Replacement of Project Manager in IT projects: A Normative Process Model

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Master’s Thesis
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Abstract

There were two purposes of this study; first one was to propose a normative process model to the situation where project manager is been replaced in IT projects, and the second one was to increase the knowledge about RPM. The design science research method has been utilized in this study. The empirical portion of this study was gathered by conducting semi-structured interviews with ten supervisors of project managers, because they have the best knowledge in the area. The actual process model was created with the support of Van de Ven & Poole’s (1995) process theories and with the information gained from the interviewees and theoretical framework.

The results indicated that if a project is in trouble due to incompetence of project manager, RPM does not give the best result when thinking outside of the project. The normative process model created in this study contains two possibilities; RPM or providing a mentor to support the current PM to finish the project. When project manager can stay in the project and gets help from experienced PM, he or she gets valuable learning experience and same kind of situations can probably be avoided in the future.

RPM creates problems when there are lack of processes and instructions in a company about how to run a project. When everyone follows instructions and project documentation is in order, RPM is easier to handle and the project or the project portfolio will not suffer substantially. If project manager is incompetent to run a project, instead of RPM there should be a mentor to guide the project manager in trouble. Educating project managers will help these kinds of situations in the future.

Based on the results RPM is not easy to handle and situation is lacking instructions. RPM is not the first solution to save a troubled project and it should be avoided. For future research it would be interesting to research how project manager experiences RPM especially in cases, where project manager does not initiate the replacement.

Keywords
Project manager, turnover, IT project, project portfolio management
Foreword

Making of this Master's Thesis was a demanding and time consuming process. There were times my motivation was close to nothing and personal life demanded more of my time than I had to give, fortunately I had support and encouragement that I needed to finish this study.

I would like to thank all those who have contributed in this study; the interviewees who have given me their time and share their knowledge. I would also like to thank my supervisor, Doctor Tero Vartiainen from University of Oulu, who has given me guidance during this research and who has been incredibly patient with me. Without his expertise and dedication to his work I would probably never reach the end. I would also like to thank my opponent Li Zhao for his comments and feedback of my thesis.

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Oulu, May 21, 2015
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1. Introduction

The purpose of this master’s thesis is to increase knowledge in RPM and create normative process model for the situation, where project manager is being replaced in IT projects. Failure of information technology (IT) project is well known and researched area in the field of IT. The Standish Group was formed in 1985 and it has been studied project failures for almost 30 years. Their criterions for successful project are that project is ready on time, within the scope and budget. The Chaos Report from 2013 reveals that only 39% of these projects succeeded, 43% faced some kind of challenges and 18% failed. (Standish Group, 2013). One way to ensure the continuity in the project is to have the same project manager throughout the entire project, from beginning to the end (Eskerod & Blichfeldt, 2005).

According to Havelka & Rajkumar (2006), replacement of project manager is a common solution in software development firms. In Sauer, Gemino & Reich’s (2007) study of IT project performance, the project manager changed once in every two projects and when projects faced the change in key personnel, the risk of underperforming increased from 22% to 50%.

Managing multiple projects is challenging. Engwall & Jerbrand (2003) conducted a study where it showed that there are no available resources most of the time in a company, and the lack of resources affects negatively in the project portfolio. Lack of resources causes challenges in managing multiple projects. When there aren't enough people or people have to be involved in too many projects at the same time, short term problem solving increases instead of focusing long term solutions. (Engwall & Jerbrand, 2003).

Even though replacement of Project Manager (RPM) is a known phenomenon in the business of information technology, research concerning RPM is yet very limited. Liikamaa, Vartiainen, Pirhonen & Aramo-Immonen (2015) made a literature review on RPM and they found only two articles that were directly related to the phenomenon. Parker & Skitmore (2005) conducted a study of the reasons and effects of management turnover. The main reasons for project management turnover were personal development and career motives, also dissatisfaction to the organisation and their own role as project managers were mentioned. Parker & Skitmore (2005) states that project management turnover can have negative effect to the performance of organisation; it can increase project's cost, risk and likelihood of failure. According to their study, the execution phase of project lifecycle is the phase where project management turnover primarily happens.

Vartiainen, Aramo-Immonen & Liikamaa (2010) conducted a study on RPM exploring the reasons behind the phenomenon. These reasons were divided into four groups of contradictions:

1. Primary contradictions; changes in Project manager’s personal life creates inconsistency between PM and the project,

2. Secondary contradictions; incompetence of PM or lack of trust,

3. Tertiary contradictions; the whole project has to be re-planned which may lead to RPM and
4. Quaternary contradictions; due to project portfolio point of view (PM has to go and lead another project) or the client wants to have a new PM. (Vartiainen et al., 2010).

Vartiainen & Pirhonen (2006) on the other hand carried out an exploratory study on RPM where the effects of RPM were examined. The study revealed that RPM causes chaos to the whole project by affecting project's schedule and budget, personal chemistry, solidarity and communications.

1.1 Research question

There is no kind of procedure to the situation, where RPM occurs. When project manager, hence the key person of the project is about to leave the project, the project is in a chaos. Only good management, competence of the project team and the new PM, support from management team and other stakeholders and good communication can save the project from failing. The purpose of this study is to increase knowledge in RPM and create a normative process model to that situation, and that is why the research question is:

- How should RPM occur?

In order to create a process model, the knowledge of process theories is essential. That is why process theories are included in theoretical framework of this study.

1.2 Structure of the thesis

This master’s thesis is organised as followed. First the introduction chapter reveals the background and purpose of the study including the research question. Chapters 2, 3 and 4 forms a theoretical background of this study including definition of a project, project management and role of project manager, project portfolio management and finally process theories, which are the foundation of the process model that is created in this study. Chapter 5 reveals the research design of this study chapter 6 is analysis and results and chapter 7 contains discussion and conclusions.
2. Information technology (IT) project and project management

Replacement of Project Manager and especially its effects to the project is hard to understand if basic knowledge of project management and generally project is not in a good level. This chapter starts with the definition of a project with special characteristics of an Information Technology (IT) project and explaining project life cycle. This chapter also contains definition of project management and project manager’s role, skills and requirements that are needed from a good project manager. The last chapter is about Replacement of Project Manager (RPM).

2.1 Definition of a project

The word “project” is based on Latin word “projectum” which means throw something forwards (Karlsson & Marttala, 2011, 11). Project Management Institute (2004, 5) has defined a project as “a temporary endeavour undertaken to create a unique product, service, or result”. Kerzner (2001) states that project have specific goal to complete, a starting point and end date, and it also has limited resources. The goal has to be completed within time and money limits, with the resources the project have.

Project’s purpose is to create something new. The creation can be almost anything, it does not have to be concrete like a product that people can use, it can also be service of some kind. The key issue is that the production of a project is something new and unique. Projects characteristics can be sum up in three things; they are temporary, they produce unique products and their development style is incremental. (PMI, 2004).

Although every project is unique, there are still several features that are common. First feature is that something different and new is going to be created in a project; a product or some kind of service. Second feature is that people are the main asset in a project, instead of technique. Project managers are there to influence other people to get things done and the project’s goals fulfilled. Third feature is that there is a certain context, where the project takes place. People create a project trying to change something in the environment they work. Project manager also attempts to influence people within a context. Boddy (2001).

According to Anttila (2001) information technology (IT) project is usually a development project. This kind of project has many similar characteristics than any other project. IT project’s goal is to improve the current system or to develop something new. Although IT project is in many ways similar to other types of project, there are a lot of differences. Comparing e.g. construction project and IT project we can see, that there are many little differences between them. Progression is easy to follow and planning and timing is easier in construction project than in IT project, because the final product is usually abstract. Producing very detailed project plan in IT project is almost impossible; the final product comes clearer in every step of the way. Changing and accommodating the plan is much more common in IT project than it is in construction project. Different kind of technological X-factors are also involved in IT projects. IT projects are not always big and challenging, variation can be substantial, as it is in construction project. (Anttila, 2001).

Project management techniques and tools applies in IT projects as well as any other project, but projects in the field of IT are different than in any other industry. IT project
is usually interdependent with company’s other projects and linked with both business processes and the systems the company have. IT project’s risks are unique, the development goes forward and technology changes rapidly which makes IT project much more complex and less defined. The differences are also in staffing people into project team; in other projects the people are often working full-time in the company, when in IT projects people are often working part-time and the most talented people are usually selected for the project. The scope in non-IT projects is usually defined well, but in IT project it is subject to change. (Taylor, 2004).

