

# **Evaluation of the use of Value Management in Projects and Project Models**

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*International Project Management*

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## **Abstract**

*The purpose of this dissertation has been to investigate if and to what extent Value Management is used in Swedish projects and to reveal any similarities towards the theory. An investigation was made first by comparing project models used and the theory of Value Management. Then to create a more reliable and real investigations a comparison was made using interviews with people involved in projects and compare this to Value Management.*

*To be able to define a reliable theoretical definition of Value Management since there is a wide range of literature related to Value Management the Swedish standard of Value Management was used. Four main key issues where defined, management style, positive human dynamics, consideration to external and internal conditions, effective use of methods and tools, these were then separated into subcategories to create the main areas for the investigation.*

*The investigation regarding the project models showed a high correlation to Value Management even if no one used Value Management in any greater extent then recommendations of some of the tools but still the correlation was high and most evident in the areas of Value, Customer focus, Evaluation, Communication, Teams and Teamwork, change and satisfaction and both project models show a high awareness of the importance of these issues just as Value Management does.*

*The same conclusions where made regarding the investigation of projects and the interviews with managers and showed that these issues have high importance to the projects. However some of the areas that showed low correlations were creativity which during the interviews showed that this can have a negative affect on project work of not managed correctly and here Value Management does not describe this as an issue. The concept of functions and the methods also had a low correlation which probably is caused by the fact that these issues are rather specific to Value management and therefore if not VM is used the correlation will be low.*

*To concluded the study performed showed a high correlation to Value Management and therefore has shown that this theory is used and its issues important to the projects even if it is not an official management theory used on the investigated market.*

**Key words:** Value Management, Project management, Project model



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## Foreword

This dissertation was written for and supported by Grandezza Konsult AB. This foreword will briefly explain the reason for the interest regarding this dissertation and give some information about Grandezza Konsult AB.

There is today kind of a project paradox. Despite many organizations get better and better skills in how to manage projects they seem to increasingly question the business benefits achieved from the projects. People struggle to find new ways to estimate and control value actually delivered. At the same time there is a quite well established project infrastructure, e.g. project management models and certification programs for project managers, in many countries and large organizations. There is also a well proven methodology and a European standard for value management, but these disciplines are rarely combined in an effective way.

Practicing as advisers and consultants in project, program and value management Grandezza Konsult AB is very eager to follow the trends in how organizations develop, implement and use models and tools for value control in their projects. We are therefore very pleased to have been given the opportunity to support this dissertation of how value management is used in projects and project models. We also find the observations very interesting and hope this might inspire other organizations to improve their ways of work and other researchers to further reveal the mechanisms necessary to ensure best value from projects.

Tomas Andersson, Grandezza Konsult AB



## List of Abbreviations

VM	Value Management
FA	Function Analysis
DTC	Design to cost
FPS	Function Performance specification
FAST	Function Analysis System technique

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## **1. Introduction**

Today when most organisations become more and more competitive there is a need to always be as efficient as possible and to be able to react to changes for demands or requirements to be able to survive on the market.

Many organizations feel that they need a higher exchange on their investments and are concerned that their organization does not deliver a high enough value to their customers which could jeopardize the survival of any organization (Grandezza Konsult AB, 2007). Value Management (VM) is a style of management which emphasise the importance of motivating people, developing skills and promoting synergies and innovation, with the aim to maximize the overall performance of an organisation.

Some of the benefits gained by implementing VM can be clear business decisions, better solutions to its customer by looking towards their real needs, improved understanding for the participants of the organisation regarding the organisations goals and an improved internal communication and increased understanding of the success factors for the organisation (The Institute of Value Management, 2007).

In USA, UK and many other countries VM has long been an appreciated tool for improved management and has evolved from being a process for product manufacturing into other areas such as services or administrative areas. However until today the use of VM in Sweden has been limited.

