in order to improve their effectives in their IT project teams. Considering the hierarchy of organizations, there can be two types of project managers to be the candidate for our informants. One type is the manager who directs the developers and workers in projects. Another type is the manager who is in charge of complex project that involves other project managers. The managers are supposed to have the holistic and detailed view about the projects. These informants are project managers and implements KM initiatives in their teams in IT projects. At the beginning, we contacted two informants for each type of the manager. We discovered that the management style and KM initiatives are different. In order to explore the gap and collect data for generalizing, we decided to contact two more informants from each type in same company. Two pairs of informants also allow us to validate the findings on either case. Thus we have four informants in total from three different organizations.

For our research we gained access by sending emails to the selected informants. Email contained a short description of the qualitative research and the purpose of the study. Gaining access to organization and informants involved submitting a request to the informants to obtain their acceptance to participate in the study (Creswell, 2007). This request is found in Appendix 1. Once they accepted our request to participate in the study, before the semi-structured interview we gave them a detailed explanation about the study which we try to make informed consent.

3.3. Data collection technique

The purpose of this research is to describe and explain the KM initiatives impact on managerial activities from management perspective in IT project teams context. Our main purpose is to explore and describe informants experience in their managerial activities in project teams

regarding the KM and the most suitable technique for this is in-depth semi-structured interviews for collecting data. Kvale and Brinkmann (2009) state that this type of interview seeks to gather descriptions of the interviewees' lived world with respect to interpretation of the meaning of the described phenomena. Furthermore, Alazmi and Zairi (2003) ascertain that there are several methods and techniques for determining the influence, but the most important one is the opinions of experts in the field. Qualitative semi-structured qualitative interviews is chosen in this research, because based on Creswell (2007) it is one of data collection techniques which are used in qualitative research study and it will help us to get insight information about the subject of the research.

In order to get data related to managerial activities, basically there are two main types of methods that can be adopted in this inquiry. The first is to ask the managers to keep a record of his/her activities (by means of diaries) an extended span of time when KM initiatives are employed. During second approach is to ask the manager to tell the stories about how they perform with the existence of KM initiatives (using interviews).

Both methods have pros and cons. Diaries can provide an open-ended analysis and wide time scope. The main difficulty with the diary method in the study is that the recording tasks are intrusive and time consuming. It is not only the time constraint for the master thesis limits us on using the method, but also it is lack of descriptive data to show the motivation for any changes and variety in the diary. The diary as an intrusive research tool can also affects the managers' activity, so we have to know how the manager behaves before the diary. The diary method has been criticized by Burns (1957, p. 42) that the amount of information contained in each is extremely limited.

As the shortcomings has been identified with diaries, the methodological choice falls on interviews. Based on Kvale and Brinkmann (2009) and Myers and Newman (2007) qualitative interview is not a linear process and it is based on the skill (craft) of the researcher and they provide guidelines for conducting qualitative research interview. The approach used in this research is semi-structured or open-ended where some of the questions are decided, while other questions might not be decided before the interview. In a qualitative research interview, knowledge is produced socially in the interaction of interviewer and interviewee (Kvale and Brinkmann 2009).

In this research the stages of Kvale and Brinkmann (2009) were followed in order to design the interview which includes the following stages: thematizing, designing, interviewing, transcribing, analyzing, verifying and reporting. These steps are very useful for conducting the qualitative interview process and it will be beneficial for the aim of this research to get new insights and knowledge about KM initiatives and managerial activities.

3.3.1. Thematizing

Thematizing stage involves the identification of the research purposes and the conception of theme to be researched before the interviews start. According to Kvale and Brinkmann (2009) before choosing the technique for interviewing and analyzing and which to apply in order to get the indented knowledge, is to formulate the research question and theoretical clarification of the theme that is going to be investigated. In the first section of thesis we explained the answers to *why* and *what* questions regarding the aim of the study and research question.

Since the purpose of this study is to describe how KM initiatives influence managerial activities, we use semi-structured interviews which allow the participant in the interview a flexibility to express their own thoughts for the researched subject and allow the researcher asking open ended and follow up question in order to gather new knowledge. Furthermore, due the purpose of our study that requires choosing the flexible and explorative way of interviewing, because our aim is to discuss and describe the issue rather than trying to verify the actual findings or hypothesis. In-depth interviews allow the researcher to deeply explore the informant's perspectives and feelings about the theme of interview. In-depth interviews are semi-structured, where researchers use to obtain information in order to achieve a holistic understanding of the interviewee's point of view (Kvale and Brinkmann, 2009), that further is used to explore for new knowledge in order to answer the research question and to analyze the impact.

3.3.2. Designing

All seven stages are considered in the design phase of the interview guide. Kvale and Brinkmann (2009) recommend that an interview guide should be designed before the interview. The guide contains the structure and course of the interview. We use the guide to conduct the interview process and explore relevant questions during the interview.

Since the nature of our study is to describe the relationship between KM initiatives and managerial activities, semi-structured interview can help us to explore and probe into facts related to our research question. However, the structured interview will not provide possibilities for participants to freely express their views. Moreover, the semi-structured interview also allows us to focus answers in the area of interest. Open-ended questions are also used to refine the thoughts and to ask follow-up questions depending on the answers provided by the interviewee (Kvale and Brinkmann, 2009). In Appendix 2, we have listed the suggested questions and the motivation for asking the questions. In the interview guide, we include introductory questions, questions related to KM initiatives and managerial activities and, in the end, the ending questions.

The interviews questions are developed from the research framework (see Figure 2.1). The knowledge generated from semi-structured qualitative interviews with four project managers from different organizations helps describing the research framework for impact of the KM initiatives on managerial activities in IT project team context. The suggested questions are formulated around the elements in the model. They are designed around two topics: KM

initiatives and managerial activities. It means that not every question will be following the order in the interview guide.

During design of the interview, there are other issues that have been considered, for example the number of interviews, the length of the interview and place of conducting the interview. The number of interviews is depending on the types of managers and data validation. Types of managers are discussed in selection of informants. Data validation is discussed in quality issues. Four project teams are considered to be unit of analysis. Each interview will provide the data cover the need to answer the research questions. The length of interviews is around 40 to 60 minutes. Place of the interview are decided to be the interviewer's working place. However, the place can be changed according to interviews need. For example, the first informant changed the interview into computer-aided video interview. However, the quality of the interview was not compromised. All interviews are recorded for transcribing.

3.3.3. *Conducting*

Interviews were conducted after design was completed. Semi-structured interview allows us to bring informal grouping topics and questions that the interviewer can ask in different ways for different participants (Lindlof and Taylor, 2002). Therefore, questions are revised due to the subject, situation and comprehension of each interview. Also, additional questions were asked in order to keep the conversation flow and encourage informants to tell more around the subject. Questions and answers to specific informant are listed in the interview transcript (Appendix 4-7).

The interview has been conducted in following segments:

- Interview is started with introduction about the research purpose. Then, we initiate a discussion about the research topics. Due to the term of KM is not technically used in daily managerial work; we ask the informant if they understand the topic. We have proceeded with introductory questions about the informant's professional background and role in the company for the validity of the source of data and the research context.
- We turned into discussion of KM initiatives and knowledge activities in informant's project team. By doing this, we construct a further understanding of how informant perceives knowledge in s/he team. It also helps us to form questions in the next section to the informant.
- After discussion of KM initiatives, we go further into informant's managerial activities related to KM initiatives. In this section, we find out that informant tends to be talkative in describing the daily work. So, we let them express freely around the questions and tell stories. The boundaries are the four types of activities in our model.

- According to the guide, we ask the ending questions to the informants to let them summarize relationship between KM initiatives and managerial activities by themselves.
- In case that the informants are not in hurry to leave. Before we exit the interview, we make a short summarize of the interview and tell the informant about it. Then, we have further informal questions about the topic. We also gained permission to ask more question via email or another interview with the informant if we need more data.

The semi-structured interview gives both interviewer and interviewee opportunities to discuss around the topic. Additional questions were asked, in case we feel that the answers are not enough. The interviewee feels free to describe the stories and share opinions about the questions. We discover that project managers, especially complex project managers, are talkative and willing to share about their daily work. Sometimes, we need to hold their horse and turn the topic back to our study. We listen carefully about what and how they answer the questions. At the same time, we make notes for later analysis.

3.3.4. *Transcribing*

Every interview is transcribed from the audio recorder into written text within 48 hours and before the next one. We set the tight time frame due to two reasons. First is the time limit of the study. Second, we try to transform the interview into text when our memories are fresh. Both of the interviewers are involved in the transcribing process to validate the result. Questions and answers are indexed in the transcript. It allows us to cite and trace back to the original data in the analysis process. Readers also can use the index to validate our interpretation and discussion. There is no best valid transcribed interview and but the transcription should be useful for the purpose of the study (Kvale and Brinkmann, 2009). Because the informants' answers and discussion are straight forward, in the transcript, we have not transcribed the tone of voice and pauses. Example of transcription is presented as dialog in Figure 3.1. We have sent the transcription and the empirical findings back to the informants according to the ethical issues.

I – Interviewer, R – Respondent
 L – Line, P – Person
 Informed consent: KM and managerial activities

Interview 1, Location: Lund Date: 05-04-2012 Duration: 43:49		
L	P	Conversation
1.	I	The first question we want to ask is about your professional background?
2.	R	I have a degree, a master's degree in science from the Danish Technical University. Then I was working as a research assistant for four years. And then, decided to go to the private sector. Then I worked in different small companies for a couple of years. Then I started as a consultant. For the last five years, I have been working as a consultant. Starting as a developer then slowly working, doing more and more product management. And now, I work as a program manager, it is the same as the product manager for Agnitio. And I have been working there for six months.
3.	I	Aha, so you just started.
4.	R	Yeah, exactly. Starting in a company with tough cases and trying to organize it and getting things, errr, wow, so that we deliver on time and to define quality and stuff like that.

Figure 3.1 Transcribing example

3.4. Data analysis

Data analysis part consists of analyzing and interpretation of the qualitative research data gathered from semi-structured qualitative interviews in order to answer the research question. Analyzing the data represents an essential and challenging part of the research that involves converting the empirical data into information. The spiral method is helpful for managing and analyzing the empirical data in qualitative research. The process is not fixed linear but is iterative or process of moving in analytic between with data collection, data interpretation and presentation of data (Creswell, 2007).

Motivation for the apply spiral data analysis method because it mostly used in qualitative research and emphasizes the iterative approach that can help the researcher in interpreting and finding reliable information to answer the research question. Creswell (2007) data analysis spiral is used as a method for analyzing and presenting the data. Analysis of interviews transcripts will follow the guidelines from data analysis spiral that is presented in the figure below.

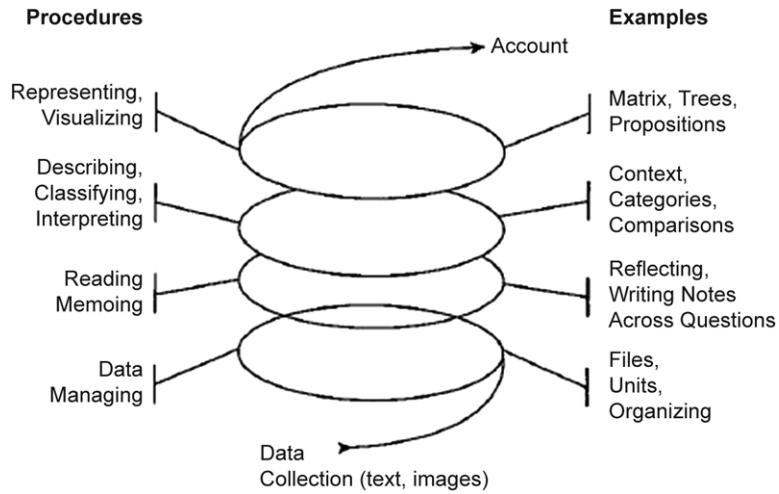


Figure 3.2 Data analysis spiral (Creswell, 2007)

Analyzing the data was done according to iterative steps outlined in data analysis spiral. The *first* step in this procedure was data managing, which involves preparing and organizing the data for analysis into files and units. This was already done with transcribing stage – converting the interview into written text.

Second step in our analysis part was to read the entire interview transcripts several times in order to get a sense of qualitative data and writing notes by highlighting the important ideas and main concepts that occur in the transcript. While applying this step we found the major ideas across questions that we prepared for this part. Questions taken into consideration were related to the managers (informants) perception of the KM, KM initiatives taken by him, reasons and techniques used for implementation. After highlighting the KM initiatives, the next iterative step was highlighting the sections related to managerial activities, planning, organizing, controlling and leading.

The *third* step of spiral method is describing, classifying and interpreting the findings in order to represent the data. Creswell (2007) emphasizes the importance of this iterative step in interpretation and making sense of the data. Significantly in this iterative step is the process of coding to categorize and conceptualize the data with meaning coding, meaning condensation and interpretation of meaning (Creswell, 2007; Kvæle and Brinkmann, 2009) that alleviates the process of analysis and interpretation of the findings. So a coding procedure was done based on concepts in the research framework and interview guide. Coding was done by attaching keywords to a text in order to be able to identify and highlight important statements Kvæle and Brinkmann (2009) and to clarify the informants' answers. Because the interviews were in-depth and we have many discussion points, so we assigned the codes to the informants' answers in order to facilitate the description and interpretation of the data. Furthermore we used line numbers on the interview transcript in order to reference to the section that is interpreted with combination of the informant number, for example for the first informant line 20, the reference code is INF1:20. The coding scheme based on the main concepts of the research framework is when coding the interview

transcript are: INIT (KM initiative), PLA (planning managerial activity), ORG (organizing managerial activity), CON (controlling managerial activity) and LEA (leading managerial activity). As a last step before interpretation of the data we organized the findings into categories by developing themes and codes for relating each of the topics to the main concepts in the model. After the classifying step we were focused on interpretation and interpreting the informants' answers that lead to research results and in order to prepare the data for presenting. The interpretation part was the making sense out of coded and classified data that required extra effort to gather information from data because not everything is apparent in the empirical evidence. An example of coded transcript is show in the figure below.

functionality, that sometimes tend to Ok, the process is not so important, you know... just you develop it, make sure that it is going to be delivered by this time and so things like lessons learned and documentation and things like that they will always tend to be, you know... second choice compared to that I need this to be delivered. So that is always something that you have the challenge in everything you do more or less, take the time to do the lessons learned, take the time to do documentation, take the time to follow the process and why is that important, well it is because if you need to track down a decision for example why or how did that happened and we decided to go this or that way.

Well you can track it back to a decision point which is stored here and there and then the lessons learned are there because we do not want to make the same mistakes over and over again. So it is easily to explain but still when you are there in the heat of the project, you just want to deliver it. So it is; I mean... it is a human thing.

43. I Will these team members (PM members) being involved in the process design?

44. R Hmm... Yes, they are. I mean... The processes that we have in the team, that is something that we very much ourselves are creating so if we think that something is wrong it should be changed, we can more or less do that, and then we just do the change and communicate it to the people that are... to the people that needs to know.

And so I have more or less asked the team who will be interested to work with the process so I have a couple of people that are like more interested than others to really work with project... process, so I have one or two appointed that supports me in that work.

Figure 3.3 Coded transcript example

Interpretation goes beyond from what is said and relations of meanings is not immediately apparent in the text (Kvale and Brinkman, 2009). So, the interpretation is not free of bias and can be interpreted differently, for that reason to validate the interpreted findings we have sent back to informants for validation purposes.

The last step in the data analysis spiral data is presented in textual and tabular form, regarding the analyzed empirical data for KM initiatives impact on managerial activities. After analysis data is presented for each of the informants based on the managerial activities. First we describe the organization, the informants' background and the IT project team. In the followed parts of data presenting we describe the employed KM initiatives by the manager and their relation with four managerial activities.

3.5. Research quality

This research uses qualitative findings from semi-structured qualitative interviews. In order to improve the quality of the research some validity and reliability strategies are discussed. This section ends with a description of ethical issues discussion, criticism of sources, reporting and audience.

3.5.1. *Validity*

We take notice of constructing the rules for judging the validity of research or to specify procedures for eliminating bias. Validity in qualitative research considers the degree to which a finding is evaluated and is interpreted in a correct way. Based on Creswell (2007) and Norris (1997) validation of the findings is an attempt to evaluate the accuracy of the research results. Because the collected empirical data is based on the skill or craft of the researchers (Norris, 1997; Creswell, 2007; Kvale and Brinkmann, 2009). There are two validation strategies internal validation and external validation. Internal validity refers to the extent to which the findings accurately describe reality. Lincoln and Guba (1985) define external validity as the ability to generalize findings across different settings. In this research, to improve the validity of the research we used some of validation strategies.

Firstly, in order to clarify researcher bias (Norris, 1997) we performed a detailed overview of existing literature about the relationship between KM and managerial activities. Also, we tried to reduce our personal assumptions and judgments during the data analysis and empirical results interpretation by interpreting the data based on research framework. Secondly, we used member checking to ensure the accuracy of our findings and interpretations. Member validation is also emphasized by Seale (1999), as a validation strategy which involves a request from informants that participate in the study to validate the interview transcripts and interpretations. For this reason we sent out by mail the interview transcript and the results of empirical data to make the research more credible, reduce personal bias and potential misinterpretations. Third, based on (Creswell, 2007), we used detailed description on the context and decisions we have taken in the study. As presented in section 3.2.1, detailed information is provided on selection of relevant informants in order to ensure the collection of valid empirical data.

Regarding external validity, Seale (1999) emphasizes the detailed description of the context studied. So that readers are given sufficient information to be able to judge the applicability of findings to other contexts. So, to improve the external validity we have tried to give a more detailed description of the context in which our study was conducted. So the reader has more information about the context and the possibility to evaluate the findings based on the given new context.

3.5.2. Reliability

LeCompte and Goetz (1982, as referenced in Seale, 1999) discuss internal and external reliability in qualitative research. External reliability is concerned with replicability of the entire study and the main question is would other researchers studying the same phenomenon generate the same findings. So, to improve the external reliability we tried to provide a detailed description of research methodology and approaches that we have used during the research. Also, it included the description of the unit of analysis and the selection of the informants. Therefore, the detailed description of data collection approach (section 3.2) and descriptions for the data collection technique (section 3.3) enhances the external reliability of the research. Furthermore, we tried to provide clear description on our data analysis strategy and coding scheme which was used to interpret the empirical data (section 3.4).

Internal reliability is considered as a degree to which other researchers applying similar methodologies would match the findings in the same way as original researchers. Based on LeCompte and Goetz (1982) techniques for enhancing the internal reliability we used audio recorder in order to save all the conversations for later transcribing in order to increase the accuracy of empirical data. Other techniques used in this research are quotations and systematic coding. During the coding phase of the interview transcripts, as a team of researchers, coding was done individually and then the results were combined. This was done in order to apply the peer review during our coding phase in order to improve the accuracy of interpretation and the internal reliability of the research (Seale, 1999).

3.5.3. Ethical issues

Kvale and Brinkmann (2009) discuss for learning ethical research behavior involved in the process of interviewing. Focus is on the preparing of ethical protocol and thinking in advance for value and ethical issues for improving the quality and validity of qualitative research. Kvale and Brinkmann (2009) ascertain that interviewing involves moral and ethical issues that impacts the human interaction which affects the interviewees, knowledge produced and researchers' understanding.