2.2 Project Life Cycle

Every project goes through similar phases and depending on the project’s characteristics the phases can also contain subphases. After finishing each phase, there is a review where project’s work and accomplishments are being either accepted or not. If accepted, the project can proceed to the next phase. In many cases the phases are limited and earlier phase is still going on when entering the next phase. Every phase can be the last one; either the risks are estimated to be too great for proceeding, or the project is completed. (PMI, 2004).

Figure 1 represents project life cycle’s typical sequence of phases. Above the phases there is inputs-line, which only affects to the initial-phase of the project life cycle. Below the phases there are project management outputs and the lowest line is project deliverable; the product after the project is done.

![Figure 1: Typical Sequence of Phases in a Project Life Cycle. (Modified from PMI, 2004).](image_url)
Every project starts with initial-phase. In initial-phase the project starts with an idea, i.e. someone wants to have a new house or some company a new information system. The charter is done at the beginning of the whole process and that document provides the authorization to the project. This phase includes also identifying and assigning a project manager and that is preferably to do as early in the project as possible, prior start of the planning. (PMI, 2004). According to Kerzner (2006), successful planning needs a good project manager, who understands that project planning is iterative process that lasts throughout the whole project. The best scenario is that the same project manager stays in the project from the beginning to the end (Kerzner, 2006). Project management team is established and the scope statement is made with the information about what kind of work needs to be performed and what are the deliverables that need to be produced (PMI, 2004).

After project initiation comes the phase of intermediate. Intermediate-phase is the phase where the actual work of the project is made. Project management plan is one of the outputs in intermediate-phase. Project management plan can contain subsidiary plans, it can be either in detailed or in summary level. Execution, monitoring and controlling, and closing of the project are defined in the project management plan. The content of the plan can vary greatly depending on the project’s size and the area of application. Project management outputs also contains baseline, responsibility of progress and finally acceptance in intermediate-phase. In final phase approval is being made and project is handed over. (PMI, 2004). One way to finish a project is to have gate review meetings. These meetings must be properly planned, including gathering, analysis, and passing the relevant information. These meetings can also result to finishing of a phase of life-cycle. (Kerzner, 2006).

2.3 Project Management and Project Manager’s role

Project management is defined as a combination of knowledge, tools, techniques and skills that are used in order to achieve project goals. PMI has defined five project management process groups that are used to manage a project; initiating, planning, executing, monitoring and controlling, and closing process groups. These processes are not separate, thus they are activities that overlap in different levels of project, from project initiation to finishing the project. Addition to process groups, project management encompasses nine knowledge areas; project integration, scope, time, cost quality, human resource, communications, risk and procurement management. (PMI, 2004).

Initiating Process Group consists of the processes that define project or project phase, and give authorization to the project including the preliminary scope statement. After initiating process groups comes Planning Process Group. Project objectives are been defined, project scope, the deliverables, duration and resources are also documented in this process group. Planning Process Group consists of defining and refining the objectives and planning the course of action that is required to achieve these objectives. Project management plan is a creation of planning processes and these processes are also responsible for project scope planning and definition, schedule development, resource management and cost budgeting. Risk management and involving all stakeholders that are needed are also included in planning process group. (PMI, 2004). According to Stahl (2007), project manager is the one, who takes care of project’s risks and is responsible for project’s success. Sauer et al. (2007) on the other hand states, that risk management cannot lye solely on project manager's shoulders; the top management and management team should play a big role in risk management too.

Execution Process Group consists of the processes that get the work (defined in project management plan) completed. People and resources are been coordinated and the scope
is defined in the project scope statement. Project team is established and information channels toward project stakeholders are been opened and actively used. Monitoring and Controlling Process Group includes potential problem identification and corrective action to be made if they are needed. Performance of the project is constantly observed and measured and any variances from project management plan are been addressed. The final process group is the Closing Process Group. As the name indicates, this process group includes closing the project and any contract applicable to the project or to any of project’s phase. (PMI, 2004).

Project manager’s role is to influence and lead his/her team. Together with the team, project manager should be able to define methods for developing new products within the organisational context (Pressman, 2005). Boddy (2001) have gathered five different practises that should be every project manager’s top priority and these practices are been presented in Table 1.

Table 1. Successful project management practices (modified from Boddy, 2001).

<table>
<thead>
<tr>
<th>Successful practice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring agreement with goals</td>
<td>Setting or receiving overall objectives and directions, interpreting them, reacting to changes in them, clarifying the problem and setting boundaries to it</td>
</tr>
<tr>
<td>Obtaining resources</td>
<td>Identifying them, negotiating for their release, retaining them, managing their effective use</td>
</tr>
<tr>
<td>Monitoring and learning</td>
<td>Seeing the whole picture: taking a helicopter view, managing time and other resources, anticipating reactions from stakeholders, spotting links and unexpected events</td>
</tr>
<tr>
<td>Exercising influence</td>
<td>Moving things forward by taking action and risks to keep the project going, especially through difficult phases</td>
</tr>
<tr>
<td>Using individual initiative</td>
<td>Clarifying and modifying their role, and those of other functions; creating teams, procedures and links to wider organization</td>
</tr>
<tr>
<td>Creating appropriate structures</td>
<td></td>
</tr>
<tr>
<td>Ensuring effective communication</td>
<td>Linking the diverse groups of individuals contributing to the project, to obtain their support and commitment</td>
</tr>
</tbody>
</table>

Project manager has to have good competence to manage the project. It is not easy to get different types of people to agree with common goals, the task requires good communication skills. When the goals are decided, PM has to get proper set of resources to achieve those goals. Project manager’s job is not only managing the project team, he
or she also has to see the big picture and focus on other stakeholders the project has. (Boddy, 2001)

Stakeholder is according to PMI (2004) “Person or organisation (e.g. customer, sponsor, performing organisation, or the public) that is actively involved in the project, or whose interests may be positively or negatively affected by execution or completion of the project. A stakeholder may also exert influence over the project and its deliverables.”

Every project has a group of key stakeholders, that list contains PM (manages the project), client/user (the one who will use project’s deliverable), performing organisation (the company where the project is been made), members of the project team (doing the work of the project), project management team (people who are involved with management), sponsor (who will apply finances to the project) and other influencers (who will affect to the project by some way, positively or negatively). In some organisations there is also Project Management Office (PMO). (PMI, 2004).

Project manager has to be able to influence other people in order to get them agreeing goals. PM gets the resources the project needs also by influencing people. Project managers create procedures and build teams that will work well together and not only in project level, but also within the whole organisation. Last of these practices is ensuring effecting communication. By creating good communication channels PM can influence other people and good communication skills are a big benefit to the PM. (Boddy, 2001).
3. Project Portfolio Management

In this chapter project portfolio management is defined. The chapter contains also a glance to project portfolio management processes.

3.1 Definition of project portfolio management

Many organisations are managing multiple projects at the same time. These projects are in constant competition for the limited resources and they are linked together when it comes to goals and schedules. Without proper management of multiple projects, organisations’ strategic goals are in jeopardy; projects are lacking resources and interdependencies between projects are vague. (Lehtonen, Lindblom, Korpinnen & Simonen, 2006).

To understand the concept of project portfolio management, it is important to know what a portfolio is. A portfolio is a compilation of projects that are managed under a fictional umbrella. These projects are either interrelated or totally separated. A portfolio can contain all the projects of a company or just a few of projects the company has. There can be multiple portfolios in one company. Project portfolio management is the management of the project portfolio in order to maximize the welfare and success of the company. In order to improve company’s welfare, project portfolio manager’s job is to maximize the value of the portfolio, make sure that portfolio is connected to business strategy and that the portfolio is balanced. (Lehtonen et al., 2006; Levine, 2005).

The value of project portfolio includes all the things that are important to the company. The most important and well-known value is financial. Other ways to define the value of project portfolio are the benefits and savings projects bring to the company and the strategic possibilities projects open. The linkage between project portfolio and companies’ strategy is also one goal of project portfolio management. (Lehtonen et al., 2006).

