How to merge a Virtual Project Room with a Project Management Model

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Abstract

Managing a project is multitasking. For making this easier, a project manager has a lot of tools.

Two of the tools that are often used are a project management model and a virtual project room. These two can be of different types in different companies and in different cultures.

In this thesis, we investigate if there is any need for these two tools to be combined. If there is a need, how should the combination be done? Exploring this means a lot of searching for background information. Ericsson has been the main company for our fieldstudies and it is the software area we have analyzed. In the following, we offer you an insight into these issues.

**Keywords**: CSCW, virtual project room, VPR, project management, project management model, software design, design, merge of tools

“How to merge a virtual project room with a project management model”

Marine Karlsson and Anna Richardsson
Summary

**Title:** “How to merge a Virtual Project Room with a Project Management Model”

**Authors:** Karlsson Marine, Richardsson Anna

**Course:** Bachelor Thesis 20 p
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**Purpose:** Do project managers need a new tool? We have taken a closer look at project management models that large companies use, and virtual project rooms, which seem to be a rather new tool to this profession. The study discusses how a project management model could be merged with a virtual project room. To do this, we have investigated project managers’ profession and the development of a tool like this. The main part of the field study has been made in the software and project Management area at the telematics company Ericsson.

Presented here are the design ideas we discovered during our research.
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1 Introduction

1.1 Managing projects

“...leadership is much territory thinking, “male pee of territory”, especially abroad”

“...as we look to project managers to become “miracle workers” pulling together great teams of specialists to create products of enormous complexity - we need to make sure that the principles and applications of the project management process are thoroughly understood at all levels of the organizational hierarchy.”

People have always had leaders, whether the role has been given or taken. Looking back in history, you see people bowing with cap in hand in the presence of the patriarch or patron. If, at the same time, they clenched their other fist in their pocket, overcome by anger, depended on the leader’s personality and which values or perspectives that guided his actions. Through F. Taylor and others who developed Scientific Management during the last century’s first decades, scientific methods were introduced in the formal leadership of the labor forces. In the 1940:ies, 50:ies and early 60:ies, a Human Relation-tradition became more important. Educational programs in leadership became available, and what was seen as the social skill of being able to ‘manage people’ became a common requirement in the employment of managers in the industrial society. During the 1960:ies and 70:ies, new theories and methods such as operation analysis, system theory, information theory, decision theory, management systems, long term and strategy planning were introduced and further developed. With all this on-going development of managerial theory and knowledge, we also developed an administrative leadership that was characterized by help from experts. In the 1980:ies, a new change took place. Personal leadership became important again, and now we began to talk about “charisma”. Perhaps as a reaction to the power previously being handed over to the experts, a new view on the business activity as a comprehensive whole, and the need of knowing and working in close relations to the customers and co-workers, became more interesting. Rohlin et al.

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1 This is a Swedish expression about marking ones territory, which we tried to translate. See appendix, Project manager, Alstom
2 Forsberg et al. 1996, s vii
3 For further reading, Forsberg et al, 1996
mention that a change of paradigm was ongoing. Now, the new
dimension of seeing the organization as a culture system gained
impact. One of the most important tasks for the manager, according
to this view, was to develop, maintain or change the culture. The
expression “Scandinavian Management”, according to Rohlin et al,
indicates at openness, which supports a holistic point of view that is
shared by all members of the organization. During the 1990:ties, some
of the earlier personnel- and administrative leadership ideals developed
into a new, integrated view, the leadership of strategy. A combination
of analytical tradition and traditions of process- and action-based
leadership appears to be of great interest today. To know “Why”,
“Where” and “How”, and to create and cultivate a learning
organization, are the strategy leader’s main tasks. Rohlin et al quote
Henry Mintzberg:

“Tom Peters tells us that good managers are doers. (Wall Street says
they “do deals”). Michael Porter suggests that they are thinkers. Not
so, argue Abraham Zaleznik and Warren Bennis: good managers are
really leaders. Yet for the better part of this century, the classical
writers- Henri Fayol, Lyndell Urwick, even Peter Drucker to some
extent – kept telling us that good managers are essentially controllers.

It is a curiosity of the management literature that its best-known writers
all seem to emphasize one particular part of the manager’s job to the
exclusion of all the others. Together, perhaps, they cover all the parts,
but even that does not describe the whole job of managing.”

Often, in the branch of software development, project managers work in
project form. The definition of what a project is, is an issue for
discussion even today. At the end of the 1970:s, Ericsson launched
the AXE switchboard on the international telecommunications market
with a major installation in Saudi Arabia. The installation was managed
as a project. This is the first time in Ericsson history that the project as a
work model is mentioned. In about 1985, Ericsson received two major
AXE orders, which meant that two systems had to be developed,
delivered and installed at the same time. This set new demands on the
organization. Roles and responsibilities had to be clarified and a
project management method was needed. The project manager, PM,

4 Rohlin et al. p.183
5 Rohlin et al. p. 187
6 See section “What is a project”, for further explanation of how we interpret the
expression.
7 For more information about the company Ericsson, see the section “The Company”.
8 AXE, the name looks like an acronym but isn’t, every letter is pronounced.
9 Ericsson, 1997
10 The acronym for Project manager, PM, is used in the following of this report.
became a very significant person, the “spider in the web”\textsuperscript{11}. The organization rules the project schedule and budget it is the manager’s job to guarantee that the software outcome is in line with the business goals of the company.

Sommerville brings up general software history and says;

“Management techniques derived from other engineering disciplines were applied and these were ineffective for software development.”

“...the failure of many large software projects in the 1960s and early 1970s was the first indication of the difficulties of software management” \textsuperscript{12}

Sommerville enumerates problems like late delivery of software, unreliability, over-budget, “often exhibited poor performance characteristics” and the general tendency to overlook the special conditions caused by the fact that “Software systems are often new and technically innovative.”

Much has been written about project management since the beginning of software industry. It is a huge area and describing the essence of project management is complicated. We think that Forsberg et al. capture the kernel elements very well with their pieces of a puzzle;

\textsuperscript{11} A direct translation of a Swedish expression used to signify a person who has an overview of, understanding of, and ability to control, what’s going on around him or her.

\textsuperscript{12} Sommerville, p. 72
**Project requirements:**
Non-essential or over specified usually result in missing schedule and cost targets.

**Organizational options:**
A structure which individuals use in order to cooperate systematically to conduct business.

**Project team:**
Forming the team starts with selecting the right people and defining their roles.

**Project planning:**
A poor planning environment inevitably results in a lack of team commitment and in failure.

**Risks and Opportunities:**
There is no simple way to prevent disasters. Nothing short of a systematic, detailed process will work.

**Project Control:**
A tracking function is not a control function and can lead to project failure by giving a false impression that project controls are in place.

**Project Visibility:**
Is how you and your team know what’s going on.

**Project Status:**
Statusing must accurately reflect reality against the plan - not how busy the project is.

**Corrective Action:**
Statusing is comparing current performance to the plan - corrective action is doing something about the difference.

**Project Leadership:**
Managing is doing things right. Leadership is doing the right things, like leaning the ladder against the right wall.

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Sommerville emphasizes that…

“Good management cannot guarantee project success. However, bad management usually results in project failure…” 13

To perform this work in a technology-focused project and in an efficient way, it is perceivable that you may need some kind of support in the form of proper methods and tools. What do these methods and tools look like today? What do the PM:s themselves think about them, and what tools do they really want? These questions have leaded us to study PM:s work in the software area.

Two PM:s at Ericsson Eva and Karin14 that we have met during our research told us that they have members in their team spread all over the world, and many different departments in their company are involved. In cases like these a smooth communication is worth its weight in gold. Eva and Karin feel the lack of tools that show how everything is going in the project, both the time schedules and why there, for example, are delays. At present they find it hard to show the complexity of a project of this size, and how much time is needed. Eva and Karin have found that most of the people in their business are time optimists. This is a big problem. Two other PM:s that we have met are Adam and Johan. They have found it very confusing to have a lot of tools in several different places. They want to have all their tools in the same place. Both of them have solved parts of the problem on their own. Adam has made a homepage in HTML15 with a lot of links on it and Johan has made something in Lotus called CMISC16. All of these people work at the same company. After a few more conversations with various PM:s, we have become more and more convinced that it would be a lot easier if all or most of the employees in the same company were using the same tools.

A lot of questions arise easily when approaching a wide area like this. Questions we sound ourselves asking were;

• What tools do PM:s use today?
• What do they perceive that they lack in the way of useful tools for project management?
• What can be developed with the help of a Virtual Project Room, VPR17?

13 Sommerville, p 72
14 We don’t want to use the real names of our informants therefore we will call them an assumed name just to inform of what gender the person is. This is valid for the overall Report. See the interview “Two Project managers, EIP”
15 Hyper Text Markup Language, used for making websites
16 CMISC stands for Configuration Management Information System Control
17 In the following the acronym VPR are used. Described more in section “What is a VPR?”

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• Is a VPR any help at all, or is it just one more tool ‘for the fun of it’?
• Do all the PM:s work in the same way, or are there differences in their views and ways of handling work?
• What is the company’s view of PM:s’ work?
• What is the company doing to support PM:s’ work?
• Is there any support and training offered in ways of how to master PM:s work?
• Where does the technology stand today?

In the above we have presented the profession and the field that we discuss in this research. Most of these questions are touched upon in this report and others have been guiding us in our search for ‘reality’. We brought all these questions with us to our fieldwork. The main part of our field studies has been done at Ericsson. Our mentor was just in a development phase of a virtual project room. This might have affected our thoughts during the field study. After a few proposals from our mentor we have chosen to study “How to merge a Virtual Project Room with a Project Management Model”. In the next sections we will present the conditions for our work, the disposition of the report, our backgrounds, the companies that are involved in our field research and some definitions that can help you to understand this report better.

1.2 This report

The introduction in this section will give you an insight into the field that we have studied during this semester. In this report we will try to shed light on how and why it is important to merge different tools into one medium. The area studied is project management within software industry. Therefore this report may be of interest for persons involved in project management, and for designers and developers of software.

We will take you on a tour of what project managing means with the PM:s own words, and we will tell you what their company has done to support them. We have taken a closer look at Project Management Models that larger companies use and Virtual Project Rooms, which seem to be a rather new tool to this profession. The study focuses on how a Project Management Model could be merged with a Virtual Project Room. We have followed the work of the development and the release of a software program aiming to combine these tools into one, and in the end we will present our reflections and design ideas about this.

In the literature we have, among other things, found ideas about the future. To broaden our view even more, we have looked around to see what different companies have done in this area.

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We chose to write in English, which not is our native language, because English is the Ericsson company language and, of course, as a personal challenge. We have translated all the interviews, which were carried out in Swedish, as best we could. If there are misinterpretations in the material presented, we are the ones who must be held responsible for them.

1.2.1 Delimitations
We will describe the delimitations that have been guiding and shaping our work, including the delimitations we have set up ourselves.

The company of study is far away from home. It means that when we have been at the company, we have really worked and tried to use the time as efficiently as possible. We knew this from the start and had counted on it. Our work has been going somewhat differently from what we have been used to when we were closer to the research field. Some of the “external” research has been carried out on home ground, however.

We have studied project managers. Our main focus is on how PM:s plan and how they communicate in large projects with many members. There are two tools we have focused on, the Project Management Model and the VPR, to see if there might be any gain in joining them, and what to think of, if you do. We are aware of that a VPR has many different types of users, but we have decided to choose only one group of users, the group that probably would have the most need of a VPR, the PM:s. In our field studies, we found that PM:s are difficult to follow during a whole day since they are the “spiders in the web”\(^{18}\). Their thoughts and ideas are formed during a lot of meetings, in the corridors, when e-mailing and when talking on the phone. Some things happen very fast, some decisions evolve during a long period, and they are always very stressed. You know how hard it can be to follow a “spider”. It is difficult to get an overview of their everyday work, since no day is like the other. Instead of following one specific PM, we therefore chose to do many interviews and attend to many meetings.

As there are many Project Management Models and the time was limited we chose to look deeper into one Project Management Model, the Ericsson PROPS-Model, and one VPR, the Ericsson PROPS VPR. To understand a model and a VPR of this kind demands a lot of effort, since it covers so much. You should therefore notice that we haven’t chosen to make an evaluation of the tools fully. Our aim has been to see how to combine them.

\(^{18}\) Here: central figures in a web of project connections, quick to make a move if necessary, but always basically in the center of on-going activities, keeping in touch with everything that’s going on around them.
1.2.2 Disposition
In the first chapter, “Introduction”, we give you a glimpse of the work context and a background of the focus of this report. In the section you are currently reading, titled “This report”, the delimitations that have ruled us are presented. Here we also describe the disposition of this report and give a brief summary of how our own work has been developed during this time, and of ourselves. You will also find here a presentation of the main company for our fieldstudy. Some definitions that are useful when reading further in this report are given in the following section, “Definitions”. The pre-study is presented in chapter two, “From understanding to design-Our way to insight”. Here we describe the ethnographical and other methods we used to approach this field of work, as well as some insights gained along the way. These insights have leaded us to our design ideas. This way of reaching the kernel is typical for the MDA students. For example, we describe our own work developing a Template Project for facilitating the work of PM:s in a VPR.

In chapter three, “Project managers and their tools - Designing for practice”, we analyze our ethnographical material with our earlier questions in mind. A discussion of the entire idea of VPR:s, especially PROPS VPR, that has been the main focus of our research, is presented. Chapter four, “Our thoughts about VPR:s in the future”, presents some design ideas that have evolved during this research and some associations we have made in the literature we have read along the way. In the final chapter of the report, “Conclusions”, we offer a summarizing discussion of the work we have presented. We give advice about what to think of when developing a flexible VPR with a project model included.

1.2.3 Who are we?
We, the authors of this bachelor’s thesis, are two students now finishing the third year of the MDA-program19, at BIT, Blekinge Institute of Technology, Marine Karlsson and Anna Richardsson. Our backgrounds before our studies at Blekinge Institute of Technology are somewhat different. Marine has a previous academic education as a recreation instructor and recreational pedagogue 20 and has worked for several years within this profession area, in a number of different roles, including that of manager. Anna has studied at other universities before she settled in Blekinge, but hasn’t been “out in the field” before, which

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19 MDA is the Swedish acronym for People, Computers and Work, (Människor Datateknik och Arbete), a Master’s program which is described further in the next section.
20 In Swedish ”Fritidspedagog”
made it very interesting for her to do fieldwork within a company outside the academical world.

1.2.3.1 The MDA-program
The MDA-program consists to equal degrees of the subjects Computer Science and Human Work Science. The four-year education results in a Master’s degree. This report is a Bachelor’s Thesis, giving 20 Swedish credit points, and is the visible result of approximately 20 weeks of fieldstudies, project work and writing.

