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Designing a project management tool for project managers

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Designing a project management tool for project managers

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This thesis is about developing a project management tool for an engineering company, the Vahanen group. The Vahanen group has operated in the property management service business for over 50 years and the company is now based in Espoo. The Vahanen group uses project management software called ValueFrame.

The research objectives were to assess the current situation regarding project management within the company, to study any existing tools used, or not used, by the project managers, and to determine what is perceived to be the most important information that relates to projects. The research was conducted through personal interviews with employees of the Vahanen group.

The interviews revealed that the most important information concerned the duration and cost of the project, including expenses, and the participants of the project. The interviews also revealed some unnecessary sections of project management within the lifecycle of a project. Based on the results of the interviews, an example of what information the project manager page of the software should contain was created.

Keywords Project management, project manager page

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1 Introduction

This thesis discusses project management at Vahanen group. It is a research about how Vahanen groups employees' uses their current project management tools and what do they consider to be the most important financial information about their projects. Based on this information there has been created a project manager page to help with project management at Vahanen group.

1.1 Vahanen group

Vahanen group is an engineering organization, used to be known as Insinööritoimisto Mikko Vahanen Oy. It was founded in 1955 by Mikko Vahanen. Over its 50 years in business it has grown into a conglomerate group that has hundreds of employees. (Vahanen Oy) It is a property management service provider, which offers a wide range of multidisciplinary expertise. Vahanen group main office is in Espoo Leppävaara but it has also other units around Finland; Tampere, Lahti, Jyväskylä, Lappeenranta and Turku. Vahanen group also owns a part of Ficote Oy organization that operates in Russia and the Baltics. (Vahanen group)

1.2 ValueFrame

ValueFrame is a cloud placed tool for customer and project management. It is targeted for small and medium sized companies. (ValueFrame) It was founded in 2001 and is a part of TietoAkseli- organization. (ValueFrame) For Vahanen group it is the main project- and customer management tool that is being used throughout the whole organization. ValueFrame is constantly being developed and the goal of this research was to find ways to improve project management in ValueFrame for Vahanen group.

1.3 The reasons for research

Vahanen group is always trying to improve their project management tools. Over the past few years there have been many changes in the company structure of Vahanen group. Some companies have merged in to the organization and some companies have left. Now the whole organization is trying to find joint procedure. Because of this it is even more important to make the project management as easy and efficient as possible.

The financial management of projects has been difficult throughout the organization. A great deal of employees pays hardly any attention to the financial side of their projects and do not keep ValueFrames project page up to date. This need to change and one way of changing it is by creating a project manager page tool.

There is also a lot of information on ValueFrame but people do not seem to access it and one of the reasons for this research is to find out why. (Parviainen, interview 24 January 2014)

1.4 The goal of research

The goal of this research was to find what the most important information project managers and their superiors need from their projects. What already existing information gathering tools they are using and why. Based on these results the idea is to create a *Project manager page* for ValueFrame. Through this page project managers can follow the financial side of their projects better and superiors can follow their employee's activities

2 Project lifecycle in ValueFrame at Vahanen group

ValueFrame is the main tool used at Vahanen group for project management. Through it projects are created, work is logged on to them and they are invoiced. Here is the basic lifecycle of a project in ValueFrame:

- Order comes from a customer
- A project is created into ValueFrame based on the information in offer and order
 - Company, unit and project manager is selected
 - Project name, duration and service
 - Customer, invoicing address and contact person
- Subproject is created
 - Subproject name, duration and service
 - Resourcing of the subproject
 - Agreed hours and price is entered
 - Selecting if the project is hourly or fixed price
 - As many subprojects is created as necessary
- Project work begins
 - Project manager and other working on the project will log their hours on the project
 - Additional purchases or sales are entered into project information
 - Project manager can check the agreed hours and prices
- Invoicing
 - At the beginning of every month there is an "invoicing week"
 - Project manager goes through the time sheet and sales and purchases of the project
 - Decides what will be invoiced from the customer
 - Assistant creates and sends an invoice to the customer
- Project continues the same way until it is finished
 - Project manager checks the project, the final invoice is send and project is closed

3 Theory

3.1 Project management

“A temporary endeavor undertaken to produce a unique product, service or result” (Project Management Institute Staff 2008, 5) that is how *Guide to the Project Management Body of Knowledge* defines a project. A project is created to solve a problem and the end result can be a product, service, a solution or almost anything. All projects are different but they have common nominators; every project has a starting point, target, end date, specific performance requirements, defined scope of work and a budget. (Lewis 2006, 7) And every project has a project manager.

