Handling multi-projects

An empirical study of challenges faced in management

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Abstract

With projects being a common way of working in modern organizations, multi-projects has become a more frequent occurrence and brought new situations that organizations need to handle. Research shows that project managers don’t have complete understanding on how to handle multi-projects and the problems that can arise. In this thesis a qualitative study was conducted with five project managers from different organizations who had experience from working in multi-projects. Interviews were performed in order to plot the challenges and to identify how they were handled. Four areas of importance were pinpointed; project phases, composing teams, absence of multi-project management systems within the organizations and finally choice of project methods. The findings are to be thought of as guiding principles for organizations and project managers that experience concerns regarding multi-projects.

Keywords: multi-projects, project management

1. Introduction

One of the most important characteristics of today's organizations is the use of projects as an approach in order to solve tasks and work assignments of different size and types (Clegg, 1990; Maylor 2001). The countries and economies in the western world is moving towards a “projectified society” (Lundin & Söderholm, 1998) where project management is becoming a larger part of the organizations daily procedures and operations, rather than for special cases and situations where it has been used (Lundin & Söderholm, 1998). This has increased the academically interest towards these temporary or long-term projects and how they are used in organizations.

There are however a number of issues that can lead to unforeseen consequences during a project’s lifecycle. Such as increased workload for some employees, stress and resource management (Harr, 2009), in fact a worrying amount of projects are considered failures due to budget escalation, time deficiency or poor quality (Johnson, 1995; KPMG, 2010). Project success can be difficult to monitor since there are more things happening side-by-side in different projects, in contrast to one large project. With the increased amount of projects, it is possible for organizations to run projects in parallel, both standalone or “freely” and also interconnected with other projects. This phenomenon is known as multi-projects (Cusumano & Nobeoka, 1998). Multi-project opens up the requirement for the company to put more focus on how simultaneous projects affect each other by using related resources and personnel from the same organization. Working in multi-projects also means that you have to organize the teams in another way and that the task assignment will look different as compared to a standalone project (Payne, 1995).

There are however issues administrating multi-projects. While the research within the field seems to have a large focus on how to manage multi-projects and is well traversed, the research on what the underlying problems are when running multi-projects does not seem to be as well investigated. Elonen and Artto (2003) discovered problems that can occur when
controlling multi-projects and how it separates from ordinary project management. As an example, the focus on the importance of having a good project manager(s) that can make sure that the responsibilities the project have doesn’t conflict those towards the regular assignments of the employees.

Using this as a background, we chose to study what project managers do in order to control, manage and distribute resources when working in multiple projects at the same time. Our main goal for this thesis was to gain further knowledge about how organizations handle multi-projects and the challenges that they bring into the working environments.

1.1 Research question
Which challenges do IT-project managers in multi-project contexts face and how are these challenges handled?
2. Projects and what we know about them

This chapter reviews related research to the area of multi-projects. The first section aims to provide the reader with an idea of how project work is conducted in firms. Secondly, research around challenges with projects is explored with an emphasis on how the issues are multiplied when dealing with multi-projects. In the last section, research related to multi-project management is put into focus to further emphasize the importance of having an awareness of implications when dealing with multi-projects.

2.1 Projects as a form of work

Using projects as a method for working has been applied for a long time and is still very popular in business environments (Maylor, 2001). It is used by organizations in a lot of different branches as a temporary, rather than social, system where you collaborate in order to reach carefully planned goals. This type of collaboration often includes design and research throughout several different teams in the organization. Projects are a common way of working in organizations dealing with business and service sectors, especially IT-organizations. Figure 1 shows a general life cycle for projects:

![General life cycle for projects](image)

Initiation is where you set the scope and nature of the project and where the management analyzes the needs and requirements, translating them into goals for the project. Planning and designing a project consists of developing a scope, schedule, budget and a detailed plain for the project. Sometimes estimating the time and cost of the project is also addressed. Executing is where the work is done in order to complete the project plan and fulfill the requirements and needs of the project. In the monitoring and controlling process, the product is observed so the potential problems can be detected in time and action taken in order to prevent them. The closing phase is the formal ending of the project, the files are archived and you document what lessons you have learned from this project (Wysocki, 2006).

There are also newer methods of working in projects; some of them are referred to as agile methods. They focus on iterative and incremental development where solutions evolve through collaboration. Terms usually related to agile methods are adaptive planning, self-
organization, rapid and time-boxed development cycles and flexible response to change, to name a few (Beck; et al., 2001).

Even if the two types of project methods can be used for reaching the same goal, there are a number of differences between them. They have different view on the planning process where traditional projects make plans over a longer time, as where agile projects use shorter “sprints” over usually a few weeks. The two methodologies also differ in how the timeframe for the project can change; traditional projects have a set deadline and will work towards it from the start of the project, as agile projects are more flexible and have the possibility to change the planning of their projects more easily as the “sprints” are short. This indicates that it is possible to use different ways to reach the same project goal (Beck; et al., 2001).