What are the differences in managing multiple projects at the same time and managing project portfolio? Pennypacker and Dye (2002) have described the difference between project portfolio management and multiple project management in Table 2. Pennypacker and Dye (2002) emphasis the fact that a group of separate and independent projects does not form a portfolio, they form simply a group of projects. Portfolio management focuses on the selection and prioritization of projects while the purpose of multiple project management is resource allocation.
Table 2. High-level comparison of project portfolio management and multiple project management (modified from Dye & Pennypacker, 2000).

<table>
<thead>
<tr>
<th></th>
<th>Portfolio management</th>
<th>Multiple project management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Project selection and prioritization</td>
<td>Resource allocation</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Strategic</td>
<td>Tactical</td>
</tr>
<tr>
<td><strong>Planning emphasis</strong></td>
<td>Long- and medium-term (annual/quarterly)</td>
<td>Short-term (day-to-day)</td>
</tr>
<tr>
<td><strong>Responsibility</strong></td>
<td>Executive/senior management</td>
<td>Project/resource managers</td>
</tr>
</tbody>
</table>

As seen in figure 2, project portfolio management is linked with strategic management and project management. In an ideal situation, company’s strategy should be translated into programs and portfolios and then individual projects, this is more effective way than trying to incorporate individual projects directly into the company’s strategy. (Chin, 2004).

![Different levels of management](image)

Figure 2. Different levels of management (adapted from Martinsuo, Aalto & Artto, 2003).

Chin (2004) states also, that all projects should be evaluated according to portfolio management, only that way optimization and business strategy can be achieved. Unfortunately that is somewhat impossible to do in rapidly changing business environment.

Portfolio manager is typically a senior manager or a team of senior management. Portfolio manager’s responsibilities are managing assigned portfolio or portfolios and monitor them. Portfolio manager prioritize projects and keeps the balance in order to achieve strategic goals. Portfolio manager reports to key stakeholders any issues or risks, that impacts to the performance of a company, gives them information of progress, impact and changes associated with portfolio management. He/she is also responsible for legislative mandates and measuring the value of portfolio. Portfolio manager has big responsibility and in order to succeed in his/her expertise must be applied for benefits realization, project management methods and techniques, process development and
continuous improvement and have good management skills. (Project Management Institute, 2008).

3.2 Project portfolio management processes

Figure 3 presents a summary of portfolio management processes and how they interact with company’s strategic plan, the determining factors and the project management processes. Project management processes are interrelated processes from portfolio components’ authorization and identification to reviewing progress of each component individually as well as the entire portfolio. (PMI, 2008).

Project portfolio management processes have been divided into two interdependent process groups; aligning and monitoring, and controlling. These two process groups are the basis for establishing and managing components’ portfolio. Aligning Process Group determines the categorization of components. After components have been categorized, they have to be evaluated and managed in the portfolio. Any decision making process is based on Organisation’s strategic plan and if there are any changes, the components and risk management have to be revisited. (PMI, 2008).
Figure 3. Project Portfolio Management Processes (Modified from Project Management Institute, 2008).
4. Process theories

In order to create a process model, it is important to learn about process theories, which are created to explain why a phenomenon exists. In a literature review Van de Ven & Poole (1995) found approximately 20 different process theories and by studying these further they put them into four different categories. These categories are described as life-cycle, dialectical, teleological and evolutionary theories and they give explanations of why and how change encroaches in different kind of biological or social entities. Each of these four theories consists of different motor of change. In reality there can be several motors of change that produces interdependent cycles of change. These four theories have been classified in terms of their action and process into two dimensions of unit and mode of change. These dimensions focus on classifying organisational changes by the outcomes they produce. (Van de Ven & Poole, 1995).

In Figure 4, each theory has been presented in its own cell. There are multiple entities in dialectical and evolutionary theories, and life-cycle and teleological theories focus on a single entity. An entity can be a number of things; a working team, an organisational unit or the whole organisation, individual’s job or organisation’s relationship with other organisations. These process motors are different also from the change process point of view; the change process can either follow the prescribed sequence or it can be constructed. (Van de Ven & Poole, 1995; Van de Ven & Sun, 2011).
In Figure 4 the lifecycle model represents the change process in an entity as proceeding through a necessary sequence of stages. The teleological model views development as a cycle of goal formulation, implementation, evaluation and modification of goals based on learning of the entity. The sequence goes through purposeful social construction with individuals in the entity. The dialectical model contains conflicts that emerge between entities and espouse opposing thesis and antithesis that collide in order to produce synthesis. This synthesis becomes next thesis for the next cycle of a dialectical progression when time goes by. The fourth model is evolutionary model and it contains repetitive sequence of variation, selection and retention events among entities in a designated population. (Van de Ven & Poole, 1995).

Life-cycle theory

Life-cycle and teleological theories are the most common explanations of development in the literature of management. In life-cycle theory change is inevitable, it happens whether we want it or not. The progression is typically being described as an undividable sequence, which has same characteristics at the end of the stage as it has earlier, thus they are cumulative. The entity can be affected by external, environmental events and every event contributes to the final product. Sequences are conjunctive, which means that the stages are linked such that they derive from a common fundamental process. In an organisation entity, life-cycle theory describe development as a program that needs developmental activity to progress in a prescribed sequence. (Van de Ven & Poole, 1995).
Teleological theory

Teleological theories see that the chain of events proceeds because of the final cause, the envisioned end state. Events follow each other and the purpose is to reach that desired end state, the entity has a purpose, it does not drift around aimlessly, it takes action to reach the end state and monitors the progress. In teleological theory development is seen as a repetitive sequence of goal formulation, implementation, evaluation and modification and these elements are based on what was learned in the entity. In teleological process the development track cannot be accurately specified, it can only be given possible paths that they may, or may not follow. (Van de Ven & Poole, 1995).

Dialectical theory

Third theory that Van de Ven & Poole (1995) founded in their literature review is called dialectical theory. In this theory the organisational entity is seen as colliding events and forces that are in a competition with each other fighting over control and domination. These oppositions can be both internal and external. Dialectical theory needs at least two different entities that represent these kinds of oppositions. The change happens when these oppositions are trying to maintain status quo. The status quo represents the stability. (Van de Ven & Poole, 1995).

Evolutionary theory

The last of the four theories is called evolutionary theory. Evolutionary theory does not consider evolution to be an unrestricted change but it often depicts global changes in organisational populations. In this theory the change happens like evolution in biology; there is a constant cycle involving random variation, retention and selection based on the competition for limited resources. Retention is the one that stays the same maintaining certain organisational form. (Van de Ven & Poole, 1995).

Replacement of Project Manager is not always an easy situation. There can be conflicts in a project for instance when provider wants to replace the project manager and client does not want to do that, or the other way round. These kinds of conflicts can create same kind of collision events than are presented in dialectical theory. PMI (2004) has defined project as a temporary effort and Kerzner (2001) also mentioned that project has clear start and end points. In teleological theory chain of events proceed towards the final goal, the envisioned end state. That is why normative process model created in this study has features from both teleological and dialectical theories.
5. Research design

As mentioned in the introduction, design science is the research methodology that has been employed in this study. The empirical material of this study has been gathered by conducting semi-structured interviews with ten supervisors of project managers in large companies in the field of IT/ICT. The artifact, which in this study is a process model to the situation where RPM occurs, has been constructed with the rigor of process theories and the information gathered from the interviews.

5.1 Design science

Describing the philosophy of design science is more difficult to do than describing the philosophy of natural science, because it does not focus on explaining the past but it focuses on realizing alternative futures in order to discover the truth. Due to its complexity, design science does not seem to have a stable scientific foundation. The methodology for design research can be described as a “hermeneutic process that explicitly considers the inner and the outer environments of the artifact”. (Purao 2002).

Design science goes hand in hand with behavioural science in the discipline of information systems, with some differences. Design science paradigm is all about creating new and innovative artifacts and through that it breaks boundaries of human and organisational capabilities, while behavioural science focuses on explaining human or organisational behaviour. Behavioural research focus on finding the truth and design science focuses on utility. Design-science and behavioural-science should be engaged in complementary research cycle in order to solve some fundamental problems that productive application of information technology faces. While design science is trying to find out what is effective, behavioural science is trying to found out what is the truth. (Hevner, March, Park & Ram, 2004).