A project manager can be defined in many ways depending on the field in question. According to *Fundamentals of project management* project manager is someone who gets people to do the work that needs to be done in order to complete the project. (Lewis 2006, 30) This means that project manager, especially in big projects, is not the one who does the actual project work, or at least much of it, they are the one who decides what other members of the team do. Projects consist on performance, time, cost and scope requirements (Lewis 2006, 22) and it is the project managers' job to be in charge of them.

Project management itself is defined as “...the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the...project management process...” (Project Management Institute Staff 2008, 6) James Lewis in *Fundamentals of project management* describes part of management is “Project managers must understand the mission and vision of the organization first, then they must see how the project they are managing meshes with the organizations mission, and they must steer the project to ensure that the interest of the organization are met.” (Lewis 2006, 26) This means that the project manager is accountable of the people in the project, the result of the project to both their organization and the client.

3.2 Problem solving

Problem can be defined as a something that is between what is and what should be. (Proctor 1999, 50) In *Problem solving in organization -handbook* problem is defined as an unsatisfactory situation that can be solved in reasonable amount of time and resources. (van Aken et al. 2012, 78)

There are many different problem solving processes and methods example creative- and rational problem solving theories. (van Aken et al. 2012, 24-26) (Proctor 1999) When choosing what method to use the problem context and environment should be taken into considera-

tion. However almost all the different problem solving theories have these same steps; identifying problem: finding out what the problem is, defining goal: what is the wanted outcome of the solution, study different methods and processes and choose one: finding out what or which methods are the most suitable in solving the problem, gather data: finding out as much as possible about the problem and its environment, generating solutions: what could be done to fix the problem and implementing solution: trying out if the solution is effective. (Proctor 1999, 60-63) Going through these steps any problem should be solved.

3.3 Information needs

Business information needs is a process that converts data into useful knowledge and intelligence. Its purpose is to offer precise and rightly timed information for the support of strategic and operative decision making. (Roponen 2014, 7)

Defining business information needs are crucial for a company and it an important part of business intelligence, this means gaining “information to act in favor of a company”. (Vuori 2006, 1) “Information need can be divide into objective and subjective needs” according to Höglund and Persson (Vuori 2006, 3) Subjective information is what an individual thinks he need in order to solve a problem and objective information need is something that is generally thought to be needed in order to solve a problem. (Vuori 2006, 1)

There are many different methods used in gathering business information needs. The method should be chosen carefully and made sure it supports the information gathering and take into consideration the reasons why the information is wanted in the first place. The most common used methods are interviews, questionnaires and observation. (Vuori 2006, 1-8) The information can be from several sources and methods. (Roponen 2014, 8)

When gathering business information needs, a good start is by analyzing the current situation. From there it is easier to determine what information is actually missing. (Roponen 2014, 22) There are many different business intelligence process models that show how gathering business information process works. They have different number of phases and they emphasize different things but most have few things in common; they work in a circle where the last phase leads up to the phase the process started and they have phases for: defining information needs, gathering information, processing the information, analyzing, distribution, utilizing information and feedback. (Vuori 2006, 2) Without knowing what the information needs are data can not be collected and the process do not work without data. (Roponen 2014, 11)

There are many problems related to defining information needs. Most common problem is that people, who need information, do not know they need it or can not tell what information

they do need. Another problem is that people do not know what information is available. (Roiponen 2014, 20-21)

4 Research

4.1 Research method, targeted people and wanted outcome

The research was done as personal interviews throughout a four week period. The interviews were 10 to 25 minutes long and held during the workday in the office. For these interviews twenty people were chosen from different departments and companies throughout Vahanen group organization, however all based in the Leppävaara office. Eventually seventeen people participated in the interviews. Vahanen Environment Oy decided not to participate in the project and two other Vahanen Oy employees did not show up for their interviews.