Some general benefits the can be gained from using VM in projects are better business decision, improved products and services to the customers through the focus of their needs, the members of the organisation or the project has an increased understanding regarding organisational goals and simultaneous enhanced communication and efficiency by development of multidisciplinary team work.

### **1.1 Research Purpose**

The aim of this dissertation is to investigate if and to what extent VM is used in Swedish projects, since the belief is that even if VM is not an official method used there may still be strong similarities to what is used to improve organisation's performance on the Swedish market. The investigation will focus upon how projects are performed but are not bound to any specific market or area since projects as a work form is used in all types of organisations.

### **1.2 Research Procedure**

To be able to do a reliable and credible investigation there is a need to see how projects are performed. Therefore the first part of the investigation will look towards some of the project models used on the Swedish market. The general purpose of a project model is to improve organisations work in projects and implement a common structure to each project. Two models have been chosen for the investigation and both project models have a wide range of users on the Swedish market. However even if the project models shows

how to work in projects there is a need to investigate the execution of projects to create a more in depth research, therefore the second part of the investigation will address people working with real projects such as project managers.

Since VM is a management tool with a wide range of definitions for different applications and areas a structure was needed for the dissertation to be able to focus upon some specific areas. The European standard of VM has therefore been used to clarify the most important aspects of VM which will be used during the investigation. The areas of interest is according to the standard what VM brings together and therefore separate it self from other management techniques and are defined as the key principles of VM.

- Management style
- Positive human dynamics
- Consideration to external and internal environment
- Effective use of methods and tools

These areas are used throughout the dissertation first to establish a review of the existing theories and then for the investigation in itself by using them as a foundation for the interviews and the theoretical comparison of the project models.

The research method used for the empirical part of the investigation will be qualitative interviews which will be recorded for later analysis. The reason for choosing qualitative interviews is that it corresponds well with the fact that this is a research done on a limited area and there are few strict guidelines on what to expect from the outcome of the investigation therefore there is a need to be flexible which can be done in qualitative research.

### ***1.3 Limitations and Delimitations***

In relation to the study some limitation and delimitations has been made. The dissertation aims to investigate the relation between the project models and VM and therefore this study should not be seen as a evaluation of the project models in any other aspect then the relation to VM.

The study will not include any comparison between the project models since the project models included much more aspects to project management, which is not addressed by this investigation and does not relate to VM.

## 2. Literature Review

The literature review will aim to clarify the definitions of projects, project models and VM and highlight the areas of interest. To be able to define VM in an appropriate manner the European standard of Value Management (Swedish Standards Institute, 2005) has been used as a structure for the topics investigated in this literature review.

### 2.1 Projects

*“A project is a temporary endeavor undertaken to create a unique product, service or result” (PMI, 2004)*

This is the definition of a project according to A Guide to the Project Management Body of Knowledge (2004) written by the Project management institute.

To this statement or definition some conclusions and interpretations can be made such as, that temporary indicates that all projects have a specified beginning and a specified end. The end of a project will be achieved when either the objectives of the project are fulfilled or it is obvious that the objectives can not be fulfilled and the project is cancelled (PMI, 2004). Other issues that can be related to the temporary characteristics of projects can be that if the opportunity or the market is time limited. Also the project team and its composition is temporary, the team is created for the single purpose of performing the projects and reach its objectives. When finished the team will dissolve and the participants will move to other assignments (PMI, 2004).

All projects are unique and create unique deliverables such as products which can be either an end item in itself or a component to another product.

The capability to perform better in certain situations in an organization or the capability to perform a service, are objectives that also can be included in projects (PMI, 2004).

Projects can involve one single person or thousands, it can be performed at all levels in an organization and can include different organizational units such as joint ventures and/or partnerships (PMI, 2004).

Projects are often related to an organizations strategic planning. Some examples listed by PMI (2004) for creating a project or why projects typically are authorized:

- A market demand
- An organizational need
- A customer request
- A technological advance
- A legal requirement



Some conclusions that can be made concerning projects are that they always exist in a temporary environment, projects can have similarities to the operation line in an organization but unlike the line of operation it has a specified beginning and an end. Every project is unique, since all project should deliver a product or service unique in itself it demands for the project to exist under the same circumstances. However this does not mean that we can not learn and develop they way we work in projects.