In a brochure from the Blekinge Institute of Technology you can read the following description of the MDA program;

“The program People Computers and Work aims to educate a new group in the work market, a group with expansive knowledge in the context of Human Work Science and Computer Science. A group who will work, among other things, with project leadership, research and development of modern information technology for the workplaces of the future.”

The aim is to develop skills in perceiving how people interact with IT, Information Technology, and with one another, in order to design IT-solutions, which fit in to, and support, daily work practice.

During the years we have studied at the Blekinge Institute of Technology, we have worked in project groups all the time, often in groups consisting of between two and eight persons, as well as we have been conducting individual tasks. We have used virtual workspaces in our groups, and Anna even carried out a project specifically about this and evaluated some software for e-learning. This has given us reason to discuss project management, and the need for VPR:s, and what they ought to look like, in depth and at length. We have experienced leaderships in our project groups, and VPR:s that were too slow to use at all, and others, much simpler but quite useful for their purpose. With these experiences, this semester’s work has suited us very well, and had given us continuity in our education.

1.2.3.2 Writing is something always ongoing

Our own work has a place of its own in this section, as we think that it has affected this report in a number of ways.

Our project diaries are full of notes taken at every meeting and at every analysis conversation we have participated in. In between the trips to our company of study, we have had intensive periods of taking care of collected material. In order to manage this from an early stage in

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21 For further reading Mattsson and Richardsson, 2000
22 For further reading about project diaries, see Ely et al, p. 78
the project, we started writing in parallel with doing our fieldstudy. When we wrote, we shaped our thoughts and developed our work in a more focused way than we think we would have done otherwise. The writings were born out of discussions, and all this together drove our study onwards and helped us gain deeper insights into the area we have been studying.

The two of us always started the work of writing a document by having a discussion. Then one of us would start to write and by pass the unfinished document over to the other person for further developing, often in combination with a continued discussion about the issue at hand. In this way the texts have been sent back and forth between us, and the contents have gradually developed and crystallized. In the end we have been sitting in front of the computer and writing the final version together.

To make things easier for us, we have divided some tasks between us, such as contacts with external supervisors and companies. The same person has the responsibility to take care of the recurring contact with one specific external person or company.

Except for a few of the interviews, which one or the other of us has carried out separately, we have shared the all other work in the project.

1.2.4 Companies involved
Both of us, being students, were interested in getting close to reality during our Bachelor’s thesis semester. We searched for a large worldwide company to do our fieldstudy in. During our search for an interesting focus, we got in contact with Arne Sundh at Ericsson Project Management Institute, EPMI. This department is responsible for supporting and evaluating project managing.

What, then, is project managing? Is this something so important that Ericsson needs a whole department just to manage projects? Arne told us about large worldwide projects with for example 50 active members. Through past experience, the multinational and multi-project Ericsson Company of today has learned that it will enhance the outcome if there are efficient tools to support the work. Arne talked about “Project Management Models” and “Virtual Project Rooms” and we got very interested.

Arne is in charge of developing Ericsson’s web-based virtual project room. The department was just going for a new version of the Virtual Project Room, PROPS VPR 2.0. We thought this opportunity, to become a part of this evaluation, was really interesting. Our focus became to explore the relations between PROPS and VPR. We

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23 See section 1.3.2.1, “What is PROPS?”
believe that it is unusual to deliberately and explicitly build in a company policy, as you can say that PROPS represents, into an IT-tool like this. What would the outcome be, something good or something that nobody ever wants to use?

In discussions with our mentor from Ericsson, we became aware of a focus that engaged all of us: “How to merge a VPR with a project management model”. We saw two different ways to go. We could develop some help function containing supportive PROPS information or we could develop templates for a project. Can you with the help of a template build in PROPS functionality into PROPS VPR? The Ericsson vision is that their employees shouldn’t need expensive and time-consuming courses to be able to handle PROPS.

We wanted to know more about a project manager’s work. Our focus was mainly in the area of programs for communication and their use. What tools do project manager’s use today, and what functionalities do they want in PROPS VPR 2.0? We received a list of PROPS VPR 1.0 users and started to phone around.

To get a wider view of the field, we contacted other companies as well. Thus, we have interviewed PM:s at the companies Aerotech Telub, Adera, Improve and Alstom, in addition to the PM:s we interviewed within Ericsson.

To give you a better knowledge of the main company that we have studied, we will give you a brief presentation of it in the following section.

1.2.4.1 The company

Ericsson is one of the world’s leading IT-companies - LM Ericsson24. Ericsson was founded 1876 by Lars Magnus Ericsson and it has been active worldwide ever since. Lars Magnus Ericsson worked with telegraph equipment, and after a while he started repairing telephones. Then he realized that the quality of the phones was very bad, so he started manufacturing his own phones. In 1892, Ericsson released the first product internationally. By the end of the 1890:s, they had business in China, Russia and Mexico. Today, Ericsson operates in more than 140 countries, has more than 100 000 employees, and four out of every tenth mobile calls are handled by Ericsson equipment.

The department we have studied is called EPMI, Ericsson Project Management Institute. The office we have visited most is located in Kista, Stockholm. EPMI is the department which develops the project management model PROPS and the features that come with it, such as courses, an on-line manual, different types of material, and they also

have project managers who can be hired as consultants. PROPS is the standard Ericsson project management tool. EPMI has offices in Karlstad, Kista, Kuala Lumpur and San Diego. If you compare it with other departments at Ericsson, EPMI is a rather small department. It has approximately 70 employees. It took us quite a long time before we understood where we were in the Ericsson organization. In a company like this, there are frequent reorganizations, and just before we entered the field, one such reorganization had taken place. We experienced this by coming across wrong email addresses, changed names of departments, and confusions about where employees belonged nowadays. On top of this, Ericsson had a notice of closure within certain parts of the business this spring, and that fact affected all employees and of course even us. This was a very short presentation of one of the worlds largest companies. We will now move on to a section containing some valuable definitions that you may need for a better understanding of this thesis.

1.3 Definitions

In the introduction we briefly described the history of leaders and leadership in general and management in software industry in particular. But what is a project management model, and what is a VPR? We think it would be a good idea to clear out what we mean by these terms.

1.3.1 What is a Project?

Before starting to discuss the question “why merge a VPR with a Project Management Model”, we would like to clear out what a project really is. Ericsson writes;

“Work forms are needed in which decisions are made closer to those who perform the work, and ensure that they quickly can adjust to the needs of the customer or market.”

We have met PM:s who say that one thing their colleagues talk a lot about is this issue. Here follow definitions that we think make the phenomenon fairly clear. Marttala and Karlsson declare;

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23PROPS-binder no 1, Introduction to PROPS, p. 4

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"A project is a time-limited and from other work unique and delimited activity that through the steering of resources is intended to attain a defined goal."\textsuperscript{26}

(Our translation)

A project should have a temporary organization including different work roles such as, for example, a project leader, project administrator, subproject leaders, project members.

We have also heard\textsuperscript{27}, seen and read\textsuperscript{28} that even if this is a good way of organizing work, it might not always be the best choice. At the present the project model is "hot", but sometimes it might actually be best to work in an ordinary line organization. The definition is not at all unproblematic, either. Aren’t all activities about reaching goals? And what if the same type of project comes up every year, is it still unique? The organization might have done it ten times by now. Often, something starts as a project but is never ended. When is the project not a project anymore? At a course we attended at Ericsson, the course leader told us that 85% of all business activities at Ericsson are carried out as projects. This is always a risk, as you ought to have more focus on long-term planning. An estimated 25% of the projects don’t actually contribute to Ericsson's professed view on business. All of these resources should be used in better ways. Ericsson is not very good at closing projects that are not top-notch, the course leader said. Some of the course members, who were professional leaders in various activity-controlling positions, discussed along the lines that this is a problem that always comes up in every organization, all around the world, and there is still no good solution to it.

Building a house has always been defined as being a project. It has an obvious goal, it is time-limited and it is unique. But for software projects it is not that obvious. The goal is not tangible, for instance, as it is with a house. If there are delays in a house-building project, the effect is visible, but within a software project, the effect is not visible in the same way. Software project managers cannot see the progress; they have to rely on others’ documentations and reports.\textsuperscript{29} In the 1980:s Project Management Models for making the goals, and how to reach them, clearer started to evolve. This was because of the want of process models in the early days of software engineering. In the next section, the Project Management Model and its history will therefore be explained further.

\textsuperscript{26} Marttala and Karlsson, p. 10
\textsuperscript{27} See section "The PROPS course"
\textsuperscript{28} Marttala and Karlsson. p. 10-12
\textsuperscript{29} Sommerville p. 72
1.3.2 What is a Project Management Model?

One of the first problems that has to be solved when setting up a project is to decide who is responsible for what. If it is a large project, you probably want to work in a structured way. In order to get some type of security for the quality of the outcome of a project, a project model was the answer in the early days of software development.

A model in this case consists of some kind of a time line. The line is usually divided into a pre-study and an analyzing phase, then a phase when the real job is to be done, and finally a phase when the project is concluded and evaluated. The model is of course further developed into smaller, more detailed phases, and looks quite different in different companies and in different kinds of projects. Often there are points on the time line when crucial questions and decisions need to be made, for example; Should we continue this project or not? Is the customer still satisfied? Is this project in line with our company’s strategy? Are there any new risks?

A model can also consist of guidelines of how to act in different roles. What does it mean to be a project manager? What am I supposed to do in which stage of the project? The model is therefore a support for different professions that are involved in a project. The entire project organization could be found in a model like this.

TietoEnator states in their course brochure...

“TietoEnator has worked out a way of working to be able to, in an active way, lead and plan project work based on personal responsibility with a consistent goal steering and result orientation. ... human relations and how to manage resources, humans as well as technical is strongly emphasized.” (our translation) 30

We have taken a closer look at Ericsson’s project management model, PROPS. It is important, to remember though that a model can’t do everything. Ericsson states;

“...projects must be coordinated, routines must be created which guarantee that the resources are used effectively, processes must be developed which support projects, etc.” 32

Ericsson is very careful to declare that PROPS is just a general model with guidelines. It is not a process description or a method.

30 TietoEnator, p. 6
31 See section “What is PROPS?”
32 Ericsson, History of PROPS 2
The methods and tools change, and are soon replaced by new ones. In most cases, they depend on the business and technology that is related to the project."[^32]

To summarize, we can say that a model should be used as a guideline for planning and organizing a project. The example we have studied further is Ericsson’s PROPS-model.

### 1.3.2.1 What is PROPS?

Here, we give is a brief explanation of the PROPS-model. To explain the entire model would be another thesis in itself.

PROPS is an abbreviation for the PROject for Project Steering. It is a model for project management, which meets the need for a uniform terminology and a common view of the working form in projects within Ericsson. In 1989, the first version of PROPS was developed. Before this the line manager used to work as project manager as well. The second version was developed for single projects, but in reality people are usually working in many projects at the same time. Another version was therefore developed in 1999. This is called “A General Model for Project Management in a Multiproject Organization”.

A very important thing to remember is that PROPS is a model, not a method. The model is supposed to be thought of as a toolbox, you only use what you need. It is a model for project management and management of projects that supports managers and project members at all levels in a multi-project organization.

There are four different important perspectives in PROPS. These perspectives lead to a multifaceted view of project work:

- **Single Project Flow**
  What to do when in projects.

- **Project Organizational Perspective**
  Who is responsible for doing what in the project.

- **Business Perspective**
  Aligning all project efforts in the same business direction.

- **Human Perspective**
  Benefiting from the total competence and capacity of individuals and teams.[^33]

The general project model is divided into four different phases: **Prestudy phase**, **Feasibility phase**, **Execution phase** and **Conclusion phase**. Every phase begins with a **tollgate** and ends with a **milestone**. Tollgates are defined as decision points and milestones as checkpoints. There is more than one milestone and tollgate in the execution phase, since this is the longest phase.

The prestudy phase focuses on if it should be done. The feasibility phase focuses on how to do it. The execution phase focuses on doing it. And during the conclusion phase the focus is on lessons learned.

There can be many roles in the project, but this varies a lot, depending on the size of the project and the intended outcome. However, there are some basic roles that are always necessary:
• One of the most important roles in the project is the project manager. He/she coordinates all activities in order to achieve the overall project goal and to deliver the product to the customer on time.
• Another important role is the project sponsor. He/she economically sponsors the project. This is also the only person who can decide whether the project will continue or not at the tollgate meetings.

Four colors are used to illustrate the different parts, functions and roles in PROPS: blue, red, yellow and green.
• Red color represents the long-term business direction in the organization, the project steering function. The project steering function has the authority to initiate and terminate projects. The purpose is to ensure that the project is commercially and financially viable as well as in accordance with the organizations business direction. The red line encircles the entire PROPS U.
• Blue color represents the project management function. This function has the responsibility for managing the project toward its goal and is limited to the lifetime of the project. This blue part is the middle section of the PROPS U.
• The so called "Yellow part", is where the actual productive project work is defined. The yellow part is where a project office or a certain organization tailors its own project workflow, specifically for the type of projects they run. In the yellow part you define what should be done in different phases; what milestones and main activities there should be; what supporting processes should be used, etc.

Such a tailored PROPS is called a PROPS application. A PROPS application is specific for a certain type of project ready for re-use for every new project of that type.

It is the PROPS application that becomes a template in PROPS VPR.

*PROPS VPR has given the PROPS applications a face.*"34

The yellow part is the inner section in the PROPS U.
• The green color is used for describing the project outcome. It represents the goal of the project toward which the project aims. In the PROPS model can be seen as a hexagon in the end of the PROPS U.

Many people think that using the PROPS-model means having to write a lot of documentation. PROPS recommends four different documents: Assignment specification, which is written during the prestudy phase by

34 Said by our mentor at Ericsson.
the project sponsor. *Project specification*, which is written during the feasibility phase. A *Final report*, lessons learned, which is written during the conclusion phase. And during all the phases *Progress reports* are to be written as well.

PROPS is a very general model, but it contains some crucial recommendations that should be available at all times in PROPS VPR. The problem is to be able to make it clear that although PROPS is ubiquitous in PROPS VPR, it’s still just a tool, a recommendation.

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1.3.3 What is a VPR?

We have tried to make clear what a project and a project management model are. The third thing to describe before going into details is what a VPR is.

A few years ago, the term "virtual project room" was something unknown to most of us. In just a few years, completely new possibilities for communication and co-operation have been developed to support project work.

VPR is the acronym of Virtual Project Room that is used throughout this thesis. There are many different types of VPR:s. In the

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three types of existing VPRs are described:

- "Groupware as meeting"
  These types of VPR support single meetings, but no communication between the meetings.

- "Groupware as process"
  These types are often integrated with workflow systems. They support asynchronous activities. They might seem a bit more like an information page.