There are two design processes and four design artifacts in design science research in IS according to March and Smith (1995); build and evaluate are the processes and models, methods and instantiations are the artifacts. Design science is mostly used information system design research according to March and Smith (1995). However, it can also be used in the study of the business research as well. Hevner et al. (2004) states that IS research is a combination of behavioural science, that addresses research through the justification of theories and development and design science, that focus on building and evaluating artifacts that are designed to meet the business needs. The artifact must be viable and in the form of a method, a model, an instantiation or a construct. In Figure 5 the framework of information systems research is been illustrated.
Hevner et al. (2004) have described seven guidelines for design science in the field of information systems research. First guideline is designing an artifact that solves an important organisational problem. Second guideline is problem relevance, which means that the objective of this kind of research is to create technology-based solutions to problems that business has. Third is design evaluation, meaning that the created artifact needs to be evaluated by using evaluation methods. Fourth guideline is research contributions, which means that the research must contribute in design artifact, construction knowledge and design evaluation knowledge. Fifth guideline is research rigor, which has to be applied in both development of the artifact and also in its evaluation phase. Sixth guideline is that the design has to be a search process that is based on existing theories and knowledge. The last guideline is communication of research, which has to be aimed both technology-oriented and management-oriented audience. (Hevner et al., 2004)

In this research the artifact is a normative process model to the situation, where project manager is being replaced during IT project. The rigor comes from Van de Ven and Poole’s (2005) process theories and the knowledge is gathered by studying about project management and especially by interviewing people, who have experienced and managed RPM in practice. There are no process models or other instructions to the situation where RPM occurs, so the problem relevance is established although the designed artifact is not technology-based. Research is made by studying about process theories and the fields that are relevant in creating a process model, and interviewing people that have good knowledge and experience concerning RPM. Evaluation is not included in this study. Communication of the research is been made through this thesis, which will be published in the University of Oulu and sent to all the interviewees who participated in this study.
5.2 Semi-structured interview

There are three types of interviews according to Myers and Newman (2007); structured, semi-structured and group interviews. Structured interview is completely prepared beforehand and lack the room for improvisation. Semi-structured or unstructured interview also has a script, but it is not complete. The researcher may have prepared some questions beforehand, but in this type of interviews improvisation plays in a big role. The last form of interview is group interview, where two or more people are being interviewed at the same time by one or more interviewers. In qualitative research semi-structured interview is used more than the other types of interview. (Myers and Newman, 2007).

The great advantage interview has as a data collection method is that researcher can control data collection flexibly complying interviewees. Researcher is able to control the order of questions and there are more room for interpretation than i.e. questionnaire. Interview is chosen usually because of following reasons;

- researcher wants to emphasize the person as a subject of the research situation,
- researcher does not know the direction of replies beforehand and the area is somewhat unknown,
- researcher wants to place the result (speech) to a bigger context and that is easier when researcher has the possibility to see the interviewee, his/her expressions, and interviewee can also tell about the subject wider than by answering a questionnaire,
- it is known beforehand that the subject a complex by its nature and the responses can go to many different directions,
- researcher wants to clarify the responses,
- researcher wants to ask deepening questions and
- the subject that is studied is complicated and sensitive. (Hirsjärvi, Remes & Sajavaara, 1997).

In the beginning of each interview it is important to build a trust and reassure the interviewee that the interview is confidential. Almost equally important is to gain a relax situation before the interview starts and that can be done i.e. when the researcher talks for the first few minutes. When interviewee is relaxed, the quality of the interview is higher. There are many advantages in tape-recording of interviews and one of them is that all data is being captured compared with taking notes. When interview has been recorded, researcher can return to the transcript later and pick direct quotes from what interviewee said. It also helps the researcher to concentrate to the interviewee. (Walsham, 2006).

5.3 Execution of interviews

I executed the interviews during autumn 2014. I interviewed 10 supervisors of project managers from large companies in the field of IT and ICT, interviewees were located in Oulu, Tampere and Helsinki. Four of the interviews were made in person in interviewee’s workplace situated in Oulu and six were made via internet calls (Skype/Lync). All of the
interviews were tape-recorded with the permission of the interviewees, and transcriptions were made by Tutkimustie Oy. All interviews were made in Finnish.

The duration of interviews varied between 11 minutes to 40 minutes, first interview was the briefest because of the inexperience of the researcher and lack of additional questions. After the first few interviews I started to notice some similarities in answers and started to make additional questions which I realised would help me to create the process model. I scheduled the appointments and got the permission to do the interviews via e-mail, it was quite easy to get people to accept my request once I got to hold of them. In interviews I had tape-recorder, notebook and pen with me. My supervisor Tero Vartiainen wrote a recommendation letter, which I sent to interviewees in addition to my request, this recommendation letter can be found at the end of this study (APPENDIX A).

5.4 Interview protocol

The interview protocol was made before the interviews and it was followed throughout the interviews. The interview protocol was as followed;

Demographic data:
- Age and gender,
- Education,
- Work experience (relevant to this study i.e. in the field of IT/PM),
- Current position and brief description of a company,

RPM:
- Describe one (or more) situations where RPM has been occurred during an IT-project. How did it start? How did the events proceed? Where there any noticeable phases?
- What were the reasons behind RPM? Were there any fundamental issues behind RPM?
- What kind of effects there were to i) the project, ii) the project portfolio, iii) the organisation? Were other parties concerned?
- Now when you look back about the RPM you described, how should have it been made?

Ideal operations model:
- How should an organisation be structured in when taking into account RPM?
- What would be the best operations model to the situation, where project manager is going to be replaced during an IT-project? Are there any phases or other course of actions? Think from i) project, ii) project portfolio, iii) organisation point on view.
- How could organisation be prepared for RPM, should it be prepared and can anyone prepare for RPM? Should RPM be encouraged and why?
- How would you define successful RPM? Think from i) project, ii) project portfolio, iii) organisation point on view.

- How would you manage RPM?

- Should organisation culture be developed in case of RPM?

- When the project manager should be replaced and when not?

- What else comes in mind concerning RPM?

In addition to the questions in interview protocol, I made questions based on the responses I got from the interviewees. If I did not understand something or if I needed further information, I asked and the conversation floated freely during the interviews.
6. Analysis and results

Analysis has been made by reading transcriptions several times and gathering the main issues from each interview to separate piece of paper. After reading process I gathered main issues from the papers I had wrote, and united them into one paper. This chapter starts with demographic data of the interviewees. Because this study is not only about the process model, but also tries to increase the knowledge about RPM, I think it is necessary to write about interviewee’s own experiences related to RPM and learn about these situations and that is why I include interviewee’s experiences in this chapter. RPM can be successful or unsuccessful and it effects both to the project and to the project portfolio. The last chapter is about the ideal process and reveals the normative process model.

6.1 Introduction of the interviewees

All ten interviewees had good experience both in being project manager and supervisor of project managers. I have gathered their demographic data in Table 3, including age, gender, description of work experience and current position, time and location of the interview and the duration of each interview. The youngest of the interviewees was 39 years old, the oldest one was 60. 4 of them were women and 6 of them were men. Four interviewees were located in Oulu, and I conducted the interviews in their workspaces. Six of them were located in southern Finland (Tampere and Helsinki) and I interviewed them by using Lync or Skype.
6.2 Overview of experiences of each interviewee

I1 works in a multinational company that provides multi-discipline engineering and information management services. In Finland it has approximately 500 employees and they offer help to client's research and development. Projects are mainly documentation projects. I1 has experienced RPM in a situation, where he has been the one that has taken over a project after the current project manager (PM) has left. The project was multinational and the former PM has had some medical issues and that is why the project had been struggled for a while. Replacement was made in a worst case scenario, in which the old PM had left before the new one had arrived. There were no meetings between project managers or no handover –period, I1 had to start from blank. First task was to get in touch with the client, find out what was the current situation, schedules, scopes and
other things related to the project. The project management plan was out of date, every stakeholder were unfamiliar and they were located in other cities as well.