## **2.2 Project Models**

To be successful and profitable there is a need to become more efficient and organizations are constantly forced to produce their products or services with lowered cost and fewer resources used on less time and further more the organization must be able to react on the constant change of the market.

Projects are commonly used since it can resolve some of the issues with its flexible work form. However to be able to work effectively in projects a structure needs to be implemented. (Semcon, 2007)

This structure comes from a project model which has its purpose in creating a common strategy when working in projects within an organization. With a project model all project receive a familiar structure through the use of templates, checklists and tollgates. This procedure enhances the project performance, makes the start up process easier and more effort can be placed on the actual project instead of the structure surrounding it (www.projektplatsen.se, 2007).

Important to remember that a project model should not create more work but instead it should contribute to more efficiency when working in projects and relive the participants from unnecessary work in projects (www.projektplatsen.se, 2007)

### **2.2.1 Theory Project Models A and B**

This part of the essay aims to establish a general description of the two project models and how the function in projects. This theory is built upon literature received from the companies that develop these project models. It should be stated that this is a general description of the project models and a more in depth analysis in relation to VM will be performed during the investigation.

### **2.2.2 Project Model A**

According to theory material received from the developers a project model needs to create a structure, to focus on enhancing the overall line of business by coordinate all individual work contributions, outline a common terminology and be able to define clear roles and processes. The project model also concludes that a project model should be able to support the management of the organisations project portfolio.

Other aspects of a well functioning model is that it should function as an inspiration and support for the people involved in projects but at the same time also support project managers responsible for the entire project portfolio.

## **Perspectives of Project Model A**

Project model A has two different perspectives in which it describes projects. These perspectives make it possible to provide and describe the project work from different views.

### **The Business Perspective**

This perspective is about aligning all different efforts and contributions from the organisation to focus on the overall business direction, focusing on customer satisfaction and on effective and profitable use of resources.

### **The Human Perspective**

The most important asset in any organization is the individual employee. The human perspective of project model A is about how to recognize the importance of each individual employee. This recognition is vital for the development of a common project culture which is a prerequisite to have the most beneficial outcome from project management and from the total competence of the individuals in your organisation. To be able to gain a well balanced project culture the foundation should be built on a common terminology, shared understanding of basic concepts and a common view on leadership and team work.

### **The Different Steps of the Model**

Project model A uses a project life cycle model to ensure the execution of the project and that all aspects of the project are considered.

The life cycle model is divided into three different parts the project steering function, the project management function and the project execution function.

### **Project Steering Process**

This part of the Project model A is illustrated by the red part in illustration 1 in appendix 1. Projects always include a certain degree of business risk and therefore it is necessary to have a continuous involvement from the project sponsor. The project sponsor should have a clear view of the project performance and how its current situation affects the expected value and the outcome of the project.

The steering process is a process for decision-making at a strategic level as well as a monitoring process for the performance and should contribute with managerial support for successful project conclusion.

To be able to have a flexible project that quickly response to unforeseen change and to meet new or change demands the project sponsor needs to make certain decisions during the project life time, it is also important that the different types of decision are formal enough to ensure financial and business control of the whole project.

According to Project model A the following decisions should be made by the project sponsor:

- Tollgate decisions, decision regarding the general direction of the entire project at six predefined points of the project Tollgate 0- Tollgate 6.
  - TG 0, Decision to start project analysis (optional)
  - TG 1, Decision to start project planning
  - TG 2, Decision to establish the project and start the project execution
  - TG 3, Decision to continue execution according to original or revised plan
  - TG 4, Decision to handover project outcome to internal receiver and external customer
  - TG 5, Project outcome accepted, decision to start project conclusion
- Decisions on early start, decisions made at an early stage before the tollgates regarding how to respond to requirements to initiate work packaged early in the project
- Decisions to change the project scope due to unforeseen changes in the projects or its preconditions
- Decision to close down the project due to unforeseen changes for the business justification of the project

### **Project Management Process**

This part of the Project model A is illustrated by the blue part in illustration 2 in appendix 1. The Project management process defines the activities performed by the project management function during the projects life span. This is together with the steering process the managerial part of the project.