2.2 Issues regarding single projects in relation to multi-projects

There are a number of issues that comes with working in projects; such as division of labor, too much workload on some employees, stress and forced multi-tasking (Engwall 2003, Harr 2009). It is common in projects that it is difficult to keep track of the assigned tasks of all the workers in the project (Engwall, 2003; Elonen & Artto, 2003; Kaulio, 2008; Yaghootkar & Gil, 2012). Special focus lies on the project manager, the person that leads his or hers team and ensures that they are up to date and available to work (Hyvärä, 2006).

While maintaining a special focus on the planning procedure of a project, a great deal of importance also lies on managing the individuals participating in the project. The project manager needs to be aware of how the members of the project are performing so that deadlines can be met on time, something that requires a great deal of communicative skills and not to mention tools and/or techniques (Hyvärä, 2006). A theme that can be seen in Hyvärä’s (2006) report is that the IT solutions for decision making, especially for project budget estimation was used on a certain scale with good effect, but one can also question if there is room for improvements. For example, an employee’s calendar could prove itself to be a vital tool for project managers when setting up their team but a lot of the responsibility is
on the employee, ensuring that he or she updates it properly. Some might also argue that this responsibility lies on the human resources (HR) department (Bartel, 2004). One could also question if it’s up to the employee to decide on how much work that he or she can perform, considering some employees have a slight chance of taking on too much work for them to handle (Wood & Wall, 2007).

2.3 Working in multi-projects

A single project within a business requires control and a clear view of project integration, scope, cost, quality, human resources, communication, risk, and procurement (Elonen & Artto, 2003). It has become more common in organizations and for project managers to handle several projects running at the same time, known as multi-project management (Payne, 1995; Cusumano & Nobeoka, 1998; Elonen & Artto, 2003).

The control needed for a single project can thus be multiplied to span across several projects, which brings up a whole new set of problems involving everything from a single project member to the entire organization. Elonen & Artto (2003) identifies some problems with running several projects at the same time. They explain that the early stages of a project might get overlooked, the definition, planning and management does not receive enough time and resources to function properly. Furthermore, the importance of having competent project managers and similar project personnel is also brought up, it is also possible to draw a relation to overlapping objectives and tasks between projects. Running several projects might also affect the workers in terms of normal responsibilities towards other projects are prioritized, resulting in a lack of commitment and an impact on resource allocation (Elonen & Artto, 2003).

With several smaller projects, the senior management has to spend more time monitoring the project since there are more opportunities for errors and accidents that can harm the project and organization, as compared to working in one larger project. According to Payne (1995) managing smaller project becomes much easier if the management uses similar systems for controlling the project, as having similar systems makes it easier to separate what is to be done in the projects and by whom rather than having different systems that could make it more difficult to separate the projects. An important question to consider when deciding on an additional project is what impact that project will have on the other projects already in progress (Payne, 1995).

There are also other things that separate smaller project and larger ones, like for example how the groups in the projects are organized (Payne, 1995). In larger projects there might be issues related to communication in the project chain, as compared to smaller projects (Payne, 1995). In contrast, Engwall and Jerbrant (2003) identifies problems concerning having several on-going projects at the same time will in different ways affect one project or another. The most common mistakes or problems when running several projects seems to be related to resource management, managerial processes or competence and project managers (Payne, 1995; Engwall & Jerbrant, 2003).

Engwall and Jerbrant (2003) also bring up what they call the resource allocation syndrome, which explicitly is shown when a business is running multiple projects. It is briefly explained as the problems that occur when a project is let loose, unless a strict over watch is
kept over all of the currently running project’s resources. Previously identified as a problem with scheduling and planning it now also includes financial layers that fail to show how multiple project’s resources overlap (Engwall & Jerbrant, 2003). Worth mentioning is that it also includes knowing when to “kill” a project, something that seems to be a recurring problem (Kaulio, 2008). Not only is time a constraint when it comes to individuals working on a project but it’s even more of a constraint and especially a problem when combined with individuals working on multiple projects at the same time. Kaulio (2008) continues on this discussion where he states that there is a problem in managing several projects due to the fast moving business situation of today. Two of the most common problems in Kaulio’s (2008) findings are technical difficulties and dyadic leadership. The early planning phase of a project is one of the most vital (Engwall, 2003) and should be given enough time in order to set up the project so that resource management and cost control can be kept stable. If a link could be drawn to technical difficulties findings (Kaulio, 2008) and the planning phase, one can ask whether or not there are enough technical solutions and procedures to help during the planning phase of a project with special focus on managing the project team member’s time across projects and furthermore resource allocation. In relation, Harr (2009) points out that it is common for individuals to work in co-operative work in parallel arrangements which creates issues regarding work fragmentation, overload and stress, which puts suspense on individuals as well as their organization.

There is fresh research regarding project management information systems, which provides project managers among others with decision making support, easing the task of organizing and controlling projects. The use of such a system is advantageous to project managers but it’s also in direct relation to information quality, time needed for reports and project status updates and how satisfying the system is to use (Caniëls & Bakens, 2012).