We used four ethical guidelines in this qualitative research, based on Kvale and Brinkmann (2009), such as:

- *informed consent* (informing the participants about the aim of the research and potential risks and benefits from participation to the research),
- *confidentiality* (implies that participants' privacy will be protected)
- *consequences* (addressing the possible harm to the participants as well as benefits expected from the participation in the research)

- *role of the researcher* (knowledge, experience, honesty and fairness that is critical to the quality and ethical decisions).

In order to fulfill this we signed interview agreement with informants (see Appendix 1). This was done because the qualitative interview is a social practice and ethical issues must be emphasized (Kvale and Brinkmann, 2009). To keep pace with ethical and quality issues during the coding procedure acronyms for the informants and companies are used in order to fulfill the required ethical issues recommended by Kvale and Brinkmann (2009) for confidentiality. The ethical issues were considered in the process of data collection and analysis. We have sent transcript interview and the interpreted findings to the informant to avoid misapprehension and issues related to confidentiality of the provided empirical data.

3.5.4. *Criticism of sources*

The interviewees' answers to our interview questions can be affected on many things that we do not have any control of (Kvale& Brinkmann, 2009). Although they expressed the genuine interest of the study subject, they may still try to avoid extreme statement when they are interviewed. It is possible that sometimes interviewees may misreport and misrepresent their perceptions to make themselves look better (Han and Anantatmula, 2007). We are aware of this when we conduct and analyze the interview data.

3.5.5. *Reporting and audience*

This part of the research report focuses on the communication of the findings in an ethical and scientific manner. Creswell (2007), Kvale and Brinkmann (2009) and Yin (2009) state that during the writing of the research report significant is role of the researcher in the writing procedure and researchers must acknowledge different audiences in the writing of the report.

The targeting report audience will be the peer researchers. The report starts with basic theoretical background and is written in linear-analytic structure. Then literature review part is followed. Therefore, the research framework is developed and clarified. In order to write the report in a way as rigorous as possible, large portion of report is covering the empirical data collection and analysis. The bias and validity of the result are discussed as well. Two methods are used for reporting the interview knowledge, partial narratives and table visualizing. The context and analysis points that conceive the untold information will be narrated in the report. Furthermore, in this report the writing is encoded and includes the voice of participants in the qualitative interview with the use of quotes (Creswell, 2007).

4. Empirical Findings

4.1. Project Teams

We interviewed four informants from three different organizations based on the sampling strategy (see section 3.2.2). All the teams are specialized in providing IT solutions. The summary of team is presented in table 4.1.

Table 4.1 Summary of informants' project teams

	Team A	Team B	Team C	Team D
Organization	Danish company; more than 70 employees; software provider for pharmaceutical industry.	multinational mobile phone company in Sweden	Sub-organization specialized in providing information management solution for the main company in Sweden.	
Informant	Program Manager	Manager Corp IT PMO	Change Manager	Project Manager
Project Team	distributed team structure;	distributed team structure;	distributed team structure	temporary team

4.2. Project Team A

Organization A: Danish company with more than 70 employees which provides software solution aimed at supporting sales and marketing within pharmaceutical industry.

Informant: Program Manager

Informant's project teams: Distributed team structure, 8 developers in Ukraine, 2 developers in Malaysia and 1 developer in Denmark.

4.2.1. KM initiatives

The manager views the team members as knowledge resources in the project team. When he faces the inconsistency of the team members who are constantly coming and going (INF1:8), he

tries to build a process, which embeds KM initiatives. The KM initiatives in the process are used to manage the knowledge resources. The manager tries to ensure that the process is followed, remove the impediments and to protect team from disruption (INF1:14, INF1:20). The main reason for him to choose the initiative is that he is experienced with it and he is confident about the benefits (INF1:18). He also use ticket system for reporting tasks and track the task progress (INF1:12).

There are several different initiatives that he uses when he manages the knowledge, such as tasks on whiteboard, daily meeting, wiki conference system and documentation. There is a whiteboard, which visualize the progress of working tasks. Team members have daily meetings in front of the whiteboard, for sharing knowledge and solving pending issues. They use wiki conference systems to report in the organization. They also use project tracking software. The daily meetings are aided by the video conferencing software like Skype. He also allows the team members to explore other ways of knowledge sharing activities, such as pair-working (INF1:42). Documentation is used to store the codified knowledge in project (INF1:32).

4.2.2. Managerial Activities

The KM initiatives have impacts on two *planning* activities. The first activity is the task prioritization. The tasks are prioritized by the level of emergency. However, the way of prioritization does not ensure the internal business logic among the tasks. The developers will loose the sense of importance of the tasks. The other activity is the choice of coordination tools in project team. The informant tried to use pure technological KM tool to manage the project. But he realized that “we had no effect”, because KM initiatives require intensive social interaction between team members (INF1:60). He changed technological into social ways that it can be visualized by every team member in the working environment. By social ways, it means that he combined technological tools, such as Excel, Skype, ticket systems, with human interactions, such as daily meetings, whiteboard (INF1:8,12,28,60,76,78,90).

Members are *organized* in front of whiteboard for the daily meetings, based on the need of human interactions. Due to the frequency of the meeting, the informant has sufficient communication with team members and he keeps track on the status of each team. This allows him to have different managing style on teams. For the team that is experienced with the working process and self-motivated, the informant hands-free from the knowledge creation activity. On the other hand, for the less experienced team members, the informant has to provide training session to them and guide them in order to make them on the track. In some cases, some knowledge limitation for one member will be impedance for the project progress. The daily

meeting provides them a chance to re-allocate the right knowledge workers to help solving the pending issue. (INF1:14, 20, 18, 38)

Leading activities are profoundly driving the KM initiatives in the informants' project team. He personally strongly encourages the members to be involved in the knowledge activities (INF1:26). On the other hand, the leadership gets stronger after the KM initiatives are taken. The whiteboard makes sure that the projects have progress every day. At the same time, the board is visualized to his peers and his managers, according to the informant "the more and more visual it is, and the more managers look into it, the more on a daily basis, it has a very good effect on the management." In this case, Informant gets stronger confidence to his leadership and more open to new KM initiatives. (INF1:88, 90) As a result of the stronger leadership, he tries to allocate more resources to enhance the knowledge activities, such as rewarding them with incentives and "couple of days off" when the team members are improved (INF1:64).

For *controlling* activities, the informant uses ticket system to evaluate the time that takes to solve the ticket and writes it down in his Excel sheet, where the project progress is recorded. The information will be reflected in the daily basis meeting in front of the whiteboard with the developers. In this case, controlling is not only the manager's job, but every team member participates in the process (INF1:76). KM initiatives is related to collecting feedback, in order to adjust the operation, where the amount controlling activities are increased. The informant takes much time to micromanage the team lack of required knowledge (INF1:54). Table 4.2 presents the summary of key points for Interview A (INF1).

Table 4.2 Summary of key points for interview A

KM Initiatives		Managerial activities	
Tasks on whiteboard		Planning	Task prioritization Decisions on coordination tools
Daily meetings		Organizing	Resource allocation Communication on tasks Re-allocation on pending issues
Documentation		Leading	Confidence for driving the KM initiatives Incentives to encourage team members.
Wiki conference system		Controlling	Measurement of progress on daily basis Micro management on team members
Ticket system			
Project tracking software			
Video conference			
Pair-working			

4.3. Project Team B

Organization B: Multinational mobile phone manufacturing company located in Sweden. There are more than 2000 employees working for the company.

Informant: Manager Corp IT PMO

Informant's project team: Around 17 project leaders work in the team located in Sweden and China. (INF2:118)

4.3.1. KM initiatives

The manager perceives the issue of managing knowledge not as in the same way as dealing with data and information stored in documents, but informants emphasizes that the knowledge is within the people. The informant's team has KM initiatives in the process. The informant mentioned mainly five KM initiatives, such as lessons-learned, DMS (document management system), pair-working, area specialty and mix-competences.

At the end of every project, the team members are asked to a lessons-learned session, in order to share the knowledge between peers. The lessons-learned documents are stored in a knowledge repository, called DMS. Peers inside the organization have the right to access the documents and read other's lessons-learned. Pair-working is employed between team members, in order to construct the joint-knowledge (INF2:20,32,34,76). According to the information, "the aim is the backup each other, so if some team member leave, there is at least some will have the knowledge for that area". In the meanwhile, she also focuses on developing the area specialty of the members by putting them into similar project areas. Also, Team members are swapped in different business fields, so that informants can try to mix the competence and share the knowledge (INF2:70). In case of vague business requirement, the team also uses agile project management method, which requires other KM initiatives like daily meetings (INF2:48).

4.3.2. Managerial Activities

For *planning* activities, the informant uses the knowledge gained from the lessons-learned to improve the designing and scheduling. According to the informant, her project team "can track back to a decision point which is stored here and there and then the lessons-learned are there, because we don't want to make the same mistakes over and over again" (INF2:42). Project duration is also reduced after the lessons-learned "no longer than nine months" (INF2:60, 39). In the cases, planning activity is revised by KM initiative of lessons-learned and daily meetings. On the other hand, informant takes KM initiative into consideration as an influential factor when she

does planning, such as pair-working and mixing-competence. She tries to develop joint knowledge among the team members, so that she will be allowed to plan the project with flexibility of relocating knowledge workers (INF2:62).

The informant *organizes* resources according to the need of KM initiatives, especially, for the area-specialty, mix-competence and pair-working. The team member who is specialized in one area is normally allocated to another related area (INF2:24). In cases that the resources and time allow, the team member can be switched to new areas by his own interests or the informants order (INF2:30). Some knowledge initiatives become the low-priority, when the resource and time is limited. According to the informant, lessons-learned session is the “second choice compared to that I need this to be delivered” (INF2:42). The team can save the time and resources by sufficient communication about the demand by using daily meeting, when the project request is not clear at the beginning (INF2:50). The team members in Beijing are asked to travel to Lund to participate the lessons-learned once a year (INF2:32).

Informant *leads* the team with her experience of managing knowledge people. Her vision is that the team members’ roles are “to make sure that they delivering things in time and follow the schedule” (INF2:24). The project management competence for the members is crucial for the team goes with the vision. The KM initiatives that are employed, including area-specialty, mix-competence, pair-working and lessons learned can be considered as actions she has taken to share the vision. However, no incentive is given to the team members because of the KM initiatives, rather than recognizing developed competence of project management in the team (INF2:102).

Because of knowledge stored by using lesson-learned and documenting, the informant *controls* the management competence of the team members periodically at the end of project. The informant views them as a tool to trace the cause of the mistakes in the project (INF2:34). Daily meetings regarding with agile project management method, let the team synchronize the progress with the changing requirement from the orders (INF2:48). Table 4.3 presents the summary of key points for project team B (INF2).

Table 4.3 Summary of key points for project team B

KM Initiatives		Managerial activities	
Lessons learned session		Planning	Designing and scheduling Planning project with flexibility
DMS(Document Management System)		Organizing	Resource allocation depending on the specialized area Communication about the project demand
Documentation		Leading	Driving for the competence development Recognizing team member as encouragement.
Pair-working		Controlling	Tracing the cause of mistakes Synchronizing the project progress
Area specialty			
Mix competence			
Daily meetings			

4.4. Project Team C

Organization C: Sub-organization specialized with providing information management solutions that improves the performance of business processes to the main company in Sweden. There are more than 400 employees working in the organization.

Informant: Change Manager

Informant's project team: Around 15 developers distributed in Lund and Singapore.

4.4.1. KM initiatives

The informant places the issue of managing knowledge into two perspectives. The first perspective is the knowledge enabled environment, where the collaboration is encouraged and the KM strategy is guided by the organizational culture. Role specification is used to select the team member that has the ability to engage in the knowledge activities in the team (INF3:20). Aftermath, mentorship is used not only to transfer the business knowledge, but also to accelerate the integration to the team (INF3:34). In order to share tips and tricks from the technical aspect, biweekly meetings are hosted by the experts within the development team (INF3:40). In case of team members leaving, pair-working of the member with his/her to make the knowledge transfer (INF3:80). From another level, the project teams work nearby also share the project status in a weekly update meeting.

The other perspective is the project process where the KM initiatives like regular documentation, daily meeting and status meeting are embedded within it (INF3:46). According to the informant, the knowledge is secured by using documentation. Daily meeting and status meeting are enabling the knowledge transfer in the project teams (INF3:100,102). Walk-through meetings give the team member a chance to report the changes in the project (INF3:46).

4.4.2. Managerial Activity

When the informant makes *plan* about who will work for a specific project, a series of KM initiatives impact his decision. The KM initiatives in the knowledge enabled environment, such as mentorship, pair-working, walk-through meetings, allows the person to develop the knowledge needed to fulfill the requirement for the task. So, the informant mainly considers the person's ability to learn and to collaborate within the team (INF3:30). By doing role-specification, he can be "clear on the expectation to the person" (INF3:28). Decisions about the technology improvement are taking KM initiatives into consideration. According to informant, they are trying "to use subversion for storing" documents on the server and also "tag all the documents for every service release" (INF3:54).

In order to perform *organizing* activity, on one hand, the working capability is assessed by the informant by role-specification. On the other hand, informant tries to create all necessities to make sure the person are engaged in the team activity by allocating resources around the new role, for example mentorship (INF3:34) and pair-working (INF3:80). Bi-weekly meetings allow the team members to have a reserved time only for knowledge dissemination in the group (INF3:40), so the knowledge resources are not constrained in small number of group members. It is also a way to secure the resources. Documentation allows the team member to transform the knowledge into text. It saves the time of repetitive knowledge-transfer meetings. Informant can use the saved resources to contribute project delivery (INF3:48). However, in order to make sure documentation is comprehensive, resources are allocated to peer-review process (INF3:84). Documentation stored in a versioning system allows the team to work on two projects simultaneously (INF3:54). It also provides a systematic way to secure the knowledge resource in documents (INF3:78). KM initiatives, such as daily meeting, status meeting, allow him to reallocate resources depending on the status of the team (INF3:102).

The vision of the informant is to *lead* and build a knowledge enabled environment where the knowledge activities are self-motivated. According to the informant, they "are relying on each other and the knowledge in the team" (INF3:64). In order to achieve the vision, he takes two

actions. One is to verbally motivate the team members who perform well in the KM initiatives (INF3:64). Second is to encourage people to behave as a team player with incentives (INF3:64). The informant is confident about timesaving by using documentation (INF3:90). So, he drives the whole team to commit the activity.

KM initiatives influence *controlling* activities on two levels. First level is the project level. By using daily meeting, status meeting, the informant monitors the progress of the project (INF3:102). The other level is individual level. In order to keep the KM initiative alive, he sets team-player as an objective to the team members and measures their performance about it. Also, the process knowledge is another factor he measures for every individual (INF3:64). He is doing tedious work on monitoring the KM initiatives, for example documentation. According to informant, he “constantly sent out mail” when team members forgot to write the document (INF3:90). Table 4.3 presents the summary of key points for project team C (INF3).

Table 4.4 Summary of key points for project team C

KM Initiatives		Managerial activities	
Role specification		Planning	Decisions about filling the role Technology improvements
Biweekly meeting		Organizing	Securing the resources Disseminating the knowledge resources in team Allocating the resource
Mentorship		Leading	Motivating the team members to adopt KM initiatives
Pair-working		Controlling	Monitoring the performance of team member Monitoring project progress
Documentation			
Daily meeting			
Status meeting			
Walkthrough meeting			
Weekly update meeting			

4.5. Project Team D

Organization C: Sub-organization specialized with providing information management solutions that improves the performance of business processes to the main company in Sweden. There are more than 400 employees working in the organization.

Informant: Project Manager

Informant's project team: around 5 team members. But the members are allocated depending on the need of projects, which means that the team members may change from project to project.

4.5.1. *KM initiative*

The informant views knowledge not only as technical solutions to problems but also people's feelings and reactions to the problems (INF4:58). Several KM initiatives have been used to manage knowledge, such as kick-off meeting, weekly meeting, documentation, lesson-learned session and pair-working. Kick-off meeting is used at the beginning of projects to visualize the requirements and goals of projects within the team (INF4:22). Weekly meeting is where the informant's managerial works are mainly conducted. Team members are discussing issues together. The informant also monitors the resources and project progress in the meetings (INF4:24), so that he takes action to minimize the gap (INF4:18). Documentation is used to store tasks, issues and use cases for the project. Task document is used to record the progress of projects. Issues document can be edited and contributed by every team member to record solutions to problems. According to the informant, "it is little bit of Wikipedia but there is no owner on it, but everyone is free to add information on it." Use case documents need to be verified after the change (INF4:40). At the end of the project, lessons learned session are conducted with the developers, suppliers and business owners (INF4:56). Pair-working is used to transfer knowledge between team members, when one of the members is at risk of leaving the project (INF4:76)

4.5.2. *Managerial activities*

Project *plan* was initially made by the informant. During the kick-off meeting, the informant invites team members to contribute to the project plan. It is an initiative that the whole team makes the plan as comprehensive as possible. The initial plan can be changed, if any "end goal" was considered as unclear in the kick-off meeting(INF4:22). Also, project plan can be adjusted in the weekly meeting. According to the informant, after reviewing the tasks and issues, they

“change a behavior or reschedule into something else” (INF4:24). Planning project also considers the lessons learned from previous projects. Lessons are useful depending on the degrees of importance. According to the informant, “it is important, because if it is not done, then, there is impact on the other projects”. (INF4:126)

The informant takes lots of effort to *organize* the team, because the informant does not own the full working time of project members. Their working hours are allocated distributed on multiple projects. Weekly meeting allows informant to utilize the fragmented resources as efficient as possible (INF4:24, 26). Also, it allows the informant to communicate clearly about the project expectation to the team members (INF4:102). In the meetings, the informant can encourage team members to be engaged in the project. Also, any impediment can be discovered and resolved as early as possible (INF4:34). Resources can be reallocated according to their status in the weekly meeting. It also allows the informant to coordinate the resources to resolve pending issues in the project (INF4:58). When some team member is going to be absent in the project, pair-working allows the informant to transfer knowledge to the replacement team member (INF4:74).

The informant’s *leading* vision is that the team member should be active and engaged in the project (INF4:38, 70). He encourages knowledge sharing. The shared knowledge is available and centralized for everyone in the team. Weekly meeting allows him to take actions to inspire team members about the vision. Documentation records all codified knowledge. A degree of engagement in the knowledge initiatives is considered as a factor to reward the team members. Although there is no incentive, team members can be recognized as good team player (INF4:80). He tries to let members discuss freely. According to the informant, he tries to “make a climate that people are allowed to bring up things, discuss everything in the weekly meetings.” By using the initiatives, he is confident that the team can deliver expected result (INF4:95). Therefore, he motivates team members to be more engaged in the initiatives (INF4:81, 84, 86).

The project is *controlled* by the whole team by using documentation and weekly meeting. The task document visualizes the project progress within the team. In weekly meeting, team members sit together to evaluate the progress and make corrective actions as needed together (INF4:24, 32). Team members’ status is also evaluated by the informant during the weekly meeting. According to the informant “there is need to have weekly meetings to secure that no one sleeps away.” (INF4:58, 90). Table 4.5 presents the summary of key points for project team D (INF4).

Table 4.5 Summary of key points for project team D

KM Initiatives		Managerial activities	
Kick-off meeting		Planning	Project planning Tasks breakdown
Weekly meeting		Organizing	Utilizing the fragmented resources Communicating
Documentation		Leading	Encouraging knowledge activities Recognizing good team player
Lessons learned session		Controlling	Visualizing the project progress Making corrective actions
Pair-working			

5. Analysis and discussion

In order to summarize the findings from empirical data, we list all the KM initiatives and managerial activities in table 5.1.