The participants were six project managers, three members of overseeing groups and eight people that belonged to both of these groups. Project managers are the basic employees at Vahanen group they have their own projects that they are responsible of and use ValueFrame to manage them. The members of the overseeing group are superiors that don't have their own projects, unless they are also project managers, but are responsible for their employees, the project managers, and their projects. These people are usually the heads of their departments.

4.2 Why interview as a research method

Interview was chosen as a research method so that the information would be as precise as possible. Interviewing gives the research situation a possibility to change and expand questions and the subject to tell their motives behind their answers. Also it frees the situation so that it is possible to go deeper in to the subjects. (Hirsijärvi & Hurme 2006, 34-35)

More precisely a questionnaire interview was used. According to Tutkimushaastattelu this type of research is most suitable when interviewer wants to quantify collected data easily and the interviewee knows in advance what types of answers they will get. (Hirshärvi & Hurme 2006, 44-45)

4.3 The interview / questionnaire

In order to get the necessary information for creating the project managers page a survey was created. The survey had twelve questions which were designed to get the pros and cons of the current situation and what information about the projects was the most important.

On ValueFrame on the front page of every project there are indicators and key figures that tell the project manager about the financial situation of the project. These numbers are created from the information project managers insert to ValueFrame. The numbers are there to help the project manager to keep up with the profitability of the project.

Questions about the indicators and key figures

- Indicators
 - a. Do you know what the indicators mean?
 - b. Do you know how the numbers in the indicators form?
 - c. Do you follow the indicators?
 - d. How often do you follow the indicators?
 - e. Is the information on the indicators necessary to you?
- Key figures
 - a. Do you know what the key figures mean?
 - b. Do you know how the numbers in the key figures form?
 - c. Do you follow the key figures?
 - d. How often do you follow the key figures?
 - e. Is the information on the key figures necessary to you?
- Would some other information instead of the indicators and key figures be more relevant?
 - a. What?

Reports

In ValueFrame there is a tab that contains different reports that the project managers can use to follow their own projects, their individual projects or the superiors can use to follow their employees projects. There are;

- Unapproved Hours and Expenses
 - With this report project managers can see who and how many hours person has done on their project. They can also see expense that has been added to their project. Through this report a project manager can approve these enterings and the project can be invoiced.
- Subproject Report
 - This report can also be found on the project page of each project. Through this can be seen who, how many and when people have done work on a subproject.
- Project Follow-up Report
 - This report is similar to subproject report but with this the whole project can be looked at not just the subprojects.
- Employee Planned Hours vs. Actual
 - With this it can be seen how many hours had been planned and how many hours happened per month on a specific project per person.
- Subproject Planned Hours vs. Actual
 - With this report can be compared how many hours was planned for a subproject and how many actually happened
- Time Sheet Phase Summary Report
 - This report show how much work with a certain phase has been done for a certain customer and at what price
- Employee Profitability

- This report shows each employees profitability
- Uninvoiced Labor
 - This report shows how much of employee, project or subprojects' hours have not been invoiced
- Account and Project Profitability
 - Shows the profitability of customers
- Project Manager Profitability
 - This report shows a project managers profitability through their projects profitability
- Service Report
 - This shows the profitability of services provided to customers
- Do you use the reports in ValueFrame?
 - a. Yes
 - b. No, why?
- Which of the following “Project management” reports do you use?

Report	Yes Why / What information do you search	No, Why	I don't know what the report entails
Unapproved Hours and Expenses			
Subproject Report			
Project Follow-up Report			
Employee Planned Hours vs. Actual			
Subproject Planned Hours vs. Actual			
Time Sheet Phase Summary Report			

- Which of the following “Profitability reports” do you use?

Report	Yes Why / What information do you search	No, Why	I don't know what the report entails
Employee Profitability			
Uninvoiced Labour			
Account and Project Profitability			
Project Manager Profitability			
Service report			

- How often do you follow these reports?

	Less frequently the once a month	Once a month	2-3 times a month	Once a week	More often than once a week	I do not follow the report
Unapproved Hours and Expenses						
Subproject Report						
Project Follow-up Report						
Employee Planned Hours vs. Actual						
Subproject Planned Hours vs. Actual						
Time Sheet Phase Summary Report						
Employee Profitability						
Uninvoiced Labour						
Account and Project Profitability						
Project manager profitability						
Service report						

Reports 2

In ValueFrame there is another reports tab on every project page. From this tab it's possible to find reports that contain information about that particular project.