However, when reviewing previous research addressing the topic (Caniëls & Bakens, 2012; Engwall & Jerbrant, 2003, Elonen & Artto, 2003; Payne, 1995) the research seems to be a lacking regarding what the cause of the problems are and how they are combated, at least on the managerial part of handling multi-projects. The area of project management information systems does not seem to be as explored as one could expect, especially when viewed from an organization that stands between the choice of running multi-projects or putting the focus on a single project, the question is also how well known the use of such systems are out “on the field”. Are organizations aware of the problems of working with multi-projects or are they simply a part of the everyday? This opens up the opportunity for us to further investigate how project managers experience running multi-projects, what type of methods and/or tools that is used, and how project managers experience project members when they’re a part of several projects, either parallel or not.
3. Handling multi-projects

The aim of this chapter is to not only describe the choice of approach for this thesis, but also introduce our respondents. The choice of approach is described and put into context regarding the research question, later on the data collection and analysis is explained and finally some criticism regarding our use of sources and how the data selection could have been done in a different way.

3.1 Research approach

For this thesis the choice of method stood between qualitative and quantitative methods of working. Transforming information to numbers and statistical graphs is what characterizes the quantitative method, while the qualitative method focuses on the researcher(s) interpretation and interception of the subject thus having a closer relation to the object of study (Holme & Solvang, 1997).

Given the time-frame for this thesis and the fact that we wanted to focus on explanatory details that can only be found when “diving” deep into a subject (Holme & Solvang, 1997), we chose to conduct a qualitative study. Since we are studying multi-project management and leadership we have selected to perform qualitative interviews with five selected project managers. In order to find opportunities and pitfalls regarding multi-project management, the interviews had a minor focus on finding patterns or dissimilarities which gave us a heads up that project work was being done differently depending on the type of organization.

We were then able to compare our findings in order to identify issues and furthermore put the results in affiliation to the related research that exist within the area, in order to see possible solutions or ways to prevent issues regarding multi-projects, as well as suggesting a change regarding tools for management.

3.2 Qualitative interviews

An interview is a research method that is used in order to collect qualitative data from a respondent. It’s used in order to get information and insight from a respondent about their situation surrounding the subject that is being discussed (Dalen, 2007). Worth mentioning is also that interviews is used in order for the researcher to get a deeper understanding of the respondents situation and to get a look at their world-view which is used in order to describe their situation, before the interviewer tries to do a scientific explanation (Kvale, 2002).

By receiving a better view of the respondent’s situation, an improved understanding of what the underlying problems of the context of the situation can be developed. The core of qualitative interviews is to gather knowledge and the respondent’s experience around the research area (Kvale, 2002).

In this study we have focused on a number of respondents and their experience within a certain area. Since our goal is to find issues related to multi-project management and get a deeper understanding of the underlying problems these interviews are the most suitable for our thesis since they provide an excellent tool for answering our research question regarding challenges that IT-project manager’s face in multi-project contexts.
For this thesis, semi-structured interviews have been conducted with a focus on the respondents part in multi-projects, how they experienced (positive and negative feelings) working with multi-project management and what their thoughts were about procedures and tools for planning and managing multi-projects. Our main purpose was to ask the same basic questions to all respondents, thus an interview guide was developed. We developed our interview guide as a mean to make it easier to structure our interviews and to ensure that the respondents were discussing the same topics. The general layout for the interview guide was to start with general questions about their background and their role in the organization and then proceed with multi-project management and finally finish off with general questions, this was done in order to make the respondents feel safe with the questions as explained by Dalen (2007). We put a great amount of effort asking questions without any given answer in order to not ask leading questions as explained by Ryen (2004).

Anonymity was important both to us and to the respondents in order to make sure that they were comfortable with answering all of our questions without having to worry about any negative effects from it, or for their opinions to reach others that shouldn’t be able to take part of it.

### 3.3 Selection of respondents

The selection of respondents for our thesis was based upon interviewing people who were working with project management and had experience regarding the challenges of multi-projects. We started off by contacting local organizations, both small and large, and searched for project managers experienced in working with multi-projects and were willing to contribute to our research with their knowledge. As we didn’t conduct a case study, we managed to get ahold of respondents from several different branches, such as housing, public transportation and general IT.

We managed to find respondents from organizations with varying size and area of operation, but something that all of the respondents had in common was that they had experience working with multi-project management. We wanted our respondents to have as much background and apprehension of the subject as possible. A bonus was that three of our respondents had been working for different organizations throughout the years, providing them with a comprehensive and deep view of working with the subject.

### 3.4 Data setting

Our first respondent had been working in several IT-projects, mostly as project manager or sub manager, some with a lot of members and some with smaller groups ranging between 3-10 participants. He had a lot of experience working in multi-projects and handling resource allocation for those. The second respondent had much experience in technical/service oriented projects, working for two related companies at the same time where running several projects was a part of the everyday work procedure. Our third respondent had several years of working in an IT department of the financial sector, participating in projects. She is currently working as a head manager for several multi-projects. The fourth respondent has a lot of experience being in a steering committee as well as being a project owner for several projects during the years she has worked in the public transportation. The final respondent
had been working since 2010 with project management and had excellent knowledge of multi-projects.

All of the respondents are kept anonymous, and the assigned name does not represent anything and is merely done for the reader of this thesis to make the respondents more identifiable and easier to relate to. The table below explains whom we interviewed (their assigned names), what type of business their projects were involved in and how long/what type of interview that was conducted.