- "Groupware as place"
  A VPR that works like this captures both synchronous and asynchronous collaboration. It also takes into account both individual and group work.

The different types of VPRs have emerged from different views and needs. The “Groupware as process” has emerged from homepages, and ideas from for example MUDs have been used for developing meeting tools for “Groupware as meeting”.

There are also some PMs who primarily think of project management as document management. From their point of view, a document management program is sufficient. The VPR that we have studied more in detail is Ericsson’s PROPS VPR and we will give an introduction to the software in the coming section.

1.3.3.1 PROPS VPR

VPR is a general name for these types of programs and this is why the program developed by EPMI and Cerres ltd, the software company, is called PROPS VPR. The latest version is called PROPS VPR 2.0. This is the version we have made a template in.

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35 Roseman and Greenberg, p. 332
36 Multi User Dungeon, for further reading see glossary.
The first version of PROPS VPR had more than 2500 users and contained about 60 projects. PROPS VPR is a useful tool when you don't want to work with HTML. By using this you won't need a web administrator.

"If it's possible to get rid of a web page administrator and if it supports project models, it is worth its weight in gold!"37

An opinion poll was performed by Arne Sundh to see what the users of the PROPS VPR 1.0 thought would be most interesting to develop. The users proved to be very interested in template projects and a function for keeping track of on-going activities in projects called Project Scorecard.

The new version is expected to be more stable than the old one. Information about PROPS is also supposed to be more easily available and the new version will be more user oriented.

Most of all, PROPS VPR is a communication tool. It gives the opportunity to handle documents but it is not a documentation tool. Many project managers want to have a documentation tool, but PROPS VPR only links to such a tool. Although there are possibilities to store documents in PROPS VPR it is not the main purpose of the tool.

37 Appendix, “Future customers”

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PROPS VPR is more of a home page with PROPS related features. In PROPS VPR you can …

- Get a quick overview of your projects.

Fig 5. Screen picture from PROPS VPR

- Add and see described activities.
- Add and see described milestones.

Fig 6. Screen picture from PROPS VPR

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- Analyze the project with Project Scorecard. This feature gives the PM a possibility to show how the project is “thriving”.

Fig 7. Screen picture from PROPS VPR

- Do risk analysis.

Fig 8. Screen picture from PROPS VPR

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- Add and use template projects.
- Add and see actions.
- Add and handle documents to the library.
- Use predefined roles.
- Add and search for personnel.
- See and learn from other projects that are open.
- Etc

There are possibilities to hide projects if necessary. Right now PROPS VPR is only available inside the firewalls of Ericsson, but there will be an access to PROPS VPR from outside the firewalls of Ericsson, the extranet, in the future.

PROPS VPR 2.0 will be a layer on a web-based knowledge management platform called Protocol, which is contained in an Oracle 8i Internet database. Protocol is implemented in Oracle's Procedural SQL and the application is stored in and runs within Oracle's 8i database. The application is served through Oracle's application web server to deliver HTML and DHTML to ordinary Internet browsers. Ericsson owns the PROPS VPR layer and Cerres ltd. owns Protocol.

Fig 9. The configuration of PROPS VPR. Copyright: Cerres Limited 1999 – 2000

In this first chapter “Introduction”, we have given you a background to this thesis. The area of research, the companies involved, delimitations and some definitions are described. A brief presentation of ourselves can be found here as well. The next chapter, “From understanding to design-our way to insight”, contains information about our fieldstudies and how they have been accomplished.

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2 From understanding to design - Our way to insight

In chapter one, “Introduction”, we have presented the delimitations that have shaped our work and the disposition of this report. You got a presentation of our backgrounds and the companies that have been the targets of our research. Some recurring concepts in this report have also been explained. In the following we will tell you about how we carried out the fieldstudies.

Our fieldstudies were not something done once and for all. These studies were ongoing during our entire Bachelor’s thesis semester. It is a new world that has been opened for us and we continually learned something new every time we dealt with our research field. It takes a while to learn the culture codes at new workplaces. As Fägerborg writes in an illustrative way:

“Regardless of the aim of the specific research assignment, the ethnographer who does a work life study has to know how the work is performed. Even if the purpose of the study isn’t to investigate the work processes in detail, it is necessary to achieve knowledge that makes it possible to talk about what happens at the workplace. And the basic in starting point in work life is the work that is performed.”38 (Our translation)

Because we had to travel a lot in order to reach both the department, the end users and our supervisors we have been good organizers and have been forced to plan our visits very well.

In order to gain better knowledge of the company, we started with a journey to Arne’s department, EPMI, and so did our supervisors from Blekinge Institute of Technology. During a meeting39 with all our supervisors we were introduced to the Ericsson Company and the tools that they had developed for projects, the virtual project room PROPS VPR and the project-model PROPS. Our teachers presented the MDA program and Blekinge Institute of Technology. The very day after that, we met the project team which is developing PROPS VPR 2.0. and were introduced to their work. We, the students, also had conversations with Arne where he told us about the Ericsson culture. By now, we felt that it was about time to meet some end users.

These feelings of needing to get to know the end users came due to our education, where we have gained insight into this way of designing technology support for work practice. To study the context where the

38 Fägerborg, p. 17
39 Appendix, “Our first meeting at Ericsson”.

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designed technologies will be used is a condition for a successful outcome. In Ethnography\(^{40}\) we found four basic principles to guide our work, Natural settings, Holism, Descriptive and Members point of view.\(^{41}\) We found it natural to look for and learn about the context of the matter and therefore it has become very important for us to get the opportunity to meet people who have worked as or will work as, PM:s, and listen to what they have to say about it. Blomberg describes it in a very significant way:

“...Ethnography is concerned with understanding other people’s behavior in the context in which it occurs and from the point of view of the people studied.”\(^{42}\)

Usually the ethnographer enters the field before the design process is initiated. In our case, however, the design process had already been started. Arne had a prototype of PROPS VPR 2.0 in use. We had to learn how this prototype was designed and worked, and to start out from it. We took the prototype and did some tests on users in order to learn more about the software and to see how some in-house users reacted to it. Then we went out to both internal and external PM:s to see what they really need.

By now we understood that it would be difficult to study just a few PM:s.\(^{43}\) We wanted to get a broad view of the profession from different kinds of PM:s. We got in touch with several project managers, PM:s in Karlskrona, Ronneby, Växjö and Stockholm, mostly inside Ericsson but also at other companies. When we talked with the PM:s we had the PROPS VPR in mind and design thinking was always close-at-hand. This fact influenced us surely in some kind of way. We may have missed other solutions of tools, not at all like a VPR. The questionnaire we made in the beginning was not so open as it could have been. By the time we made more open interviews and let the informant speak more freely.

2.1 Meetings and the “fly on the wall”.

In our ambition to gain deeper insight into how PM:s work, we have attended several meetings, with a reference group\(^{44}\), with PM:s and within the PROPS VPR project team at Ericsson. Sometimes we didn’t feel that we had anything to contribute to the meeting, but we wanted just to be there anyway. We wanted to contemplate and to learn,

\(^{41}\) Blomberg, p 125
\(^{42}\) Blomberg et al, 1993, p. 128
\(^{43}\) See chapter 1, section “Delimitations”.
\(^{44}\) Appendix, “The reference group”

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without necessarily taking an active part, but working in that way was impossible. We were always part of the discussion in the end. If we didn’t take the word any initiative to talk on our own, we were invited to give our view of the issues being discussed. You could say that we started by trying to take part without taking much space like “flies on the wall”45, but ended up as participating observers46. Blomberg states that these kinds of unplanned developments are usual and that you, as an ethnographer, most often move back and forth between participation and observation.

Lave and Wenger discuss how important the ingress to the area of learning is, and how much participation in communities of practice means.

"To begin with, newcomers’ legitimate peripherality provides them with more than an “observational” lookout post; It crucially involves participation as a way of learning – of both absorbing and being absorbed in – “the culture of practice”."47

We are very grateful that our mentors and other persons around us have acted in this way towards to us, and let us be a part of the discussions and actively participate in what has been going on.

We have also met other students who have been studying project tools. These students had questions and other thoughts about PROPS VPR and project management from their point of view, which has widened our horizon as well. We have met PM:s in different organizations in order to get an as broad overview as possible. During the semester, a lot of informal meetings have been of great importance, for example in the coffee room or stopping in for 15 minutes in someone’s office, where we got an answer to a question. Together, all the impressions have contributed to our visual picture of PM:s profession as well as the work involved in developing supportive software for project management.

2.2 Our mentor at Ericsson

The person who has given us most insight is our mentor, Arne Sundh. He has taught us very much about the Ericsson culture and working life. During many long-lasting meetings and telephone calls, Arne has described all kinds of things that have contributed to giving us a well-grounded overview of our research area. There have been so many valuable meetings arranged for us by him that we couldn’t write about them all.

43 Expression by Blomberg, p 130
46 For further reading Blomberg, p 131
47 Lave and Wenger, p 95

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We have followed Arne in his work to develop, sell and release the software PROPS VPR 2.0. With the term sell we mean both to sell to customers, but also to negotiate within the own organization in order to assure that it will be the VPR that Ericsson will decide to invest in, because there are a number of alternative tools for project management in use within the company. Arne rather wants to cooperate than to compete for a monopoly within the company. In Ericsson’s Project Management Model they have checkpoints at which the projects are evaluated, and a decision is taken about whether the project should continue or not. During the time we have been at Ericsson one of these checkpoints occurred for the PROPS VPR project\textsuperscript{48}.

This spring has been characterized by Ericsson’s threat of closure and cutting back of business in parts of the company. Which projects or departments were going to be the ones closed down and which persons are were going to lose their jobs?

Arne is fairly alone in this VPR project. He executes both the Project Managing work and develops the functionalities in cooperation with the English company that produces the software. Arne is the help desk for PROPS VPR personalized. He also presents the program everywhere that it is needed, to those who are interested at conferences and so on. He is doing more than a full-time job, it seems to us, and on top of all this he has taken on the mission of being our mentor.

Arne’s home office is at EPMI in Karlstad but he is in Kista almost every week. We have been to the Kista office nine times, for several days every trip, but also in Karlstad once. We haven’t met Arne every time but we have attended to the PROPS course\textsuperscript{49} and met other informants.

Together with Arne we have had the opportunity to join in several different meetings, like the Kick Off for the VPR project, playing the Damali game\textsuperscript{50}, the Tollgate Meeting\textsuperscript{51}, the Reference group meeting\textsuperscript{52}, the Customer meeting\textsuperscript{53} and a meeting with other students who like us are doing project work at Ericsson. During these meetings we have met many people who together have given us a very wide view of the area software development and the management behind it. The entire EPMI is a large competence center about everything that belongs to projects and PM. Everybody at EPMI, including Arne, has extensive experience about the area. They meet PM:s every day when they lead courses or administrate the worldwide network. They do investigations among

\textsuperscript{48} Appendix, “Tollgate 3 PROPS VPR”
\textsuperscript{49} Section “What is PROPS?”
\textsuperscript{50} Appendix, “The Damali game”
\textsuperscript{51} Appendix, “Tollgate 3 PROPS VPR”
\textsuperscript{52} Appendix, “The Reference Group”
\textsuperscript{53} Appendix, “Future Customers”

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PM:s all the time in order to be updated and to have the ability to support them in a proper way. Also active PM:s are connected to the department.

Arne has been very supportive of us and has made it possible for us to attend and analyze different situations and phenomena. Arne was somewhat annoyed, to put it mildly, because the release of PROPS VPR 2.0 was delayed, but the delay was caused by things outside of his control. We changed our project schedule instead, and started writing much earlier than we had planned, and in the end we caught up with our practical work with PROPS VPR 2.0 that we wanted to do. We had wanted, from the start, to see how the program works, and what you have to think about when you are going to add a new project. Another plan that we had was to do PROPS VPR 2.0 tests with users of the templates we made, but unfortunately, the postponed release of the software made this impossible.

2.3 Meetings with external project managers

For getting a more general view of what the profession of a project manager really is, we interviewed some PM:s outside Ericsson. We met PM:s who work in different lines of business.

We have also talked with PM:s wherever we have met them during this semester, among friends, at camps with the children, even at parties, in athletic associations and so on. These informal meetings are not noted on paper but have contributed to a broader picture of the PM:s profession.

2.4 Meetings with project managers at Ericsson

Our interviews have been informal, although we have used a questionnaire, prepared before the occasion, as a guideline. We have checked the questions at the end of the meetings to see that no important question was forgotten. We have met with PM:s to analyze their work and see what kind of tools they are using right now. We have met with PM:s, who have worked for Ericsson for a long time as well as PM:s who have only worked there for a shorter time. Fägerborg points out the importance of this. The beginner’s perspective can give access and shortcuts to common ways of reasoning and cultural ways in the company. This was something that we experienced especially in one particular interview. Here we got informal thoughts about …

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54See section, “Templates”
55 See appendix, “Questions to Project managers”
56 See appendix, “Project manager EPK”, and “Two Project managers, EIP”
57 See appendix, “Project manager, EPK, focus on…” and “Project manager, IAPP”

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“It is the PM:s role that is difficult. What demands can I make on the sponsor? Resource owner?”

…when we talked about PROPS knowledge.

During our conversations and interviews, we have used audio recordings as a complement to logging. These tapes have mostly been used as reference material when we have had missed something, or if we have had different opinions about something that has been said during the conversations and the interviews.

Many meetings have not been planned ahead of time. During the PROPS course, for example, we talked with PM:s during lunches and coffee breaks and in the evenings even over a glass of beer. Meetings like these have been very useful for us as they have provided us with insights into PM:s more private views of their profession.

2.5 Test and Analysis.

We did a test on a prototype of PROPS VPR 2.0 and video recorded it. The test included analyzing how three PM:s filled in a feature in this prototype and how their sponsor read the PM:s message. Video recording is a suitable method to use in order to carry out detailed analysis of important observations after they have taken place and review details that we were too busy to notice while we were taking notes and observing the participants. The recordings can also be used as references to support our theories in our analysis. We found a lot of interesting things in our analysis, which we discussed with Arne.

“This was very interesting reading and I agree about most of it. What hit me are how many useful things that appear in this, seemingly simple, study. It would be interesting to do this on the whole VPR sometime.”

We wrote a report about our findings. Most of this work we performed in order to learning more about what a VPR is, and what ‘language games’ the developers and the users play. Language game is a term borrowed from the philosopher Ludwig Wittgenstein. Wittgenstein writes that in every group of people interacting with eachother there is a special language, which develops during the interaction. It includes the group’s experiences and names they have

58 See appendix, “Project manager, EPK, focus on…”
59 Logging is what we call taking continual notes during an interview or observation.
60 See section, “The PROPS course”
61 For further reading see Jordan and Henderson
62 Comment from our mentor at Ericsson, Karlsson and Richardsson 2001
63 Karlsson, Richardsson, “Videoreport”
64 For further reading see Ehn, p 64
given things. In different work areas there usually are special jargons, or you can in a Wittgenstein way call it a ‘professional language-game’.