- Do you follow the Project follow up Yes/No
 - How often?
 - Do you know what the report entails?
 - Why do you use it?
- Do you follow profit sheet Yeas/No
 - How often?

- b. DO you know what the report entails?
- c. Why do you use it?

Resourcing

In ValueFrame there is a possibility to resource the time spend on a project. The hours planned to be spend on the project can be divided in subprojects and for the people working on the project. This is meant to help with project management and time and money control.

Do you use resourcing in your projects? Yes/No

d. How often do you resource your projects?

- Do you resource your projects yourself or dose an assistant do it?
- Which resourcing tool do you use?

At the end of the interview I asked if there were any other comments.

5 Analyzing the results of the research

The answers where collected into one document. Most of the questions were open so the literally answers were first collected into one and then combined with other same answers. The answers were looked as on entirety, but also separated based on the position of the interviewee. The interviewees were kept unanimous.

6 Indicators and key figures

In the first question the subjects were asked what do they think about the indicators and key figures. Most of the interviewees knew what do they mean and how they are formed. Some of the subjects looked at the figures for the first time but recognized and understood them.

The information found on the indicators and key figures was according to all the subjects important and relevant to the project. Most of the subjects also said that consumption of hours, percentage of completion and the need for invoicing where the most important things. Also the profitability of the project was important. Although many interviewees said that the indicator for this was bad and it does not change in real time and whit the development of the project. The subject said that especially linkage between two projects causes the indicators to be wrong.

The following of the indicators and key figures vary. Almost all the subjects said they glance at them every time they open the project page and more intensively about once a month. Six of the interviewees said they follow the indicators and key figures once a week or daily.

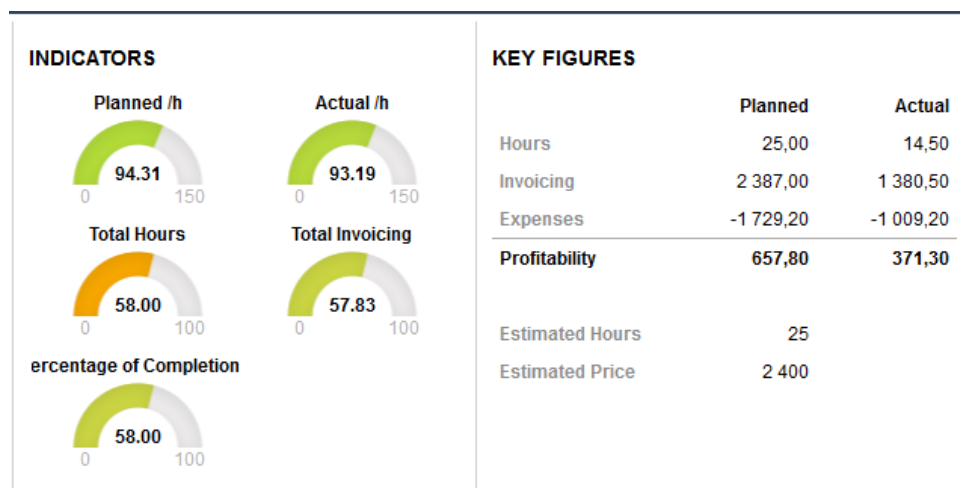


Illustration 1. Example picture of indicator and key figures from ValueFrame

6.1 Proposition for the front cover of the project page

Even though the information currently on the cover of the project page is thought to be relevant, the subjects gave their own ideas what could be even more important.

- The overall situation of the project should be visible right when the project page is opened; the percentage of completion, hourly rate of the people working on the project, profitability and the hourly accrual. Also a list of people working on the project and the amount of hours they have done and at what price. On the front page there should also be found the date, number, the amount of hours done and the sum of the latest invoice.
- On the front page there should also be a “real time side column”, that would show the latest entering on the project.
- Another idea was to have a diagram that would show how many hours have been done on the project per month.

The resourcing of a month per person should be shown on the front page.

7 Reports

In the interview there were questions about ValueFrames’ project management - and profitability reports. Of the seventeen people that were interviewed thirteen answered that they use reports found on ValueFrame. Four people answered they do not use the reports, because the information on them can be found in other places also.