<table>
<thead>
<tr>
<th>#</th>
<th>Assigned name</th>
<th>Type of business</th>
<th>Interview time</th>
<th>Interview type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Niklas</td>
<td>General IT</td>
<td>32 min</td>
<td>Face to face</td>
</tr>
<tr>
<td>2</td>
<td>Olle</td>
<td>IT &amp; Construction</td>
<td>26 min</td>
<td>Face to face</td>
</tr>
<tr>
<td>3</td>
<td>Pia</td>
<td>IT in public transportation</td>
<td>21 min</td>
<td>Telephone</td>
</tr>
<tr>
<td>4</td>
<td>Anna</td>
<td>IT &amp; Operations</td>
<td>27 min</td>
<td>Face to face</td>
</tr>
<tr>
<td>5</td>
<td>Anders</td>
<td>IT &amp; Maintenance</td>
<td>25 min</td>
<td>Face to face</td>
</tr>
</tbody>
</table>

*Table 1. List of respondents*

Since we wanted to have as precise quotations as possible, all interviews were recorded and later transcribed by us. During the transcribing process we paid a great amount of attention to detail, making sure that the entirety of what was spoken was transcribed. When the transcription was completed, it was printed out and read through by us individually, and the most interesting finding and themes were marked with color markers in order to easily identify relevant parts that were in line with our field of research, as explained by Hartman (2004). The quotes have been translated from Swedish to English, something that we also tried to pay much attention to in order to get a correct translation.

### 3.5 Source criticism

The related research used in this thesis is mostly collected from Umeå University library (UB) and Google scholar. We’ve used printed books and articles that concern our area of interest. This is something that we’ve applied to every source, and as suggested by Bell (2006) sources were to be critically reviewed before used.

Something that has affected our selections of respondents was of course their availability. We’ve gone through many possible respondents that chose to not take part of our study, or did simply not reply to our messages. Thus our selection suffers from what Holme & Solvang (1997) describes as a convenience sample, choosing our selection based on our respondents availability. While these samples have the possibility to suffer from a non-representative sample problem, we were very focused on getting respondents that had the qualifications to participate on our study. We can safely say, and as already mentioned, that all of the respondents have been participating of multi-management of projects of some sort and most of them have experience in project management.
4. Results

This chapter shows empirical findings in this research paper based upon the qualitative interviews we conducted, to find similarities or differences and other relevant factors that could pinpoint pitfalls or opportunities for multi-project management. We have structured the results after our key themes. Firstly, the project phases where new layers of issues are introduced when working in multi-projects. Secondly, issues with assembling a team, as securing a good project group becomes problematic since it is common for multi-projects to share personnel. Thirdly, technical issues are brought up, focusing on tools to help managing multi-projects. Lastly an unexpected issue regarding choice of method by the organizations is briefly explained.

4.1 Multi-projects and their definition

Our respondents told us that multi-projects were typically used as small sub-projects that together were a part of one larger project. This is how it was most commonly used in the organizations where our respondents were working, like a support to the main project(s) and usually with a smaller group of people or within a shorter timeframe. There were of course larger projects running in the same timeframe, but often they had no dependency other than members on each other.

As long as the team members or project manager delegates time in between projects, parallel or not, both types of projects are counted as multi-projects by our definition.

4.2 Project phases

We asked questions related to multi-projects and the phases that they go through, as explained in Chapter 2. Several of our respondents put extra emphasis on the planning phase regarding multi-projects and its recurring issues, mostly put into relation to time and resources. Extra planning was considered to be important in order to better cope with handling multi-projects. Niklas states his views on the subject:

“One pitfall, in my opinion, when working like this [multi-projects] is to work on the project planning and charter as much as possible, so everything is clear. Make sure you know what to deliver; the planning phase is where you should focus your efforts. If a good job has been done there, you’re more likely to succeed.”

In contrast, Pia first stated that the problems were more likely to occur during the development phase:

“That’s... I’d like to say that it is, the planning phase usually goes very well because then you think everything will work out fine. Thereafter when you move on to the development phase and you start noticing that not everything works out as planned, so you have to patch it up a bit.”
This statement could of course be interpreted so that if the planning phase was lacking in quality, the development phase would be considered more problematic, problems are not seen until they occur. Later on she did however mention that the planning phase was of great importance for the development phase:

“Some problems can be foreseen, maybe not enough good competence was brought in, or we missed some vital parts of the planning, which if they were known, could've helped. A major part lies in the planning, that it is done thoroughly and precise.”

Olle did however not agree that the planning phase was the most problematic:

“It’s the closing phase. I believe it to be a human question, everyone who’s a project manager is driven to create something, and the focus is of course of getting stuff done. The closing phase is a way to ‘clean up’ and close binders. Somewhere near the end of a project it’s not unusual for me to mentally drop the project and move on to the next project”.

Which however, he later mentioned could be countered by a more proper project plan. Anna focused on the requirements, which is usually performed during the planning phase, but can also be a reoccurring procedure:

“I have to say that requirements make it a lot harder. If the requirements were super clear from day one, the problems could have been reduced early on. Usually the requirements are not very clear from the start [...] during the projects, and adjustments need to be done and then the planning has to be changed”.