“To be able to participate in the practice of a specific language-game, one has to share the form of life within which that practice is possible.”

To involve users in the design discussion is something very crucial to us as MDA- students. Our thoughts are grounded in the Scandinavian tradition, Participatory Design (PD). This means that the persons that are going to use the system are important as co-designers.

“It assumes that the workers themselves are in the best position to determinate how to improve their work and their work life. In doing so, it turns the traditional designer-user relationship on its head, viewing the users as the experts - the ones with the most knowledge about what they do and what they need - and the designers as technical consultants.”

Through this period of testing and analysis we got results that would have been impossible to achieve without the real users. These results have expanded our view of why a VPR is needed and what it ought to look like.

2.6 Evaluation of four VPR:s

In order to get a general overview and learn more about different types of VPR:s currently on the market, we wanted to evaluate and compare a number of different VPR:s. We do not claim that we have done an in-depth evaluation of the VPR:s we’ve explored. It was the overview that gave us a general insight to the VPR-market. To do a more thorough evaluation was neither possible nor necessary within the scope of our project. Still we gained insight into the already existing techniques and ideas about the future.

After some proposals from Arne and some searching on our own among project rooms that you can easily find on the web, we selected four VPR:s to evaluate further.

- eRoom, marketed by eRoom Technology Inc.
- onProject, marketed by onProject Inc.
- Share A space, marketed by Eurostep Commercial Solutions AB
- Sightline, marketed by Sightline AB
- Spectral, marketed by Spectral AB

65 Ehn, p. 65
66 Schuler, Namioka, p. xiii
We have also looked at the prototype of PROPS VPR 2.0
We began to construct a set of guidelines, or a kind of checklist, so that we wouldn’t forget what it really was we were looking for. We felt it might also make the evaluation more fair and equal. As a starting point, we used an earlier evaluation that was made by EPMI before the development of PROPS VPR 1.0. We took the same questionnaire and added some more topics, among others “Ten Usability Heuristics” 67. At this stage we didn’t read EPMI:s evaluation because we wanted to get an opinion of our own first. After we had seen all the VPR:s and written the checklists we read EPMI:s evaluation and discussed what we had seen and felt about the programs.

We were in somewhat disappointed as there are many programs we couldn’t see because there were only still pictures available on the web. We had to contact the companies for “consultation”, and when we did we didn’t get any answers. Could it depend on the fact that we told them that we are students, thus not prospective customers, i.e. future sources of income?

As students we have some own experience of programs like this, for example Luvit and e-groups. There are also a great number of programs that we have looked at, but not evaluated any further.

2.7 To get as close as possible
In order to get as close as possible to ‘the real thing’, we decided to work more “hands on”. We decided to do this in two ways. In order to really learn about a project management model we participated in a three-day course that Ericsson ran and in order to learn how to use a VPR we developed project templates in PROPS VPR 2.0.

2.7.1 The PROPS-course
We attended to this course with a somewhat different aim than the others who were attending it with us. Our goal was to get a good view of the model, meet PM:s and hear something about the ideas they had about their work and its future. As it turned out we really got what we wanted during the three days the course lasted!

- The first day we got an introduction to PROPS68, which is Ericsson's Project Management Model69. During the day we were informed about what information there should be in certain documents and at what time. Definitions were given and explained

67 References, see links
68 PROPS is a Swedish acronym for “PROjektet för ProjektStyrning”, The project for project steering.
69 For further reading see “What is PROPS?” and PROPS binders

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for important concepts used in the model, for example the different project roles. During this day, we concentrated on the first phase of a project, the pre-study phase.

- During the second day, we learned about the second phase, the feasibility study phase, and more definitions were given and explained, for example concerning how to plan a project. A lot of documentation examples were shown as well.
- The third day we concentrated more on the third and fourth phases, the execution phase, and the conclusion phase. We learned how to analyze a risk, and there were a lot of discussions about what we had learned during the three days.

During the entire course, we worked according to "learning by doing", by carrying through a project in small sub-groups. We also "played" different games. Some of these gave us new and valuable insights. The way of mixing different forms of presentation, first lectures and then practice, of some kind, was very successful. We have brought a lot of thoughts with us from the course on to this report and the to next section, which will be about how to add templates to the VPR.

2.7.2 Templates
A thought that has permeated the MDA education is that the best way of learning is by doing. One way of learning by doing is by constructing. Papert makes a distinction between concrete-abstract and constructionism - instructionism. It's not a good idea just to be instructed, you learn much more if you yourself construct.

"...bricolage...Use what you got, improvise, make do...to serve as a source of ideas and models for improving the skill of making – and fixing and improving – mental constructions." Papert, p. 144 (sv.)

Our mentor suggested that making a template for a special project model would be a good way for us to gain better insight into PROPS VPR. This would be useful both as a way to see if the design is relevant and for doing real work at a department that wanted a template in PROPS VPR. Through this work we thought we could both get good insights into real work with PROPS VPR and a good chance to evaluate it. Lövgren and Stolterman refer to this way to design a design process, with a special focus on the process itself as crucial for informing the evolving design.

70 Papert, p. 120 (eng.)
71 Papert, p. 144 (sv.)
“...the understanding of the situation where the artifact is going to be used develops hand-in-hand with our attempts to design the artifact.” (Our translation).

Schön calls it “reflection-in-action” and “reflection-on-action”. When you as a designer are trying to solve a problem by working with the material you get, you meet situations that will surprise you, and these surprises are the base for reflecting on the design. Schön says that designing is

“...a conversation with the materials of a situation.”

To get started in this process of learning by doing, i.e. of designing and developing a template for a specific project, we contacted with two PM:s at the Ericsson company. We had a conversation with them about their work, and they showed us the material that the template should be based on. Now we had a big problem to overcome. The release of VPR 2.0 became delayed by almost a month. This was a long time, and caused a considerable break in our plans for the semester’s work. What should we do? We had to reconsider our plans and make some changes.

Here, we have told you about our way to insight. This should be seen as a background when you read more about our reflections in the coming chapter “Project managers and their tools-Designing for practice”. In the following we will reason about why you should use a VPR and a project model at all. The combining of the two tools, and the Ericsson example, PROPS VPR 2.0, will be discussed as well.

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72 Lövgren and Stolterman p. 63
73 For further reading see Schön, 1982
74 Schön p.78
3 Project managers and their tools – Designing for practice

During our field studies, described in the previous chapter, “From understanding to Design- Our way to insight”, we have seen much of interest and learned a tremendous amount about the area of project management in a worldwide company and about our assignment to work as MDA designers. In the following we will analyze our own design and development work during this past semester and discuss if there really is a need for a tool like PROPS VPR and, if so, why? Is a project model necessary? Is there any interest from the users in combining a VPR and PROPS?

Since we, from the very beginning, got introduced to an already existing design of PROPS VPR and a prototype of version 2.0, we were naturally influenced by this during the entire period of studies. During our field studies a further development of PROPS VPR was always in our minds. This fact made us compare the Ericsson example with the tool that the informants were using at the moment. If we saw something that could add to and improve the performance of PROPS VPR, we wrote it down in our diaries immediately. If we hadn’t entered the field with these views, the outcome might have been different. We think that in the software industry this way of working out design ideas under the heavy influence of where and what you’re starting from, and what application environment you are already working in, is common. To get admission to the area of study we agreed to have PROPS VPR as a starting point for development. Of course, as MDA students, we think that the best idea is to meet the end users as early as possible, before the prototype is too “finished”, but this is not always possible. In this case, with PROPS VPR we all, Arne, Anna and Marine, thought that there was much left to be developed, though.

One future customer said at a meeting:

"The user has to gain something if they are going to use the tool."75

We considered this interesting and important. No one will ever use the VPR if the effort to use it is bigger than the gain. The same thing goes for the model. If it is too difficult to understand and it demands too much, no one will use the model either. If these two tools are really

75 See appendix, “Future customers.”
good, and if they support one another, it sounds to us as though it would be great. But what do the users say?

"The content is more important than buttons. One time I engaged someone to make a homepage. He used immeasurably much time developing nice buttons, but the content – was really lousy."76

"I like to see everything in front of me…"77

"Nice to get rid of a lot of documents!"78

We have got a lot of thoughts from informants and future users. Their thoughts have had a deep impact on our development of our own ideas.

3.1 Why use a project model?

From an organizational point of view there is a desire to ensure the focus in the projects is in accordance with the company’s business direction. To accomplish this you might use a project model.

"To support document management effectively we need to balance the individual professionals’ focus on their current activities against the long-term interests of the organization."79

A more concrete opinion could be:

"A simplified picture of reality to sort out the chaos."80

A project model is almost necessary to succeed with projects. You learn to work in a common way and to make use of earlier experiences. Even if the persons are exchanged from project to project, the main steps within each project stay the same. You reduce the risk of missing some important step as, such as, for example, the “hand over” at the end of the project. Who will take care of the customer support in the future? You can use the model in the dialogue with the customer to clarify where you are in the process.

"With a well-defined project management process in place and the model in mind, it becomes relatively easy to:

76 See appendix, “Future customers.”
77 See appendix, “Future customers.”
78 See appendix, “Future customers.”
79 Hertzum, p 41
80 The PROPS expert, appendix “Our first meeting at Ericsson”
• Convey to the team how project will be managed.

• Communicate with others about the health and progress of the project.

• Assess the risk of alternate paths and take advantage of emerging opportunities.\(^{81}\)

According to this text we ought to have a process description for software development because the project process itself is not tangible and real. But the problem that could occur with Ericsson and PROPS is that Ericsson pursues internal implementation-, customer order- and product provisioning oriented projects. By doing this Ericsson creates a structure but

“All structures can hinder the creativity.”\(^{82}\)

Lars said this during conversation about PROPS. He also mentioned that the big problem is not PROPS, the problems arrive when using the work models, the yellow, operative part of PROPS, in PROPS VPR this is the same as a template project. This is why there are so many demands on a template. Lars said that the big effort lies in forming the methods for just the actual project. PROPS itself is so general so it arises no hinders along the process. This problem is solved through several solutions of different project descriptions at a high level in the workflow area.

Ericsson states in their course literature...

“In the multiproject organization, successful projects are prerequisites for business success. A general model for project management common to the entire organization enables speed and flexibility in operations, thus giving the organization a competitive advantage.”\(^{83}\)

“...the professionalism of Ericsson’s project managers has undoubtedly been strengthened.”\(^{84}\)

To have a plan is a good support when you are going to carry through a project. When you are responsible for a worldwide project with about 50 team members, it is rather difficult if you don’t have anything to lean on. Suchman stresses the use of plans, but she also emphasizes the

\(^{81}\) Forsberg et al, p. 18
\(^{82}\) A diary note, “Project manager, EPK”
\(^{83}\) Ericsson, PROPS-binders, p. 4
\(^{84}\) Ericsson, the draft, History of PROPS 2
need of understanding plans not as a rigidly predetermined script for action, but rather as a resource for situated action, and thus of being able to change the plans according to the situation. Everything changes, the conditions are never predictable, and things that weren’t in our minds from the start come up and put everything in a different light. Then it is important that the model is general and in flexible and always an object for further development.

"The goal is to develop PROPS all the time. There is a continuous learning and on-going change."85

To have organized who is responsible for what, in and around a project, is basic. To have the entire structure of responsibilities ready, and just have to fill in names, must simplify the planning and the addition of personnel a great deal when a new project starts.

"The Where and Why is important, for motivation, then you have the ability to steer something that isn’t good"85

In a large company that has a large number of projects ongoing at the same time, it is an advantage if everybody talks somewhat the same language. It makes it easier to discuss experiences and to spread and share knowledge. As we mentioned in a previous section, “Test and Analysis”, the philosopher Wittgenstein is often referred to concerning the importance of a common language.

3.2 Why use a VPR?

"PROPS VPR 2.0 can make the amount of document less"86

We intend to discuss if there is a need for a VPR, or if it is just one more of these techniques that have been evolved because of the technical evolution itself and not because of the actual needs of the people.

Since there already exist a lot of different types of VPR:s, this discussion might seem a little unnecessary. If there hadn't been a need for VPR:s, there wouldn't have been that many! Opper states…

"In our experience one out of three meetings can be eliminated by using groupware. Cutting down on meetings by this much saves not only the..."

85 Said by PROPS expert, appendix “Our first meeting at Ericsson”
86 See appendix, “Future customers”
meeting time, but also travel time, and the disruption to work flow before and after it.”

In a widespread organization such as Ericsson and other companies as well, we have seen an obvious need for communicating in one or another way. According to an article...

"Trends toward more flexible organizations and telecommuting can result in teams whose members are at various times scattered over large geographic areas. For such teams, shared physical spaces are not an option." 88

From this point of view there are not many options except using a VPR. The managers at present use the phone and the mail, and at some times a documentation program for communication. Using a VPR means that all the members of the team can get exactly the same type of information at all times. A possible problem could be to inspire the team members to read the information. The managers probably will have to really push for the use of the VPR, as far as we have seen. Probably it will be the same in both directions. As one PM says...

"The hard thing will be to get the sponsors to look at it." 89

There is nothing the "VPR itself" can do about this, except being as easy as possible to use. The same problem has come up at other times. It takes some time to understand the program for the manager, too.

"It seems interesting, but I have to sit down and get into it first." 90

So it is not entirely natural and effortless for the PM either to use a new tool from the outset. When starting to use a program like this, the benefit has to be clear. A worthwhile benefit could be that the tool reduces the number of reports and telephone calls that need to be made. The only thing we can see that would eliminate these risks of the VPR becoming an unused program is to make it as usable, useful, simple and self-evident as possible.

The PM:s we have talked to have been very positive about the VPR, though. They have pointed out the need for a communication tool and a support for their work many times. During the PROPS-course, we met PM:s who said they had difficulties in communicating with parts of their teams when they were allocated. Another PM said he wanted to have all information necessary for the project collected in one spot.

87 Opper, p. 45
88 Roseman and Greenberg p. 323
89 See appendix, “Project manager, EPK”
90 See appendix, “Project manager, IAPP”

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Two other managers said that they couldn't wait for us to add templates to the VPR. They were using one type of VPR at the moment for getting an overview of their type of projects. Another PM said that if her teams had been distributed, she would have needed a type of communication tool. There are a lot of examples of people who have said that they need a VPR.

All of the VPR:s we have looked at show the need for communicating about the project and the plans for it. As a PM said about the overview you can get in PROPS VPR…

"I like to see everything in front of me and get rid of all papers and documents..."