“I had to update (the project management plan) from scratch; what are these outputs and the schedule, and find out who were in my team, because I didn’t know anyone because I had been away for a year. And they were located in different cities as well.” (I1)

When looking back to the situation of RPM, the main issue that arose was project documentation.

“The project documentation should have been in order, but in those days the company was not demanding it. It initiated an improvement. The superior was very good and he fixed the current situation. He made it work, that all project documentation in all projects were fixed and reports were done in time and in correct form and processes.” (I1)

It was a learning process to the whole company and because of good management skills it led to situation, where RPM became easier to manage after that.

I2 works in a multinational company that provides design and research, insight and strategy, software development, quality assurance, R&D operations, globalization and systems management and support to clients in different industries all over the world. I2 has experiences in RPM both managing them and been the one who takes over the project after previous PM had left. The one he wanted to mention is a project, where he takes over after PM is going to be replaced. It was a software project that was behind the schedule even before RPM.

“As traditionally software-project was behind schedule [...] there were too many changes.” (I2)

There were a handover-period that lasted a couple of weeks, new PM got the chance to blend in smoothly during that time starting from participating weekly meetings and communicating with the client. Notification about replacement was made to the client in time, but other than that the feedback from client was negative.

“Because the project was not a success due to different reasons, it showed in client feedback; the personnel replacements. It was one very negative, that they indicated.” (I2)

There were one meeting and otherwise the communication between old and new PM was done via e-mail. One big concern I2 had in communication and transferring information was that the silent knowledge and information is difficult to transfer. When thinking RPM in project portfolio management point of view, I2 thinks that the lack of good project managers is one factor that increases insecurity.

“There are no project managers, it is limited natural resource.” (I2)

When asking from others, the lack of project managers was not an issue. There were clearly a geographical reason for that; supervisors in northern Finland had trouble in finding good project managers, supervisors in southern Finland informed that there are plenty of good project managers in labour market.

I3 works in a Finnish research and technology company that has approximately 3000 employees in Finland. His experience of RPM was in managing RPM. The PM wanted to leave because of a new job during the most hectic phase of the project.
“The most challenging thing was the transformation of tasks. And in what kind of situation the previous PM had left things and in what way this, in a sense what kind of view the previous PM had and what kind of view the new PM received and how different these views were.” (I3)

After a while undone tasks were exposed, even though according to the previous PM these tasks were already done. Hanover-period was very brief, which made things more difficult.

“Because old PM had been only short time in the company, he had very short notice and he was able to leave in just a few weeks. Because the project was very big, it should have required months to make the transfer, that the new PM could have had the clue.” (I3)

The influences RPM had to the project were big; because things had been left undone and schedule was exceeded, the client was not happy.

“‘Yes, of course, it influences to the reputation.’” (I3)

I4 works in the same company as I3. His experience of RPM is somewhat different than others; the project was multinational and one country that was responsible for project’s technical portion decided to drop out without any notice and the situation escalated to one meeting, where words were not saved.

“‘There was a cultural collision... They had reported, what was done. But we haven’t seen the result.’” (I4)

After the country had left the project it was sure, that there were things to be done and they decided to recruit the person with good technical skills to run the project, because the technology that should have been made was not. The administrative side was managed with the support of the project team and supervisors. The influences to the project were the delay and also financial loss. The quality of the product did not suffer substantially.

I5 works in a large multinational company that provides software solutions to different types of industries. She mentioned two projects, where PM was replaced; in the first case the PM has left the project because PM wanted to develop and the company did not offer the kind of development PM wanted. Other situation was that PM wanted to continue studying and PM resigned because of that. In both situations old PM had told about leaving on time to supervisor, so she had time to recruit someone new and to adjust to the new situation.

“‘It is an ideal situation, when supervisor has been informed on time that he/she is planning to leave.’” (I5)

When notification and recruitment was made, there were a handover-period that lasted for two weeks and that was enough for the new PM. There are many challenges, because one project manager handles many projects at the same time. Transferring the information and knowledge was one issue the interviewee mentioned.

“‘And then, the challenge is how to transfer the information to the new PM; documentation plays a key role.’” (I5)

Getting to know the project team and especially the client creates difficulties, both to the new PM and to other stakeholders. Adapting the work ethics and practises is also time-
consuming. Other PMs and supervisor were there to help the new PM in the beginning as well.

"It’s all about cooperation." (I5)

I6 works in the same company than I5. There are many reasons why PM had decided to leave in her experiences; client and PM does not have good chemistry is only one of them;

“Client thinks the PM is not fully qualified to the task. One option is of course that PM wants to leave […] Then there is of course the reason, where our own internal management team makes the decision to replace the PM. One reason for that is i.e. that the project does not proceed with the current PM." (I6)

On her example the PM had betrayed the trust of the management team and the client, the project ran over schedule and time and management team did not have any other choice than to replace the PM with her. Company decided to recruit someone with high administrative skills and long experience in being PM, because they wanted to gain the trust of the client back. In this example leadership and administrative skills were more important than technical skills. Leaving PM went for a holiday during handover-period and information that came from him was in many ways incorrect or insufficient. Project team played a big role in saving the project.

“There were good people in project team and that is why project could proceed.” (I6)

Documentation in the project was inadequate and the scope was unclear. There were no checklists about remaining tasks, the contract was not explicit enough so that the client had too much power to change the demands and the scope of the project as it proceeded. Despite of the incompetence of the old PM, I6 does not think that replacing the PM was necessary the right thing to do.

“When you think about it afterwards, is the replacement of the PM the correct way to handle the situation or should it be that I could have gone to the project as a mentor and we would have finished the project together? In this situation he (old PM) did not learn anything.” (I6)

I7 works in a multinational company with approximately 140000 employees worldwide. It provides IT-solutions and projects to different types of industries. He didn’t remember any specific case of RPM, but he had been involved in some of them. Reasons for RPM have come either from client’s request due to poor communication, or from management’s request due to incompetence of PM. Replacement starts usually with a meeting of a few people involved;

“In practise we find the suitable candidate for the job, who continues in the project [...] and of course we think about the reasons for the replacement and in the result we decide who is the most suitable.” (I7)

After finding the best candidate, they have to have client’s approval and communicate with their PM. Good communication between the client and provider is the key thing. Notification to the client has to be made as soon as possible and client has to know at all times person in charge. Hanover-period is usually quite short, but if former PM stays in the company after the replacement, he or she can give guidance to the new PM if necessary. The replacement effects to the project in many ways. Transferring the right information and sticking with the plan creates many challenges.
“It’s probably the most challenging; how to transfer information…” (I7)

When thinking of project portfolio point of view, RPM is the last option in troubled project. Usually the new PM comes from outside, so that RPM doesn’t initiate a chain reaction of RPMs, or new PM is from inside and takes the new project in addition to other projects. RPM causes also financial effects to the company.

“In project portfolio point of view of course finances are the most important.” (I7)

I8 works in the same company as I7. In his first case RPM had occur because of lack of personal chemistry and different work methods between the PM and the client. In this situation the PM was hard working and strict and for some reason client didn’t appreciate his methods. They wanted someone who was not so strict and who got along with the client better. Because it was a big project, and provider’s point of view the old PM was very good at his job, they decided to appoint other worker in the project team as a PM to assist in project management, the one who handled the contacts with the client and the old PM stayed also in the project, but not in the client interface. In this case the reason for RPM was personal chemistry and dissatisfaction of the client. Because the old PM did good work, they discussed with the client about the reasons for RPM before the replacement. Effects to the projects were not big or even harmful after the replacement; on the contrary it provided the old PM maybe some social skills. Because the new PM was already in the project team, the project didn’t suffer. Another case was different, because the new PM was totally an outsider and didn’t have any knowledge of the project beforehand. Good project team made things easier to the new PM to get acquainted with the project. Personal chemistry was the reason in this case also.

Main reasons for RPM or the reasons why RPM should be encouraged are presented in Table 4. These reasons are as followed; the PM is incompetent or the client wants to replace the PM. Project can be behind the schedule, promised work are undone and the client is not happy.
Table 4. Reasons for RPM.