Table 5.1 Summary of KM initiatives and managerial activities

KM Initiatives	Managerial activities	
Documentation DMS(Document Management System) Wiki conference system Ticket system Project tracking software Video conference Tasks on whiteboard	Planning	Task prioritization Tasks breakdown Project planning Designing and scheduling Planning project with flexibility Decisions about filling the role Technology improvements Decisions on coordination tools
Daily meetings Status meeting Kick-off meeting Weekly meeting Biweekly meeting Walkthrough meeting	Organizing	Resource allocation Re-allocation on pending issues Resource allocation based on specialized area Utilizing the fragmented resources Communication on tasks or project demand Securing the resources Disseminating the knowledge resources in team
Mentorship Pair-working Role specification Lessons learned session Area specialty Mix competence	Leading	Confidence for driving the KM initiatives Incentives to encourage team members. Motivating the team members to adopt KM initiatives Encouraging knowledge activities Recognizing good team player Driving for the competence development
	Controlling	Measurement of progress on daily basis Micro management on team members Tracing the cause of mistakes Monitoring the performance of team member Monitoring and visualizing project progress Making corrective actions Synchronizing the project progress

5.1. KM Initiatives

The findings presented in chapter 4 reveal that the project managers views knowledge as important resources that resides in the team members. The managers try to secure and coordinate the knowledge activities at the same time to achieve the requirement of project. They are very clear that the KM should be complying with the project instead of hampering the project, because, the ultimate goal of project managers is actually to deliver the result. Many KM initiatives, such as daily meetings, weekly meetings, are implemented for the project compliance.

A project starts at a specific time with particular requirements. It has a period of development time. At its end, it needs to deliver a result. The nature of the project lifecycle makes managers employ KM initiatives according to the knowledge needs in project phases. Varieties of measures are used to transfer knowledge about, knowledge in and knowledge from projects (see section 2.1.5). Most of them are heavily relying human to human interaction, for example kick-off meetings for transferring the knowledge about the project, regular meetings for transferring the knowledge in project and lessons-learned session for transferring the knowledge from project.

The two types of project managers that we have chosen as informants show difference on the frequencies of the meetings and interests of the project knowledge. The first type of managers, who are in charge of developers directly, takes more efforts on the knowledge in projects than knowledge about the project and knowledge from the project. INF1 and INF3 both have daily meetings mainly with the developers. The daily meetings are used to monitor and calibrate the developers' work and status. In the other words, this type of managers views daily meetings as a device to collection information from team members for project compliance. It is worth to point out that although INF2 uses daily meeting occasionally, the participants are not developers but customers. It is used for the knowledge about the project.

For the second type of managers, who are in charge of other project managers, pays more attention to the knowledge about the project and knowledge after project. INF2 and INF4 both pointed out the lessons-learned session as an essential method to share the knowledge. At the end of the project phase, they both run the lessons-learned session. They both point out that the lessons learned are not making sure that other person can really learn from it. INF4 even mentioned the need of failure before lessons learned. INF4 also has information collecting device called weekly meeting. The frequency of meetings is less than the daily meetings for the first type project team. It can be understood that the team members in the second type project team are more autonomous than developers in the first type project team. The duration it takes to have a meaningful milestone for a project is normally longer than a completion of working task. Another level of meaning for the weekly meeting of INF4 is to create a tight social connectivity to increase the team member's commitment in the project.

The managers are working with the teams and at the same time developing the projects. Although the projects may be discontinuous and dissimilar, the knowledge domains of the projects are always overlapping at some degrees. Informants mentioned the need of requisite and process knowledge (see 2.1.6) in the project teams. Requisite knowledge allows the team member to pick up tasks and solve it. The process knowledge is used to integrate team members to work as a team. INF1 and INF3 weigh the process knowledge more than the requisite knowledge. Especially, INF3 points out that it is important for the person to fit into the job and team. Schindler and Eppler (2003) also found out that systematic project learning is important to develop the competencies in project.

Mentorship is used for the team members to speed up integrating in to the teams' process. INF1 coaching the team members by himself. INF3 appoints veteran team member to guide the new team member.

INF2 and INF4 mentioned that they wanted to have a person do a job with requisite knowledge. INF2 even tries to give opportunity for the team members to develop in a specific knowledge area. Although INF4 does not directly own the human resource, he always tries to request resources with the competence in the project's knowledge domain from the organizational resource pool. INF2 does not have as large resource pool as INF4, so she mix the personals competence in order to achieve further flexibility in the future projects. As long as the team members can deliver project result in INF2 and INF4's team, the process is not as important as for the first type managers' teams.

Pair-working is normally deployed to solve contingency issues like absence of team members. However, INF2 uses pair-working to build the mix-competence in team members. She is securing the knowledge in case of the contingency issues. Ajmal (2009) claims that the managers have to create space and place for social interaction to share relevant knowledge.

The purpose of a project team is to deliver project as expected. All activities that enhance the knowledge transferring about the project and knowledge in the project have direct impact to the project result. According to the table, it is not hard to understand the intensive of resource allocation with frequent meetings like daily meetings and weekly meetings.

Lessons-learned session is at the end of process and it is not the first priority of the teams. It does not have the direct impact to the current project anymore. INF4 has pointed out that lessons learned are only important if the consequence of not implementing it on the current project is known.

5.2. Managerial Activities

5.2.1. Planning

Three planning activities are mentioned by all informants, which are project task breakdown, task scheduling and resource planning. The informants are performing as the source of the knowledge about the project. They act as delegates to take in project requirement from customers (INF2) or business side (INF3). Before projects are introduced to the team members, the project is broken down into tasks. Team members are not much involved into the initial task breakdown. Task scheduling should be performed from the reality. KM initiatives allow the informants to gain knowledge about the reality. Lessons learned helped INF2 to realize that in a fast changing IT organization, the project should not last more than nine months. INF4 also mentioned that the scheduling can be adjusted in the kick-off meetings and weekly meetings when the goal is not clear. Although the team members for INF1 are not invited in rescheduling activity, daily meeting allows them to understand the cause of the change. It is not only the informant, but also the whole team need to have the knowledge of the reality. It helped the team to find, select information and expertise for problem solving, decision making and planning (see section 2.2.3).

Resource planning about the work force is basically depending on the need of personal development. Although INF2 and INF3 are different types of managers, they both point out the concerns of making effort to put the right person on the right position. If the person is not ready to fulfill the requirement yet, they will plan resources on KM initiatives like mentorship, pair-working.

All informants are working with IT projects. However they are all cautious about resource planning on technologies. INF1 and INF3 both mention decisions to adapt technologies in project teams. INF1 tried to use software to integrate the project process. However, he realized that the individuals are separated at the back of the computer. He had to use daily meetings in front of whiteboard to integrate them together as a team. INF3 is very clear about the role of team player. He is more concerned with technologies that can enhance the information processing. INF2 and INF4 are more believers in social activities. INF2 pointed out that she does not believe in technology.

5.2.2. Organizing

It is shown from the analysis of empirical data that organizing activities are allocating resources not only to execute the plan but also to adapt the KM initiatives. On one hand, the team members are dictated by the managers to participate the KM initiatives, such as daily meetings, documentation. On the other hand, managers are building an environment to allow the team members to self-organize themselves to perform the knowledge activities. INF2 and INF3 claim

that knowledge transfer in the teams normally happens when people talk to each other by themselves (informal communications).

It is worth noting that project managers are performing a role in the dictated organizing activities as knowledge catalyst. INF1, INF3 and INF4 all try to reallocate people to collaborate on the pending issues as soon as they are aware of the problem. KM initiative in this case is a container with knowledge resources. Managers initiate and speed up the knowledge reaction in the container by connecting the proper resources to the pending issues, in order to transform resources into business value (see section 2.2.3).

The analysis of empirical data confirmed the limitation for resources in project. It shows that project compliance and the competence development are the principle contradiction when the managers consider allocating resources. Project managers, such as INF1, INF2 and INF3, all have a stable team to develop the project. They all are having problem of limited time and budget when they try to secure the knowledge resources in the project team. It makes some KM initiatives become volatile, because they have to give the way to the project compliance. However, they still make effort to improve the competence of the teams. INF2 uses area specialty and mix competence and INF3 uses role specification and bi-weekly meetings. INF4 is different from previous three informants. His team is allocated from a resource pool. He is not responsible for the competence of the team. As a result, he can just focus on the project delivery part and only allocate the resource on the project.

5.2.3. *Leading*

The findings suggest the common vision of the project managers. They are all driving knowledge activities at the same time of project compliance. The first type managers reward developers with incentives when the knowledge activities are improved. The second type managers also try to encourage the team members for the well performed team player with recognition. Experience is the common word that is used for every informant to explain the reason to drive the team in this direction. It is shown that teamwork or collaboration is the key to deliver the project. Otherwise, according to INF4, the project will not be delivered.

Informants take lots of effort to lead to the team to an open environment that the team members can commit to the work. INF1 personally coach the team members to be integrated in the KM initiatives. INF2 is carefully balancing the team members' need of interesting knowledge and project requirement. INF3 is dedicated to build a knowledge enabled environment where all team members shall feel comfortable to make knowledge transfer. Managers are taking efforts to harness the power of KM to enable, inspire and reinforce the team members (see section 2.2.3). Davenport (1995) claimed that knowledge enabled environment can facilitate trust and sharing. INF4 put up an inspiring climate in the weekly meetings to make the team members to freely express their opinions about the project.

It is also observed that project managers try to join the knowledge resources in a sustainable way. INF2 use mix-competence to create the joint-knowledge domain among the team members. INF3 set up the biweekly meetings to disseminate the technical skills in the team. INF4 record the solutions to technical issues in a centralized document which all team members can contribute to it.

5.2.4. *Controlling*

KM initiatives are used as monitoring device to control the whole teams' behavior. It provides basis for management to focus on what is important, help managers to understand the status of project team and the whole project (see section 2.3.3). As the team members' delivery results to contribute to the whole project, project managers need the device to regularly check up. INF1, INF3 and INF4 all emphasized the necessity of the checking process. INF2 does not have the regular routine but she goes to the team member directly and talks to them whenever she needs to do it. INF4 mentioned that the same method was used in the organization before. However, it does not make sure that the project can deliver, and then he started forcing everybody to have a weekly meeting.

Checking process in the KM initiatives such as daily meeting and weekly meeting is not purely used to stick the tasks completion rate to the schedule. It also allows the project managers to tune the team members on the same tone as they lead the teams to. Managers react to the contingency issues and make corrective actions to solve them. The pure technological KM initiatives, like the project tracking system, do not allow managers to react efficiently to coordinate the team behind the computer screen (see section 2.1.3).

In order to make the controlling objective shared in the team, a centralized information carrier is commonly used. Whiteboard is for buildup a common sense and transfer the information directly. Excel document can also be used to make the same role. It is just depending on the resource or team organization.

6. Conclusions

The purpose of the study is to contribute to the body of KM theories and practices. In order to investigate the management behavior, in the literature review, we identified four basic managerial activities in IT project teams, which are planning, organizing, leading and controlling. In our study, it reveals three empirical findings, which indicate relationship between the KM initiatives and managerial activities that we mentioned in the research framework.

The first and most extended finding is that the KM initiatives are aimed to achieve two objectives about the managing the knowledge in IT project teams. The project managers' ultimate goal is to deliver the projects. KM initiatives are implemented on the project related knowledge to accomplish the project compliance. The other on-going goal is to developing the team members' knowledge and skills. Social interactions approaches, such face-to-face meetings, are heavily used by project managers to manage the project requisite knowledge and process knowledge to carrier out competency development.

The second is that the complex and unpredictable setting of projects generates challenges constantly for project managers. The choice of the KM initiatives in IT project team depends on the need of the project managers to manage different types of knowledge. Therefore, same KM initiatives can be used for different purposes.

The last, the project managers in IT project team all attempt to response as quick as possible to issues. The managerial activities require a set of approaches to gather the required knowledge to tackle the issues and improve effectiveness. Findings demonstrate that KM initiatives are selected by the project managers to fill the requirement.

While looking at the relationship between KM initiatives and managerial activities we found the types of knowledge and project managers' objectives affect the implementation of KM initiatives, which has direct impact on the managerial activities.

How Knowledge Management initiatives impact managerial activities in IT project teams?

From the research question we conclude that we need consider objectives that the KM initiatives are designed to achieve before get the complete picture on how the impact on managerial activities. The objectives are project compliance and competency development. Project compliance allows the project team to fulfill the business requirement. Competency development allows the process and team integration in the project team. The limitation of resources and time puts pressure on project managers to deliver the project on time. Integration of process and team is the most economic way of utilizing the dispersed knowledge in individual team members. Project managers have the power to decide which KM initiative to be deployed in the team.

However if they do not balance the two objectives, the KM initiatives can be the obstacles for the project managers to carry out the managerial activities.

The effective management of knowledge in project teams is essential for delivering the project. KM initiatives that are taken by project managers have the purpose to create, capture, disseminate and use knowledge in the project lifecycle. These initiatives have implications on managerial activities. As a result, they cause new challenges for project managers.

In order to manage project related knowledge, project managers use varieties of approaches, either formal or informal. Management problems caused by KM initiatives tend to be solved using stronger controlling, for example micromanagement. Therefore, to improve the knowledge transferring and sharing between team members is crucial for project delivery.

This study finds that all four managerial activities are impacted by the KM initiatives. Although planning is a decision making activity mainly relying on the project managers' perception of project settings, managers can benefit from the knowledge created in KM initiatives, such as regular meetings, to improve task breakdown, scheduling and avoid decision making problems. Technological KM initiatives also provide the well organized file system. They allow the project managers to plan and coordinate multiple projects simultaneously.

Organizing and controlling activities are impacted most significantly by the KM initiatives. Project managers can solve ambiguity problems with the help of KM initiatives and get feedback from the team members in order to tackle the contingency issues. It is also a benefit that clear expectations can be made by sufficient communicating with team members. By using KM initiatives, project managers are not only controlling the project progress by themselves, but the whole teams are involved into the controlling activity. It makes consent between project managers and team members. At the same time, the commitments of team members to the projects are established. However, more KM initiatives in the team, the more resources will be spent on the project. Managers need to pay more attention to monitor the team members' work.

The more actions managers take in the KM initiatives in planning, organizing and controlling, the more clear vision can be conveyed to the team. Incentives and recognitions for participating KM initiatives will be granted to team members, so that it can facilitate the knowledge sharing and management of knowledge among all project participants. A project manager can help by fostering a communication-friendly environment within the project team.

Project managers have to comprehend what type of knowledge team members require to use in order to achieve the goal. Moreover, they should be able to deal these types of knowledge, because managers have to balance the need of the KM initiatives in order to gain benefit.

Appendix 1 Gaining Access

Dear Informant,

We are Master degree students at LUSEM (Lund University School of economics and management), in the Informatics department, Information systems program.

We have to write a master thesis (a degree project) in the end of study period. Thus, we will do some research related to knowledge management.

Knowledge management is quite important for the organization efficiency. Furthermore, if an organization has its knowledge well managed, the organization's value creation process will be more sustainable. So, we come up an idea about researching the knowledge management in IT projects context and how Knowledge management initiatives impact your managerial activity.

It will be benefit for both the organization and ourselves, if can be approved to be conducting the qualitative study with the help from your organization. Perception of knowledge management initiatives impact on managerial activities, the data provided by you will be critically reviewed and we will provide feedback to you with what we can find and provide empirical data to you to make decision about working process in the future. We will make comparison about the research results also from other IT organizations and draw a conclusion from it. Thus, you can also gain information about this comparison.

The research method will be in-depth interview with you about knowledge management initiatives impact on managerial activities and will last approximately 45 minutes.

When is it possible that we can arrange a meeting some time?

We appreciate your help.

Best Regards

Luo and Tahir

Appendix 2 Interview Guide

Questions	Context	Motivation
What is your professional background?	Introduction	To get a picture of interviewee and make the interviewee more comfortable with the interview's situation(Kvale & Brinkmann, 2009).
What position do you have in organization?		
How do you consider your role as a manager in the IT organization? Which are your work tasks?		
How long time have you been working for the organization?		
What is the role of Knowledge asset in organization?	KM initiative	To get the interviewee's understanding of knowledge
What initiatives do you take to manage the knowledge? Both in the project and daily work? How did the KM initiatives come into place? Who are the users of KM initiatives?	KM initiative	To get interviewee's approaches to implement KM initiatives in the project team
What is the impact of the KM tools to your project team? Do you have standard processes for transferring tacit knowledge between employees?	KM initiative	To get an idea of the how interviewee is experienced with the KM tools.
At what stage is your KM initiative?	KM initiative	To get a picture of the running KM initiatives in interviewee's project team
Do you consider KM initiative as a factor that influence your decision making process? And How?	PLAN	To identify the impact of KM initiatives to planning
Do you benefit from KM initiatives when you plan your project? And How?	PLAN	
Are the KM initiatives considered as a factor to justify needs and allocate resources?	ORG	To identify the impact of KM initiatives to organizing
Do you allocate specific resources for KM initiative implementation?	ORG	

Is the knowledge activity self-directed, guided or dictated How do you organize the activities with the help of KM initiative?	ORG	
How the KM initiative helps in protecting the knowledge resources?	ORG	
Does your organization reward knowledge sharing?	LEAD	To identify the impact of KM initiatives to leading
How do you try to encourage team members to use KM initiatives?	LEAD	
Do you try to establish the KM policy in the team?	LEAD	
Do you use KM initiatives to assist the process of measuring and evaluating the progress? How? Is there a technological support for the measurement?	CONTROL	To identify the impact of KM initiatives to controlling
How are the knowledge resources valued?	CONTROL	
In your opinion, are the KM initiatives successful? What is the reason?	ENDING	To get an general impression from interviewee on the result of KM to their managerial work.
How KM initiative impacts your work?	ENDING	