Wulf et al. write about the importance of cooperation within a team, and that sharing material is necessary:

"The notion of shared material refers to the fact that no explicit communication is necessary to assess the state of affairs in a cooperative work situation. But this is only possible if there is an established cooperation."

To cooperate without communicating is impossible, and communicating while you are at different places is impossible without aid. One type of aid is a VPR.

Having a team that works together also implies that it communicates. The alignment on a team is dependent of its vision. If the individuals work towards the same goal, the outcome will usually be much better and will be achieved faster. Building a common vision for all individuals in the team is absolutely impossible without communication.

The difficulties of having a team that doesn't communicate we have read about in a thesis by Conny Johansson. This thesis brings up a software project that had one part of the team working in Finland and one part in Sweden. One example of communication problems within the team was that the Swedish part of team, that was larger than the Finnish part, made decisions that would influence the Finnish team without consulting them first. Other problems occurred even within the Swedish part of the team. There was a core team, which worked in a project room. The core team knew what was going on at all times. Other Swedes, project members, who were not working in the project room, didn’t know anything about what was happening in the project, which led to many misunderstandings. As far as we have seen, a

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91 See appendix, “Future Customers”
92 Wulf, et al. p. 10
93 Johansson, p. 73 - 96
communication tool could have been a support there. At least it would have made it possible to have the same version of the documents accessible to everyone in the project team at all times. The goal and the progress of the project would also have been clearer.

Papert discusses school classes in his book and states fairly convincingly that classes all around the world can cooperate in different projects, and that we soon will be making electronic visits in each others realities…

"It’s no longer necessary to connect thousands of people under an administration in the same building to develop a community." 94

The needs for a VPR today seem fairly obvious, but what could be done to improve the tool? One way will be discussed in the next section.

3.3 Why not combine the two tools into one?

We have discussed the need of a project model and we have discussed the need of a VPR. The name of our thesis is "How to merge a VPR with a project management model". This means that we decided to see if there are any needs to merge these two tools and if so, how it could be done.

We have to admit that we are a bit "brainwashed". The first words we heard, at our first meeting95 with our mentor, Arne, was:

"Using a VPR will be the same as learning PROPS."  

These words have of course colored our minds throughout our journey during this thesis period, but we haven't once seen proof that this idea might be basically wrong. Arne argued that one of the things that made PROPS VPR stand out from other VPR:s, is that it was meant to support PROPS. This makes it very important to integrate PROPS very well into the VPR. For distributing knowledge about PROPS, it is good to integrate the model in the VPR for EPMI.

The first thing we wanted to know was if there was any support for this notion in "the real world". Another idea we got from our informants was that it should be possible to follow up actions points decided at a meeting. For example with a feature like Project Score Card and a progress bar.

During our research, we have discovered that there are at least two different kinds of PM:s. One kind emphasizes that the documents are the most important thing to have in order. As Hertzum declares…

94 Papert, p. 185
95 See appendix, “Our first meeting at Ericsson”
“Documents also serve as reminders of things to do. Here the essential aspect is that documents play an active role in the professionals’ management of their work tasks – the documents are not just passively available.”96

Among several occasions when we got proof for this thought, was the “Reference group”- meeting when a member during the entire meeting questioned the ability in PROPS VPR to handle documents. Other PM:s want support for communication, overviews, templates, etc. By this we don’t mean that these PM:s don’t care about the documents, on the contrary, they are very careful PM:s.

At another occasion one PM stressed that …

“VPR could be good to show the time-consumption in the project, the complexity…”

She said that it could be a way to see what is missing.

One other PM97 said explicitly that he would like to get knowledge about the project management model without having to look for it. He would like the information to be there all the time, without having to think about it. The same PM said that it would be great if there were a place where everything necessary was collected.

Two female PM:s98 more or less said that having their work model integrated in the VPR would save their days!

Lucy Suchman99 says that situated action needs to be supported. When using a plan, like one can say that a project management model is, it is important to be able to see this plan less as a once-and-for-all formalized and settled script for future action plan and more as a support for situated actions, we think. If this plan is available in the situated action, as it would be in the case of having a project management tool integrated in the VPR, there are more possibilities for the plan to be followed, but in a way which is supportive of the situated action.

As a more opposite opinion we found that Osterweil think its better to describe the process minute by minute.

“Our suggestions is that we describe software processes by ‘programming’ them much as we ‘program’ computer applications.”100

96 Hertzum, p. 48
97 See appendix, “Project manager, EPK, focus…”
98 See appendix, “Two Project managers, EIP”.
99 For further reading see Suchman
100 Osterweil p. 4
This would lead to a very rigid model, without any support for situated actions. Wulf et al. mention what we think is the best way of making processes when quoting Lucy Suchman:

“There are two basic options for embedding formalized procedures in the richness of human situations. One is to rely on a formal model of the class of use situations, and to automate a set of rules for how to proceed according to the model. The other is to leave the use context open and to offer a repertoire of resources to use in self-organizing work. In this way, I shall differentiate between ‘centralized control’ and ‘situated coordination’ of cooperative work.”101

This is exactly in our opinion what PROPS is trying to accomplish. And this is also what we have heard from users;

“To me, PROPS is most of all a framework, from where I can take the tools I need.”102

One difficulty lies in making the coupling between the VPR and the model. Should the model be there all the time, or should it be integrated so that people use the model without even noticing it? Or should it be there as an optional support feature that can be selected when needed?

As it is now in PROPS VPR, some of the vocabulary from PROPS is used, such as the objects, tollgates, milestones and names of other activities. There are also links to the PROPS online website. This means that there is both ubiquitous PROPS information and information you can seek for yourself.

Even if there are things to look out for when integrating a project management model with a VPR the benefit seem obvious. The most interesting challenge is how to integrate them in a good way. An example will be discussed in the next section.

3.4 Getting concrete: The Ericsson example – PROPS VPR 2.0

In this section we will describe how PROPS VPR 2.0 works and how the PROPS-model has been integrated into it, and also present some of our own ideas and suggestions.

It is the PROPS applications that are modified in VPR. As we wrote in section “What is PROPS?” our mentor said that:

“PROPS VPR has given the PROPS applications a face.”103

101 Wulf et al. p. 9
102 From telehonecall with Lars

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The integration of PROPS in PROPS VPR is done on two levels:

- The user interface level
- The template project level.

User interface level:

The standard product, Protocol, has got a PROPS layer where buttons, colors, icons and way of working reflect the main ideas in PROPS. For instance, when inside a project, the "propsified" version, PROPS VPR, has a menu button called Organization, as opposed to the standard product that has the button Directory, where all the project staff is listed. For PROPS VPR it's not just a list of people. Instead you can structure the project staff into different groupings reflecting responsibility, authority, competence, relations, etc. that is significant for PROPS.

One type of grouping is Project Functions, Project Steering function, Project Execution function and Project Management function, which show the different responsibilities in and outside the project. Then there are Teams, Development Team, Testing Team, or even Entertainment Team, where you can group people anyway you like, just to show how the project staff is working together.

A Project function can contain both persons and teams. Teams can contain persons.

Moreover, the personnel can be assigned to different roles. For a user that is familiar with PROPS this is very important since he/she is looking for the possibility to show how the project resources are organized.

There is another function called Workflow that is also part of the PROPS layer. It has the possibility to handle such important PROPS items as Tollgates, Milestones and Activities.

Template project level

The particular with PROPS VPR is that such a PROPS application can be integrated in a template project. This integration requires no coding and can easily be done by any VPR user. The most important functionalities for this purpose are the Template function and the Attachment function.

- The template function allows you to create a project room, "furnish" it with all you need of library folder structure, workflow, project roles, etc. and then make an endless number of copies of it. Then the project manager doesn't have to start

103 Said by our mentor at Ericsson.

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from square one every time he starts a project. He can re-use
the knowledge that is built in to the template.

- The Attachment function allows you to attach documents and
  links to, e.g., activities, milestones, and roles. When the user
  wants to know about a specified activity, he just clicks on the
  link that goes to the documented PROPS application. If that
  PROPS application is on a homepage, the link can lead to the
  very spot for the information. The user doesn't have to browse
  or search for the activity description. If there is a document
  connected to the activity, a document template can be attached
to it, thus putting it in its context instead of in a folder.

Today PROPS is visibly integrated into VPR, especially if the user
chooses the template “General PROPS” as a base for their template. If
the user chooses this there are explanations for all the projectphases, the
roles, the milestones, the tollgates and so on. The terms used today are
very much related to PROPS, for example, the names of the, Project
Performance Indicators (PPI's) and the aspects in the Project Scorecard.

Besides for the descriptions, there are also many links where the
user can read more about the chosen topic. There is also a link at the top
of the window to PROPS online. When clicking on this, the user comes
directly to the PROPS online home page.

We think that it could be a good idea to be able to see where the
project is in the PROPS-U in order to enhance the understanding of the
project as well as of the PROPS-model.

We think that it could be an improvement to develop technical
support for the different diagrams that PROPS supports. There is a
support for doing a risk-analysis, but we think that it could be useful to
develop features for Work Breakdown Structure (WBS), Organizational
Breakdown Structure (OBS) and Resource Diagram, as well.

The use of colors should follow the color codes in the model. For
example all the activities aren't always yellow, so in these cases there
should be a possibility to choose the color.

Another appreciated thing we have heard of during our meetings
and interviews is that people will save time both in meetings and in
writing reports when using PROPS VPR. One sponsor said explicitly
that he now knew exactly what to ask for, after he had seen the Project
Scorecard. He also said that it wouldn't be necessary with so many
progress reports, because now he could go to the project home page and
check what was going on. He even mentioned that if the PM:s would
write a lot on the descriptions of the PPI it even might replace a
progress report.

Except for a number of details that could be done for improvement
we think that PROPS VPR is a good example of how to merge a project

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management model with a VPR. This is because it adds to the knowledge about PROPS without annoying the user and there are various possibilities for the user to learn more if and when he or she wants to do so.

We have experienced what it is like to work more hands-on with PROPS VPR when adding a template project. The demands on the model as well as the VPR are explained in the next section.
3.5 The demands on the model and the VPR for adding a template.

We have talked about how to merge a project management model with a VPR. In PROPS VPR we have added a template project. This means that we have made a "wizard" for a work model. When doing this we discovered some things that are necessary for the model as well as for the VPR for facilitating the adding of the template.

The demands on the work model found to be the following:

- It has to be concrete.
- The facts have to be very organized.
- It should be in a digital form. If it isn't, there will be a lot of writing to do for the person who has to enter the template.

It is to be recommended for the person adding the template project to have some basic knowledge about PROPS. It might otherwise be confusing to understand in what order everything is done. It might be easy to mix up the names of the project phases and the activities as well. Using the template will be easier than adding it since all the first hand information is already in place in the template. This is the case with PROPS VPR at the moment.

The demands on the VPR, from our experience, are:

- It has to be so easy to understand that a user without any knowledge about the model will still be able to understand how to use the VPR and by using it gain knowledge about the model without really realizing it. This may be accomplished by the user using the vocabulary of the model, for example, but such in a way that the user understands what it means without having to put any extra effort into it.
- The VPR has to be very flexible. It has to be easy to change when you have written or done something wrong in it. Sometimes the user might write things in the wrong order, then he or she shouldn't have to delete everything and start over again, but rather there should be features to facilitate changes and corrections.
- It has to be easy to see what is done at the moment. If there are any doubts about this, it is very possible that the user may enter the same data more than once.

Another difficulty lies in making the template projects. Are they supposed to be changeable or not? Our first thought is that they should be changeable.
"...expert human work should primarily be supported and not regulated or automated."

Other thoughts occurred over time. If people can change the template projects, then they might change them so much that the main purpose of them, the standardizing function will disappear. This would lead to a VPR with too many different templates for the same thing, and that wouldn't be good. One of our mentors at school also mentioned that people find it secure to have "checklists"; if the managers follow the checklists, they have the checklist to blame if something should go wrong. It could be easy to use a template as a checklist, but as our mentor at Ericsson says, checklists are history, and therefore they must be changeable.

Our suggestion to this would be to make the templates changeable to a certain degree. Which degree would be up to every "template responsible person".

There should be support for the VPR in the organization. It is easier for the PM:s to start using the VPR if, for example, the sponsor supports the idea as well as the team-members.

These demands are not big obstacles. Adding a template is not that difficult, as long as everything is clear and understandable, both in the VPR and the model.

In this chapter we have talked about what we have found during the entire semester. We have noticed that there is a need for both a VPR and a project management model. We have also seen that it is a good idea to combine them, both for the user and for the organization. PROPS VPR seems to us to be a functional example of how to merge the two. When stating this we have also thought about what a VPR could look like in the future. This is described in the next chapter.

104 Wulf, Gryczan, Zullighoven, Process patterns p. 1
105 There will be a template responsible person for every template in PROPS VPR
4 Our thoughts about VPR:s in the future

In chapter three, “Project managers and their tools-Designing for practice”, our reflections from the field are discussed. We agree that there is a need for VPR:s, but what should the design look like? In this chapter we will bring together the results of our research and discuss the matter. We want to call attention to the issue that it is the user that has the greatest knowledge of what he/she wants and needs as support, and in the end he/she is the one who will choose what to use and how, and what not to use.

The most important thing we have discovered is that the VPR should be flexible. Every team should be able to choose what features should be included. In doing this, an understanding for the program emerges and people get more interested and will be more likely to use the VPR in the future.

“How much are you supposed to have there in the beginning? You may inhibit the user...”

There could also be a possibility to make a homepage of ones own, a personal space where you could have personal links and documents. Having a room like this could also make people use the VPR more. In this personal room we think that people could have a toolbox, and the user could then add the tools that they would like to use to their homepage. This would make a very personal and flexible place. One informant expressed that he wants to customize his own menu. This is to simplify his everyday work but we can also recognize the relevance of this idea from an earlier course during our MDA education. We read about the importance of having and showing one’s territory. Showing one’s territory is something instinctive. It can be seen for instance when people want to use logotypes at their project homepages even if it’s not recommended within Ericsson. During several interviews and meetings we have heard the question “Can I place the projects home page here or the logo?” when talking about PROPS VPR. Torsten Malmberg a Swedish scientist in the area of human ecology, writes:

“Naturally you ought to know or get knowledge about a certain area in order to be bounded to it. Further, you should already have use of it or have the hopes of making use of it and that it could be some sort of reserve for yourself or your group. And of course it is in your own

106 See appendix, “Future customers”

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interest to communicate your pretensions to the others, which you do through markings.”107 (Our translation)

Having a territory of one’s own adds to one’s personal well-being, but today it isn’t that easy to maintain the boundaries when it comes to the virtual space. Some need it more than others:

“But the human being can not always personally guard her area, and then it would be useful to have all the artificial replacements like fences, walls, bars, signs and flags. Graffiti, i.e. scribbling, is surely an expression of youngsters territorial needs and those of others who have lack of own space.”108 (Our translation)

Could it be because Ericsson is such a large company and thus the risk of becoming a tiny speck in huge crowd is obvious, that you have this need to make your own space visible. Malmberg writes about Russian collectives where differences in yield are enormous. As one reason Malmberg mentions:

The collectives are huge, impersonal, unnatural, forced units, where you cannot directly see the results of your own work and don’t get the exchange of it in comparison to your stake. The private disposed cultivation plantation which of course is identical with an economical territory, all of this is diverse and you can see the result.”109 (Our translation)

…or is it that simple that we need an identity? As a main part of social territorial behavior:

“…one scientist places the “feeling of identity” as number one and another scientist adds that such a feeling is fundamental for human functions.110 (Our translation)

Malmberg cites an architect, R J Martin, who says, “Territory is identity”. These quotes might help us understand the PM:s who want to mark their project among all the thousands of projects that exist at Ericsson. Making an icon and a homepage for the project could be done in the beginning of the project, as a part of a start-up. With this we are not implying that the official Ericsson logo should be deleted, but rather that it could be complemented by something unique for the individual project.