<table>
<thead>
<tr>
<th>Reasons for RPM</th>
<th>Incompetence of the PM</th>
<th>Client's dissatisfaction</th>
<th>Project team's dissatisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>12</td>
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<td>14</td>
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<td>15</td>
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<td>16</td>
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<td>17</td>
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<td>18</td>
<td>x</td>
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<tr>
<td>19</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

6.3 Unsuccessful RPM

The PM is not always the reason why the project is in trouble;

“The PM is not alone in the project. Team has to know what they are doing and be awake, since everyone is responsible for the success of the project. As project’s owners on both sides, and of course the people in the management team have to know and be able to tell at any time what is the project’s situation.” (110)

Especially in cases where the client wants to replace the PM, interviewees thought the PM needs some kind of support after replacement. It is always a personal crisis to the person who is going to be replaced. The first thing to do in order to save a troubled project should not be RPM. In situations where the provider is satisfied with the performance of PM, but the client wants someone new, the provider should not obey the client without any hesitation.

“You can never sell people […] Replacement should be based on either the lack of competence or other unwanted behavior based on different values…” (19).

I9 works in the same company as I5 and I6. In her cases PM was replaced because of lack of trust or project failure. RPM has been the correction to the bad situation although the PM was not always the reason of project failure.

“Typically and in this case the performance of management team was insufficient, it is number one. The PM was unheard…” (19)

In her cases there has been a handover-period and project had proceeded after that. Success in this project reflected to other projects in project portfolio and that is why it was important to save the project. In her opinion RPM should not be the first action in order to save a troubled project, because RPM affects usually negatively.

“And it is some sort of personal tragedy to the person who is going to be replaced. Because of that there should be some kind of support process that helps, that experience of failure could be inhibited.” (I9)
I10 works in a company that has about 1000 employees from which 800 works in Finland. The company provides IT-solutions to different types of industries. First case that she had was a successful RPM; the reason for leaving was that PM was wanted to lead another project. The new PM had good experience in project management and knowledge of company’s products and with the support of the project team the replacement went smoothly. In unsuccessful cases the scope of the project has been vague, the management team hasn’t been working sufficiently and the PM has worn out because of that. In case of sick leaves there hasn’t been time enough time in handover-period and that cause the delay to the project, when new PM has to learn everything from scratch. The effects have been almost catastrophic in the sense of finances or client relations.

“The one that comes in mind is the financial part, and in worst case scenario losing the whole client.” (I10)

The main reasons for unsuccessful RPMs from the interviewees’ own experiences are presented in table 5.

<table>
<thead>
<tr>
<th>Reasons for unsuccessful RPM</th>
<th>No handover-period</th>
<th>Too short handover-period</th>
<th>Project's documentation was inadequate</th>
<th>Unsufficient information transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
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<tr>
<td>I2</td>
<td></td>
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<td>I3</td>
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<td>I4</td>
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<td>I9</td>
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<tr>
<td>I10</td>
<td>x</td>
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</table>

In three cases there were no handover-period at all and 6 interviewees mentioned that the handover-period was too short. Five interviewees said the replacement went un-smoothly due to inadequate project documentation and 7 of the interviewees had experienced difficulties in managing (or participating as a new PM) RPM because information was not transferred sufficiently enough. Information transformation was mentioned in most cases and that is highly related to documentation of a project. When new PM starts and there is either too short handover-period or no handover-period at all, the new PM has to be able to rely on project’s documentation. The project team and other stakeholders including the client can help the new PM to fill the gaps of knowledge, but if the information is been transferred poorly the replacement is about to fail and the whole project can be in jeopardy. Silent knowledge was also mentioned in interviews as a reason why RPM is unwanted;

“Silent information cannot be transferred [...] There are many details that are not in any books or covers...” (I2)
RPM affects both to the project and the project portfolio. Project can run over schedule and budget, client satisfaction decreases and company’s reputation can be negatively affected. In project portfolio point of view few things were mentioned in the interviews:

- good project managers are hard to find and project managers have too many projects to run

- RPM in one project can affect to other projects in the portfolio negatively, e.g. the project is a basis to other projects and when it runs over schedule, are other projects going to be late too

“Timing of the replacement has to be considered […] the replacement should go in sync with the phases of the project.” (I4)

- RPM is the last thing to do when thinking project portfolio point of view.

“If we have to replace the PM, it is very unlikely that we do it so that it affects to another projects (in the portfolio), that we would take the PM from another project, and then we would have to find a new PM for that project and we would create some sort of chain reaction. In those situations we find the kind of person to be a PM that we don’t have to make replacements in other projects. Or someone can take the project to run in addition to his/her other projects.” (I7).

- Finances are the most important effect of RPM also in project portfolio point of view.

“The effects can be catastrophic in the sense of finances.” (I10)

“Project portfolio manager or owner has to know, if the replacement is necessary.” (I7)

“RPM comes always as a surprise, but it can be anticipated […] dynamic recourse control, that there are not only few persons that can be used but bigger amount of recourses.” (I7)

6.4 Successful RPM

In interviews I asked how interviewees would manage RPM and what kind of RPM would they consider to be a success one; what kind of phases it might have and how should it proceed. From the answers I have gathered reasons for successful RPM that were mentioned in the interviews. These reasons are been presented in Table 6.
### Table 6. Reasons for successful RPM.

<table>
<thead>
<tr>
<th>Reasons for successful RPM</th>
<th>11</th>
<th>12</th>
<th>13</th>
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<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
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</thead>
<tbody>
<tr>
<td>Handover-period that lasts long enough</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Project documentation is in order</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Support from supervisor, management team and project team</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Good competence of the new PM</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>Support from the PM who is been replaced</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>x</td>
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<tr>
<td>Specific process to follow, checklists</td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Backup PM</td>
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<tr>
<td>Communication skills</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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Every interviewee thinks that the handover-period, i.e. the period where the PM who is been replaced and the new PM work side by side in the project, should be long enough. The support from the old PM is crucial, support from other stakeholders is also important. Project documentation should be in order according to 5 interviewees, and 5 of them think there should be specific process to follow and some kind of checklists where tasks that are made so far are been listed. The new PM should have good competence or there should be a backup PM or a mentor, who supports the new PM. Communication skills save a lot, the replacement should be made as soon as possible and with good communication skills the new PM can gain the trust of the client and the project team. One interviewee thought that the new PM should always have one person that supports him/her in the beginning of the replacement and who can leave the project when the new PM doesn’t need help anymore.

### 6.5 Ideal process

The ideal process can vary greatly and contain several different phases and this study represents only one proposal of them. First I will analyze each interview separately, collecting the main issues the interviewees had about how RPM should occur when thinking about the ideal way.

First interviewee thought there should be some kind of process which can be followed when RPM situation is at hand. Documentation plays in a big role, but even if the
documentation of the project is in order, there should be a handover period where leaving PM and the new PM work side by side for a while. I1 also mentioned backup-PM, the one who will guide the new PM and be as an assistant in the replacement-period. The competence of the new PM should be in good level and there should be a lot of support;

“It requires the support from the whole organisation...” (I1)

The process to follow came up also in the second interview. In ideal situation there is a handover-period that lasts as long as the project requires. Some sort of checklist would be convenient.

I3 thought that the sooner supervisor knows about the PM leaving, the better. Handover-period should last long enough and the new PM should be competent to run the project. To make sure there will be competence, educating of PM should increase. In ideal situation each project would have two people with project management skills so if another one decides to leave, the other one can continue as PM without any interruptions.

“With educating project managers [...] should be educated even if we are not going to recruit the PM. So that there will be know-how ready.” (I3)

I4 is also in the favor of a handover-period where the leaving PM works side by side with the new PM for a while. The support from the supervisors and upper management is crucial. In ideal situation and in their cases there usually is a technical manager and project manager in every project and in the situation where PM is going to leave, the technical manager can continue in the position. I4 also mention educating project managers which would and will help managing RPM. Maintaining good relationship with the leaving PM (in case he or she is competent) ensures the company that they will manage in these situations.

“And of course we want to maintain connections with the person who is leaving. The world is small and especially specialists know each other, and are involved no matter where they work.” (I4)

I5’s company have processes to these kind of situations and they usually don’t create huge problems when everyone follow these processes. If the PM is going to leave the project, handover-period should last long enough. I5 thought that replacement of project manager is not the best way to handle the situation where the project is in trouble due to incompetence of PM.