Anders and his team(s) on the other hand focused a lot on the communication between projects to try and phase out any problems early on:

“Well, it’s plausible that you would see two or maybe more teams begin working with a similar functionality or technical part, that it would create disturbance or even create dependency in-between. But at the same time there is a lot of communication and you have to ensure that you talk with the teams so that no such problems arise”.

Focusing on getting rid of the dependency between projects, making them not run in parallel seem to be a working concept for Anders and his teams. While this is possible for some projects, it’s not for others. In relation, Pia put focus on separating projects, but more out of a proactive workload perspective:

“With my experience, if you have the option to choose you should try to work with the multi-projects a bit more separated and not in parallel. If it’s the same
people going in and out of these projects you have to ensure that the workload does not become too big for that reason”.

Running projects in parallel is evidently causing issues regarding team members, but focus should also be put into ensuring proper communication in between teams. This can be put into the planning phase, weekly meetings etc. as mentioned by Niklas in our interview with him.

Olle also brought up issues with the evaluation, which is also of essence for multi-projects since some new issues are introduced that needs to be properly evaluated in order to handle them in the future. Olle discussed the problem of letting go of multi-projects nearing their closing phase:

“The closing phase is a way to clean up and close documentations surrounding projects. Somewhere near the end of a project, I often let it go [the specific project] to instead focus on the other project. Thus I put my energy on that instead. On all places that I’ve been, it’s the closing phase and evaluation that has been most problematic when dealing with multi-projects.”

When a single project is close to its end, and if team members are involved in other projects it is more than likely that focus will shift towards the other projects. This means that team members will be more involved in other projects, which could impact the evaluation of the project that is being wrapped up. If a project is not evaluated properly it’s likely that there is little room for improvements for future projects and they might run into the same type of problems when it comes to planning, resources and team management, among other things. Contrary to Niklas, Anders hastily mentioned that evaluation was important and he put much pressure on the team that it was done properly; something that had given results in terms of changed planning and development phases.

Based upon our interviews, we get the impression that the earliest phase in the project, planning, is especially crucial when working in multi-project environments. Other phases might suffer from issues as well, but it is more related to the type of organization and choice of project method. Furthermore it was proven that a dependency in between projects should be avoided as far as possible in order to ensure easier multi-project management.

As project managers will have to take in account more than just the factors of their own project, but also that the project members are in other projects at the same time. Sharing resources and members causes issues in the different phases of a project and needs to be anticipated early on by the project manager. Putting together the team is thus another important aspect when dealing with multi-projects.

4.3 Assembling a team
Our respondents had different ways of selecting members for projects, but most of them seemed to agree that a few people were more suitable for working in multi-projects than others. When the projects reached the phase where they were going to be manned, some of our respondents had similar opinions. Olle and Anna both stated that for their projects, they
assembled their groups with a mix of personnel. Both of the respondents explained that it was not uncommon to put together groups where some members could perform multi-tasking between projects without issues and basically no supervision from the manager(s). Other members perhaps weren’t as self-propelled and needed more motivating and be told what to do by the project leaders in order for them to get working. Olle had this to say about putting a team together for working in multi-projects:

“You have at your disposal an A-team and a B-team, some workers you know is self-propelled and very enterprising and can co-operate with everybody, can handle stress as well. Other people you know can be impressionable and dig themselves down. If you do a single project you can mix it quite well, but if I have multiple projects I want good employees. So I can combine them in a good way.”

Olle and also Anna explained that managers prefer to have one or more members in the groups, depending on the size of the group that can take responsibility when the project manager is occupied with other issues in the organization or other projects that are running alongside the one they are participating in. Having a member of each project group that can assume responsibility temporarily from the project leader is both convenient and useful for the project manager, as he or she gets someone with good insight in the project to trust with if should the project manager be away from it for a shorter time period. It is not uncommon for workers in multi-projects that they have to manage several tasks at the same time, and for those who are not used to it, it can become quite the challenge.

Several of our respondents stated that flexibility is an important trait to have as a project manager when working in multi-project organizations. Juggling several projects at once as a manager is something the takes a good amount of experience, and is rarely something that new project managers can handle to full extent. The importance of this trait could make multi-project management to be considered as a more advanced form of project work, and a form that could be difficult to work with if you have not worked with it before. This is what Anders says about flexibility in their projects:

“Now we try to do everything at the same time, I divide the assignments between the teams.

-So flexibility coming from the agile methodology helps a lot?

Yes, I would say so. However, it gives you less control regarding the budget as it might escalate. So you have to know what you want from your team as a project manager when you give them the task. I want this functionality and these things done until the next sprint. This is what I tell my teams.”

This trait is also important for group members, as mentioned by Anna in our interview with her. She stated that she didn’t want workers to jump between projects all the time, but preferred them to stay within one project for at least a few days before changing to another
project. Niklas explained that he had a rough idea which people that worked extremely well when assigned only one project but had issues working in multi-projects. Furthermore he explains:

“Well there’s the HR department, I have to keep in touch in them to know which persons that are available, know which one that is most appropriate. We have server and operations and one personnel-department. You have to get the people that are right for the job to be completed on time”.