We have noticed that a lot of our informants have talked about that people won’t use the homepage. One informant said that the idea with

107 Malmberg, p. 25
108 Malmberg, p. 28
109 Malmberg, p. 47
110 Malmberg, p. 130
the Project Scorecard seemed very nice, but the difficult thing would be
getting the sponsor look at it. This is why we suggest a meeting in the
beginning of the project where the management explains that the VPR
will be used, and how. If a meeting not is possible, it should be made
clear in some other way, for instance by mail or phone.

We believe that Ericsson should recommend PROPS VPR as a
company program to be able to put as much effort as possible in it. You
would then see VPR as a common way to gain knowledge and to use
the PROPS model. A risk however is that it is the PM who is
responsible for the VPR and what is shown there. If the information
isn't updated, or if it is wrong, or if there is no effort put into it, the team
members will lose their interest in using it very quickly. The same
things will happen with the documents, if they are badly organized and
hard to find, the users will prefer sending an email for getting a copy of
a document instead. Then it won't help if there have been directions
from the management to use the program.

One thing that we think will be important is possibilities and
support for communication. An idea for aiding communication could be
to use a web camera for meetings. For making the important face-to-
face contact possible, a web camera could be a substitute for actual
shared physical space. Both formal and informal contact is important
for making teamwork work. There could be a chat function for making
it possible for people to interact more informally. But the formal way of
communication is important as well, for example the forums and the
information that is seen on the project home page of VPR. Hightower et
al give the advice…

"Organizations using virtual groups should be wary of ad hoc groups
and attempt to foster an environment that encourages informal face-to-
face contact when possible."111

Hightower has two main findings, first that virtual groups exchange
information more effectively than face-to-face groups, but second that
ad hoc, virtual groups exchange information less effectively than face-
to-face groups when information load is high.112

We have discovered, however, that with having information on the
project home page people will talk about more adequate things. For
example, a project sponsor said during a test of Project Score Card, that
he wanted to call the PM:s of some projects, but now he knew what to
ask them about. He could ask about the important things immediately,
which makes the formal meetings more effective as well. Opper and
Fersko-Weiss talk a lot about this issue and say…

111 Hightower, p. 214
112 Hightower, p. 212
“No electronic gathering will ever replace the experience of individuals being together in a group. For this reason, it is recommended that some face-to-face meetings be held even while groupware is being used.”

Other ideas for the future:

- In some ways the information in a VPR should replace other ways of reporting. The involved persons don’t think it will be efficient to have several different places to inform about their results on.
- Drag'n'drop possibilities ought to be evident. The user shouldn't have to use extra effort to figure out what to do to repair the damage if something goes wrong. It should be very easy for the administrator to change and move for example activities, milestones and tollgates on the progress bar.
- There should be possibilities for describing how everything is going. For example, the person responsible for an activity should have a place where it is possible to write down the progress. This is something that a lot of PM:s have talked about during our meetings. Maybe VPR could even have a Project Scorecard for that too. A similar idea we got from our informants is that it should be possible to follow up action points which have been decided at a meeting.
- There should be an activity log towards the customer. Something that shows what contacts have been taken by whom and with whom, and what happened.
- We have got information that people want to know easily and fast when a document is approved. This could be done by showing a small symbol.
- The PM:s want to have the ability to get a clear view of the budget. The suggestion is to make it as a graph. The graph ought to be generated automatically from prewritten data. We saw a good example of this when we visited a manager.
- Maybe there should also be a mobile solution, WAP.
- Simulating the project should be possible. Alessandra Agostini et al. give proposals about the future that we think could be interesting. One example is…

“…effective tools for creation of process modeling environments exhibiting the following properties: to simulate the process before its execution.”

113 Opper, p. 45
114 See appendix, “The Reference Group”
115 See appendix, “Project manager, EPK”
116 See appendix, "Project manager, EPK, focus on….."
In the literature we found a lot of flashy functions that could be added here, but we think that a toolbox for these “endless functions” must be developed and ought to be clearly visible and easily accessible if the user wants it.

Summarizing all this, we would like to see an even more flexible, self-explanatory and more communication-supportive VPR in the future. The flexibility is very important; as no one is going to use a program that doesn't improve his or her work situation, and inflexible tools that can't be adjusted to suit the situation and the user tend to hinder more than help in the long run. Target group adopted, use case adopted, flexibility, communication, access to relevant information and plainness are keywords for the future VPR.

These are our thoughts about the future VPR. In the next and final chapter, “Conclusions”, we offer a summary of our analysis.
5 Conclusions

The Ericsson organization has had some problems during this spring; of course this has affected our work and our feelings. There has been an uncertainty for all on-going projects, concerning if they should continue running or should be shut down. We have noticed that there is a lot of bureaucracy in a big company like this, and when reorganizing it can get very confusing.

As we have said, a lot has happened during our semester at Ericsson. The new version of PROPS VPR 2.0 was delayed so we had to limit our research a bit. We had planned to work more hands-on with the product PROPS VPR. We had also planned to make more tests, but because of the delay this has unfortunately not been possible.

Because of our traveling, we have learned to plan our work and to be efficient. The fact that we were introduced to PROPS VPR at a very early stage has influenced us in our fieldstudies. We have had difficulties in making distinctions between fieldstudies and design, because the design-thoughts have followed us during all meetings and interviews. This was the best way of working, since we already had a design to proceed from, and we think this way of working is very common in the software industry.

Still, we are certain that a program like PROPS VPR is necessary in a large organization like Ericsson. We think that communicating is very important here. Although it might be difficult to develop a tool that merges a project management model with a VPR, it is worth the effort if you gain knowledge and information from it within the company. The user shouldn’t have to fill in the information at several different places though. It was the largest apprehension our informants had.

“Can this replace something? I.e. Time Schedules, can MS-Project be expelled? Can this replace the Progress report...”\textsuperscript{118}

They don’t want to fill in both, for example, Project Scorecard and a Progress Report, in different tools as well.

The demands on the model and the VPR are high, however. Both of them have to be very easy to understand, otherwise people won't use them. These things are very important to remember. One way of merging a VPR and a model is adding a template project. Through our experience there are things to think about when adding a template: The names used in the model have to be consequent and follow the standard of the model. There ought to be a clear coupling to the model, and very

\textsuperscript{118} See appendix, “The reference group”

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clear what happens when, in the project. The easiest way to fill in a template is when the information that should be transferred, from the beginning, is digital. An overall picture of the model, always present in the different stages of the process, would be helpful. To easy get information about where you are in the process of the model would make the workflow more evident.

The tools have to be flexible, because if they demand a lot of the user and give the user no freedom they won't be used either. To develop a personal page which the user could “furnish” as he/she likes is something that we have heard from most of the informants as an important and desirable feature. There you could save shortcuts to the most used parts in, for example, to the project management model.

To merge these two important tools into one is an always ongoing process, because both techniques alter as new knowledge develops. The knowledge in the model must be easy to reach from the VPR. If the information is linkable you can use it in a more flexible way, which makes the product more suitable for future development.

We think that the Ericsson example, PROPS VPR, is a good solution to this problem. The software has been chosen with the idea of further development and, from the very beginning, in order to work in combination with PROPS. The support from the company is probably crucial for whether the tool will be used or not. The model, PROPS, already has it, but the PROPS VPR doesn't. Our suggestion is that, as with other tools, there ought to be a recommendation from the company to use PROPS VPR.

Studying at a real company has been very interesting. We have discovered the difficulties with working at a company as big as Ericsson as well as the advantages. Just being a part of the culture has been an experience, and understanding it could be a whole thesis by itself. This is why we have explained so much for giving the reader a background, a basis for understanding our thoughts and suggestions. Hopefully we have succeeded in our intent of explaining things so that everything has made sense in the end.

We will end this discussion with some words by Norman that have been a guidance to us during these three years in the MDA education, and to underscore the importance of flexible technology.

"Even when the technology is predicted properly, it is rare that anyone truly understands its real impact, how it will be used. In fact, I use the word rare just to be safe: I have never seen a prediction that was correct about the usage."119

119 Norman, p. 186

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Spectral, http://www.spectral.se/

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### Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BIT</td>
<td>Blekinge Institute of Technology</td>
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<tr>
<td>CMISC</td>
<td>A tool developed at the Ericsson office in Karlskrona/Ronneby. The letters stand for Configuration Management Information System Control</td>
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<td>DHTML</td>
<td>Dynamic HTML</td>
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<tr>
<td>EIP</td>
<td>an Ericsson department in Kista.</td>
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<tr>
<td>EPK</td>
<td>The Ericsson department in Karlskrona and Ronneby</td>
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<tr>
<td>EPMI</td>
<td>Ericsson Project Management Institute, the department we have studied.</td>
</tr>
<tr>
<td>ERA</td>
<td>Ericsson Radio Systems. The Ericsson department to which EPMI belongs.</td>
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<tr>
<td>HTML</td>
<td>Hyper Text Markup Language, used for making websites</td>
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<tr>
<td>MDA</td>
<td>The Swedish acronym for People, Computers and Work, Människor Datateknik och Arbete, a program at Blekinge Technical Institute.</td>
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<tr>
<td>MUD</td>
<td>Multi-User Dungeon. In the beginning text-based adventure games. Used primarily socially, but also used as support for collaborative work. ¹²⁰</td>
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<tr>
<td>OBS</td>
<td>Organizational Breakdown Structure. A diagram used in PROPS for showing the use of the personnel.</td>
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<tr>
<td>PD</td>
<td>Acronym for Participatory Design, a Scandinavian approach to</td>
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¹²⁰ Teamrooms: Networkplaces for collaboration. p. 332

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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td><strong>PM</strong></td>
<td>Acronym for Project manager.</td>
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<td><strong>PPI</strong></td>
<td>Project Performance Indicator</td>
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<td><strong>PROPS</strong></td>
<td>The PROject for Project Steering, a project management model used at Ericsson.</td>
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<td><strong>Sponsor</strong></td>
<td>A term in PROPS. The Sponsor is the manager who is commercially and financially responsible for the project's outcome.</td>
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<tr>
<td><strong>URL</strong></td>
<td>The address of a webpage</td>
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<tr>
<td><strong>VPR</strong></td>
<td>Acronym for Virtual Project Room.</td>
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<tr>
<td><strong>WBS</strong></td>
<td>Work Breakdown Structure. A diagram used in PROPS to show how the work is structured, to find the activities and show the estimated time.</td>
</tr>
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“How to merge a virtual project room with a project management model.”

Marine Karlsson and Anna Richardsson
B  Guide for evaluation of Virtual Project Rooms

We have taken the best of two professional evaluation guides and developed it to something that will suit us in our research. This is a template and we will note the answers on some other paper during our “travels” in the virtual world. Later on we will make a fair copy directly in the template just to get an “easy to read” evaluation. Afterwards we will write a summary and a conclusion of our work.

From evaluation guide:
EPMI Guide for evaluation of VPR systems.

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</table>
1. **First impression.**
   Is the product a VPR? Is it easy to understand and easy to get along by your own? Is there any ambition to adhere to PROPS or any of its applications?

2. **Overview over ongoing projects.**
   Does the product present any information on the total project portfolio regarding status, ownership, and the type of project and short descriptions?

3. **Level of details.**
   How much detail is presented for each project? Are the details presented within the product or are the details only referenced to as separate documents?

4. **Open and security.**
   Is it possible to specify who is allowed to see details at different levels of individual projects?

5. **Freedom, guidance and steering.**
   Are you allowed to structure the information you want to publish or does the product limit the amount the kind of information to show? Is there any guidance in the form of references to literature or WEB pages containing description of the project process you want to follow? Is it possible to adept the information structure of individual projects according to project specific demands, e.g. adding your own specific activities to be presented together with the others?

6. **Usability.**
   Is it easy to work with the product? Is the product well structured? Is it easy to find the information you are looking for? Is it easy to publish the information you want to share?

7. **Facilities**
   like Discussion Groups, Bulletin Boards, Mailbox, Support and FAQ etc. at different levels within the VPR (globally or specific project only)

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From evaluation guide:
Useit “Ten Usability Heuristics”

1. **Visibility of system status**
The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

2. **Match between system and the real world**
The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

3. **User control and freedom**
Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Supports undo and redo.

4. **Consistency and standards**
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

5. **Error prevention**
Even better than good error messages is a careful design, which prevents a problem from occurring in the first place.

6. **Recognition rather than recall**
Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

7. **Flexibility and efficiency of use**
Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

8. **Aesthetic and minimalist design**
Dialogues should not contain information, which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes
their relative visibility.

9. Help users recognize, diagnose, and recover from errors
   Error messages should be expressed in plain language (no
codes), precisely indicate the problem, and constructively
suggest a solution.

10. Help and documentation
    Even though it is better if the system can be used without
documentation, it may be necessary to provide help and
documentation. Any such information should be easy to search,
focused on the user's task, list concrete steps to be carried out,
and not be too large.

Our complementary questions

1. Document generating

2. Things that I cannot see or clear out

3. Others
C  The Damali game

*Purpose:* 
Damali game is a game for project managers and their team. The developers wanted to evaluate the game. The EPMI-staff wanted to get new ideas on how to teach Project Managing and we were just curious to get an insight in the project manager’s work from a different angle.

*Participants:*  
Developers: Students at Idékraft.  
Players: students and EPMI-staff

*Location:*  
Kista

*Date:*  
2001-03-20

*Disposition:*  
Introduction from the developers, reading the instructions, playing the game and evaluating. All lead by the developers.