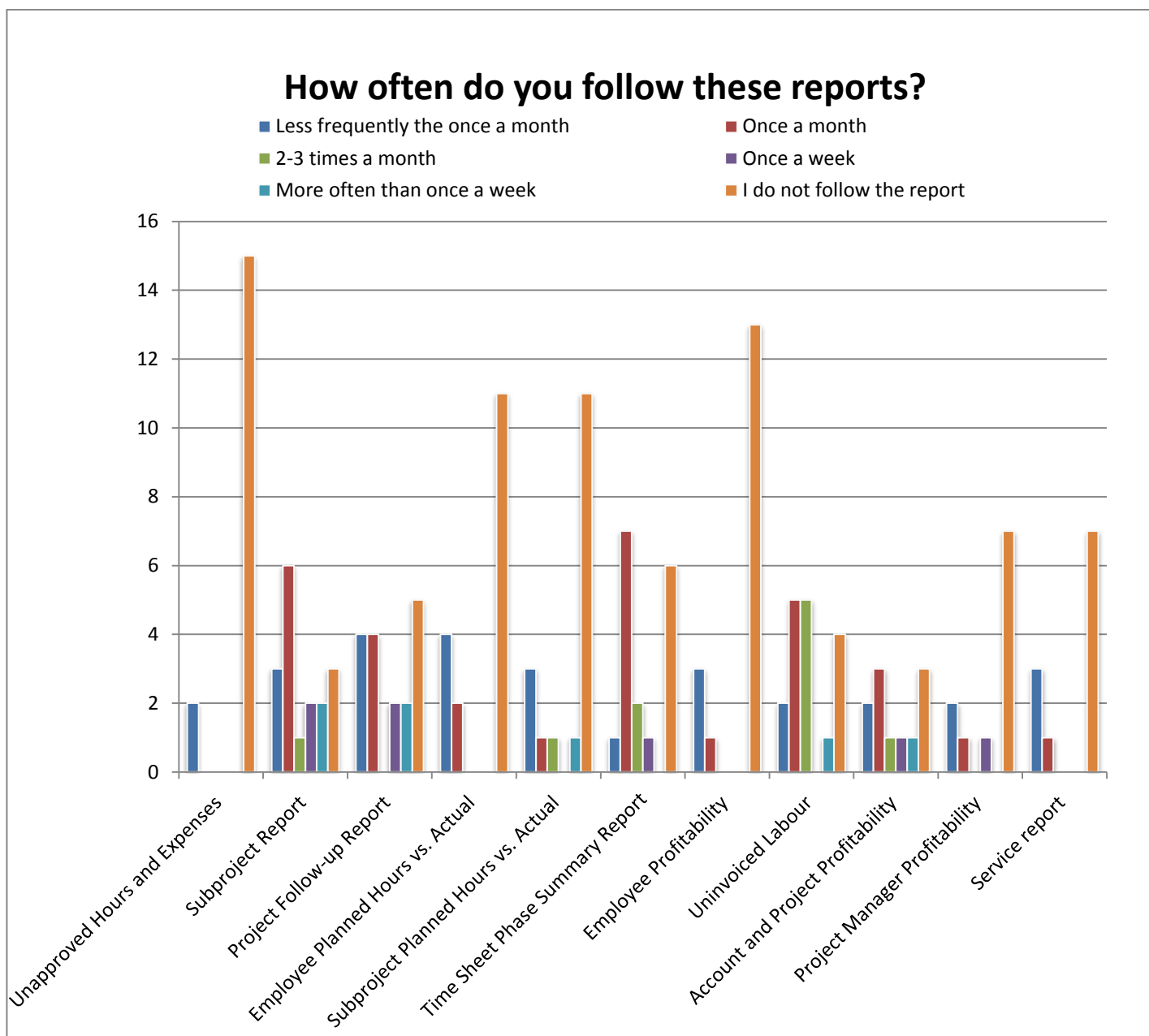


Figure 1. How often do you follow these reports?

7.1 Project management reports

7.1.1 Approved hours and expenses

Fifteen people do not follow this report and two follows less frequently than once a month. The subjects think this report does not add any value on the project and there isn't simply any use for it.