“I wouldn’t make the change, instead there should come another person to his or her side. It would be smarter way [...] the younger one would learn [...] the more experienced one would lead...” (I5)

I6 thought that the sooner the replacement is made, the better. Notification to customer has to be made at an early stage, usually with a few candidates to offer as a new PM. She also thinks that replacing the project manager is not the best way in cases where PM doesn’t have enough competence to manage the project. If the project is in trouble in their company, one procedure is to have someone to analyse the situation and make some sort of plan of actions in order to rescue the project.

“Always RPM is not a solution. There will be no learning (in RPM). Another one could come as a mentor and to analyse the situation...” (I6)
Handover period should last long enough so that all relevant information is transferred to the new PM. The old PM should be motivated and the one who will come to lead the project should have good competence.

I7 has also a set of processes to follow within the projects and when everyone knows and follows these processes it is quite easy to make the replacement. Documentation is one that he mentioned:

“Every things that effects to project’s content, schedule or budget, they should be always documented.” (I7)

When documentation is in order, the replacement is easier to make. The old and the new PM should have enough time to transfer information. The management team should support the new PM. Notification to the client should be made as soon as possible, but not without a plan. I8 thought so also.

“If you think that you are the client, you don’t want to hear that ok, the project manager is leaving and the provider doesn’t have any plan how to continue…” (I7)

I8 was behind a quick switch. In cases where project manager is leaving the company, the company finds the new project manager and notifies the client about the situation. Client then can choose the project manager who will continue in the project. If the company doesn’t have the kind of PM client wants, they will employ an outsider. Those situations are very rare when looking at big companies with lots of project managers.

I9 thought that the handover-period should last long enough and there will be one person in addition to the new PM who will enter the project. That person is there to help the new PM to get started, assisting at the beginning and that person can leave the project as soon as the new PM can handle the situation alone. She recommended also a mentor when situation requires more competence, instead of RPM.

I10 thought that the best way to manage RPM is to get the new PM as soon as possible. Notification to the customer has to be made at early stage and there should be a handover-period. Organisation’s support is vital. Documentation and processes have to be in good order.

When making the summary from these interviews, the process model of RPM contains following actions;

- Need for RPM is expressed
- Situation is analyzed
  - After analyzing the situation, the decision of RPM is made or instead of RPM there is other remedial actions without replacement of PM
- RPM
  - Notification
    - client
    - other stakeholders
- Finding the new PM
- Handover
  - Introductory discussion
  - Information transfer
- Other remedial actions, no RPM
  - In case of PM’s incompetence
    - Mentor to support the PM
- Continuation of the project
  - In case of conflict
    - Providing support for the replaced PM
    - Old PM as backup
  - Support from other stakeholders

Figure 6 presents the normative process model that is made with the rigor of Van de Ven and Poole’s (1997) process theories and information gathered from literature and interviews. The normative process model has the features of both teleological and dialectical process theories. Teleological theory sees that the chain of events proceeds because of the final cause and in the same way normative process model aims to finish the project successfully; within the budget, scope and schedule. There are collision events and forces that are in a competition with each other in dialectical theory and in RPM there can also be oppositions e.g. situation where the client wants to have a new PM but provider is happy with the work of a current PM. This process model covers possible conflicts the situation of RPM can have, in this case when PM is reluctant to be replaced.
Need for RPM is expressed

When need for RPM is expressed, the situation has to be analysed. This analysis can be made by the supervisor of PM or the portfolio manager, or there can be an outsider analysing the situation. After analysing the situation e.g. finding out what are the problems in the project, the decision has to be made; RPM or other remedial actions instead of RPM to save the project.

RPM

In case of RPM there are three phases; notification, finding the new PM and handover. Notification has to be made as soon as possible, especially to the client in order to maintain the client’s trust to the company. Also other stakeholders have to be informed. According to PMI (2008) it is project portfolio manager’s responsibility to inform to key stakeholders any issues or risks that have an impact to the performance, and PRM is one of these risks. Project manager is responsible in managing the project, and portfolio manager manages the portfolio and monitors potential risks and problems. When project manager is about to leave the project, his or her responsibility is to let the supervisor know about his or her intentions as early as possible. The sooner the information of project manager’s intention to leave the project is revealed, the better the outcome is.

The new PM has to be recruited (or PM can be selected from the provider company, maybe from another project), preferably before notifying the client so that the client can start making the decision which PM they want to continue in the project. Handover-period contains introductory discussion, where the new PM introduces himself/herself to every stakeholder the project have. The new PM and the PM who is leaving the project are responsible in transferring all the information the new PM has to have in order to lead the project. This can be challenging to do, especially in cases where information has not been handled with proper methods and there is lot of silent knowledge.
Other remedial actions, no RPM

If RPM can be avoided, there has to be other remedial actions to be made. If project manager’s competence is in insufficient level and the project is in trouble because of that, better way to save the project is to find a mentor to support the PM to lead the project, than replace the current PM. This mentor can be another PM in the company, someone with better experience and competence. In case of PM’s incompetence, having a mentor is always better than replacing the PM. If the PM is been replaced due to lack of competence, there is no learning in the process and the replaced PM can do the same mistakes again in another projects. When mentor is supporting the PM to run the project, the PM learns a lot and other stakeholders does not have to be bothered by recruiting the new project manager and going the phases of RPM.

Continuation of the project

The last phase is continuation of the project. If every step is made properly, the project has a chance to proceed without any major setbacks. RPM influences always the project, mostly to the schedule and through that, the budget. Recruiting new people, transferring information, notifying the client and other stakeholder and having to have extra meetings takes more time and costs more money than keeping the original PM and having someone to assist him or her.

Providing support for the replaced PM

If there is conflict in RPM for some reason, and replaced PM wants, there should be some sort of support provided. The situation and reasons for RPM has to be analysed and informed to the replaced PM. RPM can be a personal tragedy to the replaced PM, if the replacement is made without the PM’s will. With support the PM can handle the crisis better and survive with less damage.
7. Discussion

The purpose of this study was to propose a normative process model to the situation where project manager is been replaced in IT projects. The process model was created with the support of Van de Ven & Poole’s (1995) process theories, mainly teleological and dialectical theories, and with the information gained from the interviewees and theoretical framework. This thesis did not only produce a normative process model but also tried to increase the knowledge about RPM because it has not been researched a lot.

The subject of the study was supervisors of project managers because they have the best knowledge in managing RPM especially from the project portfolio point of view. The interviews were made with ten supervisors of project managers and all of them had experienced RPM either managing one or being involved as the PM who will enter the project after previous PM leaves. Most of them had several experiences and even though the sample was not big, it indicates that RPM is not uncommon situation in the field of IT. This finding is similar to Sauer et al. (2007) study, where one in every two projects faced the change in key performance. Because RPM happens and based on these few studies it is not rare that the PM is replaced, it is good to have some instructions to the situation, where RPM occurs.

Need to replace the PM can come from various directions. In interviews the reasons of RPM were similar as Vartiainen et al. (2010) revealed in their study; PM wanted to leave due to personal reasons, PM was incompetent to manage the project or PM had to go to another project in order to balance the project portfolio. The last reason was that client was not happy with the PM and wanted to replace him or her; the lack of personal chemistry was usually behind this reason.

If the client wants to have a new PM even though the provider is happy with the work of the current PM, the situation is difficult to handle. The provider wants of course to keep the client happy, but if the current PM is not incompetent and had done a good job, there should be discussion of the reasons why the client wants to have the project manager replaced. Even if the client has the final word, project managers deserve a fair treatment and they shouldn’t be casted away without any hesitation. Personal chemistry is unfortunately one thing that cannot be trained.

The best scenario is that the same project manager stays in the project from the beginning to the end (Kerzner, 2006), but as studies show, that is not the case in every project. Project life cycle contains different phases and RPM should go in sync with the phases of the project, e.g. before the next iteration.

RPM can occur so that the project will not suffer substantially. When replacement is done with co-operation of stakeholders and the support of supervisor and leaving PM, the documentation is in order and the project have been managed with proper methods following instructions and processes the company have, RPM can be a success. On the other hand RPM can lead the project into a state of chaos. In worst case scenario there is no handover-period because the leaving PM has to quit immediately. When project documentation is not done properly, the scope is vague or important issues concerning project have been discussed only via phone or email, new PM has almost impossible mission at hands.