*Résumé:*  
The developers started with a presentation of themselves and an introduction of the game. When they have finished school, called Idékraft, they have an aim at Project Management. During approximately 9 months they have been developing a game for project managers. The name of the game is Damali. This was the game we were going to try. The Idékraft students were very organized. We had 30 minutes for reading the instructions, after that we had 30 minutes for planning, and then 2 hours for playing. The game focused at teamwork and in our group we got an informal leader pretty fast. She had heard about the game before, so it is possible that this was the reason. While we were playing, another person became the formal leader who answered the questions after the whole group had been discussing. The game leader, one of the developers, was reading the questions and deciding how many bricks we got for each answer. The bricks were a reward we could get. She also had the power to give questions to certain participants, which one of us got to realize pretty fast when she only was listening and not participating in the discussion.

We had to sign a secrecy agreement; this is why we can’t give the details on how the game worked exactly. But the main idea was to build

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Appendix C 1(2)
a tower with bricks and get to the end of the game-plane within two hours. During the time we had to answer questions. The game was very well planned since it showed that the whole team had to be part of the game. It also showed that project planning is multi dimensional since it contained both building, getting through the game plan, answer questions with answers that the entire team were satisfied with and do it on time.
D Questions to Project Managers

Place:
Name:
Profession:
How many years in the profession?
Date:

- Are you working with help of PROPS?
- Are you using PROPS VPR 1.0?
- If not, what do you use instead?
- What is there that you can’t find in PROPS VPR?
- How is that program documented, Ex Word, homepage?
- Which roles are presented in the program? Document templates?
  Activity descriptions? Checklists?
- What ought to be improved in PROPS VPR?
- Do you think that PROPS-knowledge needs to be a part of PROPS VPR?
  In which area?
  In what way?
- Are project templates a good thing?
- Should they be changeable or not?
- What ought to be in a template?
E  Meetings

E.1. Our first meeting at Ericsson

The meeting took place at the office of Ericsson Project Management Institute, EPMI, Kista 2001-01-30.
Except for our mentor at Ericsson, Arne Sundh and us, there were the Project Sponsor, the PROPS-expert and our mentors from BIT, Yvonne Dittrich and Sara Eriksén.
Yvonne Dittrich started the meeting with a presentation of BIT and the MDA program.
The Project Sponsor first explained what EPMI is and what it stands for. EPMI is supposed to develop the management skills and efficiency. EPMI:s slogan is...

"Better projects, better business."

EPMI is a competence-center with PROPS as a base.
The department offers...
• Consultants which helps customers to develop PROPS in their organization
• Training, courses, workshops, seminars
• A network, “Project Networking”, with 2,500 members
• on-line support
• Project managers for hire
• Publications

EPMI has its main focus on Ericsson internally, 85%, but also externally, 15%, this because EPMI challenge their concepts on the market. Knowledge, influences and wishes from the external market will improve the product and if the concept is accepted externally it will also be good for Ericsson.
EPMI has 70 employees and two offices in Sweden, Kista and Karlstad, one in Kuala Lumpur and one in San Diego.

"Project leaders often feel isolated"

…said the Sponsor.
The PROPS -expert explained the PROPS-model to us. PROPS is a ...

"General model for project management and management of projects."

According to the expert Ericsson has a long history. How do you steer in an organization like this? The steering of project managing should
not block the process. This is a difficulty and often makes PROPS criticized. One has to be able to change directions deep down in the process fast, if the organization is changing. You may not lose the touch with the reality. The model must not conserve Ericsson’s work way. All the time it must be able to develop PROPS.

“The goal is to develop PROPS all the time. There is a continuous learning and ongoing change”

The first model of PROPS came 1988. After that two more releases has been developed.

People think that PROPS demands a lot of documents, but PROPS is just a model. The ambition with PROPS is to make a tool that supports and allows instead of restricting. PROPS should be a...

“A simplified picture of reality to sort out the chaos

If there are too many details you won't be able to see...

"...the wood for all the trees”.

PROPS is not detailed, the detail conserve, people will be afraid. It is important to tell the “Why” and “Where” for giving motivation.

"If you know why you get the ability to cut things that isn’t good."

Yvonne said, when we were talking about details, and why people want checklists in PROPS that...

"...Steering gives protection..."

Checklists can give the project managers a feeling of "having their back free." PROPS is a way of reaching the goal. Arne said...

"Checklists are always history, written in another time"

After this discussion the EPMI personnel explained the PROPS-model further. Arne presented all the functionalities of PROPS VPR,. There was a comparison with “Projektplatsen” which Sara told she knows a lot about.

According to Arne the availability of PROPS VPR is revolutionary within Ericsson; there is a lot of bureaucracy else. At the moment PROPS VPR is used by 2500 users and in 600 projects.

121 See, “What is PROPS” for further reading about the PROPS model.
We were discussing about roles and the PROPS-expert stated that...

"Taking decision in groups is a bad Swedish invention"

You always ought to have someone responsible. After discussing this Arne explained some of the new things that will come in the new version of PROPS VPR 2.0, for example:
- Multi Project view
- Scorecard
- Templates
- Risk analysis

This new version will be released at the end of Mars. EPMI wish to teach PROPS knowledge through VPR as a complement to the courses, which costs both time and money. What problems are there? Maybe it would be good to have education in interplay between PROPS and PROPS VPR? Yvonne pointed out that there is a difference between using a system and attending to a course. When you attend to a course you reflect and evaluate. Inger wasn’t that sure,

“...do you really know that, to do is to learn..”

Arne talked about the value of getting feedback from members in the help desk. Sara said...

"...to let the members give feedback is a little bit Scandinavian."

While talking Arne started explaining what he wanted from us. He wanted us to write help-function texts. Yvonne immediately said that it would be too big for us. Another proposal was that we, the students, could study how text about PROPS could be easily achieved in PROPS VPR.

"Using VPR will be the same as learning PROPS"

"Do you use VPR, you use PROPS"

...Arne said during this discussion. There are a lot of areas in PROPS that could be visualized in PROPS VPR.

We thought that this sounded interesting, but we decided to discuss the focus of our thesis more later on.
E.2. The reference group

*Purpose:* To discuss PROPS VPR 2.0

*Participants:* The reference group members, Arne Sundh, Anna Richardsson and Marine Karlsson.

*Location:* Kista

*Date:* 2001-03-06

*Disposition:* Presentation of PROPS VPR 2.0 and discussion among the participants.

*Résumé:*

First there was a short presentation of every participant. Except Marine and me, every one was working as project managers or sponsors within different parts of Ericsson.

After this Arne presented PROPS VPR 2.0.

There were many discussions about how to handle documents. Arne made it clear that VPR is not a document tool but linking to other tools like Eridoc is possible. VPR is more a substitute for all project homepages that exist within Ericsson.

PROPS VPR will be out in its second version the second of April. In later versions it will be located both on extranet and Intranet, but in this version it will only exist in the Intranet. There were also many discussions about security. Some projects should not even have their names publicized on the Intranet. This is supposed to be supported by a hidden-function.

Many discussions were about the interface as well. The word tag was hard to define. Maybe the word “keyword” would be a better solution? Discussion abilities could be available at the start page of the project, and maybe there could be a global forum on the first side. They were also talking about a function called “My Backpack” that would contain all information concerning one self.

Some asked if…

> “Can this replace something? I e Time Schedules, can MS-Project be expelled? Can this replace the Progress report...”

We, Anna and Marine, noticed that there were different types of Project managers. Some found it important to be able to communicate with every one in the project, some only wanted to use it as a tool for communicating with their Sponsors and some only wanted a tool for document handling.

After this meeting we understand that every Project manager at Ericsson will not use VPR just for this reason, but some are really eager to get it started.

> “How to merge a virtual project room with a project management model”

Marine Karlsson and Anna Richardsson
E.3. Tollgate 3 PROPS VPR

“Tollgate 3 is a pre-defined decision point in a project at which the decision is made to continue project execution according to the original or revised plan.”

The meeting was at the EPMI office in Kista 20-03-2001. The sponsor of the project, Arne Sundh, the PROPS-expert, Anna Richardsson, Marine Karlsson and the Marketing and sales responsible.

“A Tollgate assessment is an objective evaluation of:

• The business situation of the project and its outcome
• The use of resources in the organization and in the project
• The present project status
• The level of confidence and commitment among the project stakeholders.”

The meeting

• Business perspective. From business perspective of the project it seems very good and the future seems to be even better. Questions about what Ericsson owns and what Cerres owns of the software came up and the answer was that it’s taken care of. After 19/4 a new project for extern product developing of PROPS VPR can get started. A new business agreement between Ericsson and Cerres is in that case necessary and the question about who should be Project manager have to be solved. What is an external VPR? The matter was discussed for a while. How much is the license costs for a year to Cerres? Discussions.
• About Tollgate 4.

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122 Introduction to PROPS and PROPS Terminology p. 18, PROPS-Binders

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At this time VPR 1.0 become VPR 2.0. both for users and for the companies. Ericsson, EPMI, has to pay Cerres for the license.

- **About Tollgate 5 at 04-19-2001.**

  “Tollgate 5 is a pre-defined decision point in a project at which the decision is made to start project conclusion, based on a confirmed acceptance of the project outcome.”

What is most important, ready at planned date or that all functions are ready? The dilemma to catch up with final date is lack of resources. The coupling to PROPS on Line, Templates and Help texts must be done. *Confidence and Commitment.* Everyone at the meeting believed on the product and the decision is to continue as planned.

“How to merge a virtual project room with a project management model”

Marine Karlsson and Anna Richardsson
E.4. Future customers

This meeting was at EPMI, Kista, 2001-04-19. These customers wanted to know more about how well they could integrate their own PROPS-application into PROPS VPR 2.0. They had one person writing about the model for the moment and another that will enter data in PROPS VPR 2.0 later in the summer.

They wanted to know how well they could integrate a documentation program with PROPS VPR 2.0. Our mentor explained that the two different programs wouldn't interfere with each other. The two programs would more support one another because both of them are using URL:s on their pages. This makes it possible for the two programs to link to each other.

In the beginning of the meeting one of the customers said:

"The user has to gain something if they are going to use the tool."

One of the customers said about PROPS VPR:

"If it's possible to get rid of a web page administrator and if it supports project models, it is worth its weight in gold!"

“PROPS VPR 2.0 can make the amount of document less”. (For example, by using Project Scorecard and risk analysis, our explanation)

"PROPS VPR 2.0 doesn't have a lot of intelligence, but that's good, then you don't get locked up."

"It's not a planning tool either."

One good thing is that it's possible to inherit folders and documents when making a template project.

"Oracle is used because it is possible to update while the program is still running. This because no middle layer is used."

… our mentor says.

One customer likes the possibilities to sort the lists and the overall sorting methods. Web administrators have told him that it is not possible to do that on the web. But it is possible when using a data based application

Another thing that made the customers positive is that you can mix links and documents in the folders.
People often call EPMI, asking for a certain application. Having them as a part of PROPS VPR would seem like a great help!

The customers liked the ability to see the history of the risks.

They were also interested in the communication possibilities. Our mentor showed that there are bulletin boards for different levels in the program.

Another nice feature is the labeling possibility, adding a tag to each object. Here you can label for example persons, which means that if you are seeking a person with a certain skill, it is possible to search for this skill. Then you get a list of suitable persons and you can also see what they are doing right now.

One customer asked for the ability to see the "critical line". It is not possible now, but maybe something for the future?

Another thing for the future could be linking the risks and the aspects in Project Scorecard.

Our mentor and the customers were discussing different possibilities to link the two programs together. For example they were discussing the possibility to updating template documents automatically and creating documents directly in PROPS VPR, but using the other program as a tool.

More cites from the customers...

"Nice to get rid of a lot of documents!"

"How much are you supposed to have there in the beginning. You may inhibit the user..."

"The content is more important than buttons. One time I engaged someone to make a homepage. He used immeasurably much time developing nice buttons, but the content – was really lousy"

"I like to see everything in front of me..."
F Interviews at Ericsson

F.1. Project manager, EPK, focus on virtual communication.

The male project manager, PM, has worked as a project manager for some years in another company and for nearly one year at Ericsson, Karlskrona, EPK. This interview was performed at PM:s work office, Fri 23-02-2001 from 1.00 am to 2.30 am. Conducting the interview was Marine Karlsson and Anna Richardsson. This is a résumé from our project diary. The interview was audio taped. At this time we didn’t know anything about CMISC or document generating. This is a brief résumé of the interview.

The PM showed us a homepage for one of his projects. It is made by himself and contains among other things:

- A presentation of the project.
- Links to some project bibliography.
- Hot spot this week.
- An Action Points-list.
- MS – Link, to the plan of the project.
- Contact list, to the members in the project.
- News
- External and internal links that PM thinks is good.

He mentioned the importance to have a document administration system tailored to the homepage. He uses CMISC right know which is a program made of an Ericsson employee in the same department as PM. “This is a very simple system for review rounds between the project manager and the sponsor” 123, PM says. The document number generating is a good thing in CMISC; the numbering follows Ericsson standard. You can see who are responsible, author and the type of the document. ”...But you can’t do much more here”, PM says. “You should have a mark of which Milestone the document belongs to. ” It’s hard to delete files in CMISC.”

PM uses PROPS as project model. When he needs to check something he takes help from the text-based version but mostly PROPS on Line that he has a link to on his homepage. He misses a search function though, to be able to write in key words and get the answer quickly.

123 Ericsson expression, all specific Ericsson terminology is explained in the glossary.

“How to merge a virtual project room with a project management model”

Marine Karlsson and Anna Richardsson
PM has tried VPR 1.0 some as a project tool but found that some things miss. He wants:

- AP-lists
- Risk-analysis
- Resource contracts - who, when, how and how many hours?
- Which document should be done to which Milestone? Maybe you could show the status – red undone, green ready?
- Own templates custom made for the own department should be a good thing. The possibility to bring old experience from one project to another within the template is necessary.
- The database, how should it be constructed?
- The program must be far quicker than today.
- The Menu lists will MP construct custom made for him.
- PM wants shortcuts to different programs, just some small symbol.
- A WAP- variant, maybe text based, is it something for the future?

PM used a program called “The Brain”. It’s a program reminding on mind mapping. PM uses the program to see relations between documents, roles and functions clearer.

PM had a telephone list on the notice board. When we asked why he doesn’t use the list that he has in the computer he answered that glance at the notice board is the fastest way.

When we ask PM if he had other lists or likely besides the computer that he use he answer

“...you always have the block with you when you are out walking”

PM says that it is the project managers role that is difficult, and...

“It is the PM:s role that is difficult. What demand can I make on the Sponsor? Resource owner?”

“How to merge a virtual project room with a project management model”

Marine Karlsson and Anna Richardsson
F.2. Project Manager, EPK

*Purpose:* To find out how the tool CMISC works and to get an insight of a project manager’s work and what tools he needs.

*Participants:* Anna Richardsson, Marine Karlsson and the project manager, here called Lars.