There are four phases of the process, project analysis phase, project planning phase, project execution phase and project conclusion phase (see appendix 1).

The purpose with the Management process is to achieve a business-focused and efficient project management with effective project performance and conclusion.

### **Project Work Model**

This part of the Project model A is illustrated by the yellow part in illustration 1 and 2 in appendix 1. This part of project model A is a description of the operative process of the project and provides a basis for planning activities and is a mean to visualize the project work for the project stakeholders. This part of the project model does not included as much guidelines as the previous parts of the model and is related a lower level which is more related to the actual products or services produced by the project.

### **2.2.3 Project Model B**

For project model B the foundation of the model lays in four different areas, first there is the human perspective. Whenever there is human involved there is of great importance to view and determine their potential in their context. Project model B uses the basic concept that each individual is unique and have different abilities both technical and social. The perception in the model is that all people wants to evolve, feel satisfaction, can and wants to take responsibility in their work. With this in mind we have to consider how we guide and delegate work.

The second area is culture of commitment, in our daily work we make decisions to produce results for different situations, we make commitments.

There are always two side to a commitment where two parties in advance needs to agree upon what it is to be produced and what is needed for reaching the set demands. To be able to perform an efficient project a common view and respect for the commitment must be established between the different parties involved.

In any project there is a need to first and foremost determine the benefits that the customer demands or wants. During the project it is important to have and encourage a continuous connection or review of the customer's requirements to be able to keep the project up to date and to ensure high quality and benefits for the customer. This is in project model B the third area for its foundation and is called Benefits- quality, to understand why.

The forth and last area regards the understanding between customer/supplier and project manager/project employee. To be able to achieve a high level of understanding, an open and active dialog within all parts of the project is necessary and will make this common understanding and respect for each other a benefit for all parties involved.

To conclude the project should have an open, objective and correct communication throughout the entire duration of the project.

#### **The Different Steps of Project Model B**

Project model B are built up with a project cycle with eight decision points, these points represents eight types of decisions that the starting group is responsible for during the life time of a project, see illustration 2 in appendix 1.

The decision points gives an agreed and easy controllable coarse of the project, a opportunity for the starting group to gradually delegate authority to the project, the individual decision points creates a visible point for the involved people to focus upon, creates a common line of decisions for all projects performed independent of the result that the project should produce and gives the starting group clear occasions to control the progress of the project.

- Decision point 1, initiates the project with a decision to start the project and to initiate the preparations.
- Decision point 2, decides whether the project should proceed, preparations remade or if it should be cancelled.
- Decision point 3, is there enough material to make a commitment for the rest of the project.
- Decision point 4p, decision point for starting some parts of the project process before starting decision point 3.
- Decision point 4, decides to start the project process
- Decision point 5, decides whether the project should proceed or if the project commitment needs to be altered.
- Decision point 6, approval of the delivery of the project results.
- Decision points 7, Handover of the project results are approved.
- Decision point 8, decision to terminate the project.

To conclude some general aspects of the model is, a practical and tested, preventive and corrective and a method that emphasize relations. The project models contribution to the projects is a goal oriented and effective model with both satisfied customer and project participants.