Appendix 3 Interview transcript 1

I – Interviewer, R – Respondent

L – Line, P – Person

Informed consent: KM and managerial activities

Interview 1, Location: Lund Date: 05-04-2012 Duration: 43:49			
L	P	Conversation	Code
1.	I	The first question we want to ask is about your professional background?	
2.	R	I have a degree, a master's degree in science from the Danish Technical University. Then I was working as a research assistant for four years. And then, decided to go to the private sector. Then I worked in different small companies for a couple of years. Then I started as a consultant. For the last five years, I have been working as a consultant. Starting as a developer then slowly working, doing more and more product management. And now, I work as a program manager, it is the same as the product manager for Agnitio. And I have been working there for six months.	
3.	I	Aha, so you just started.	
4.	R	Yeah, exactly. Starting in a company with tough cares and trying to organize it and getting things, errr, wow, so that we deliver on time and to define quality and stuff like that.	
5.	I	OK, What is the organization like in your company, is it a new company?	
6.	R	Agnitio is emm, I think the company is five year old. But for the last four years or three and half years it's been a very small company, barely existing. Only having, I don't know, 25 employees, but during the one and half years, they have expanded by almost five hundred percent. So we get new employees every month. New people starting. And until now, we don't have anybody leaving the company. But of course, at some points, we'll also have people leaving us for different reasons, finding new jobs or getting laid off, and stuff like that. But at the moment, we are just growing that is one of the most difficult parts with a company like this, when it's grows five hundred percent during in one and half year, you don't have all the processes and responsibilities of employees are not that defined. So there is no actual leadership in the company. Mostly just who takes the responsibility. Then, we try to do our best to complete it. And it is a bit different from what I was used to, so it's a big task.	
7.	I	So you mentioned that people are leaving and coming, the people leaving and coming are carrying the knowledge of the company. Do you feel pain about that?	
8.	R	Yes, that is a hard part, but we try to do Scrum. The company, I don't know how much you know about Agnitio as I just told you about it, but Agnitio is mainly located in Denmark. But the whole development department aside from management, product management and management upwards. All the development is done in different locations in the world. We have in Ukraine five developers. And, we have iOS team also located in Ukraine. That is three developers. Then we have two developers in Malaysia. And only one developer in Denmark. So, we have a, it is been	INIT

		very hard to keep people in. You tend to have a lot of people coming and going and that's why we try to use Scrum to do some knowledge sharing combining it with some experience. I wouldn't say it works. But it is probably better than have one guy knowing all about the company and when he leaves you have to start all over again.	
9.	I	That is you adapt the agile programming methodology maintain your knowledge resource in your company?	
10.	R	Yeah, exactly.	
11.	I	You mentioned Ukraine, Malaysia and Denmark, all you have developers. Are they all leaded directly by Denmark?	
12.	R	Well, the setup is that, as I said, program management is in Denmark, then we have team leads in each team but the responsibility of the team leads is mostly to look at the backlog and another backlog, the sprint log. That's why where we actually at the moment are not in sync with scrum process. The setup is that we do projects, right? We have products. And we have a lot of support tickets coming in from the support system. And because the setup we have right now, it's been very hard to prioritize the support or ticket that has come with. So every ticket has priority high or critical. So the team leads task in different teams is actually to prioritize the things that have come in. And the program manager is more concerned about the new features that we have, and making sure we have all the new features when we do the releases. So, I will say that the decisions are made in Denmark but the control and the daily work is done by team leads in different teams in different countries. So, I do the planning, prioritization of features and team's leads do the daily prioritization and assigning it to different developers. But we do have scrum meetings every day. Standard meetings where we do Skype meetings with the difficulties that gives us, but we do have that so we try to use Scrum as much as possible.	INIT, PLA
13.	I	So you try to set up the daily Skype meeting every day to share knowledge. Is that an initiative that you do managing the knowledge in the organization?	
14.	R	Also, when you have teams. We have one team concerned iOS, ipads, about the application. But they depend on the backend system. We also use scrum meetings to get any impediment or blocker out of the way. So that when they have these standard scrum meetings every morning, they say, well I am working on this ticket. But I cannot close it because I am waiting for the backend to complete something. Then I can talk to the backend team. And find out why they are delayed or whatever is holding them up.	INIT, ORG
15.	I	So, the backend team is responsible to the technologies supporting?	
16.	R	The backend team is, they do the servers and web services. They are the engine. All the applications around it and all the client application are more like; they just transform the data to something visual to the customer.	
17.	I	So why did you choose, at the beginning, to use scrum way?	
18.	R	Because I have done it before, I worked last five years at least; I work with scrum in different scenarios. First, as a developer, and then later as a scrum master, and product manager. And, Scrum is helpful; at least we have team in Denmark we would have this daily scrum standing in front of a paper board, in front of a scum board. It gives a lot of effect, when people have to talk to each	ORG

		other.	
19.	I	Okay...	
20.	R	<p>I can give you one example. I worked at Danish Company, and took aware a team that was completely behind deadlines. And we had a long meeting and I asked them why they were behind. And they told me that the rest of the organization was working against them. That every time they came to some developer in the other team, the developer would not help them so that was why they were behind and we started the Scrum process. And soon they realized that, well... one example was that one developer from the team was saying, well I cannot not close this ticket because I am waiting for an answer from another developer. But then suddenly one developer in the Scrum team would say, well I already got that email, here is the information you need and then you could close the ticket fast. So Scrum gives us a chance on a daily basis to follow up on stuff that tends to just accumulate and then you forget about it. But at the Scrum meeting we can discuss, hmm... Also I have stuff like, you have a ticket and it is assigned to one developer, because he thought that when he started working on it, that it was something that he could do, and then he finds out that he cannot do it then in the Scrum meeting he would say: well guys I took this ticket but I cannot close this, because I do not have the knowledge. And then one of the other developers could say: Well oh o super... but I know how to do that, so I will take that ticket and close it for you.</p> <p>I have also worked on top down development, you know... waterfall model. I have done that both in Siemens and a Danish company called STC. And, the difficulties are always that you have the customer defining very, very meticulously how the program should work, but they always change their mind. And now if it takes half of year to develop some kind of software, the start scenario and the end scenario often differs a lot. And if you do it in the waterfall model you do not have the possibility to change. And the goal of the development is actually to have customer happy. So that is why we introduce Scrum, not that agile does not mean that you have to change every day but agile means that we can change. Of course there is a cost in doing it, but we can change if the customer finds out that, well the feature that they put up to us as was a high priority is not longer high priority, it is actually is low priority so they do not want that , they want something instead.</p>	CON, INIT
21.	I	So, this gives you the flexibility to manage your project, to manage the changes actually?	
22.	R	Yes, exactly... and the primary goal is of course is to make customer happy, so they will come back to us again with another task.	
23.	I	What do you think about the stage of Scrum implementation in your team?	
24.	R	In my current company?	
25.	I	Yes.	
26.	R	<p>It is not good. No. We come with different backgrounds. I have the Malaysian team, which is actually a guy from China and guy from Belgium and they work pretty good with Scrum as they have done it before. But the guys in Kiev in Ukraine, there is a cultural difference, they are from the Russian times, and they used to just coming at eight in the morning and getting a ticket and then they work on that ticket, they close it and they go home. But Scrum does not work that way, you have to take the responsibility in Scrum for completing the project of the features and then we have... they do not seem to realize that. So actually we are going down to Ukraine next week to try to teach them and hopefully that will help. But right we are trying to implement the processes but it</p>	LEA

		is not working that well.	
27.	I	Do you think that the Scrum can be factor to influence your decision making process? Because you try to plan and decide what step to go next, is the Scrum process a factor that influences?	
28.	R	Yes, I think it does because when we do the Scrum or when we do sprint planning for instance with Scrum, well... we try to let the developers pick from the high priority, we start from the high priority of the backlog items, but it does influence the development because we... well one of the things that developers told me is that sometimes they lack the overview of what is going on or which direction we are moving the product. And that perhaps tends to be a problem with scrum that when you have the waterfall you have a very descriptive definition of what direction the product should move in and in Scrum you can actually have the customer coming and saying well today we want these and tomorrow we want something else. And it can influence the developers so that they lose some of the focus on what is important and not important. So sometimes it does influence the decisions that we do when we do the Scrum planning.	PLA
29.	I	Okay...	
30.	R	Did that answer your question?	
31.	I	Yes, you said that the waterfall has the complete description for the requirement and Scrum is too flexible to manage the description?	
32.	R	It can be. At least it can make some... it can make the developers lose the perspective of the overall goals of the project.	
33.	I	Do you think there is a way you can deal with it, to make the description more solid?	
34.	R	Yes... I think it is a process that ...if you have a customer and I have always a deal that total scrum can be very hard to manage because it has to be implemented throughout the whole organization and all the way back to the customer. Whereas mostly where I have worked, we have had a combination of waterfall model and scrum. So you have a customer that comes in they say well we would like some software and it should do this and this. Then you split up the whole process into big chunks and where the customer actually specifies not as detailed as they normally would do if it was a clear waterfall model but they do specify in big terms in which direction they want the software to go. And then you have, let's said three months period or just two months period while you do the scrum development then in that Scrum period you would involve the customer in sprint demos but you will still have a goal for this sprint. So we would have some overall feature description that the developers knew about. This period is about creating the backend system and this period is about creating some functionality in the front end and stuff like that. And when you combine it like that, I think it is best scenario I have seen so far that you combine it. So if you do that... But we do not do it at the moment, we have a total Scrum.	CON
35.	I	Next question is that... Is the knowledge activity in the team self-directed, guided or dictated?	
36.	R	Hmm...	
37.	I	For example for knowledge sharing or knowledge creation. Do (are) they try to self motivated to create documents by themselves?	

38.	R	That is the problem. I would say that the Malaysian team, they are self motivated. They often come up; if I give them a feature, say... some new functionality for the application.	ORG
39.	I	Yes...	
40.	R	I give it to them, they sit down, they estimate they break it into smaller pieces, they come back to me and say: Well we have done this we but we faced this problem and this problem or they do unit testing or documentation by themselves but the Ukraine team is quietly opposite.	INIT
41.	I	Okay...	
42.		It is very dictated. The team lead dictates for them. Now you have to do documentation, now you have to do testing, now you have to do this and this. But they tempt to... I mean... the team leading in Ukraine has set up some kind of experience, he has paired two developers and the meaning is that they should sit and share knowledge. This was done by his own initiative, so, so that's a good thing but my opinion is that I don't believe that they do it that much. I think that it is mainly, they do it when they have told or have to do it. So it is a big difference between two teams. One team is self motivating and performs very well, and the other team is very micromanaged and needs to be told every day what to do.	INIT, ORG, CON
43.	I	Do you think that do you need to organize these activities in order to make it more efficient or?	
44.	R	Yea, you have to. When you do micro management you need to have some kind of system to plan and remember. So that tends to put...the program manager tends to be very rigid, and then it goes in to some kind of system. Where you say...well for working today I need to discuss with them, I have follow upon this, I have to follow upon this which is very non Scrum, because normally I would just rely on developers on completing tickets. As an example is that with we just have this, a feature called iMagazine in our product, and the developers in Kiev told us that this was done. So we started planning for releasing, we have to inform our customers four weeks in ahead, in advance.	CON
45.	I	Okay...	
46.	R	So we started planning and started planning for the release and then, we did one release, one alpha release and we started testing and we found out that almost 40% of the implementation and the acceptance criteria for this feature were not implemented.	PLA
47.	I	Aha...	
48.	R	So, so that is why, you as program manager tend to micromanage, because the next time they close the ticket, I have to go in and make sure that they do it. And then you move further and further away from Scrum and more and more in to some...Yea, a micromanaged dictated way of working.	CON
49.	I	Okay, so actually... the Scrum helps when the team is small. Isn't it?	
50.	R	But, figures just fill out, just only I have small misses...	
51.	I	So you mention that Scrum only helps when the team is small, but when the team is expanding then you have to take a lot of effort to micromanagement?	

52.	R	Yes...	
53.	I	Is that will be, is there will be any obstacles for your managerial activities?	
54.	R	Yes it will, yes it does. Because of the distance when doing of shoring like I do. It is difficult, had the team been in Denmark, it would been much more easier for me to not micromanage and because then I have the ability to watch them, see how they work I could see whether they were running around in panic or they were working organized. But I cannot do that, so I have to rely totally on the status they give me. And that makes little bit more difficult to do the Scrum with teams that are not professional Scrum developers.	CON
55.	I	Are you going to allocate specific resources for this?	
56.	R	<p>No, I do not think so. (.) If it was up to me I would have at least some of the developers in Denmark or close, so that I could have this human interaction with them. But, of course my manager and my boss, also looks at prices. And the price in Kiev is still bit cheaper than it is in Denmark. So I think we have to work the other way around, I would have to come up with some kind of process or tool whatever, to make it more... training and coaching of course is very important part.</p> <p>We have to train the Ukrainian team to realize that this a way we want to go, right now they do not see the benefits of Scrum, they do not... even though they have been coached for almost three months they do not understand what the burn down chart shows them, so... I think that education, training and coaching, and stuff like that is going to be the major part of getting the Ukrainian team often running as a Scrum team. But I still think that even though they do not perform as a Scrum team right now, the benefits of keeping Scrum in the long run is good.</p> <p>Because I really hope that at some point they will get, they will take the responsibility of creating the products, I see small changes every day and improvements. They start calling back to me with questions, they did not do before, so I see improvements every day so that I think we will keep them in Kiev, but there still is lot of work still involved in getting them often running.</p>	ORG, INIT
57.	I	So when you are doing training or coaching this Kiev guys, do you personally go there or do you use any kind of technology?	
58.	R	Yes, I personally go there.	
59.	I	Ok, you face to face are guiding them...	
60.	R	<p>Yes. I think it is very important. Scrum relies a lot on human interaction, it is difficult for developer to stand in a Scrum meeting until the rest of developers that he has not have any progress on a ticket. It is a lot hard to do that without a good excuse, and then it is just sitting behind the screen on Skype.</p> <p>So, I really think that human interaction is good think. Also the Scrum... we are working on video scrum, some video conferencing because just doing Skype meetings it is not that good, people tend sit in read emails instead of taking part in the scrum. So, we are trying to do some video scrumming, but it is difficult because the technology even though is there, it still demands a lot of bandwidth for instance for video, if we have three locations it demands a lot of bandwidth. So, yes, I do not know...we will see what comes up, but we definitely have to find some improvements.</p>	LEA, INIT, ORG

61.	I	Ok. If the Kiev guys are improved by the training?	
62.	R	Yes.	
63.	I	Do you reward them with something?	
64.	R	<p>Yes. I mean... When I was in the military they told me that commenting people was a rule for all evil, because you should only tell people when they did something really, really good. But, I mean that telling the development teams that they do well and that they perform well is very important and what we do is that we for instance we had the new Ipad came out, then we gave them Ipads.</p> <p>And, we had one particular colleague that worked very, very hard and I could hear his voice that he was getting very tired. So we gave him a couple of days off. Talking to him, go home and stay home for the next two days and turn off the telephone and stuff like that. I think that is very important because If you just the work people too hard too long, they will either get the change the job or get sick right, so we try to... every time when they do something good, we try to tell them that it is good.</p>	LEA
65.	I	Is that based on the organization or it is based on your team?	
66.	R	<p>Hmm.... Right now it is team based. Organization is not that... the rest of Agnitio is using very old management techniques like close follow ups and stuff like that. And it is little lack of trust in Agnitio as an organization... Well, that's what happens when company grows this fast, because the manager, the head (...) boss he is used to making small decisions on whether the button needs to be green or red, and suddenly when you have grown 500%, he is no longer able to do that because the distance from him to developers is very long now.</p>	LEA
67.	I	Ok.	
68.	R	So... but it takes some time before the trust comes into through the all levels of management.	
69.	I	So it means that middle levels are the first entries for this kind of knowledge encouraging activities?	
70.	R	Yes, yes. I would say.	
71.	I	Is there any plan for your organization to have official knowledge management policy?	
72.	R	<p>I do not think so; I have not heard about that, I have not heard about anything like that. As I said this organization is very new and another important issue for Agnitio is that many of the people in the higher positions have been part of the company as they started, and they have not got the education needed as managers for instance or department managers... So, I do not think they even knew about it, they do not know anything about managing; so they just do it on a god feeling. So I am looking, I am very anxious to know and looking forward to see what will actually come out of this because at some point they need to be let just call what it is, they need to be professional managers and they are not right now, they are just they... just react, they do not plan for anything.</p>	LEA
73.	I	Then, let's go back to Scrum. In Scrum how do you measure your progress?	
74.	R	You mean the progress of the sprint or the progress of the burn rate of the developers?	

75.	I	I mean in the process of the project.	
76.	R	<p>Ok, well we start up by sprint planning, and from previous sprints we know the burn rate, we know how many story point they can burn and then we go through the backlog picking features or tickets or whatever from the backlog that we need to do, that the highest priority available and we put it up into sprint log and fill it up with the number of story points that can be put into sprint according to their burn rate. Then we do breakdowns, we break the tickets of the stories into smaller subtasks estimating them into hours actually.</p> <p>And when we have the hours, they start the scrum and then they move the tickets back and forth in the scrum board, and every time they close the ticket actually we do... if the ticket has been estimated for eight hours, then at the scrum meeting the developer will say, well I have two hours left then we will write two hours on the ticket, it might take eight hours to burn six hours on the ticket but that is another story. With this two hours left, then I have a big Excel spreadsheet where I write down the estimates for the tickets. And then actually my burndown chart and it tells me normally whether am I on track or not and that's how we measure the progress on a daily basis at a scrum meeting they tell me how much time they expect to be left on the ticket and then I write down the original estimate of the ticket.</p>	CON, PLA
77.	I	Do you share this measuring report with anyone else?	
78.	R	I have a scrum board at the office, and it is on the scrum board. We have a wiki system called conference, I do not know if know it, but we put the burn down charts in that tool, or I should say that is the plan. We do not do it right now, but the plan is that we will put into the conference system so that the developers can see it every day and then we once a week we have what we call executive summary, which is the program managers reporting back to the product manager and any other manager actually in Agnitio. And that's part of that too. So it is shared throughout organization actually.	INIT, PLA
79.	I	How do you think that knowledge resources are valued in your project teams?	
80.	R	How I think that knowledge is (...) sorry...?	
81.	I	Knowledge resources, like knowledge workers...	
82.	R	Yes...	
83.	I	Your team members, yourself actually. How these knowledge resources are valued in your organization?	
84.	R	Yes, I think that is very hard to say because, it tends to be like offshore resources so they are not valued as much as in house resources. But the in house resources take me for instance, are not valued... that is also perhaps related to time being in Agnitio, because I do not think I am valued as much as some of the developers that has been in Agnitio for a longer than me, so it is very difficult it is ... I mean it is not based on knowledge, the value that they put into people it is not so much on the knowledge but more based on friendship. Again that is about professionalism right, we have a developer who is a best buddy with the CEO, and even though he does not perform and has shown us again and again that he does not manage the position that he has very well, we are not able to lay him off. So the professionalism that I would normally say is that I would value my resources not	CON

		from a personal perspective but from the knowledge perspective, is not done at all, it is very much based on personal relationships or personal relations.	
85.	I	In the last half hour you mentioned the Scrum process, the Excel that you try to share the measurement report and the wiki conference for sharing with whole organization. Do you think these initiatives are successful?	
86.	R	<p>I think, Scrum is very easy to understand as soon as you explain what the burn down chart shows or explains, then is pretty easy for management to look at it. I have had when I worked in one other Danish company as a product manager, we have the Scrum board, actually it was on the wall in the executive department, so every day the bosses will pass this and often they stop me, and said, well I can see that you are doing a lot of work and this was because of the lot of tickets on the board and then they look at the scrum chart and could see that we were still good, we were ahead of plan and they were satisfied.</p> <p>Actually that was all that I have to report to them. I did not have to do a lot of normally you can fill out a meter long documents describing how the project has gone. But they just went through the Scrum board and looked how many tickets were done and how much tickets were left, and they look the chart and they could see that we were still ahead of time and then there was.</p> <p>So... I think that is valued, I think that also in Agnitio a lot of the managers they lack to look at it. It gives them confidence in that things are happening, we are not just sitting laid back and surfing the internet all day. They can actually see things are happening, they can see the tickets moving from one side to the other and that is a good visual effect on people. So, I think, that this is accepted as a reporting tool in many companies.</p>	ORG, CON
87.	I	Are your daily managerial work benefits from these knowledge management initiatives?	
88.	R	If they believe in, if they have confidence that it works than it can. But if you start doubting it, if you do not believe in it, I think it tends to just look like a lot of tickets on the board or a lot of paper. But if you have the confidence that the Scrum is working as it should, then I think it is a big benefit to the management.	LEA
89.	I	So you mean the leadership strongly drives this process?	
90.	R	Yes, there is; more and more I would say every time. When I started we have the Scrum on a computer, we have the Scrum board on a computer using Jira. And we had no effect, the management had this report once a week and it did not show anything and then we have this idea that we will create a local copy on paper on the wall in Agnitio. I mean... it took me a day to do it and of course I have to update it every day. But I have seen a lot of managers go by and stopping, going back and looking at the Scrum board, coming over and saying well I can see that you have progress and it looks nice and stuff like that. So the more and more visual it is and the more managers looking into it and they accept it, the more on a daily basis it has a very good effect on the management.	PLA, INIT
91.	I	I think this can explain why Scrum does not work in some other companies...	
92.	R	If you try... I mean, I had an old colleague of mine, he was a senior senior program manager and he had been using Scrum for lot of years. When I started as a Scrum master I started thinking in digital tools and Jira and I do not know... and he always told me the only thing that I need to do Scrum is a	ORG

		paper board and an Excel spreadsheet. But I said, o no is much easier to do it in Jira and it is electronic and you can share it, but Scrum is visual, so you really need to look at it all the time to see if you are ahead or behind. And it just tells that Jira is very individual, so you lack the whole team standing in the front of the Scrum board and stuff like that. So the whole team spirit gets lost if you do too much electronic on it.	
93.	I	Ok.	
94.	R	So actually I think...What do you call it, the primary goal of Scrum is to raise team spirit and the team effort. And doing too much electronics on that is not good.	LEA
95.	I	So that, if you do it in electronics the people are cut from each other, separated from each other; not in the same environment in that way.	
96.	R	Hmm...	
97.	I	Basically that's all our questions.	
98.	R	Ok. Super...	
99.	I	Thank you for telling us these stories. I think is very precious for us as data for the research.	
100.	R	Glad to help you.	
101.	I	Thank You.	
102.	R	Ok, anything else you can just call me again, right.	
103.	I	Bye.	
104.	R	Bye.	