*Location:* EPK, Ronneby

*Date:* 2001-02-27

*Disposition:* Conversation, with help of some written questions and tape recording.

*Résumé:*

There is a lot of document handling involved when you work as a PM. A tool for handling documents is needed. As it is now there are a lot of tools for many different tasks. Lars developed CMISC to support his own work. CMISC is putting some of the most important aspects together from most of the tools that Lars uses. No one use a tool or system to 100% and CMISC just take the good parts of many tools and bring them together as one, Lars says.

<table>
<thead>
<tr>
<th>Document handling</th>
<th>Time estimation</th>
<th>Test case</th>
<th>Error report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CMISC</td>
<td></td>
</tr>
</tbody>
</table>

CMISC is not a replacement for programs, it more or less gets them together in one spot.

He made clear that

“...CMISC is not a bookshelf, it is so to say a working place...”

He told us the whole story about CMISC and showed us the software. All of the existing tools today imply that the information is organized, the documents that don’t fit in are hard to handle. This brings a lot of problems. CMISC is an aid here. Lars hopes that PROPS VPR could take over this task in the future. As PROPS VPR is now he thinks that it is missing a lot of the features that exist in CMISC. CMISC is an in-house made program of this department and it won’t be allowed to be used much longer. Lars sees PROPS VPR as a good replacement.

“The web is about making the projects visible without any tools.”

“How to merge a virtual project room with a project management model”

Marine Karlsson and Anna Richardsson

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...PM says.

He thinks that the using area for PROPS VPR is unclear. Is it a project tool or is it a project management tool? For whom is it built? If it’s for communicating “upwards” how will we make the sponsors interested enough to enter the site?

He had a lot of questions but he still thinks that PROPS VPR is an interesting tool, especially if there was PROPS-knowledge integrated in it. PM made us observant to the fact that also PROPS is a 100% system and people don’t use 100% of anything so... what parts of PROPS do people really use? What is important to bring to PROPS VPR? Make it as simple as possible.

More thinkable notes from PM:

• What are you going to do with information that does not fit in anywhere?
• If you are going to make templates make a discussion place where users can evaluate the templates and you can develop it even better.
• Take care of the experts that are out there!

"The hard things will be to get the sponsor to look at it."

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Marine Karlsson and Anna Richardsson
F.3. Two Project managers, EIP

The two project managers we met at this meeting were Eva and Karin. They work at Ericsson department EIP, Ericsson Internet Applications. We met them in a conference room at EIP Friday 2001-03-02 between 10 am and 11.30 am. This is a résumé from our project diary.

We introduced our backgrounds and our selves to each other and the goal with this meeting. Eva and Karin described their ongoing projects and their project model “Total Project”. It’s a multi function project where several departments are included.

We agreed to take their new project and make a template in PROPS VPR 2.0. We are going to work with the Activities to get them into the templates. Different activities are connected to different Tollgates and Milestones all the way to Tollgate 5. Later on we will work with Deliverables and Roles. We are going to do this work because we want to study what it is like to work with the VPR 2.0. What is easy and what is difficult? Are the functions of the program satisfactory? How can PROPS knowledge and earlier experience be built in PROPS VPR, through templates?

Eva and Karin think that PROPS VPR 2.0 is a very good tool to illustrate time consumption and the complexity in a project.

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124 The names are assumed
F.4. Project manager, IAPP

The meeting took place at Ericsson, IAPP in Kista 01-04-26. We took contact with this PM, Peter\textsuperscript{125}, at the PROPS-course. We contacted him after the course.

This PM works as Product Owner and Project manager in a large subproject. He is building a reference portal for mobile devices, such as PDA:s and Mobile Phones.

For his everyday communication Peter uses the phone and the email, and it is a lot of meetings. Requirements have been played back and forward.

Peter has never used any documentation program.

He says that he is unstructured in his work. For example he doesn't have a timetable.

His team consists of, except himself, one technician, and one project manager for the developers and temporary members.

At his office there was a lot going on. There were papers everywhere. Despite the first impression and what he said himself, Peter could immediately find what he was looking for. Peter seemed to have a structured way of being unorganized.

There is a homepage for the main project. When we looked at it we saw a link to Eridoc\textsuperscript{126}. We noticed that they used the work model we are going to work with as a new template in PROPS VPR.

It was interesting because now we have talked to PM:s that work on different levels in the projects, both the ones that were demanding over a whole total project and a subproject manager.

Peter had looked at PROPS VPR 1.0, and got templates for project requirements. Peter would like if there were PROPS support in the documents, eventually with colors or the belonging of the documents in the Project Management Models “U”. Peter had seen the new version, PROPS VPR 2.0 and said that he liked the look of it, but hadn't had the time to investigate it fully.

One more time we got an insight in how many things a PM has to do. Even if he's just a PM for a small project, the tasks are many and hard to get an overview of!

“It seems interesting, but I have to sit down and get into it first.”

\textsuperscript{125} Peter is an assumed name
\textsuperscript{126} Program for handling documents at Ericsson

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Marine Karlsson and Anna Richardsson
G Interviews at other companies

G.1. Project Manager, AerotechTelub

This meeting took place at AerotechTelub in Växjö, Sweden 2001-04-24.
We met a project manager, Anna[^1], outside Ericsson to get a better view of different PM:s work and their view of Project Management.

Anna has been a PM for approximately 5 years. At the moment she manages 5 projects.

Many of the demands Anna have are because the company is certified to ISO 9000. Managing a project means a lot of administration she says. She has a lot of guidelines, PPS, and handbooks and for every project she discovers always something new in them. Some things are just appropriate for some projects. There seems to be a lot of quality revisions, both internally and externally. This means that revisers come revising the quality of projects, and that all required documents are there.

There are template-documents at the Intranet for all the documents. At this division there is a certain site containing all the templates, but Anna doesn't use it. She cannot explain exactly why, but it seems, as she doesn't like the order of how things have to be done. She also says that she doesn't have the time to really start using it. It seems as if she think of the tool as difficult. There are not a lot of people using the site. The purpose is good, but it has somehow got lost. The site is called document-support. There is no pressure from the management in using the site and the person who created it was an hour employed that has quit.

Every month Anna has to write a project report to the Line Manager and the Customer. She talks a lot with her Manager in the corridors and so on, there is no use of a tool for enhancing the communication with him.

We asked about her communication with her project team members. There are no formal ways for communicating with them. Especially not since they are all working at the same place. Although they are at the same place, Anna says, sometimes when she thinks about information that was evident she forgot to inform her Project Team, if she has team-members elsewhere she communicates with them by phone. She says that some people have tried to use web-based "bulletin-boards", but no one used them or looked at them anymore. Anna’s opinion is that this sort of communication has to be supported from the direction of the

[^1]: Anna is an assumed name

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department. Anna means that she doesn't have enough time for writing information. Sometimes in large projects where people are more spread and a project administrator is used it might be possible to use something like a web page.

Sometimes she works as a team-member in projects, "just to work". She explains that some project managers do that partially all the time. Anna has a lot of contacts with the customer and she works a lot with project administration of her projects.

At our question if she had any telephone lists and so on Anna responds that in her last office she had a wall in front of her desk where she had put phone numbers, order numbers and other information. In her present office she has put some of the information in the binders in the bookshelf and some lists she stores on the desk.

Anna doesn't use many other tools except for MS Excel, MS Word and MS Project. She isn't very fond of MS Project as it doesn't use man-hours; it is too much calendar based she thinks. She also uses an in-house developed tool called Doorman. It is an economy tool that is of much help. It is simple and easy to understand Anna says. Many PM:s in the company uses that tool to get rid of a lot of lists that are hard to understand. Anna also uses a calendar that is connected to the reception where she can add meetings and so on.

We asked if Anna would like to have all of these tools in one place, Anna answered:

"There is no such thing as the ultimate system, there will always be exceptions that doesn't fit anywhere."

Another thing that she misses is a forum for PM:s. She is attending to a course for PM:s right now, it is built on the information that PM:s want. She hopes that a network will come out of it as well. One question that always pops up during the meetings in the course: "What is a project?"

Anna would like to have a forum for the project members, but also means that sometimes there is too much information, and she worries about who will take notes, and will the members read it anyway?

We watched one of her project reports. It comprised a lot of text, mostly economy figures. She meant that it was one of the most interesting things for the managers. Some managers just want to see a curve.
G.2. Project Manager, Adera.

Adera
2001-05-04

Berit\textsuperscript{128} works as a Project manager at Adera. Adera is a company in the IT & Management, Marketing & Communication, and advertising area. Both IT- and other advertising projects are made. A project that is over five month is long lasting in this company.

Berit is from the beginning a traditional advertising project manager. Some time ago the company told the Project managers to lead both IT- and Advertising projects. Berit thought it would be fun and interesting to deal with IT-projects. After a while she discovered the difficulties. In the projects they were talking different language, and as a project manager you need different knowledge. The differences between an IT-project and an Advertising project was surprising to Berit. In IT-projects the main thing is that you must have more structure, because parts made of different people shall be composite and must fit together completely, in right time.

"I want to have control in my projects."

… Berit says."
The main part for control is budget, time schedule, the product, and knowledge to handle the team. The colleague of Berit whose background is in IT projects, doesn’t understand the advertising projects. There are cultural differences. Creative persons in advertising business are very unstructured, and must so have to be, because otherwise they are not able to produce. It demands to the PM to suit the information after what the team member bear to receive.

Adera has a project model that Berit use, Adera Project Model. It is good if the model is general and Berit thinks that you must be able to conform the model after the ongoing project. Managers and teams work differently structured, some want more and others want less.

"It’s good but you should be able to choose."

When we tell her about our findings in the area of VPR:s she says…

"A tool like this must be easy to use. It would be good if you could compose your own view and then increase and learn more by time."

\textsuperscript{128} The name is assumed
G.3. Project Manager, Alstom

2001-05-16, at 9.00 a.m. to 12.00 at Lisa’s office at Alstoms.

Alstom is a worldwide company in the business of industry pollution filtering for different kinds of industrial discharge. Lisa started at Alstom 1985, then ABB. She is a chemist engineer. She has worked as a Product Technology Manager for 9 years and as Project manager for 13 years. Lisa is now Department Manager and Project manager for Technical development projects. There are 4-5 projects ongoing that Lisa is involved in, most of them worldwide. In the projects there is from only herself working or up to five persons. No one work full time in any project. A project lasts from 6 months to one year, and then it will be reviewed. After this it can be ran up to three years.

The department produces filter system that reduce the discharge from incineration of different kinds. At Lisa’s department there is no own factory, subcontractors handle manufacturing. The work consists of developing and bringing together the resources needed to build a system after the customers order. The innovation cycles are much longer here than in software business. It may be 10 years between the shifts. Nowadays the primary used technique is the same as the Japanese used in the 70:ies. The market moves slowly.

The company is ISO 9000 certified and...

“...you can call that a Project Management Model.”

...Lisa explained. Her computer is equipped with Windows NT as operative system. On top of that she mostly uses Lotus Notes, which is the company’s internal program. Lisa is not allowed to install programs on her own, it is done by the Data Department.

Lotus Notes is built with a flap system where Lisa can model her own view. She writes the names on the flaps and chooses shortcuts to the databases and documents she will use. Lisa can also choose the view colors. She uses Lotus Notes...

- For **Mail** handling, globally.
- **Intranet**, both Swedish and global. Lisa uses the search function much.
- **Information** database for communication in her team, as a virtual homepage.
- As databases for common **documents**.
- **Talks**, for enhancement proposals to products or activity development. Members can write documents under different headers, for example, Technical, Products (which has sub headings), Suggestions and so on. Every document has a number. There are

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129 Assumed name

“...you can call that a Project Management Model.”

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responsible persons, quality managers, for every “header”. This proposal should be considered in the steering group. There is a star in the edge for the talks that are unread.

- To get instructions for the ways of **working**, for example, quality system – document templates, local, depending on the ISO 9000 certification. All “musts” are demanded but all ought/can are eligible. Everything according to different project is described even links and document templates are found here. It would be good if it was global but abroad they have not developed their process model so far, according to Lisa.

  “We are far ahead when it comes to project management in Sweden. Abroad you don’t meet your manager, you don’t speak with him (most often a man). The French leader style aims to ridicule and scare people to perform, it is so far from our way of working in Sweden. In other countries it is very hierarchical and formal. In Sweden we use the individuals, work in cooperative ways and have goal steering. In France and USA it is the boss that decides. “

  “…leadership is much territory thinking, “male pee of territory”, specially abroad”

Lisa talks about “female leadership” when you are starting from the team. It is important to get the team involved, to delegate a lot.

Something happened about 15 years ago. The little box on the chief’s door was no longer used. An organizational demand, T 50, telling that every project should halve the development time. Then the company started...

- Listening to people
- Start self steering teams
- Everyone on the “floor” was equal
- Smaller teams with many different functions in

This resulted in a need of a smaller amount of managers.

  “With every new reorganization there is a new manager, and every new manager wants to have his (often a man) own structure, that means, new types of documents.”

Lisa also uses…

- PrimaVera for time and resource planning.
- PAM, developed at ABB, for economy management. It is easy to get printouts from this program.
- Jeeves as a purchase system.

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130 A little box where you had to press a button to see if the boss was available or not, like a traffic light the box was telling you if you was welcome or not.
There are a lot of computer systems for different tasks.

Of course she uses mail, telephone, visits and videoconferences.

If you are new as Project manager you have to learn to find among all numbers in the lists. It would be good if everything was in the same place and if data could be generated from the budget system and purchase system and if one could generate different outputs, documents, based on this data, said Lisa.

“The economy is important, I wish there were more automatic generating of registered data”

Today she generates graphs in Excel by herself just to get an overview of the project. When we were talking we found out that it would be smart to have the points at the graph linked, to the view where you can read more about the statement.

Lisa can easily transfer her data to her Lap Top. She can get the company’s internal net everywhere through the phone net. She uses a custom free number. Then she replicates all the information.

There is a difference in large and small projects. In the small ones you, as the Project manager, must work by yourself. In the large ones you must be more professional. Lisa says that the profession is about...

“keep things in order”, “diplomacy”, “...When am I going to take the conflict with the customer and when am I going to let go?”, “The team should work against the same goal”

“It is like running a company in the company”
PROPS-studies

Mentor-meeting

Kick-off

Look at VPR 1.0 and PROPS online

Look for Literature

Week 3 - 4 0206 0207 Week 6

Check with the school mentors

Report 1

Video-sessions

PD- and Ethnographical studies

Report 2

0208 0214 0216 March 0410 - 11

Ethnographical Studies and Learning by doing

Writing

Delivering of our Thesis 7 June

Opposition 14 June

May June June

Timetable for the KRAM-project
Anna Richardsson, Marine Karlsson
2001-04-10
Ver 2

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Marine Karlsson and Anna Richardsson