Sensing the atmosphere of the project teams is essential in order to get members to perform to their fullest extent. Olle focuses a lot on knowing if people are stressed when he selects members and assigning tasks during projects:

“In these types of jobs you become a good ‘judge of character’. You’ll notice and see when people are pressured, we work a lot with ‘social keys’ so it’s easy to tell when people begin to lose focus. When that happens perhaps we’ll eat dinner or have some fun activity in the evening, let people charge their batteries. It’s important to remember that in pressured situations.”

Olle had a very good point in his argument, and while the project managers always try their best it doesn’t always work out. We found that most of our respondents had some kind of reactive actions if they encountered problems with work overload. Often it involved taking some of the work burden of their shoulders, so they can easier manager their assignments. But it could also be some good food or an evening event to relieve some of the stress. It was said by several respondents that on some occasions, workers had taken on a workload that was too much for them to handle, this was brought up by Niklas who had previously had issues with people overcommitting to their work assignments:

“Yeah, some project participants may think it’s fun to be a part of something they’re interested in, thus other projects may be suffering if they join a new project. That’s the type of stuff you as a project manager needs to keep in mind and keep track of. If it’s just a temporary thing, yeah, they can just work over time. But that won’t be good in the long run”.

Anna also experienced issues for the project teams. On the basis of selecting project members she was careful in her choice:

“As a rule it’s more complex to split your time between project one and two. But it’s on a personal level as well, some people love having three or even four projects running at the same time and they do not experience any mentionable amount of stress. At the same time, some others are of the character that they want to finish one task before starting on a new one. As a rule it’s more efficient to only have one project assigned to a member”.

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Pia had some views related to this topic: “Usually you’ll select a person, anyone, that knows about the area and works with the questions. They’re assigned to the project charter and needs to stay within the project limits”.

An important part of building teams is to have them at the appropriate size for the projects in question; Pia mentions how they cope with multi-projects and members:

“We often work with consultants as well, but we usually have at least four internal people on the project so that we can divert workload when needed. If we have any less we’ve felt that it becomes a bit too much to handle and that can usually be seen on the project’s quality. You lose focus or you have to hurry, it usually does not end up well”.

An important lesson here is that multi-projects become even harder to monitor if the whole project is diverted to consultants. Pia had learned from previous experience.

Most respondents had a positive view on working in multi-projects, while some felt that they were almost forced to do so. Pia later on shared her experience:

“We’ve tried to run several projects at the same time and ... that hasn’t been the problem. The times when they [the multi-projects] were less successful were when the projects were dependant on each other. You have two different project groups with different competence that is dependant on the results and the timing in-between. In the long run they went way over budget”.

It is not uncommon for organizations today to have external resources from outside working on your different projects, like consultants and have they become an important part of your teams. However as external resources is not part of our main question we chose to not delve deeper into that issue.

Aside from size of the projects, the size of the organization also seems to be an important aspect when assembling teams for your organizations projects. Every project becomes a little more important if you are a smaller organization without the same resources as larger organizations. Our respondent Pia shares her views:

“They [multi-projects] are smaller for us. It’s harder to have several projects running when you’re not a large organization. We’ve had issues overlooking the results, but of course sometimes it’s inevitable”.

These are some of the issues, opinions and notations that our respondents had about the assembling of teams in their respective organizations. There were some problems that a few of the organizations had in common, and other that they were alone about. They had specific ways of handling the most standard issues, and had a few alternatives for the other potential issues. What weren’t brought up in this part were issues that were related to the technical aspects of the multi-projects in the different organizations but it is still equally important.
4.4 Technical Issues in Multi-projects

All respondents said that they didn’t have any technical tools for keeping track of the employees when they’re participating in multi-projects. As in, they could manage and see the time spent by one employee on one project, but their systems could not manage members’ time for several projects that run parallel to each other within the same timeframe. The technical tools that were used couldn’t fully assist the project leader in managing the resources, such as personnel and time in the project, it seemed that tools made for project managing didn’t work as well for multi-project organizations. Olle discussed the problems with tools:

“Yes, we have major problems with that. Mostly if it is the same persons that are in different projects and you [the project manager] always want them to work on your projects. That is a big problem for us, to tighten up the time plan and make it work when you have the same people working in several projects. We don’t have a system where you can see in what project someone puts their time.”

The non-existence of a multi-project management system introduced challenges since the single project systems could only show project per project, not a complete overview. Anders gives an example:

“Yeah well, we are technically using the same system, a ticket tracking system to keep track of projects and administration... Eh. But I would not say that we have any specific tools to handle working with several projects running at the same time”.

All of the organizations we studied did use some type of software in order to manage single projects, but this software wasn’t able to provide an overview of several projects that were related to each other and/or shared resources and personnel. This was a major issue for all respondents as it became difficult to know, for example, which project an employee was supposed to work with on a certain day, e.g. to see if (s)he was available. A small notice from Anders shows the issue: “[... In relation to looking at members and single projects] Nah, it’s the only check we can do, but looking at which projects a member is working on is not possible”. In relation, Niklas explained that if he wanted to see if someone was busy, he’d go and check their schedule:

“Some people are good at reporting their tasks into schedules, simply what they are supposed to do. In that way, it’s easy to see, I usually walk around to those that I feel that I want in a project. Obviously they know what their schedules and plans looks like. The person who owns the resources knows barely anything about availability. But we do not have a system to check calendars and just check if someone is available, no we don’t have that.”