Appendix 4 Interview transcript 2

I – Interviewer, R – Respondent

L – Line, P – Person

Informed consent: KM and managerial activities

Interview 2, Location: Lund Date: 11-04-2012 Duration: 1:03:00			
L	P	Conversation	Code
1.	I	Our research is about KM initiatives and managerial activities. Basically we see that knowledge can be created, can be transferred and can be stored.	
2.	R	Hmm...	
3.	I	So the knowledge management is a way to handle these knowledge activities, to make it to use the knowledge asset in a small group or organization more efficiently. So if a team can take some initiative to store the knowledge efficiently or to share the knowledge efficiently. Or do they keep and figure out a way to store their knowledge asset or to secure that knowledge asset...	
4.	R	But do you see a data, information and knowledge as the same thing or is knowledge like...	
5.	I	It is a different...	
6.	R	Yes, I mean... that is something that is within, someone that you have kind of looked at the data or information and make an understanding.	
7.	I	Yes, so we think that knowledge is in person, so it is not in documents or something like that.	
8.	R	No, exactly...	
9.	I	Information can be stored in the document, but it has to be the person who carries it.	
10.	R	Yes, exactly. That is that I was after so we are talking for the right thing, because we have a lot of information stored everywhere, but the question is the knowledge that we have within the people. That is what we are looking after. That is good.	
11.	I	So actually we had one interview with a program manager in Denmark before.	
12.	R	Okay.	
13.	I	And he offered what is his opinion about how he uses the new process to organize his people. Because it was a startup company actually, the people are coming and going, so it is a pain for him to manage the people and the people who carries the knowledge.	
14.	R	Yes, I understand.	

15.	I	Since, we have the consent and common sense on this topic, shall we start. And we will record this interview.	
16.	R	Yes, it is ok, please go ahead.	
17.	I	Actually before we come we did a profile search on You from LinkedIn. We saw that you have very long stuff as project managers experience, actually you are very experienced project expert. Could you describe your professional background?	
18.	R	<p>Yes, sure. I studied informatics here at Lund University. My first job was actually at the E.On company; it was called Sydkraft back then to implement electronic invoices. So I did like a pre study or project that was like a product manager position. So I was there for one or two years. And then I come at Ericsson which was at that time, it was actually in the building here, but it is not here anymore, that was in 1999 and then I worked as a project coordinator within the corporate IT department for a while. And then Sony Ericsson was created in 2001, and I was a service manager so I was responsible for the maintenance... the application maintenance of number of applications and it was in the area of consumer facing applications foremost so like sonyericsson.com solutions that we have for external consumers. So, and then I became team and then manager for that team. Then I moved into a kind of reorganized and we formed the teams that handle both development and maintenance of these consumer facing solutions.</p> <p>And then I had the couple of different roles in that team so I was first I was like internal key account manager. So I was the one who took the demands from the business so internal customers from the rest of business, the demands on how they did want to update the Sony Ericsson dotcom site, for example.</p> <p>Then I worked into organization and we developed the maintain team... what we have developed. And, then I was worked as a resource manager for a while, so I was line manager of product managers, solution managers, architects and the guys who worked in the projects. And I also worked with some like team development, because I am interested in like person development and leadership and how like group communication and things like that. So I am actually certified in the Myers-Briggs Type Indicator (MBTI), if you have heard about that, it is about how you act and how you are as a person, MBTI but this is not so important for you I think, but just to show I started with my like interest for how people act, and why you are the way you are and how you communicate with other people. If you put like very similar people together or if you put very different people together what kind of communication and you know... culture can be created and I think this things are interesting.</p> <p>So and then by that time the team was partly in Lund and partly in Stockholm, but all the people in Stockholm who are, were made redundant when we closed the site in Stockholm, so then I took over the whole team as a manager by that time. So then I have that position for a while and then two years ago, my manager decided that he wants to do an experiment and change places of us, as managers. So I actually changed place with the guy who was the manager of PMO (project management office). So he got my job and I got his job. So that was completely like switch so I came in the PMO two years ago and at first I was little bit okay... but it turn out really, really good and I really enjoy the working with PMO, I really like the project management as such and I am pretty structured person and I like to deliver things and get things done...go on to next one. Yes. So I really enjoy that. That is my story.</p>	

19.	I	How the decision was made, is that guy in the same team as you or you switched the team as well?	
20.	R	He was manager for the PMO team and I was manager of the internet competency center team, so we just switched the places, we have the same manager so we switched the places.	INIT
21.	I	Okay. I think you are working with resource managers. So you are dealing with people and communications...	
22.	R	Yes, I mean... I have been manager for the last 7 or 8 years. So that is what I do. To manage the people...	
23.	I	From your position... How do you view the knowledge asset?	
24.	R	<p>Yes... I mean working with projects it is a bit special as projects are as such, something that has a start and an end. When the project is finished you just leave it. So I mean, for me it is long term to work with my team and product management process as such, that is the long term work. But, projects that we, my people are working on, they always end and they are going to the next project. So that is the question how do they... or how do we take care of knowledge management in the projects. So I think that product management is a like a professional or like an area that you can be good at so I usually say what my people, my team is good or is product management as such... they are not specialist in any specific areas, like technical areas or application areas or something like that, they are good at product management period. Then of course the experience is that of course if the product manager has the knowledge of the area where they manage the project usually turns out very good, because they can quickly understand the different dependencies and different areas you know... the challenges in project.</p> <p>But I also have learned that it is not so good to be too much of an expert in the area, because then you tend to go to every little detail, solve everything yourself that is not the role of product manager. He or she should be managing the project and other people should actually perform their activities. His or her role is to make sure that they delivering things in time and follow the schedule highlight the risks and report to steering committee. They are not supposed to do everything if you are expert in an area you tend to do too much to yourself so that is not the point.</p> <p>So I am trying to you know... to work with project management as a competence but of course... so therefore you can bring your knowledge to the next project. Because so when you have managed the number of projects the knowledge could be like general knowledge about project management. In my last project we forgot to look at the risks and the something happened that we were not prepared so therefore I know in this project I would definitely identify all the risks and so we can prepare if something happens. So I guess... is a kind of kind of knowledge, which is...may be you can compare it more to competence.</p> <p>But another aspect of it is of course if we have or if have a product manager within the SAP area which is kind of specific area, I usually try to have that person doing another SAP project when it comes up because it makes sense that he can bring on that knowledge into the next project. So still it is good to have the product management competence but combined with some more specific area competence as well.</p>	PLA, INIT, ORG
25.	I	So that means you try to develop the knowledge and competence of project managers by directing them in the specific area... As the example SAP example you take is that...	

26.	R	<p>Yes, exactly. It can also be... I mean looking at the specific individual. He or she might be interested to try on something new or to learn something new and then we can with the competence of product management they can easily go into new area and learn that area. They are safe in their product management competence, but the area is new. But, then they can learn that area and maybe when the next project comes up in that area he or she is more experienced and can bring that within.</p>	INIT, ORG, LEA
27.	I	Is there any systematic routine that you take for that initiative?	
28.	R	<p>Not really. That is depending on our life way is not systematic. Nobody, I mean...I usually know what products are coming up maybe becoming quarter or half year but I have no idea what is going to come up next year so I can't prepare for more than that. So I mean... the demands on what we are doing are coming from the business and their demands are based on what is happening within the company and what is prioritized, what is important, the strategy, etc.</p> <p>So I mean it all goes from the top management business strategy through the organization and then to different demands and different projects, etc. So I mean... I can expect some projects coming but I do not know the exact plan so I cannot like plan it 100% but I am trying to get both the right person to the right project, both in order to get that person continuously developed and that also get the best person for that specific product, so we can deliver the project.</p>	PLA, INIY
29.	I	If one person was developed in one direction, for example with that be taken as good practice or to be shown to other project managers, who will be taken to the same area?	
30.	R	<p>Yes, I guess...I mean product managers are very... the individuals are very different from each other. I mean some people are really like, oh I love SAP, I want to do all SAP projects and others may hate it. So it depends a lot on your own interest and what I mean some people are really technical and then you can put them on technical project and then they will enjoy it. Other people really want to stay out of technical questions and they do not want to do that.</p> <p>So it is challenge on that sense, which is also fun I would say, is that the product managers are really different in their interest in their competence and you know... the way of working so it is always a challenge to have because we do have a process in place that we are supposed to follow and all the product managers they do follow it but may be not the exactly the same way because some people are saying more are not or like high level and other might go more into details. And both could be fine depending on the project and depending on what other people that they are in the project how they are together like find or filling the competence need or the knowledge of that.</p>	ORG
31.	I	How other project managers would benefit from the knowledge that has been created by this expertise?	
32.	R	Yes, that is probably an area that we might not be too good, because we usually always may sure that everyone is fully allocated so it is not that we have a lot of time to really interact with each other and learn a lot from each other so therefore I would say that most of my people are actually working pretty like alone. I am working on my project and the next product manager he or she is working in their project.	PLA, INIT

		<p>So that is something that I know it but it is not always so easy to get the time to do it, as we had a lot of products coming in all the time but to make sure that we meet in the team and actually, you know... looking at lessons learned and share the lessons learned and make sure that Ok in my project this happened but we mitigated it in this way so I recommend you that the next time you experienced it you can use my way of handling it. And everyone and every time we do that all people are like ...Oh yes we should do this more it is really good. So that is something that I am trying to do more but we are not perfect, because everyone are so highly allocated all the time in projects. And also I have a... when I took over this role I had people both in Germany and UK, and US, Asia and here.</p> <p>Now I have people here only in Lund and now I have two in Beijing. But still I mean two in Beijing they are...and I mean when you are there you can meet like daily it is harder to share those learning. So I try to get them here at least once I year so we can get the whole team together. So we are planning to do that in May, June timeframe now and then we are going to focus some on the lessons learned program?</p>	
33.	I	Is this lessons learned...	
34.	R	<p>Yes that is something that we have had actually in our project process, we have as a last activity before we close the project, and we have the lessons learned.</p> <p>And that is actually the product manager calls for a meeting with the all the people who are spending time and involved in the project and then they actually can bring up, ok... what are the good things in this project, what did we do really well and why. And then on the other hand what things were not happen so well and why was that. So then they summarize this in a report and store it in our document management system (DMS) but then the tricky thing is that really you should review it and make something about it. And that is what I need to do for. So we do it more or less with every project, we do the lessons learned and it is stored but the question is how, do we really learn from it. So what we done now is that I have asked all of the project managers to bring up their like five most important lessons learned from their last project management and we are going to summarize that in a list and to prioritize them and probably there will be some duplicates that we can take out and then decide on Ok..., that these three, or four or five whatever lessons learned are the most important ones that is something that we should work on during this year to improve.</p> <p>And that could be something that we can affect something that we can change from a product management perspective but it could also be that we might need a, you know... other people in the organization to do things differently or to change the process or you know, change decisions.</p>	CON, INIT, ORG, PLA
35.	I	Share inters organizational knowledge...	
36.	R	<p>Yes... so it could be like anything really. So it is not only about changing ourselves. It could be the way we work with the other groups or people or things like that.</p> <p>So I think that lessons learned are something that is a knowledge management or knowledge thing that you should really focus on and try do things, do something about. But it is hard, like everyone knows when you are finally done with the project, you just want to you know... to throw it away and getting to something new. And that is the trick, that is really do this lessons learned and also make use of it next time. So I mean at least the person who did the lessons learned for his specific product will of course bring that on with him to his next project. The trick is to share it with all</p>	LEA

		other product manager, so they do not do the same fault again. So that is the trick.	
37.	I	I think, it may be is also why you put this lessons learned in the end of the process and before its ends, so let everybody takes it?	
38.	R	Actually, I would say that we are pretty good at performing the lessons learned meeting and documented, so that is fine and that is good because the most projects does not even do that so it is good, but still we need to take the next step as well and actually make use of it and share it.	INIT
39.	I	What do you think will be the barrier for the people to really learn from it rather than just storing over there?	
40.	R	Yes, I mean... the work we have started now, I have really seen that people are interested and they want share this so and they want to learn from the others, so I do not see big barrier there. But, the issue is that if they have too much to do then they do not have the time and I do not push it then it is not going to happen. So I am the part of the barrier maybe, and also the amount of job or the amount of work that we have.	LEA
41.	I	Yes, that means the resources and leadership will be the factors influence these...	
42.	R	<p>Yes, and also, I mean... one another challenge that we have in the product management area is that I am trying to make sure that we are working according to this processes that we have, but when you are in the project then you are... maybe you are sponsor and you see that you have you budget and you have the time plan and you want the specific functionality, that sometimes tend to Ok, the process is not so important, you know... just you develop it, make sure that it is going to be delivered by this time and so things like lessons learned and documentation and things like that they will always tend to be, you know... second choice compared to that I need this to be delivered. So that is always something that you have the challenge in everything you do more or less, take the time to do the lessons learned, take the time to do documentation, take the time to follow the process and why is that important, well it is because if you need to track down a decision for example why or how did that happened and we decided to go this or that way.</p> <p>Well you can track it back to a decision point which is stored here and there and then the lessons learned are there because we do not want to make the same mistakes over and over again. So it is easily to explain but still when you are there in the heat of the project, you just want to deliver it. So it is; I mean... it is a human thing.</p>	LEA, ORG, CON, INIT
43.	I	Will these team members (PM members) being involved in the process design?	
44.	R	<p>Hmm...Yes, they are. I mean...The processes that we have in the team, that is something that we very much ourselves are creating so if we think that something is wrong it should be changed, we can more or less do that, and then we just do the change and communicate it to the people that are... to the people that needs to know.</p> <p>And so I have more or less asked the team who will be interested to work with the process so I have a couple of people that are like more interested than others to really work with project...process, so I have one or two appointed that supports me in that work.</p>	ORG, CON
45.	I	Okay.	

46.	R	<p>But everyone is allowed to come with the input and then... and make proposals for the changes or whatever, so everyone and I really try to be open to my team to say if you see that there are things that we should change, let me know we can change it because, you know we are not going to follow process that is wrong or bad anyway. That is not going to happen. And also as other teams that we are collaborating with, they might have their processes as well, that we need to, you know... combine it with our process so it is kind of a living thing all the time because we need to adjust to other areas. But I think that the project management process has been pretty stable for a quite some time.</p> <p>We are basing it on props model of the waterfall model that was originally generated from or created in Ericsson, but now it is managed by Semikron I think, so it mostly waterfall but we also do some agile project that is something else that we also use more and more agile way of working.</p>	ORG, CON, INIT
47.	I	What is the motivation for the agile?	
48.	R	<p>The motivation for the agile... is sometimes it is because you really need... I mean if you do it correctly I really do believe that it makes it a bit cheaper and a bit easier but you really need to do it properly and that is the trick. Because if you as a sponsor or who ordered of the thing what is going to be developed you really need to be engaged and in another way and make decisions as you go and really sit down more or less daily, is this what you want, is this what you want that is built but you on the other hand you will really see parts of the products you are creating, and not just entering all the demands in here and then wait for three months and then outcome something, no, it was not what I have ordered. But with the agile way you will see it... coming further during the whole process. But it requires that you as who ordered realize that you need to take that time and you need to understand that the decisions that you are making all the way are affecting the product in the end. So it is completely different way to work. And therefore it is good if you do it properly but it could be bad if you are not doing it properly.</p>	PLA
49.	I	So that means you have parallel processes in your team?	
50.	R	<p>Well, the processes that we have is actually only the Waterfall one, but then we are sometimes trying to do it agile in some parts, like in some phases, where you do the development you can do little bit agile or a bit iterative perhaps. An iterative and agile is not the same thing really but it should not be mixed but we sometimes do like iterative development as well.</p> <p>Because that is also the way...you know we tend to spent so much time in the beginning to specify all the demands, so that everything should be like 100 % clear before you start to develop and that time might sometimes be... I mean you might need to change things on the way still even if you did such a nice work over here.</p> <p>So then it tends to be very much more expensive instead of specifying the demands started to build see is this what you meant, is this what you meant and go a long that way. So, but it just two different ways of doing it and in some cases is a good way doing agile, and in some cases it is not a good way. So it is about picking the right project and the right model.</p>	PLA, ORG
51.	I	If you think about some cases that are not suitable for agile, what cases would that be?	
52.	R	If you have a very clear picture of what you want to order that is not really a reason for doing agile, then you can specify your requirements, put it into the fabric or... and then outcomes exactly what you have ordered. And if you are not really sure and you, I mean... and you want to be able to be	PLA

		there in the creation process it could be better to go agile.	
53.	I	That could be mean...in the beginning of the project when you specify the requirements, is there some kind of barrier to transfer the knowledge, the business knowledge explicit to the project?	
54.	R	Hmm, can you explain little bit...?	
55.	I	I mean... you choose the agile project methodology and because you do not know exactly what the requirement is.	
56.	R	Yes.	
57.	I	And that because that the business knowledge is not clear at the beginning?	
58.	R	<p>Exactly, but the trick is also that you should not use it like every time because almost every time the business is not clear what they want. So if you go agile all the time because they are not clear it is not going to end up in a good way but sometimes it could be the right thing to do. I mean agile is usually about, we did a lot of agile and still do within the dotcom area, where you have like you know that marketing for example will do update on the dotcom site like every month, err...then you can specify, ok we have a team of ten people that are always available and means that we have a budget corresponding to more or less ten people full time. So we have a specific budget, we have a specific resources and we have a specific time because every month we go live with something. We do not know exactly what we are going live with but we do have the frames.</p> <p>We have the budget we have the resources and we have the time. And then you go into it and depending on what projects we are announcing or what we want to show to consumers this month then the business people can decide in that process, ok and lets spent money on these this month and they would not have known that three month earlier in order to do a waterfall development, so then it could be a good way of doing it.</p>	PLA
59.	I	So normally, how was the duration of the waterfall model project?	
60.	R	<p>Yes it could be anything between... I mean it is usually at least a couple of months. We do not have projects that are shorter than a month really, and then it is more like an activity. So if you have a proper project with the steering committee and tollgates, development and testing everything, they are usually not shorter than two or three months. And they also can be two or three years. So it is everything between that. there is actually also lessons learned, that you should try as hard as you can to make sure that projects are not longer than nine months and the reason for that is that nine months in our company means that you have probably some kind of organizational change or people has left their positions or the budget is changing or the strategy is changing and that affects the project.</p> <p>So if you do or run a project over two or three years so much things will change. So the situation that you have here is not the same as you have when you started it. So the prerequisites, the dependencies and everything would have been changed. So we are trying to shorten the project and rather say; Ok, do you want to do all this but let's do half of it as a one project. And go live with that and then do the rest half. So we are trying not to do like too big of the projects because then it will gone forever and a lot and lot of things will change and then you never are going to... You know, it is going to be a mess. So we are trying to do that shorter.</p>	PLA, ORG