Replacement of Project Manager is not wanted in most cases. Better way to solve incompetence issues is to provide a mentor to the project to assist the current PM. If the
mentor does the job well, the project can proceed and incompetent PM has a valuable learning experience in the situation.

Engwall & Jerbrand (2003) state, that lack of resources causes challenges in managing multiple projects. When there aren't enough people or people have to be involved in too many projects at the same time, short term problem solving increases instead of focusing long term solutions. One issue that rised from the interviews was that there are not enough competent project managers. The normative process model created in this study offers the solution to the lack of project managers; instead of replacing the incompetent PM there should be a mentor providing the PM the help and experience needed to finish the project.

RPM is not necessarily the kind of situation the whole organisation should be prepared for. If everything is done according well-organised processes and documentation is done properly, good project managers with the support of other stakeholders can handle RPM smoothly without any big setbacks to the project. The lack of competent project managers can be handled by increasing the education of project managers.

There were four reasons that came up when asking the reasons why RPM had gone poorly. First reasons were that the handover period was non-existent or too short. When handover-period is too short or there is no handover-period, transferring information suffers and the new PM has very tough job to run the project. Though every important meetings, decisions and actions of the project should be properly documented, there are always silent information that can be transferred only through good communication between the old and the new PM. Inadequate documentation of the project was also one reason why RPM had been unsuccessful.

These results are similar than what Vartiainen and Pirhonen (2006) had in their study about RPM’s effects to project success. The worst case how RPM occurs is the one, where there is no handover-period or too short handover-period and the introductory discussion is left undone. In the best case scenario introductory discussion is made between the old and the new PM and the client can be involved in this discussion too. This kind of action makes it easier for the new PM to start to run the project. (Vartiainen & Pirhonen, 2006).

RPM can cause many problems to the project and when one project in a portfolio is not in balance, the whole portfolio can be in jeopardy. Monitoring and controlling processes lasts from beginning to the end of the project and they contain identification of any problems and making corrective actions to pass these problems (PMI, 2004; PMI, 2008).

Usually the new PM comes from outside, so that RPM doesn’t initiate a chain reaction of RPMs, or new PM is from inside and takes the new project in addition to other projects. RPM causes also financial effects to the company

Monitoring and Controlling Process Group includes potential problem identification and corrective action to be made if they are needed. Performance of the project is constantly observed and measured and any variances from project management plan are been addressed (PMI, 2004). Situation of RPM is one of variances that have an effect to the project. When monitoring and controlling is done throughout the project, this situation can be handled in quick and efficient way.

Though the project manager is said to be the key person in the project, he or she is not the only one responsible for project’s success. Project manager is important factor of the project because PM sees the whole picture better than any other stakeholder. According
to Boddy (2001) interpreting directions and reacting them is one of the project manager’s top tasks. Project manager should handle the most difficult phases of the project, but that is not always possible, especially in situations where client wants to have a new PM because of the lack of personal chemistry. In those situations the project manager can be one the last ones to know about the upcoming RPM and it is impossible to him or her to manage that kind of situations. In these cases the supervisor of PM and/or project portfolio manager has to be the one who takes control of the project and inform other stakeholder and the project manager, what the situation is. In conflict situations the project manager who is going to be replaced should not be left alone. Because the replacement can be a personal crisis, the replaced project manager should be offered some kind of support after the replacement. Managing the project is very demanding job and RPM can cause a severe personal tragedy and sense of failure to the replaced PM.

Hevner et al. (2004) have created theoretical framework for the design science research. In this master's thesis, I used both academic knowledge of IT projects, project management, project portfolio management and process theories, and the knowledge and experiences of the interviewees to provide both the environment (people, organisation and technology) and knowledge base. Answers to the research question were found by making interviews and combine the experiences my interviewees had to the theory of project management, project portfolio management and process theories. The result was a normative process model to the situation of RPM, which is the new artifact created in this study.
8. Conclusions

In conclusion, aim of this study was to increase knowledge of RPM and create a process model to the situation where RPM occurs. There is no kind of process model or other instructions to the situation, where RPM occurs, so the normative process model created in this study can help to manage RPM in the future. The normative process model is divided into two different directions; either RPM occurs or not. If not, and if the project is in trouble due to incompetence of the current PM, a mentor can assist the current PM to continue managing the project. That way the current PM gets valuable learning experience and project doesn't suffer too much as it probably would, when considering RPM. Recruitment, information transfer and other issues are time consuming and influence project's timetable.

The research question was “How should RPM occur?” and answers to that question were many-sided. Hopefully the research continues and this subject will get the attention it deserves. Project manager is not only one of the key persons in the project but also the one whose absence can lead the project into a state of chaos.

8.1 Implications for practice and research

Business in the field of IT is hectic and IT projects face failures with relatively high percentage. What we have learned is that RPM is not unusual phenomenon among IT projects. The effect of RPM can be massive both to the project and the project manager who is been replaced. RPM effects also to the project portfolio, especially in cases where projects are pending other project’s progress. Because project manager is a key person in a project, replacing him or her makes a big effect to the project. This study reveals some reasons for successful and unsuccessful RPM and can help the supervisors to anticipate the problems RPM can produce.

This thesis provides a normative process model to the situation of RPM. RPM is a situation that is not uncommon in the field of IT and yet there hasn’t been any kind of guideline to the situation of RPM before this thesis. The normative process model that is created in this thesis can help supervisors of project managers or project portfolio managers to manage the situation of RPM in a more controlled way.

In a situation of RPM, the continuance and the success of the project play a big role, but replaced project manager should also be a factor in the process. Though business is tough and money seem to be the biggest priority in companies nowadays, people shouldn’t be casted away, if they seemingly need help or are in a crisis. Providing a mentor to assist incompetent PM is much more sensible solution than RPM, when a project is in trouble due to incompetence of PM. When there is a mentor helping the PM to continue managing the project, the project does not suffer as much as in the situation of RPM and the PM gets valuable learning experience.

This thesis provides also general knowledge of RPM. It emphasizes the fact that RPM is not easy to handle, especially when circumstances are challenging. Documentation, duration of handover-period and competence of project managers and other stakeholders can affect the project’s success in the situation of RPM.
Because the replaced project manager was mentioned in several interviews, one topic of future research could be replaced project manager; how he or she experience RPM and what kind of effects the replacement has to the replaced PM, especially in a conflict situation. One future study can be evaluation of the normative process model that is created in this thesis. This evaluation can be done for example by conducting a research on the effects of project’s success in cases of RPM and cases where there is a mentor to support the incompetent PM.

Transferring the information is one of the challenges in RPM. Because there can be very much undocumented information, good communication between the old PM and the new PM is important. How the replaced PM transfers all relevant information to the new PM could be one of the topics for further study.

8.2 Limitations

There are few limitations in this study. Even though the interviews were well planned, due to the inexperience of the interviewer some of them were very short and there could have been more open-ended questions. The theoretical framework of design science research method includes evaluation (Hevner et al., 2004), but evaluation has been left out of this study. That is because it would have been too long project to finish this study; RPM is usually not something people can predict.

This study was data-driven; the normative process model created in this master's thesis is based on the knowledge gathered from the interviews and on the logical thinking of the researcher. If this master's thesis had been used some kind of maturity model, the results may have been different.
References


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Appendix A Recommendation Letter

PROJEKTIPÄÄLLIKÖN VAIHTAMINEN KESKEN IT-PROJEKTIN -TUTKIMUSPROJEKTISTA

Projektipäällikön vaihtaminen kesken projektiin (replacement of project manager, RPM) on IT-alalla tunnettu ilmiö, mutta sitä ei ole tieteellisin menetelmän tutkittu. RPM-tutkimuksen tavoitteena on i) ymmärtää ja selittää perussyyt RPM:n tapahtumiselle, ii) selittää milloin RPM on tarpeellinen ja milloin ei, iii) kehitää suosituskokoelma tai prosessimalli RPM:n toteuttamiselle, iv) kehitää suosituskokoelma tasapainoinen organisaatio- ja projektkulttuurin kehittämiselle, joka ennaltaehkäisee tarpeettomia RPM:ää ja ottaa huomioon RPM:n ja sen seuraukset.


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