### ***2.3 Value Management (VM)***

The reason for choosing VM as the main subject is that it is a management theory with a long history of making organisations more effective and improves their work performed in projects through its use of value and functions. And further according to The Institute of Value Management (2006) there are many benefits related to the implementation of VM such as:

- Better business decision through a sound basis provided to the decision makers
- Improved products and services, gained from looking towards the real need and wants of the customer
- Enhanced competitiveness by the use of both technical and organisational innovation
- The value culture which gives enhanced understanding for its members regarding the organisational goals
- Improved internal communication and common knowledge of the success factors for the organisation
- Enhanced communication and efficiency by developing multidisciplinary and multitask teams

### 2.3.1 Origin, History and Development

VM and its principles were originally developed by the American engineer Lawrence D Miles during World War II under the name of Value Engineering or Value Analysis (Thiry, M. 1997).

The basic principle was developed from the lack of parts and the shortage of components to the war industry, from this problem Lawrence D. Miles developed a new way of thinking which basically stated that if we can't get the part we have to get the function (Thiry, M 1997).

Instead of focus on a specific part Lawrence realised that if they instead searched for the intended function that the part was suppose to perform it was possible to achieve the same outcome and many times it was possible to reach new improved solutions with this strategy (Thiry, M. 1997). Miles further separated the function and the characteristics of the design separating the two questions "what it must do" and "how it does it" (Kaufman, J. 1998).

With the development of his theory cost reduction by the use of function focus started to evolve and its procedure was named "Value Analysis". This was used as a team activity and aimed to reduce the high costs of products and always consider protecting the intended function or basic function of the solution which it would have to maintain (Kaufman, J. 1998).

In 1945 the positive results of value analysis had reach some acknowledgement and had caught the interest of the U.S Navy which commissioned Miles to train its personnel in the process of value analysis. However the navy didn't have any openings in their organisation table and where therefore moved into the organisation for engineers, to give value analysis an organisational recognition to its effective process value analysis was renamed to value engineering. This change causes even today some confusion regarding differences within the theory of VM and its applications (Kaufman, J. 1998).

According to the Department of defence the difference between the two is value Engineering is an activity which applies the value process during the product design phase and further defined value analysis as being applied after the design release, during the production (Kaufman, J. 1998).

In the early 60's Charles Bytheway with the Sperry Rand's Univac decision developed functional analysis System Techniques or FAST. This technique enables a structure to organise functions in a logical and orderly manner (Thiry, M 1997). This technique or structure has since then been altered to fit better into specific contents and is still used today (Thiry, M. 1997)

The further development and new methods in the late 80's started to focus on implement the value theories and techniques at earlier stages and to integrate them into the management process and thereby creating a true management tool.

One of these new methods is known as VM and is a process that integrates during the whole project process.

The definition of VM differs some in the literature, according to Thiry (1997) "the consensus today is to use VM to describe the widespread application of value techniques". VM includes function analysis, value engineering, value analysis, value control and other value techniques (Thiry, M. 1997).

## ***2.4 The Main Key Issues of the Investigation***

To be able to create a good investigation which will lead to clear and reliable results and with a clear relation to its purpose there is a need to define VM via a set number of key issues.

These key issues are based upon the European Standard for Value management and how it describes the most important aspects of VM, the key issues will be:

- Management style
- Positive human dynamics
- Consideration to external and internal environment
- Effective use of methods and tools

Each of these issues will be further explained in the upcoming chapters with their different sub categories related to them. These areas will also be used as a template for the interviews.

### **The European Standard for Value Management**

In 1996 the European standard 12973:2000 was published. The standard should have a status similar to a national standard, either by publication of an identical text or through endorsement (Swedish Standards Institute, 2005).

Countries that are according to CEN/CENELEC internal regulations bound to implement the European standard are: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The European standard for VM has the status of a Swedish Standard and was endorsed as SS-EN 12973 by the Swedish Standards Institute (Swedish Standards Institute, 2005)..