61.	I	So when the crucial person leaves the company then how do you react to that?	
62.	R	<p>Yes...I mean, there is not so much you can do, that is also very important aspect in knowledge management, if that person leaves he or she will just take the knowledge and leave so that is also a question how do you... I mean that is organizational, people and leadership question. How do you make sure that you are not so vulnerable if someone leaves and that is something that we have really faced in the last year I would say where we have outsourced a lot of things from IT. We started to outsource like maintenance which is fine because then you still have the knowledge of the applications in-house, but you have someone else supporting it. No we have over the last one or two years outsourced also solutions management, architecture and like core things like that, which means that the knowledge that you have in-house is very, very thin and usually you have only one person who knows one specific solution. So one person might have the knowledge of maybe ten or twenty solutions and there is no one else who knows that.</p> <p>So that person leaves, you just the knowledge is out of the building. And again you cannot, you cannot have like double people all over because that is going to be too expensive, you cannot have like a shadow of every person, so you need to be creative somehow and to make sure that you have someone that at least can know part of the area, so if this one knows all the blue things and this is the red one, they can have like a purple area where they can backup each other so if this person leaves someone knows at least something. So that is the leadership or like organizational questions that always are there because it is really... I mean that is really something that we are struggling with.</p>	LEA, ORG
63.	I	How do you make sure that purple area will be created?	
64.	R	<p>Yes that is just common sense. I mean if you look at your people and see who has that knowledge and who has that and what areas will be good to combine or so that you just do it in a best way you can.</p> <p>I do not have that problem too much because product managers are easier to... you know, to switch out, it is not so much as they are working in projects deliver that and go on to the next project, it is not so crucial to have that specific process. It is still important to have good product managers, so it is not about that, but it, I mean if you have like some guy who has been working for ten years with like three or four solutions that they know, you can wake up in the middle of the night and ask questions about solutions and they know everything. If you lose a person like that and you do not have anyone who knows about that then you have a problem. That problem is not so big with product managers they are easily replaced so I do not have that problem too much but my colleagues they do.</p>	ORG
65.	I	So that means that... because you follow a standard process and you have a rigid way to work as a project manager so the knowledge is not quite crucial?	
66.	R	No. I mean, since we have process it is pretty easy to get someone new into, just Ok, learn the processes and make sure you follow it. That is probably easier if you compare it if you are going to learn someone all the specifics of the technical application because that requires more from you, it requires that you have like experience of working with this solutions so you know all the details about it. So, yes it is probably easier to get someone new up to speed in such an area. Compare to when you will have, err... you need to have the knowledge...	ORG
67.	I	How do you monitor that the business knowledge has been transferred perfectly to the managers or	

		project managers?	
68.	R	The business knowledge from like the people who are ordering?	
69.	I	Yes.	
70.	R	<p>Actually, pretty many of the project managers that I have in my team have previously worked in the business. And that is really good in most cases because then they might have been product managers, but within like operations or resourcing or development so they know also the business so then they come into IT, and I can give them a project from development., resourcing or operations and they would be familiar with the wordings and terms that they are used and maybe the processes and how things work.</p> <p>So that is really good that we within the company can share people and move people over the teams, the organizations, so that is the very good thing. And also the other way around if we have people from IT going to business they can bring that knowledge with them so that is one thing, that I think is great thing with working at a big company where you can... you know move people around and mix the competence and the knowledge around. So that makes sense.</p>	ORG
71.	I	Is that a kind of organizational decision for just two teams that you decide to share knowledge?	
72.	R	<p>It is not really a structured way, it could be. There could be like a program where you do like job rotation or things like that... but the usual thing is that lets say someone wants to have another job and they apply for a job in another area or when we have redundancy some people are identified that they are redundant, but maybe there other areas that need people and then we can find new jobs for them in other areas. So the reason for it could be different, it could be that someone actually or actively says I want to go there but it also can be like we are replacing or changing people around to the areas where we need more people from the areas where we do not need them anymore. So it could be different ways of doing it.</p>	INIT, ORG
73.	I	All these information can be found in the internal website or...?	
74.	R	No, there is an HR ... like human resources management thing for the process that we are doing it. I mean now we have done a notification of redundancy, I think... two or three weeks ago. You know we have made a redundancy notification for 149 people here in Lund.	
75.	I	Yes, I read that news.	
76.	R	<p>Yes. Then of course we want to make sure that as many as possible or few as possible need to leave so we are looking at what open positions do we have in the company and how can we get make use of this people somewhere else. So that is one process that HR is working with. So that is one process for it and the other process is just normal thing that you... I mean if I need a new person in my team then I have internal advertise for that role and anyone can apply for it. So that is normal recruitment process.</p>	
77.	I	So HR supports your decisions?	
78.	R	Yes.	
79.	I	Okay. I think the organization as we speak as so far, I think it is very helpful to change people...	

		with people carrying knowledge around the organization.	
80.	R	Yes.	
81.	I	And how do you think that this kind of knowledge interchange affects your needs to allocate the resources when you try plan your projects and planning tasks?	
82.	R	Well I am trying to make use of the knowledge that people have. So if they knowledge or experience from operations, I tend to give them an operational project because it makes sense that they know the area. So yes, I guess... that is the way of doing it.	LEA
83.	I	Do you think knowledge activities like knowledge sharing, creation in projects manager members, are they self directed, leaded by you or by the process?	
84.	R	Well, it is not leaded too much from the process I would say, so it is more leaded by themselves, I guess. But then of course I can... you know noted and see how we can use it in that way and also back to the lessons learned is one way of handling it.	ORG
85.	I	And also you mentioned Beijing's, a Chinas projects and managers are located here. Do they have differences in knowledge activities such as knowledge sharing?	
86.	R	No, not really. So it is more that... it is good to have couple of people in the Asia region. If we have projects that are mostly they are happening in China or Japan or somewhere else because then they are in same time zone and same language or same well people nearby. So it is more or less that we have people in different places all over the world. But the process and the way of working, I think it should be the same.	ORG
87.	I	That means that they have much flexibility on their own and they are not regularly controlled from a higher level?	
88.	R	Well, there is no difference from I mean the Lund people compared to China people. If that was your question? I am not sure that I understand your question?	
89.	I	I was trying to figure out is there a cultural difference or?	
90.	R	Aha... Ok. Well of course there are cultural differences between China and Sweden, but I think that... I mean I am trying to do the same thing for them as I do here, we have products coming in and I am trying to allocate them to the right person and both when it comes to make sure that the right person is interested in those projects that I get because I truly believe that if you are interested in project in one area you will do a better job than actually to force it or something. So I always try to make it sure that people are as happy as they can be with the project that I give to them. Of course you cannot always get what you want. And I mean we have to accept the projects that are coming in but sometimes I need to force people to a bit but I do not see that I am doing differently with people in China or people in Sweden. I mean they are... we have our resource pool and incoming projects and I am trying just to allocate them in the best way.	LEA
91.	I	But do they behave differently?	
92.	R	(..) No, not really. I mean the two people that I have in Beijing one of them might have some	ORG

		difficulties with the language, the English of language which makes it little bit hard in sometimes in the communication but other than that I think there....	
93.	I	In that case how does the lessons learned phase will be executed between these two locations?	
94.	R	They are doing lessons learned just as here, all the product managers no matter where they are they should do lessons learned at the end of the every project and again back to that how share it between ourselves. And then the China people are involved in this like the people in here. So that is not really a difference.	ORG
95.	I	Do you have any kind of technology to support this sharing?	
96.	R	No, no, I have not. We have been discussing like you know databases for it but I do not believe in that really. I think it is more about finding handful of activities that you can you know remember and work on them rather than have a very huge database and have all the things that you should include that it will not going to happen. So I do not really think that we need really so much like technical support to do it.	INIT
97.	I	Okay, so it is more based on human activity. People are talking to each other?	
98.	R	Yes.	
99.	I	How do you think these lessons learned and all the agile projects, all this methodology help to protect the knowledge resources? Do they help a lot?	
100.	R	Yes. I mean the lessons learned at least make the people reflect over what they are doing and you know look back and think. And, that is a good thing. So even if we do not make use of them afterwards at least the people in that specific project, as spent one or two hours to actually think about projects and what they could have done differently and hopefully bring that with them in to the next project.	CON
101.	I	Do they get reward if they do these activities?	
102.	R	<p>No, not really. We could probably be better in rewarding people but that is a tricky area really because is always... I mean if you are going to reward people, then there is always someone why I was not rewarded, I did this, is that more important than what I did, so you always end up in this you know... who has done a good job, who should be rewarded, it is not easy as a manager to do that properly.</p> <p>So then you rather tend to not rewarding anyone because you do not want to get people disappointed but you could try to find other things like we had training for the PMP certification, the product management PMA certification, which is an international well known product management certification.</p> <p>And that it is really requires a lot of work to pass that test and do the certification and so when... I think we now have three people or four that are certified and every time someone gets certified I sent out a mail to whole and you know, not rewarding them by something like money or things but at least mention it to the other people and congratulate them for the job done. So is that more like highlighting something, so... because I think we could always award people more then or reward people more than they are doing but it is tricky, like I said.</p>	LEA

103.	I	So that means is very hard to monitor or control the outcome of their knowledge activity?	
104.	R	Yes, it is has hard to do that I think.	
105.	I	Do you think it is necessary to take actions to measure who has done better or the levels of these activities?	
106.	R	It might be necessary but it would be pretty hard I would say. I mean it would be nice if you could say that ok look here, you, one for example has make use of lessons learned from the last project so now he has succeeded. That would be great, but then again someone, well but I did my project perfect and even If I did not use any lessons learned. So am I not good then? So it is always I mean...I do not know it is so tricky.	CON
107.	I	Do you think this is depending on your leadership style?	
108.	R	Ohh...No I would not say that. I think it is just too tricky to measure the things in that way. I do not think that we are capable of doing it in good way. But maybe I am... it should be easier I do not know! It is an interesting thing.	CON
109.	I	How hard is the knowledge resources are valued when they create the lessons learned and then you put them as a crucial step in the process? So do you value it as a very high level resource?	
110.	R	Do you mean if they do it or?	
111.	I	I mean how do you value this knowledge resources, this people and the lessons learned?	
112.	R	Hmm... I am trying to understand the question.	
113.	I	I mean according to what we just discussed and you have described, I think, according to my opinion they are valued as a very crucial resource in your team. I do not know if you agree?	
114.	R	Well everyone is. I mean the people in the project are all valuable and they are important to do a good lessons learned. So I would not say that anyone is like more important than someone else or more valuable. I mean it is the product manager who is responsible for doing the lessons learned and make sure that the relevant people are there. But every ones input is valued or important. I would not say easily that someone is more valued than anyone else.	
115.	I	Ok. I am not saying that someone is more valued, just the knowledge that they carry, are they valued as important resource?	
116.	R	Yes of course. Yes it is, a simple answer.	
117.	I	How do you think your managerial activities for example planning, controlling and leading are they affected by the initiatives related to the knowledge activities? I mean when you plan your resource or when you try to monitor your data?	
118.	R	Again I think I am just trying to you know to find the best person to fit the specific project really. I mean my long term plan or the plan for the team is to have good product managers and with you	ORG

		know looking at them they are about 17 or 18 people, making sure that we have someone or couple of people that know SAP, couple of people that know the development area, couple of people that know like sourcing, operations, logistics area. So when I recruit new people to the team, I am looking at the team, ok, where do we need more knowledge. So for example, now I we have someone leaving who has SAP knowledge so that I would prefer to bring it someone with SAP knowledge if I can and earlier I was lacking the development, competence from the development area and now I have recruited one product manager who has been working as a solution manager earlier in the development area. So now we are bringing in that competence. So that is how I plan it like long term.	
119.	I	So I think basically this was all we want to ask.	
120.	R	Okay. Have I like...is this that you expected or is it...	
121.	I	I think it is from the higher level perspective of the managers, for the knowledge activity. I think this is supplement and additional knowledge to what we have found from previous interview.	
122.	R	Ok, that is good then.	
123.	I	And also I think that... you always mention that you need to find always good people to the right position is tricky task to do actually, so how good it is? and who is good is very hard to judge isn't it?	
124.	R	Yes. It is about me, knowing the people and you know trying to do the right decisions, so it was harder when I was new in the team because I did not know the people. But now I know the people and I know how they work and it makes things easier.	
125.	I	Thank you very much for your precious time. Bye.	
126.	R	No problem. Bye.	

Appendix 5 Interview transcript 3

I – Interviewer, R – Respondent

L – Line, P – Person

Informed consent: KM and managerial activities

Interview 3, Location: Lund Date: 17-04-2012 Duration: 38:19			
L	P	Conversation	Code
1.	I	Our research is about Knowledge Management initiatives and managerial activities. We try to identify how Knowledge Management initiatives can affect the managerial activity. So...	
2.	R	The...what?	
3.	I	Managerial activities. So how do you react when you have some knowledge management initiatives has been deployed.	
4.	R	Aha...So first of all what do you put in the words Knowledge Management?	
5.	I	Yes, that is also we want to know from the manager side. So how do you understand the role of knowledge in this organization?	
6.	R	Aha...	
7.	I	So how do you try to manage it? Something like that.	
8.	R	Ok. Let's try.	
9.	I	We shall start?	
10.	R	See where we will end.	
11.	I	So first of all then we need to know, what is your professional background?	
12.	R	I have a bachelor degree in system analysis from Informatics in Lund.	
13.	I	Ok.	
14.	R	And I worked since 1998 as a developer within our organization, since 3 years ago... I think 3 or 4 ago, I work as a change manager and work manager for developers and also actually as integration manager in our organization. Yea.	
15.	I	So how do you consider the role as a manager, the change after you have had as manager in this organization? I mean you were a programmer before...	
16.	R	Aha.	

17.	I	And you have been changed to the manager.	
18.	R	Aha.	
19.	I	What do you think about the role of the manager?	
20.	R	Hmm...to me, I was a bit surprised, that it was a lot of work around the administration. I do not think any of the developers understand how much administration work there actually is. That is... that is at least for me it was a huge surprise. Then also I think ...but that is something that I have in my vision as a manager is not only directing people and telling them what to do. But it is also what I try to do is to be some sort of enabler. Make sure that people can perform the best, by giving them as good opportunities as possible.	
21.	I	Ok. So, what kind of initiatives have you done to make them perform best?	
22.	R	First of all, we define...we did a lot of work, as you might remember. We did a lot of work with defining the roles, different roles within the organization. Because understanding who should do what and what is expected from me and as well as from the others makes it much more easier for you to actually approach the correct person immediately rather than chasing and looking who is responsible for this and also what is expected from me.	ORG
23.	I	Ok.	
24.	R	That is...there was... there was one of the big tasks that we wanted to achieve when defining the different roles that we have and also what we did... as you know we have developed, we had a process for delivering service and projects within the Global Information and Management (Global IM) within this organization, that one we need to follow as well. What we did is that we took it and then we divided it done different segments that we have and we transformed it into what we need to do within all of these the parts of the process and then we defined our development and test process that one we are using now. Those two things that I think are the biggest achievements for the organization.	INIT, LEA
25.	I	Ok. So when you define a role what kind of measurement do you use to define that? How do you think that guy is the best for that role?	
26.	R	When you put a person, when you should fill a role with... I mean that is how to say is different depending on different roles I would say. You mean how we think about it?	
27.	I	Yes, how do you justify it is the person who should be in that role?	
28.	R	I think I try to... I mean you need to get some person that actually can fulfill that role, they do not need necessarily to have the knowledge in order to get that role but they need to have ability to learn and to deliver in that role, but then also I think that it is very important that you are clear on the expectations to the persons who might be interested in having that role that you are very clear with the what are the expectations from us, if you get this role what did we expect from you to deliver.	PLA, ORG

		And then also I think you need to look at does this person fit in the role maybe they have the technical skills but maybe be not soft skills. Or we need to have a person who actually we think can enjoy working within that role that is important as well. Hmm...what else? (...)	
29.	I	So we have the ability to learn and the enjoyment of the tasks.	
30.	R	Hmm... Yes, I think.... I mean looking at the person, there is one another thing they should also fit in the group. So taking look at the soft skills for instance when we hire the people you can find a lot of very technical people, it is not that hard. But the hard part I would say is to really understand whether these people would fit into the job and the team. So that is something that I think I put a lot of emphasize into when we try to fill a role with the person.	LEA, ORG
31.	I	Ok. So when for example you have a person, who is not having this knowledge and you justify that this person has the ability to learn. How do you make sure, I mean that he can learn with the outcome you expect?	
32.	R	It is different depending on what kind of knowledge you need to grasp. Some knowledge you need to get in-house because it is business knowledge I could say and also it could be a technical knowledge that is very specific for this department or our needs what we have.	
33.	I	Aha.	
34.	R	But then of course you could send them away for training, external training, internal training and then also we can use mentorship that is what we do when we have new..., you did not have then? I do not remember whether you have it.	INIT
35.	I	Yes I have it. I have it with Lars.	
36.	R	With Lars. Ok, because now when we hired the people in Singapore, did you have Jason?	
37.	I	Yes. Jason.	
38.	R	Yes, That is one part that we connect the new people so they have one mentor and we do try it. I think everybody here is aware of everybody. I think the best is for that you should always be able to ask anyone about something but even so as a new comer in the team it is a bit safe to have one pin pointed mentor that you always know that this one is the pointed to help me. So that is the way.	ORG
39.	I	Yes.	
40.	R	So I would say external, internal and then different types of learning that we have started, for instance we have... we have biweekly meetings within the development team. Where we have knowledge sharing; to spread knowledge in between the group for instance now we are talking for Java 6, when new things are in Java 6 and we have Lars and we have Pavel. They are showing some tips and tricks. And also with our development tools, what can you learn, and how can you use the development tools in the best way, some tips and tricks. So those kinds of things we do in between people we see already normally been seen as scheduled because we can always learn something from each other.	INIT
41.	I	When you plan your project and when you do the planning? Do you take the mentorship and all these knowledge sharing initiatives as a factor to take into consideration of that?	