7.1.2 Subproject report

Of the subjects three said they never use subproject report and another three said they use it less than once a month. Six people follow the report once a month and five interviewees said they follow it more often than that. The interviewees searched from the subproject report who, when and how many hours has someone done for a certain subproject. From this report the project managers can also see what has been done during each hour. From the subproject report can the project managers also get a sense of the subprojects overall situation.

7.1.3 Project follow-up report

Five of the interviewees do not follow this report at all. Less frequently than once a month or once a month project follow-up report is monitored by eight people. According to them the information in project follow-up report can be found elsewhere in ValueFrame ergo the report is unnecessary.

Only four people said they follow the report weekly. The project follow-up report is used to see the logged sales and hours, projects hourly rates and how the project has stayed in budget. Projects profitability is also been monitored in the project follow-up report.

7.1.4 Employee Planned Hours vs. Actual and Subproject Planned Hours vs. Actual

Eleven of the interviewees do not follow the employee planned hours vs. actual report, four of the seventeen follow the report less than once a month and two once a month. Most of the interviewee did not know what the report contains ergo they do not follow it.

Subproject Planned Hours vs. Actual report was not followed by eleven subjects. Three of the interviewees followed it less than once a month and two once a month. One person told they follow the report once a month and monitors their teams resourcing with it. The other interviewees said the subproject planned hours vs. actual report was unnecessary and the same information can be found from the project page.

7.1.5 Time Sheet Phase Summary Report

Time Sheet Phase Summary Report can only be seen in ValueFrame by superiors or eleven of the interviewees. Five managers did not follow the report at all or less frequently than once a month. Three of the seventeen followed the report once a month and three more often than that.

7.2 Profitability reports

7.2.1 Uninvoiced labor

Seven of the interviewees followed less frequently than once a month or not at all the uninvoiced labor report. They thought that the project manager of small projects could easily see all the same information straight from the project and therefore the report is unnecessary. In the units that assistant checks the invoicing needs of projects the report is unnecessary.

Seven interviewees follow the uninvoiced labor report once a month and more often than that three people follows it. According to them the report can be used to see the invoicing need of their projects during the “invoicing week” (this is the first week of every month at Vahanen group). The interviewees think that the report facilitates invoicing’s operability; from it can be seen in unit level how much work is uninvoiced. Many of the interviewees who follow it thought that the report is working.

7.2.2 Account and project profitability

Thirteen of the seventeen interviewees said they do not follow the Account and Project Profitability at all, three follows is less frequently than once a month and only one person follows it once a month (hi is a case officer). Most of the interviewees felt that the report is unnecessary. The other case officers follow their own customers when there is need for it. Few of the interviewees thought that the report is not functional but if it was they would use it.

7.2.3 Project management profitability

Project manager profitability report does not follow four of the seventeen subjects. Less frequently than once a month it is followed by two people. They told that in small projects this report is unnecessary and they can keep up in other ways. Ten interviewees follow the report once a month or two-three times a month. One interviewee said they follow the report once a week. The interviewees said they monitor from the project manager profitability report projects overall situation, median hourly rate, profit and invoicing. Report is a good overview of the projects general situation.

7.2.4 Service report and employee profitability reports

Service report and employee profitability reports are only visible for eleven of the seventeen subjects. Seven of them do not follow employee profitability report, two follows it once a month or less and one follows it once a week. Among the interviewees the report is not con-

sidered functional. According to few of the interviewees the report needs changes so that it would be useful.

Seven of the interviewees do not follow the service report. Less frequently than once a month or once a month it is followed by four people. The report is considered to be important but the interviewees think that its reliability cannot be trusted.

7.3 Reports on the project page sidebar

7.3.1 Project follow-up report

Seven of the interviewees monitored the project follow-up report through the project page. Most of the interviewees follow it more frequently than once a month or if there is something unclear in the project. From the report, project managers monitor the logged hours and what do the hours explain, examine the projects future; has resourcing done correctly and how is the project going. The interviewees that did not follow the project follow-up report said the report is unnecessary because the same things can be seen when making invoices.

7.3.2 Profit sheet

Seven of the interviewees do not follow the profit sheet, ten do. Only one person said they follow the report more often than once a month, other subjects said they follow it frequently or at the end of a project. The profit sheet is used because according to the interviewees because it used to be the only report in ValueFrame that contained some information and therefore many people are used to using it. From the profit sheet the interviewees follow that the project stays profitable; prices, purchases and profitability. However most of the interviewees think that the report is unclear and complicated. They also think the report is unreliable.