The purpose of the Standard is to: establish a common basis for management to implement and practice Value Management, to help team members and team leaders to practice the method, establish a basis for developing training and certifying procedures for individual competence in Value Management, establish a basis for Value Management contractors to provide services, should provide a basis for certification of companies and organisations, improve quality of Value Management and stimulate innovation in its use and to improve communication through the use of common terminology. (SIS, 2006)



The European standard of value management is a tool that lets all managers be able to practise VM and to introduce this discipline into their organisation and the members of the organisation will be able to understand and participate effectively in projects with VM. To be able to define and evaluate correctly the European standard for value management will be used to as a template in this dissertation.

### **Other Standards in VM**

Other standards that are in use are e.g. SAVE Internationals standard which is an international society for the advancement and promotion of Value methodology and have developed their own standard for Value methodology. Their standard aims to define common terminology, offer a standardized job plan while allowing the great diversity of individual practice that have been successfully developed and offers to reduce the confusion for those recently introduced to the value methodology (Save International, 2007).

## **2.5 The Principles of VM**

VM is a management tool which aims to motivate people, develop skills, promote synergies and innovation, and to maximize the overall performance of an organisation (Swedish Standards Institute, 2005).

VM can be applied on different levels in an organisation. On a corporate level, VM relies on a value based culture which focuses on the needed values both in relation to customers and stakeholders. At the operational level VM implies in addition to previous the use of appropriate methods and tools (Swedish Standards Institute, 2005).

The value based culture is of great importance for the effective use and implementation of VM. This culture consists of the awareness, knowledge and attitude towards the concepts of VM and what it means to the organisation, its stakeholders and customers. This culture by the use and knowledge of existing tools and models together with awareness of managerial and environmental conditions makes it possible for VM to flourish (Swedish Standards Institute, 2005).

According to the VM standard (Swedish Standards Institute, 2005) VM diverse from other management styles by integrating attributes that normally is separated from each other in terms of management. VM brings in one single management system together:

- Management style
- Positive human dynamics
- Consideration of external and internal environment
- Effective use of methods and tools

These four issues will be further explained in the next chapters and as explained previously they are the key issues to this dissertation and will be used for the investigation as well.

### **2.5.1 Management Style**

VM strives to combine several qualities such as emphasis in teamwork and communication; a focus on what things do rather than what they are (functional approach); an atmosphere that encourage creativity and innovation; a focus on customer's requirements and a requirement to evaluate options quantitatively to achieve a robust comparison of options. This is performed by the application of the concept of value and concept of function. (Swedish Standards Institute, 2005)

### 2.5.1.1 The Value Concept

The value concept is one of the cornerstones in VM theory and it explains how to achieve high value or even more important to define what value is in different situations (Thiry, M. 1997). The definition of value in relation to VM can be defined as “the relation between the contributions of the function to the satisfaction of needs and the cost of the function” (Swedish Standards Institute, 2005). However value has different meaning to different stakeholders or customer and there is no strict definition that can be applied in all situations.

This implies that to be able to achieve a good value there are usually many different parameters that need to be satisfied. However it exist some models or theories that in general describe the basic concepts of Value.

Kaufman J (1998) defined the concept of value as function divided by cost. Function could further be separated into three categories esteem, exchange and utility value. Esteem Value which indicates want and represents e.g. the buyer’s desire to own for the sake of ownership other examples of esteem value can be the company’s reputation and others perception of the company.

Exchange Value indicates worth and describes the buyer’s perception of the product. Improving a product or service requires a good understanding of why the buyer is interested and how the buyer will use the product or service. Utility Value indicates need which is the primary part of the function and describes what the product or service need to fulfil its stated function.

In the standard for VM (Swedish Standards Institute, 2005) the model for the concept of Value has been change slightly to better fit a more general role since VM previously were more used on products, the model is illustrated in Fig 1.



Fig. 1 The concept of Value

When using VM it is important to always consider this equation shown in Fig. 1 since good or high value can be achieved in different ways e.g. it is possible to get a higher value from a product or service by focus on the satisfaction of needs even if there is a

possibility that this action will cause the use of resources to increase. Other examples are to achieve high value when the satisfaction of needs is lowered and focus is upon using fewer resources for the process. However the balance should always be considered high value is not the same as low use of resources since it does not matter if the use of resources is low if the product or process is not fulfilling its functions (Swedish Standards Institute, 2005).