42.	R	I do not think that we actually think about knowledge sharing as one specific point when we are trying to... to plan the project, but within the analysis and design phase there is normally a knowledge need because always when you try to develop something for... something new, you need to understand the business needs, you need to understand what are the requirements because the requirements is not always what the need is. And then you need to help them to actually transform the requirement into what the really need is. So asking the questions why, why, why; in order to get to the bottom of...	PLA
43.	I	So who will be asking the question?	
44.	R	That is actually I would say... Normally it is driven by the Global leadership team it is normally part of the projects especially in the analysis and design phase, but it is the responsibility of TPL (technical project leader), and that is responsible of all the members in the development team in the project.	
45.	I	Ok. How do you think that the people here are carrying the business knowledge? How do you think you can secure this experienced workers here?	
46.	R	<p>Hmm... We have documentations for it but as you also know the documentations is not 100%, so you cannot rely on it entirely, which is a risk because some knowledge only exists in the head... in the head of the people which is not very good. So what we try to do in the last two years I think is that every time we have new service release and every time we have a release of the project, major projects, we have a walkthrough of all new the functionalities even though everybody I think realizes that he will not remember everything said during those sessions but at least you have the possibility to you know roughly what it is been changed and what is new.</p> <p>You also have documents to go back to the presentations that we had so at least find out little bit more what is going on otherwise we should have the requirements written down in the our use cases and also design a decisions that we take. So those are the main... if you talk about developers those are the main sources. But then we all realize that we do not have it 100% correct or we actually have quite a lot of use cases that are not up to date. So the knowledge exists in the head of the people in the office.</p>	CON
47.	I	Yes.	
48.	R	<p>So we usually quite a lot of discussions when we have tricky issues. And I do not think is... I mean you could, there is of course a need of more knowledge transfer between different people, but it is also a... I should say, it is a balance between of how much time you can spent on it and as it is today we do not have any slack of time so we do not have this opportunity to do it very often so what we do, we try to squeeze in this release meetings as you know we present the new functionalities and we have to talk for some photo projects.</p> <p>And we have now since this year developers for..., all the developers can sit down and share knowledge.</p>	
49.	I	Ok. So that means that knowledge transfer takes so much time but when you try to organize the resources it is very hard for you to put these knowledge transfer into the projects?	
50.	R	Yes, I think it is not only that. I think also people are very, very occupied with other things. So even	ORG

		if you have spent a lot of time, trying to... I mean we have this knowledge transfer meetings for each of these where we discuss and everybody, I think everybody understands what is said but then is also a matter of remembering it two months later or a half year later when this issue comes up and then you should remember what happened during that meeting. And of course we could have new meetings but there is no trait on how much time we can spend on organizing a knowledge transfer. So what we need to rely on is uses cases, and design description and also we have user guides which is used for our customers.	
51.	I	Okay.	
52.	R	And then talk to people.	
53.	I	Yes. So is there any kind of technology that you are using for this knowledge repository where you save the user guides and design descriptions?	
54.	R	Yea... I mean they are already in word documents but then we use it. What we try to do now is actually to... to use a version for storing them on the server and we now also tag all documents that every service release. So that you can go back if you want for that previous release of the applications, have a look at documentation at that point, because otherwise if you have two releases ahead you need the documentation that it could be hard to know what were the____ for that code release. Otherwise you know that is what we have to do.	ORG
55.	I	Ok. People are talking with each other when they need to transfer knowledge.	
56.	R	Aha.	
57.	I	Are these activities self motivated, guided or dictated here?	
58.	R	Hmm...I am not sure I have followed what you mean!	
59.	I	I mean people are transferring knowledge by talking with each other and checking the user guides and writing the documentation. Are these activities, are self motivated by themselves?	
60.	R	Yes.	
61.	I	Or guided or dictated?	
62.	R	I would say mainly self motivated. In some occasions it is guided. If there is a need coming from elsewhere where you actually we are giving the task and then it could be that there are some instructions to where to, whom to talk to in order to get more knowledge. But I would say that is mainly self motivated.	ORG
63.	I	Do you reward team members when they do knowledge sharing?	
64.	R	Yes. We have something called individual objectives, which is done once a year so in the beginning of the year we are giving them the different objectives to which they will be measured on and some of those are group related which means that they are not individually in the sense that this is not only for you; it is more for like for budget and for KPI's and so one to be to follow up on the group level. But then also we have really individual objectives and I usually put in the one thing is to	LEA, ORG

		<p>learn about the business to actually fulfill the tasks given to them by me or project leads but then also I put into, we have process knowledge which is also one part and then also team player.</p> <p>For me team player is very important part because we are relying on each other and the knowledge that we have in a team. And it is not only sharing by vocal but it is also part that you actually perform and filling the use cases in a proper way because the colleagues should be able to seek the knowledge within the documentation also within the design description as you know from we had from in the manufacturing, you have to do some new design descriptions for the cash and accounting. So I think yes.</p> <p>And I think that we have it and at least also I think that and we are trying to verbally also during the year to tell them once a while they have done something good, I mean especially when people have had... we have sessions where people are sharing the experience that they had. So I hope that I do it.</p>	
65.	I	I also from time to time I receive email from you that do not forget to write the use case or something like that.	
66.	R	Yes, exactly people tend to forget. Because I think it is a bit boring. It is more fun to code.	
67.	I	So that means is that there an organizational policy to encouraging people to share or is just in this way?	
68.	R	I would say it is an organizational thing. Yes, I would say so...	
69.	I	Ok.	
70.	R	Then I think it could be different depending on when you are, because it is cultural thing as well because in some cultures it is more okay to keep knowledge for yourself. But I think at least here in Sweden or in Lund or in Malmo, the culture is that sharing knowledge is a good thing and it is seen upon a being a good team member.	
71.	I	How do you value the knowledge resources that have been created in team?	
72.	R	In what sense?	
73.	I	I mean those the people, the documentation all these can be considered as knowledge resource.	
74.	R	Hmm...But I am not sure in what you mean, in what sense you mean value?	
75.	I	I mean do you think that knowledge resource is more important than the process or less important?	
76.	R	(..) I would say that knowledge is probably... especially within this group, is probably the most important part. However if you skip the process and if you skip the other tasks needed then the knowledge is not worth anything so you cannot say that ok skip that part because the knowledge is the most important part. It needs to go hand and hand I would say. But for sure, since this... the application that we are using, I do not know you know about it, it is quite big, it is actually two applications, but the biggest one is Java code application in close to 1 million lines of Java code so it is fairly big. And it is also supporting the Tetrapak's core industry, so and it is running in factories for 24/7 all around the world and if our application stops they stop the production. When	LEA

		they stop the production Tetrapak does not earn any money. So it is crucial that this application is running and it is correct. So it is really important when you are working in this department that you have knowledge about the business so that is I would say is the most crucial thing that you need to know the business. If you do not know the business does not matter how much you know about Java or any development technology, you need to know the business. But if you skip following the process and if you skip following the steps that we have in the process like documenting everything that you do and so on then we will soon have an application that no one can understand how it works. So even though we are not 100% following it because the use cases are not up to date all of them, but they are still better than nothing and as long as we at least try not to make the worse, that is good because we need to have possibility to seek for information even if one or two key persons are not here. So I would say that knowledge is very important.	
77.	I	Since the knowledge is so important and is there any measurement that you are taking to protect the knowledge resources here?	
78.	R	Hmm... yes what we do is that we try to get it documented.	
79.	I	I mean... Ok. Then if people with knowledge, business knowledge is coming and going, in that case, how do you try to avoid that case?	
80.	R	You cannot avoid that people to leave the department, so you need to take care of it, yes. What we do then is that we have knowledge transfer, and for instance we have one guy, Jula, he is leaving now. So what we did as soon as he told us that he is leaving the company we assigned one person to... two persons actually but that was one that was already working together with him. We told to these two guys that you need to have knowledge transfer with Jula, the guy who was leaving. And then we try also to pinpoint what kind of knowledge is it that this person has that we will suffer from when he leaves. So we need to define what information does he sit on, that we need before he leaves. Because maybe he is, as you say, he is the only one that has that knowledge. So we need to secure those parts of the knowledge that he has that nobody else have, and that is what we try and what we did in this case we sit down and specify what do we need to ... what does he need to tell to those guys who will take over from him.	ORG
81.	I	Ok. So when you defined what knowledge is missing or is going to be lost. How do you define it, who is taking to the definition part, defining phase?	
82.	R	Yea, we talk to the person who is leaving, we talk to the persons who are working closely to him, we talk to our global design lead, we talk to management team within in the organization and we also talk to those who will take over from him. That is the only way I know we can cover it.	CON
83.	I	Ok. In your opinion do you think the knowledge transferring works well here or?	
84.	R	I would say it works ok. It could for sure be better. Hmm...and the way I see it is that what we could do is to have more frequent meetings where we actually share knowledge, but I would say that the main problem is that if we document in a good way and if we also have someone proving the changes, so we get someone else to checking because it is very easy to...you mean something you write it down, but for another people reads it they see it in totally different way. So we need some to prove that, Ok, I understand that we have the same picture what you wrote. Those are the things that I can see that we can do to become better.	CON, ORG

85.	I	Ok.	
86.	R	So I think we are Ok, but I think we can do better. It is also about I mean time... time and resources. And the way it is right now, there is things on not...it is not highest on the agenda for management above us because they want us to deliver. So that is challenge between how much time we can steal from the delivering time, in order to make sure that we... that we get knowledge and that we spread the knowledge.	ORG
87.	I	Does that mean that you are fighting for this time slot?	
88.	R	Oh, yes.	
89.	I	Ok, so you are trying to leading people going to that direction?	
90.	R	Yes, and you set it yourself, I constantly sent out mails. Do not forget to... because people are, they are stressed, because they need to deliver. They feel a pressure from our customers and from our management to deliver. And then I have to remind them that do not forget to do this also, because if you do not do it, it will take even longer time the next release because you do not have any knowledge written down, you cannot find knowledge other than in the head of the specific developer who did the changes. So that is why I try to... to make people write down what they do.	CON
91.	I	How do you think the actions you have taken to encouraging knowledge sharing and emerging people to more about like writing about the use cases? How do you think these actions you have taken impact your daily managerial work?	
92.	R	Mine... It means that I have spent more time in being a police. Checking whether the people do it or not. That is for sure.	LEA, CON
93.	I	Ok. Does that also mean that you are coaching people?	
94.	R	No. I would not say that, I am coaching. I would say more like a police.	
95.	I	Aha. So you are checking and monitoring them?	
96.	R	Yes. That is not what I want to it, but I think I need to do.	
97.	I	That is all for our questions. Actually before you we have interviewed three guys. One is program manager in Denmark and it is a growing company. And what he sees that Knowledge Management as a kind of a process actually to making people and he is trying to make and establish an environment to make his developers to sharing more knowledge. And he also works as a police, and also in the other hand he works as a coach and he tries to micromanagement.	
98.	R	I think you need to do that actually. I think you cannot only be police. But I think maybe I think that I am more police than a coach. I would like to be more like a coach but I am forced to be police that is why I think I am more a police than coach personally. I think the coaching part is more proactive. Hmm...police is not fun part of the job I would say it is just necessary to do it is more proactive to be a coach I would say.	ORG, INIT

		But I think also that within our development and test process we actually build in the knowledge transfer, since we have many process we have tollgates before you should go to next part of the process you should have done use cases, it should been checked, you should have done design description and so on. And then also in the process we have this handover we have where, we show all the new continuous improvements and functionalities. I think also that is within the process. Maybe we do not think about it as part of the process but it is actually. I think that is... that is something that you need to do; you need to build in it within the process where the main work is otherwise it does not come natural.	
99.	I	And another interesting part from that case is that they have two teams in different locations, actually three teams. One is in Denmark with the main architect, another one is in Malaysia and the other one is in Ukraine. So he is trying to integrating these three development teams together (locations). And he sees a great cultural difference between Ukrainian guy and the Malaysian guy. Malaysian guy is more like they told them to do something writing use cases, Malaysian guys are self motivated and trying to accomplish these tasks but the Ukrainian guys are always skipping these.	
100.	R	Yes it could be. We have the same situation, we have Singapore development. What we have done is that we have video conferencing equipment outside here.	
101.	I	Ok.	
102.	R	<p>So we have daily meetings and status meetings that is actually a knowledge transfer as well. Because we have daily meetings where you force, everybody should say what are they working on currently or what have they worked since last meeting. And then what we will do up until the next meeting and do we have any issues or problems that we need to discuss with someone. That is also part of the knowledge transfer actually but on another level.</p> <p>So that something we have with...we have it together with Singapore. Every week it should be done. Tuesday, Wednesday and Thursdays. Because on Mondays we have knowledge transfer on department level, we have status meetings with a full department and a Singapore every Monday, discussing what was happen during the last week. That is more for... due for what is happening within different projects and what is happening with our application out on the sides, customers the support issues, and so on; then also what happened during the week, who will do what if someone has travelling or something like that.</p> <p>We have also weekly update where we also write down what is the status of the different projects, what is the status of the development and the test and who will be vacation and who will be on travelling and so. Also this is some sort of knowledge transfer but on another level.</p>	ORG, INIT
103.	I	Yes.	
104.	R	But sure one thing that we noticed is that it is tough having split development centers especially when you have different time zones, which makes it even more important I think to document everything you do. Because they start 7:30 in the morning then is 2:30 in a morning here so we are still asleep so they cannot the questions. So time zone issue is makes it more important to document everything we do.	ORG
105.	I	Ok. Thank you for your help.	

106.	R	No problem. I hope you get something about it.	
107.	I	Thank you. Bye.	
108.	R	Bye.	

Appendix 6 Interview transcript 4

I – Interviewer, R – Respondent

L – Line, P – Person

Informed consent: KM and managerial activities

Interview 4, Location: Lund Date: 18-04-2012 Duration: 43:55			
L	P	Conversation	Code
1.	I	Our research topic is about how managers perform to manage the knowledge in the projects in organizations.	
2.	R	Ok. Interesting. We can continue with questions.	
3.	I	First question will be can you describe little bit about your professional background?	
4.	R	Yes, I am project manager here in Tetrapak. I am working here from 2002. And I have a university degree in Information Systems.	
5.	I	Aha...So we are in the same program..	
6.	R	Yes, I have only bachelor degree, so you have studied little bit more than me. I start working...my first job was in 1992. Then I start working as programmer and then I worked in some areas consultancy and company.	
7.	I	How do you consider your role as a manager in this organization?	
8.	R	Yea, for a moment as only a project manager so there is more virtual organizations, so we allocate people when we run projects and then de allocate them after the project. So when I allocate the peoples I am the manager.	
9.	I	Ok. So you are talking about virtual organization?	
10.	R	Yea.	
11.	I	So it is like you are in the center when you need a resource, then you...	
12.	R	Yes, I make a request and then I get resource from the resource management. So they could I have four or five people that I work in a project. For example when we install a system for manufacturing.	
13.	I	So normally what kind of project you are running?	
14.	R	There is different because I have worked a lot with production systems but then I have started to work with infrastructure projects. And for the moment, now the next project will be the in sourcing one area as a small enterprise system that was outsourced before but we try to in source it instead.	

		That will be my next project.	
15.	I	Ok, in that case you have resources which is diverse when you try run your project	
16.	R	Yes.	
17.	I	How do you make sure that the people have the right knowledge to deliver the result what you want?	
18.	R	Yea, that is the problem because when we start the project I have more information than everyone else about the project. So normally we start with the kickoff that I went through the entire project and then all the expectation and everything and everyone can ask question and all this and then we start working and then we have a weekly meeting. Normally one hour, maybe in the beginning of the project two hours. But it is more that I ask questions to follow up the work and they ask the question if there are some unclear things and together we try to minimize the gap.	INIT
19.	I	Ok. So kickoff will include every project members?	
20.	R	Yes, kickoff is that is based on PowerPoint and Excel all this things that we do not discuss so much is more that I present and then question and answer.	
21.	I	Also in this kickoff do you try to concentrate on your business request that what you have to deliver at the end of the project?	
22.	R	Yes the purpose of the kickoff is that it visualizes what we will deliver, so everyone knows what we will deliver because doing the project there could be the feeling that we are doing wrong things and I guess that it is really important that what the end goal would be. That is what we do in the kickoff.	PLA, LEA
23.	I	Ok. During the project how do you monitor that people are doing according to the schedule or according to the plan?	
24.	R	<p>Most of it, doing at weekly meeting, I have a project plan as work breakdown structure with a lot of tasks and then during the meeting people bring up issues and tasks and if there is some difficulty then we add this to the plan all the time. So we have the plan, so the two main documents are the plan with all the tasks and then we have one document with all the issues.</p> <p>And then we just go through them and re-plan and go through them and all the things and follow up at every step. We have it once a week then change a behavior or rescheduling something else. But the problem is that something we do not know that we miss, this approach works very well if everyone knows what we do or what... if they know what is expected from them. Then they can raise a gap and say we do not have the knowledge for doing this one or we should not do these and then we can discuss it, but the problem is that we do not know it. For example if we need a Cisco router with setup, but we do not know it, because we think that we do not need any Cisco router to connect things. Then we have a problem. But then we will figure out very late as in the test phases instead. So I think the approach will work... (..)</p> <p>Difference is that before I started here in Tetrapak I have another approach. That was that we have a kickoff and explain everything and then we start working. And there was not so much management because of people know what they should do and if there was some question they came up and then we discuss it and we solve it and went through it again. But in Tetrapak there is more need that we need to have a weekly meeting because people have questions but they do not</p>	CON, ORG, PLA

		raise them so you need to have a weekly meeting you need ask them if there is concern to bring up that was the difference. That is the difference in big, in organizations small informal organizations people come when they have problems or like to discuss it, but in big organizations they maybe wait until someone ask them because they have shared allocations, work with other problems.	
25.	I	Ok. So why is difficult for people to gather together and discuss, and they have to get together only once per week? I mean, why project members are not so communicative which are during the project?	
26.	R	I think it is more that they like to do it. But they have shared allocations so they work in different areas and they are not fully allocated. So they have the problem in this area and the problem in this area. So if they know what they should do in another area these will over and continue work with that area, because there is always a pressure from on the people.	ORG
27.	I	Which means every team member is in charge of specific area?	
28.	R	They may are having two or three...	
29.	I	Two or three people?	
30.	R	No two or three areas. They have one people working on two or three areas. If they have issues in one area, they continue to work with next area and hope that someone will solve the problem for them.	
31.	I	Okay.	
32.	R	But in small organization, my experience is that in small organization if you have a problem, then you told that you have the problem and then you start working with the next area, but here you do not say anything. That is the reason why we have weekly meetings to ask people do you have everything to continue and as now we have a problem here.	CON
33.	I	So every team member has to have the particular knowledge about business area? Does it matters?	
34.	R	Yes. That is if they have that one they do not have any issue they can continue instead. But if they do not have that one, then we need to have a weekly meeting in this organization. But for example at home if you have an issue, you solve it directly you start a discussing so you do not go out and wash the car instead, you have different behavior at home and at that work. So that is... If you have the knowledge... But the problem is that what we like to have is that they have worked in a similar project before because as soon as they have solved the issue once, they can solve it next time. But with people that work in different projects and if you allocate them then there will be new people next time and there would be the same... the same similar issues.	ORG
35.	I	Do you try to transfer the knowledge from the previous expert to the new guy?	
36.	R	Yes. We have lessons learned and we also documented. For example we have this application DTD (online document type definition) that is the best example. We start with the documentation with 20 pages and then we add everything within it. So I think it is 150 pages for now so all problem, all issues and all experience we add everything with a lot of pictures which should solve all the things and we said every time we get some problem and we need to add to it, because when we work with this one then we shorten time, we are not discussing it and asking other people we need to read	INIT