8 Resourcing

Only one of the seventeen interviewees admitted they do not use resourcing in their projects. Fourteen project manager resources their projects themselves in ValueFrame and three other the unit assistant dose it. Only two of the interviewees use solely the new resourcing tool, eleven uses the old resourcing tool and four uses both of them. One of the reasons the employees use the old resourcing tool is that they have not been informed or guided the new tool.

The accuracy of resourcing varies from unit to unit. In those units that invoicing is done based on done hours, resourcing happens with lump sum for the whole projects. The figure is not usually changed or modified during the project. This leads to the indicators and figures to be

wrong with the project front page. In those units that the work is done with a specific sum, resourcing is used more carefully. In those units the subprojects and work phases are re-sourced precisely and are edited in the process of the project if needed. Resourcing is considered to be an important tool that helps follow the project situation.

9 Other comments

In the last part of the interview the subjects could freely tell their own opinion what they thought are the most important information that should end up in the project manager page. Depending on their own units and position it varies what the interviewees thought are the most important information about projects.

- The overall situation of projects should be easily seen and from one place.
- Information about project should be able to get in segments. Team and unit leaders should be able to get the wanted information about their subordinates so that they could monitor their projects.
- Hour consumption
 - Who, how many and at what price has hours been used
 - How many hours is still possible to be use
 - The median hourly rate
 - Separating subcontracted hours and their rates
 - Sales on the subprojects
- Invoicing
 - The date of invoices, sum, charged hours and purchases should be visible
- Profit
 - How the project is staying in the planned budget
- Projects offer and order
 - Should be easily accessed form ValueFrame
- Fixed price project should have clear projection for the future of the project
- Readiness of the project

10 Project manager page

Project manager page is directed for project managers, team supervisors and unit leaders. Project managers pages purpose is to find the most valuable information of a project from one place and easily. The information on the project managers page are based on the research conducted. The information that was claimed to be most important about projects has been combined into one place on the project manager's page.

10.1 The search criterions on project manager page

On the project manager's page there are search criterions that determine what information the page will show. Project managers and superiors will have a bit different criterions. Project managers can search the information according to these criterions;

- Whose projects do you want to look at
 - When the project manager page is opened, there is a menu where you can pick whose projects you want to examine. The person whose computer is in question will be the automatic selection.
- Do you want to see your own projects (the project whose project manager you are) or all the projects you have done work on
 - Do you want to see all the subprojects that are in your name
- The status of the project
 - All active
 - You can also choose a time period that projects have been active on
- Do you want to just see the main projects or do you want ValueFrame to open up subprojects
- Do you want on the list the subprojects form other units that you are subproject manager on
- Are the projects been search from Vahanen group concern, your unit or team

Superiors the criterions are more extensive. Along with the project manager's criterions superior can look up an entire team or unit on one search. This way for example team leaders can look at all their team members' projects at the same time. Superiors can also assemble groups from the employees and look at just their projects.

All the criterions can also be saved so that ValueFrame automatically remembers them next time.

10.2 Content of project manager page

Example picture 1 "What do the top of the Project manager page look like"

On the line there will be a summary of all the found projects. It assembles all the projects information into one:

- The number of the projects
- Hours, actual and resourced
- Median hourly price, actual and resourced
- Profit, actual and resourced
- Invoicing, actual and resourced

10.2.1 List of projects

Example picture 2 "What do the project manager page look like when the sub-projects are closed"

The letters in the brackets respond the letters in the example picture.