This of course relies on the employee, that (s)he actually updates their schedule. Niklas mentioned it could prove to be complicated when employees fail to update their schedule, e.g.
if project managers were to select a few members just to find out that they were busy in other projects. Niklas continued on the subject of technical tools and project members as a resource:

“It’s the project managers’ role to secure the resources you have. It’s a hassle if you know that you can use these three people 30% of the time and after that they are going to work somewhere else, thus it is a hassle to secure the resources regarding multi-projects”.

This was a big issue for them and is related to the planning of the multi-projects as he explained later on when he expressed the need for a multi-project management system.

4.4.1 The use of a multi-project management system

Niklas explained that having a dedicated system for handling multi-projects did simply not cope with the way that they were working. We got the impression that the handling of multi-projects had been done for so long that introducing a change revolving new systems would not only be very costly, but also take an immersive amount of time. Anna explained that using such a tool or system made the entire process take more time and perhaps not be worth it in the end:

“I've used planning systems before and I've tried to look further ahead but with my experience tell me that you have to plan on a very general level since different events are always occurring in projects. Those events can displace the planning and if there is a dependency from other projects the whole issue becomes very complex”.

In relation, Anders mentions how they used to work with multi-projects compared to how they are working today:

“I don’t know which developer who will take care of it [a task], it is a team that takes care of it. Previously the system would tell me that ‘Krister’ is the fastest developer in the organization and he has been assigned to me, he’s three times as fast as the number two. Then you could count on him, how much time it would take and, that, is a disadvantage in comparison.”

As mentioned, all of the respondents were using a project management system but it was only used for handling single projects and provided no kind of technique for watching multiple projects and/or their members simultaneously.

One could suggest that using a system that provided the organization with a better technique of handling multi-projects could be beneficial. The question is rather what such a system should contain. None of our respondents were using a multi-project management system to cope with the increased difficulty that handling multi-projects introduce. The
question still remains if using such a system would provide enough benefits for the organization that is using it.

Considering that our respondents were active using their single project management systems at least for protocols and updating project status the thought of using a system for multi-projects seemed to interest them when asked. However, the advantages are still related to how a person high up in the hierarchy decides to utilize it, and as long as it is continuously up to date regarding project statuses. Updating statuses in a multi-project management system, such as progress, resources utilized/needed and project team members is something that can plausibly be done during project meetings and should theoretically not take too long time.

4.5 The choice of project method for multi-projects
There were different methods for project work being utilized by our respondents. Anders and Anna had been working with traditional methods earlier, but had lately transferred to using agile methods. Anders found using agile methods was preferable:

“Well, earlier on when we used traditional methods we were pretty separated. The project groups were working on their own projects. It was less flexible, now we select a few tasks and focus on getting them done within a set time frame. You give out the tasks and there’s more cooperation between the teams”.

In contrast, Anna did see it as problematic sharing resources using agile methods:

“We’ve started using agile development methods now and then it’s harder to borrow resources in between projects since the planning is more precise and you can’t really switch between projects on a day-to-day basis. It more like you have meetings every day and you put up your post-it notes. In agile methods it’s a lot harder to share the resources unless it is in the project plan to do so. In traditional methods, it’s usually a lot simpler to share resources since the planning it’s done further ahead”.

This raises the question if choice of method affects working in multi-projects different. Niklas explained that he used a classic method of working in projects; the planning was done before the actual project started and rough time estimates were done in order to get a solid timeframe for the multi-projects. In agile projects however, the planning is mostly done during the project, short term, with daily or weekly meetings where it was decided on what to be done by each team next. This might reasonably make project planning further ahead more difficult and can cause a lot of problems if unexpected situations happen. The flexibility of agile methods makes them very attractive to use in projects. Classic project methods seem to overall handle them better as they in general make more rough estimates that aren’t as vulnerable to unexpected interruptions (more buffer) that might cause a delay of one or two days. It might also be related to the size of a project, as explained by Anders:
“In the case of small projects, I find it hard to go with agile methods. Especially if there is only one or two people on that project which also means that there is a limited budget. But in the large multi-projects we always go agile”.

It is good to be consistent with the methods used in the organizations, regardless if it uses traditional methods or agile, as it gives the employees a familiar method that they are used to and know what to expect from in form of time, meeting and how the project will be designed. If the employee knows what to expect from the project manager way of working, and also know what is expected from them then it makes working in the project easier.

The choice of method when it comes to dealing with multi-projects does however seem to be related to type of organization and how it has been done earlier but it is still an essential aspect to consider when handling multi-projects. However, the data that we collected were so different to each other in comparison that no real assumption can be drawn.
5. Conclusion

This thesis started with the following research question: Which challenges do IT-project managers in multi-project contexts face and how are these challenges handled? This was explored and examined by conducting five interviews with project managers at different types of organizations, who all had years of experience working with multi-projects. Evidently multi-project management introduces several new challenges both for organizations and project managers.