		about it and then solve it. But then that is the best example that we have. And one another example is that what people have in their heads instead. They maybe save it as a document and then they forget it.	
37.	I	Is that in a process or?	
38.	R	No is more that... that there were two people that work with it and we said that from the beginning we will have this approach. We will have only one document in that should be everything. We do not allow other things so now we have saying some people that work with it in common sense that we need more information ahead and you are free to do the documentation then you should do it. People add and this more an open document for everyone to add things and we tell them they should do it. If there is something and they complain on they should fix it.	INIT
39.	I	Ok. So if is something is missing it will be discovered until someone complain about it?	
40.	R	Yes. And also that everyone knows that they are allowed to making improvements, there could be one picture that they say that is better to have two pictures and they know that they are allowed to change it so they can just change it. And is only takes 10 to 15 minutes to update it. There is more that we have communicated that everyone is allowed to fix it, there is no approver procedure you can just do it. We trust you! But if you compare to use cases there is more that you could add more information but someone should approve it. And that is the difference and there would be little bit more difficult to do it so it is easier Ok I will discuss it later then you forget it. So that is the reason why I think that DTD documentation is a good.	LEA, ORG
41.	I	How do you ensure the quality of this knowledge storage or documents?	
42.	R	The only way we do it is more that if you add something and then the next person uses it and if he is not satisfied with that one he can change it, and then the first one can change it back gain but that one does not happen, because of what is happened there is more that there is one picture from the beginning and then someone expand it and expand to it to three pictures and then the next one adds more text and the next one may add one more picture and then it will be clear. So it is little bit of Wikipedia but there is no owner on it, but everyone is free to add information on it.	INIT
43.	I	What kind of technology you are using for that, Word or?	
44.	R	Yes it is on Word and we take some pictures with and ___ it but that is Word document. And then we make PDF once a month we put it on the servers that everyone that is outside of our organization can read it but they cannot change it.	INIT
45.	I	Aha.	
46.	R	So it is only the developers or manufacturer systems people can update it.	
47.	I	What is the purpose that you share the document outside of the organization?	
48.	R	Yes is more that they should know how it works and then also if they like to take a look on it so they can have a clear expectation what they can expect from DTD, that is more that. But then we have discussed it a lot because we have some creative people outside that read the document and they try to use it. So that is back and forth I think it is good that people are interested and there a lot. Then if we fail sometimes and we have discussion and so doing wrong things. But that is only	LEA, INIT

		once in a second year in a more cases it helps a lot of people instead.	
49.	I	And you mentioned the kick off meeting to transfer the business knowledge.	
50.	R	Yes.	
51.	I	And you also mentioned weekly meeting to try solving problems and sharing knowledge during the project...	
52.	R	Yes.	
53.	I	And also you mentioned lessons learned. Is that lessons learned at the end of the project or during the project?	
54.	R	Yes, it is during the project. So what we do or what we have is the template for collecting the resource needs so every time there is a complaint or some fix that we should do it in a different way next time, we collect all these suggestions and there is only an Excel mall or template that we add the all this things during the project that is good area because also that there could be a frustration during the project but it is easier for people to handle the frustration if we document that and they could express a suggestion how we should do it instead.	CON
55.	I	How often do you do that?	
56.	R	<p>In every weekly meeting we have are having this template as address there but we are not asking so much about lessons learned and it is more that we are discussing such that we do it in a wrong way, looking to do it better the stem to take up the template and add some more lines on it and then in the end of the project then we take a lessons learned sessions.</p> <p>In normal case we do it three times, we have one internally with the developer, one with a supplier to discuss with them and one with the who orders as the business to discuss with them. Then I conclude everything and distribute it to everyone and we add it then we have a share point area for all projects so we add it there so the new projects can take a look to all lessons learned that we have.</p>	ORG
57.	I	Do you consider these three initiative that you try to... these three initiatives for knowledge activities, do you consider them as influence factor for your decision making process, when you try to make any decision does this matter to you?	
58.	R	<p>Yes, little bit, but not so much because I think the best knowledge is when you do the work then you make the fails and all the things. Because of this is very, very difficult for someone that is not involved in projects, if that read the meeting minutes and the key cost material and lessons learned I think he has failed his next project anyway.</p> <p>He maybe could take care about some things, but there is a lot of more un described knowledge about the feelings, the people react and the stress factor. And all these things, they do not know about that, there could be little bit in the lessons learned, but you do not know if one person has personal problems during the project you do not see that during the lessons learned and meeting minutes and something else. Then we see that in meeting minutes that he has not delivered.</p> <p>In the meeting than we said Ok, someone need to help him and we do that. The only proof we have</p>	ORG

		on that one was we do not know does he has some problem or only normal delay or it is more complicated I think from the beginning. And the lessons learned could not be that... the lessons learned is only if someone not doing his work he needs support but that is common sense that is not lessons learned. But if you are experienced then you see that people are very tired and then you can see that we will get a problem here maybe then you can remove some load before there is a problem. That is you can do that with experience or knowledge.	
59.	I	So that it means that you benefit from the lessons learned and also weekly meetings to how to locate your resources. I mean you feel that some people are overload.	
60.	R	Yes.	
61.	I	And then you try to reallocate your resources.	
62.	R	<p>Yes reallocate or deploy some actions or make some action in parallel and all the things. But that are normal project techniques so you do not miss the target. There is also because if you are new project manager then it is easier to just push people, if someone says that he is little bit late... you say can you make some overtime, can you do that or can you do that.</p> <p>But when you are experienced, then you know that this one is not prioritized one so we remove this one and then sometimes it could be that yes, Ok, it is interesting when you say but the most important is to deliver this part do that and we will discuss other things later. But that decision you cannot do that as a first time as a project manager because the first time you think that everyone just do what they things but it is same when you study and you make a plan for an exercise or some figure. You think that ok, this time I will do it in a controlled way and then you end up the week before or something like that. And how can you do it after three years the same every time because you know that it works. But if you have failed all the times then you have changed the behavior and I think this one is the same with the project manager. You do not know from the beginning so that is the reason why you push too hard but you see in the long term people do not miss and do not say what the issues or concerns are, because every time they say something, if you came up and say I have concern. Then, Ok, solve it, then you stop coming with concerns to me. But I you have a concern and I have said Ok I will handle the concern or you can help Chris with this concerns then you come more with your concerns and then you will be relaxed and you deliver a lot more. But that is more based on experience that is not what you can do with project management you have or you do, because it is much, much issue to push people.</p>	ORG
63.	I	So you think that is only happens more experienced project managers?	
64.	R	Yes, I think so.	
65.	I	They can make it more flexible for how this project teams are involved and located according to the behaviors.	
66.	R	Yes, because they have learned to be in that situation before. This is not work and design, but difficult to understand it because of someone have written the lessons learned. If you have putted that one in the lessons learned that do not push people too much but then you are in a situation and only thing you have in your mind is that you need to push people and then you do it. But if you know that you failed later, then you do not do it.	CON
67.	I	Ok. Is that what you have learned as well, at the beginning did you push people?	

68.	R	Yes, yes exactly. I have been pushed by myself and reaction or things, and sometimes I push people also. For example if we have a goal life and there is things as we do and be done before then... but I say pushing as much as possible and do it at the end. It is the same when you study for an exercise. You push yourself at the end you do not start with pushing but you do it in the end for example but that is knowledge that you have. I do not like to fail this one and spent one more month so that is the reason why stay up all the night and study instead.	LEA
69.	I	Are these activities such as kickoffs, weekly meetings and all the lessons learned; are they self motivated, guided or dictated?	
70.	R	Hmm... there is best practice for lessons learned. The weekly meeting is more self directed because of the more... Yea, it is more common sense but you know that you need to ask the questions to capture all the issues and all the things and the kickoff is more or less based on the experience I do not know how many... I do it but I do not know how many other project managers do it. Because of most of the people feel that there is no time for it because they have to make a lot of design and works and all the things, they need to hurry up everything. But it is more that I know that it is good for everyone to have the same vision.	LEA
71.	I	Ok. Is there any case when you doing one project, your team member leaves the project? Does that happen?	
72.	R	Yes.	
73.	I	Then in that case how do you protect the knowledge that they have created but they carried away. In that how do you protect the knowledge resource?	
74.	R	Hmm... what we do in a most case is that we try to agree about a point what should be done before, so they can finish the task and so we can end up our service afterwards. But if someone is sick for long time then we may have other problem. In that case, the normal is that someone new is coming in and he redo what is done before until we come to the point that he was leaving the other one, but it is not that developers for example, develop document and develop document, develop and document so then you can remove that one and put in sub one this is not so common situation so it is more that...	ORG
75.	I	So the next person will start over anyway?	
76.	R	Yea, there will be... and we try to get them work them in parallel if we switch people. I mean normally a case is a week or two weeks if both are developers for example. It is more difficult if there is some area for example someone is good on the test and there is a developer that is not so good at test maybe they need to work in parallel for a month, not maybe full time but I think it is good if both, to sit together	INIT, ORG
77.	I	So you use mentorship to help?	
78.	R	Yes exactly, that is a good description.	
79.	I	Do you reward people if they are more active in these knowledge sharing activities?	

80.	R	Yes, I reward them in a sense that they are good workers that is good point then. So there is more of sort a recognizing reward, there is in nothing in monetary or nothing in the, what is said... they would not get any higher or figures at the end. This was that we recognize them as a good team players and we tell them that is really good that you bring that one up and this is really good that you thinking about that so we make a climate that the people are allowed to bring up things, allow to discuss everything in the weekly meetings.	LEA
81.	I	Do you try to encourage people to be active in these activities?	
82.	R	Yes.	
83.	I	How do you do that?	
84.	R	I tell them that I expect them to be on the meeting. And they need to come up with a good excuse if they not, because this is important project activity.	
85.	I	Ok.	
86.	R	And also that people feels more and more that if they miss this meeting, they miss a lot of information because there is a lot of things they discussing, that also because we have the feeling that everyone is allowed to discuss thing and show plans and everything. People like to come to the meeting and to get information and all the things. But if I have we push them too much than no one will come down. So I think if you do it good then people are coming by themselves.	LEA
87.	I	Is this activity guided by an organizational policy or you just design ways of managing by yourself?	
88.	R	This one is more my management style I think because in the process that we have our project management methodologies, there is not stated that weekly meeting or monthly meeting or something else, there is more stated that this work is need to be done by the project manager. But if I have weekly meetings and sending out of mail to capture information and how to do it, that is not stated. So the method is... but I think manufacturing system we work.... we all people works with weekly meeting a lot both in the server side organizations and front door organization.	LEA, PLA
89.	I	But that is not organizational policy but cultural and also management style in Tetrapak?	
90.	R	That is managerial style, is not that it is in Tetrapak, because of that, they more have monthly meeting but something went wrong so it is more middle management style to make it weekly because of protect the area and deliver what is expected and then we need to do it. But as I said from the beginning that in small organizations we do not have these weekly meetings, because then it is more informal people come and discuss and all the things. But here is need to have weekly meetings to secure that is no one sleep away and come up because when you work in different projects and in same times you have excuses for not delivering one project. So that is important for a project manager to protect his area and have a clear expectation.	LEA
91.	I	You keep this activities according to experience by doing this you can deliver the expected result.	
92.	R	Yes.	
93.	I	So that means you benefit from it and you think is a good way to help you to deliver the project.	

94.	R	Yes that is I think the main activity for delivering good projects in Tetrapak with this weekly meeting. The main activity to make all the plans, preparation and all the things but when you run the project if you do not do the weekly meeting then you will fail, because of people are not telling you when they have stopped working or they are not telling you if they have some problem because of they have much of other work that they do instead. But in the weekly meeting you have the opportunity to help them or support them and get issue from them.	ORG, LEA
95.	I	Is that case that some team members have many projects on their shoulder?	
96.	R	Yes.	
97.	I	You are not the owner of the other project...	
98.	R	No.	
99.	I	And they are the owners for the other projects and you are the owner for only one project?	
100.	R	Yes.	
101.	I	Ok, and how do you coordinate your activities during this complex ownership?	
102.	R	<p>We have change control board (CCB) where we meet once a week and then we discuss the allocation between all the projects and other activities. So that area will allocate people, so I will allocate for example people for two days or three days a week and then it could be that one week that there is one project that the need a full allocation then we agree on that meeting that this week I do not expect any activity from this person and maybe he goes for travelling or vacation or something else.</p> <p>So we agree that and then in the next weekly meeting I confirm to the person that next week whenever you are on travelling you should do this one and all the other things, so it works... it works good maybe 80% it is good. From an individual perspective you feel difficult when they take a look at the plan they see that I will work four hours this area, sixteen hours for this area, two hours for this area and from individual perspective it could be better frustration but it also... if you make the allocation correct we have baseline but then is up to the project manager to utilize the best from the allocation so if you have clear expectation in your projects then higher percentage that you will succeed that the individual delivers what is expected but if it is unclear that is easy for person to work without the projects, if I say: can you take care about the problems, Ok but then we do not have the picture what the problem is. But if say that could you install this server then they know that installing a server means that I install operating system, all applications and then I contact the network team and I added on the network and id.</p>	ORG
103.	I	So that means that clear language is crucial when you try to allocate the tasks?	
104.	R	Yes, a clear expectation is very... I may say are a very success factor. But it takes a time to define a clear expectation.	LEA
105.	I	So get these clear expectations from a weekly meeting discussion or?	
106.	R	Yes, so is that more they come up with an issue and then we discuss it. We will break it down what	LEA

		we should do to solve it and which alternatives are there, do we have the knowledge things, and then also it could be also that I make the clear of expectations in tasks and then I put in the weekly meetings then I say this is what I expect. And they said Ok, this will not work. Ok, then we change it during the meeting. So my approach is always to try to give an example or do something because it is always easier to change anything than create anything. So it is better if we came up with bad suggestions because that one we can change, other than no suggestions. Do not we need to invent instead, it is much more difficult but it also works only if you have climate and you can discuss openly.	
107.	I	Yes.	
108.	R	So for example if you communicate too much with emails then I came up and may see a task and sent to the people for example in Asia, and then they take a document and then says, Oh... I need to do it. And I maybe I am not saying that this would not work so they maybe do instead and send it back. It is done. And I say it is not working, and then we have a new task. But in a weekly meeting when I bring it up that then I have a chance to go through it. I came up before so that backs end with communicating too much with emails.	ORG
109.	I	Do you think these activities are successful so far?	
110.	R	Yes.	
111.	I	Or is there any improvement you can think of?	
112.	R	Not so far. That is the...I think that is the theoretical way that there is an area for improvement, but I think (...) that is the minimum level of how we need to do to success. And then you can do more you can walk around more and you can involve lot more in all activities but there is also another activities from a project management view, take care of the cost and invoices and other things that you are not send out to the people in the project but you are handing it by yourself. And all the stakeholder management then also you handle...I think it is a good balance, I have weekly meetings, discuss issue concerns and try to solve them out and then you mean then time to take care about cost and stakeholder and other things. Then I have weekly meeting again and try to solve them and change the plan maybe something like that, stakeholder management. So I think it is a good balance and it works well here in Tetrapak. And I also see that the project that fails there is often dare that project manager is not involved so much.	LEA
113.	I	It fails because he is not involved in kind of activities?	
114.	R	Yes, exactly. I told you that you should install, and then he has disappear and then the people says, Yes but I get a problem two weeks ago what do you say because I have done a lot of other things instead. So I think that is main reason why projects fail. But they are not failing so much in Tetrapak. We are very good in delivering projects. But I think also that one main reason for that is that they have put the responsibility to the project manager, so that is total project manager there is no excuse you need to deliver and then they... project manager handing down, allocate people and doing everything what he can do because he knows that his responsibility is to deliver. It is the manner of the company if project manager is allowed to come up with excuse. You should either deliver or you should have an excuse. And there is always easier to get an excuse rather than deliver. Also I think that is one success factor also here in Tetrapak. They are clear what they expect from the project managers.	LEA

115.	I	Ok. Do you think technology is crucial for these activities? I mean what kind of technology; you use Word, presentations and communication phones?	
116.	R	I think the feedback is not clear because if you bring up some issue, the only feedback is that where you put on the lessons learned and then there is feedback, to come up with suggestion or improve something. Then it is clear. But there are a lot of other things where there is not a clear feedback. Because you for example: if says that I do it this way instead and then everyone says, Ok, good, and then there is no feedback to you that people says I will also change or we should change the process... so I think we could improve the feedback to the people that bring up improvements or that came up with knowledge or the other things because on some... the only feedback they get it is the own satisfaction because I figure out some smart things and I do it in smart way but I do not know if you would do it in the same way next time.	LEA
117.	I	Ok.	
118.	R	And you will not say it because you will decide it later.	
119.	I	It is very hard to tell that people have learned from it?	
120.	R	Yes. But it is very good if you come up with something that is very good for you if people say; I will do it next time, I think that was a good time. Good to do and then you will come up with smart ideas in the future. So that I think the feedback is the thing that we are not so good at.	LEA
121.	I	And that is all our questions.	
122.	R	Ok. I hope you got some answer.	
123.	I	Yes, yes I think you answered all the questions. And we have one interview with Sony; she probably said the same thing as you said that ideal organizations, they also have these lessons learned but it is only in the end of the project.	
124.	R	Yes, We have also the lessons learned in the beginning of the project but we changed it two years ago. So now we have it all the time during project.	
125.	I	But is also problem for her to tell that people really learn from each other because it is hard to monitor I think it is a common problem.	
126.	R	<p>Yes. we have in the last project that I run, we have appointed a project for use access and then we planned everything what should be done here (before), but that should be done (before) but that was not done here instead (after), then there was a lot of lesson learned that said that all these should be done here (after not before). But we noticed it from the beginning so that was not a really good lessons learned. The only thing from lessons learned was that it is important because of if it is not then there is impact a lot in other projects here (after). So there are lessons learned that says that we are not allowed to go... to do it after use acceptance testing it should be done (before) because from the lessons learned. But we know it from the beginning but now it is important and we also know that if it is not done we need to recede a lot even if do not know it here (before) we need to maybe move the goal line one month or something.</p> <p>So that is the only thing that we came up from the lessons learned but this was maybe 20 points we have problem with the documentation, we have problem with the installation, we have problems</p>	PLA, CON

		with verification, printers we have a problem..., there a lot things here (before) that come up from lessons learned but when we went through everything because we failed here (after). But that is also difficult the next project manager says important is to do everything before this one (after). I know! So it is also difficult to capture everything and capture...it is capture and get a feeling that is difficult.	
127.	I	Seems like every project manager has its own managing style and it is quite independent during the project. So it is very hard to make them as a standard procedure. So you have to give freedom to the, since it also very hard to monitor whether have they learned it or not.	
128.	R	<p>When I was in one project... when I was working in a Sigma consultancy company I do not remember what it was... it was before 2000 and then they bring out I think it was 5 and 6 project managers, experienced project managers and then test us. Because they a goal to get profile for a good a project manager and they have a test. Interesting was that it was difficult. Everyone succeeds with the projects but we were all difficult. So it interesting because one of persons... I very focused on the delivery that was my way to handle the project; we always deliver on time and focus to delivery.</p> <p>And the other one was really good at stakeholder management so he information everyone all the time and he always succeeds because everyone know what they should do and there was open atmosphere and people work. And I was...someone was very smart and he is not communicating too much, he was very smart so he solves the problem and other people follow him and he also succeeds. That was very difficult because of what they like to have a profile with the test and when they should hire new project manager they give them that test and then they can see that he have the things that our best project manager have. But that does not work that way.</p>	LEA
129.	I	It is quite individual I would say.	
130.	R	<p>Yes but there is a certification for project management, that is PMP, what they do is more that you have a tool and process to follow and if you get some problem you know what you should do to solve the problem. So that is really good support the project manager.</p> <p>For example you may have some problem with stakeholder management or you come in situation with supplier management then you know how to handle it, so you start earlier because you know the tools.</p>	
131.	I	Training part is not your responsibility. You are not taking part in the training of the team members.	
132.	R	No not for the formal training. But we take care about the training between the members and we also take care about the training of end users or the super users. That part is the project management responsibility, but not if they need Oracle competence or something else they need to buy by themselves or with the resource organization.	
133.	I	Ok, that's all for today thank you for your help. The discussion was very helpful.	
134.	R	You are welcome. Bye.	
135.	I	Bye.	

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