- Project number and name (A)

- Based on the information written on the project page in ValueFrame
- Profit (B)
 - Profit divided into two columns; fixed price subprojects and hourly priced subprojects
 - Projects actual profit compared to budgeted profit
 - Profit is determined according to the information written in ValueFrame. Profit is calculated according to revenue and expenses which are entered into ValueFrame as the project advances. Resourced profit is calculated based on the hours and purchases/sales and the actual profit is based on invoicing.
- Hours (C)
 - Numbers for the whole project; resourced hours, actual hours compared to agreed hours and invoiced hours
 - In the picture there could also be a color code if the actual hours exceed resourced hours
 - This way the project manager immediately notices this and can look into the situation more intensely
 - The hours are formed from the information entered into ValueFrames resourcing tool. All of the projects subprojects information is summed up together and that forms the resourced amount. Depending on what has been written in the subprojects information the hours will appear either under the fixed price or hourly priced column with other similar subprojects. Agreed hours will be counted according to the information entered into Status page on ValueFrames project page, this information is from the offer/order.
- Median price (D)
 - As a number the whole projects MP and after it budgeted MP
 - If there are linked subprojects on the projects the MP will only be formed from the subproject of the same company and do not take into account the linked projects.
 - If the actual MP is bigger than planned will it appear red if smaller or the same size in green.
 - Median price is calculated according to the hours resourced on projects and from the prices people do them. The prices are determined by a price list. The actual MP is calculated from the invoiced hours and their rates.
- Invoices (E)
 - As a number the resourced amount and how much has actual been invoiced and how much has agreed to be invoiced.
 - Date, number and sum of the latest invoice
 - The invoice can be seen in PDF form by clicking on it.
 - Invoicing's resourcing comes from resourced hours and their rates also sales and purchases affect the resourcing. The actual invoicing comes from the sum of the invoices send to customers.

On the same line as the project there also should be a link to the project folder, where are all the projects documents including offer and order. A certain project can also be chosen so that no matter what the criterions the sight will always show it.

10.2.2 Closer examination of individual project

Every project can be chosen and it will open a more detailed view of the project.

Example picture 3 “What do the project manager page look like when the sub-projects are opened”

Every subproject opens up on their own view that contains that subprojects information.

Those are:

- Number and name (A1)
 - Closed subprojects on grey background, active on white.
 - Other units linked subprojects on yellow background
 - These information are formed according to ValueFrame project page information
- Subprojects percentage of completion
 - Based on the resourcing of the project
- Subprojects profit (B)
 - Actual profit and resourced profit
 - Subprojects profit is based on hours, expenses and invoicing, which are entered into ValueFrames project information.
- Subprojects resourced hours, actual hours and agreed hours divided into three parts:
 - Own units hours, along with the median price (C1)
 - With a color code is the actual median price more or less than budgeted
 - Linked projects hours (C2)
 - Summary of all done hours (C3)
 - Along with the summary mention if the subproject is fixed price or hourly priced.
 - Next to the hours a list who has done and how many hours and how many has been resourced for them.
 - These resourcing and the median price is based on the information on the project page in ValueFrame. The actual median price and hours are based on time sheets. Knowledge if the subproject is fixed or hourly priced comes from the subprojects information in ValueFrame.
- Subprojects sales (G)
 - Sale on green if it has been invoiced red if not.
 - After every sale the sales status: invoiced, ready for invoicing or in progress.
 - If the sales is in green after it the number of the invoice it is on.
 - Sales are entered into the project page information in ValueFrame.
 - By clicking the sale it can also open the subprojects sales in a new tab.
- Subproject purchases (H)
 - Purchases are divided based on their status: invoiced, not invoiced or in progress.
 - Purchases are entered into the project page information in ValueFrame.
 - By clicking the purchases it can also open the subprojects purchases in a new tab.
- Subproject expenses (I)
 - Divided into purchases and other expenses and their summary.
 - Expenses are formed based on the information written into the project information in ValueFrame. Hours and purchases comes from information entered into the subproject, other expenses form other entered kilometers, day allowances etc.

- Linked subprojects
 - Yellow background
 - Show what company do the project belong to and the projects name and number.
 - Every linked project is its own line and has the same information as in the other subprojects.

If the person making the search has chosen the criterion “all the projects I have done hours”, their name will be seen in bold in the project information.

10.2.3 Subproject manager

When choosing the search criterion the person has been able to choose do they want to see all the subprojects they are manager of but not necessary the whole projects manager. If this criterion has been chosen will they appear the last on the list. The own subprojects are on yellow background in among the projects other information so that own subproject can be easily found.

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Illustrations

Illustration 1. Example picture of indicator and key figures from ValueFrame

Figures

Figure 1. How often do you follow these reports?

Appendices

Appendix 1. Example pictures 1-3 in pdf form.