Firstly the different projects phases were affected as multi-projects introduced new challenges. The planning phase proved to be of most importance as multi-projects requires the project manager to plan their projects based on other projects, their dependencies and team availability. Proper communication in between teams, and trying to phase out the dependency in between projects as much as possible were identified solutions.

Secondly, assembling the team became another challenge as project managers are faced with different types of assets in terms of personnel. People with good multi-tasking skills need to preferably be mixed up with people who are better working on a single task since it is not uncommon for personnel to be shared in between projects. Special focus on the workload should also be maintained, as attending several projects puts a lot of stress on the project manager and other members.

Thirdly, there was a lack of multi-project management systems for the project managers which could damage the planning phase of multi-projects as well as assembling teams, not to mention providing a proper overview of currently running projects and their shared resources.

Finally the choice of project methods raised concern especially in agile methodology as there was a variance of data, suggesting that further research needs to be conducted in order to highlight what impact methodology have for multi-projects. As an example, traditional and agile methods can be put into comparison to further pinpoint pitfalls and possibilities regarding the choice of method for working in multi-projects.
6. Discussion

This thesis provided insight related to multi-projects as four areas of importance were pinpointed: project phases, teams, tools and methodology.

As Engwall (2003) mentions, the early planning phase of a single project is the most vital one and should be given enough time to set up the project so that cost and resource management control can be kept on stable level. This goes well in line with our findings regarding the project phases as the planning phase could be seen especially crucial concerning multi-projects. It should now be clear that multi-projects themselves are several single projects that can be either parallel or not, as long as they share resources (including personnel) they are considered multi-projects by our definition. In relation to Engwall (2003) the planning phase needs extra input considering that extra emphasis is shown when project’s share personnel and resources. An new type of information or solution for handling multi-projects is required and it needs strategic planning on multiple layers, further indicating that some tool or technique is needed for more proper planning, something that can be related to Caniëls and Bakens’ (2012) research. Our study did indicate issues with the planning phase but issues were also brought up in the development phase, which plausibly could’ve been avoided by better planning, but equally important is also the closing phase. Proper evaluation of projects is needed for future projects performance, but one indication that was found in our research was the loss of focus when nearing one multi-project’s closing phase. In relation to Hyväri (2006) it can be questioned if it’s the project managers’ responsibility or project members.

Our study also resulted in findings regarding project members, as there was an issue in the organizations during multi-projects where some workers either took on, or were assigned tasks that were too much for them to handle. This finding is closely related to Elonen & Artto’s (2003) research, which states that it could be difficult for project managers to keep track of the workload on some of the employees. A problem that project managers face is to put together teams using a mix of workers where individual traits will have impact on how the work assignments are distributed by the project manager. Managing members also puts more focus on the project managers who gets to pick their own teams and need to make sure that they are able to finish their assignments and deadline be met on time (Hyväri, 2006). There was also the question whether controlling workload was the project managers’ responsibility, or if it was the workers themselves who should inform their superior of their problems. This is not uncommon as some workers have a tendency to dig themselves into their assignments and take on too much work to be able to finish on time (Wood & Wall, 2007) causing a stressful environment (Harr, 2009).

As mentioned, communication in between teams is important for a good multi-project environment, equally important is a good overview for the managing multiple projects. None of respondents had a multi-project management system that was able to communicate in terms of project scheduling or shared resources, something that Caniëls and Bakens’ (2012) study proved to be advantageous for project managers. Kaulio (2008) also pointed out that schedules often partly depends on each other, further iterating that such a system could be
profitable, especially if it provides project managers an easier way of working with multi-
projects. Obviously we would have preferred having at least one respondent that could have
provided us with insight regarding the use of such a system. Sadly this was not possible due
to respondent selection limitations and time given for this thesis. We still have the
impression that such a system needs to be approached with special care as the advantages are
directly related to the information quality, as also mentioned by Caniëls and Bakens (2012).
Such a system could provide assistance in terms of resource sharing between multi-projects,
Engwall and Jerbrant’s (2003) findings about the resource allocation syndrome is very
closely related:

“There was a continuously on-going game of negations concerning access to
available resources and the allocation of certain individuals to specific projects.
Due to ambiguous cause–effects relationships, unclear project priorities, and
conflicting interests between different projects and departments, unsettled
issues were frequently boosted up through the organizational hierarchy to be
resolved by portfolio management. Consequently, portfolio management level
was overloaded with problems.”

If previously identified problems could be avoided by using a multi-project management
system is still of interest to further examine.

The last finding regarding use of methodology in managing multi-projects was not
something that we had early on anticipated to encounter. Our main focus was not to delve too
deep within the methodology use, but rather implications that it introduced. We asked
questions during the interviews related to the choice of methodology but did not except such
a variance of data, essentially leading to the requirement of more data in order to draw a
proper conclusion from it. This was not possible given the time restriction of this thesis. We
are still confident and pleased with our finding of the potential methodology problem as we
could relate our other findings to the choice of method concerning multi-projects.

This study has provided insight in the problems and opportunities related to the growing
area of multi-project management in order to further raise concern of the growing topic. For
several organizations multi-projects are still relatively new and it is of essence to have an
increased awareness when project managers are dealing with the multiple issues that are
introduced.
Appendix 1: List of references

References