### **Needs**

As defined in the Standard (Swedish Standards Institute, 2005) need is what the user wants or desire.

The total need in any project usually comprise many different components and the standard separates two of them in use needs and esteem needs.

The use needs can be described as tangible measurable activities e.g. for a manager a factory should generate outputs. The esteem needs are described as the part of the total need that is attractive, subjective or moral. These types of needs can be seen as in the factory in the previous case should provide the platform to impress customers and generate sales (Swedish Standards Institute, 2005).

In accordance with VM it is important to take all aspects of needs into account, needs for the customer, the organisation and its owners (Swedish Standards Institute, 2005).

#### **2.5.1.2 The Concept of Functions**

Function is the basis of VM, the use of functions is the most characterised fundamental step which distinguishes VM from other management theories (Thiry, 1997).

A function is how VM describes an expected performance instead of an expected solution. This method or concept makes it possible to generate creative alternatives that are not based on previous solutions (Thiry, 1997).

The need should produce a product, the function is what relates the product to the solution and is the link between them.

Considering customer oriented value it is essential to understand that the need, defined through its functions, is totally independent of technical solutions. Therefore the need from a customer can be considered as relatively stable and the solution to deliver the need is changing and evolving (Thiry, 1997).

According to Thiry (1997) there are different types of functions, the primary functions are those which guarantee the products performance. The primary functions can be divided into other functions such as use functions (needs) and esteem functions (wants). These functions should be customer oriented and focus on the needs and wants of the customer.

The next type of function is supporting functions or secondary functions and described as those functions that fulfil a complementary need or want. However, the secondary functions should not be neglected or overlooked since these functions can be just as

important as the primary function. As explained by Thiry (1997) a chair's primary function is to support weight, however the function provide comfort is just as important even if it is not essential for the primary function or the product's performance especially in a customer focused orientation.

Technical functions are results from the design or fabrication of the product, these functions should not be considered when performing function analysis except if the analysis is focused on analysing a design or an existing product.

The last type of function is functions related to constraints, these functions are related to regulations, standards, technical limitations etc (Thiry, 1997).

It should be stated that even if the use of function mostly in the literature is related to what seems to be product functions can be just as effectively applied to services (Handouts in class, Keith Hogg, 2005).

In the VM standard the definition of functions are slightly different and only two different functions are described, user-related functions and product-related functions. The user-related function are defined as the functions that the product must fulfil in consideration to needs and wants of the end-user during its whole life cycle, described as "The what for".

The product-related function describes the internal actions of the product to work out the answers to the needs and these answers being the user-related functions (Swedish Standards Institute, 2005).

Between these two definitions of functions there are clear similarities, the user-related functions are similar to the primary functions e.g. both should be customer oriented and strive to fulfil their needs.

The product-related functions are related to the secondary functions with its supportive functions. However the secondary functions according to Thiry (1997) can be related to the customer wants and needs whilst the product-related functions described in the VM standard (Swedish Standards Institute, 2005) is not directly related to the customer but should exist to fulfil the user-related functions.

To conclude the concept of function, it has been shown in this chapter that this concept is central to VM. The concept enables new ideas and creativity to flourish and remove constraints when performing projects that could be related to either to old solution for new problems or avoiding looking for technical solution from the beginning of a problem. Perhaps the most important aspect is that it looks towards the real needs and wants of the project which clarify the reason for the project and what should come out of it.

### **2.5.1.3 Customer Focus**

Studies have shown that an organisation loses more resources when losing a customer compared to expanding the service or product range to an existing customer. The ability to care for and sustain customer relations has become of great importance for the well being of an organisation. This view is expanding in today's organisations and many indications have shown that customer focus and customer relations are becoming prioritised (Karlöf & Lövingsson, 2003).

All organisations whether manufacturing or non-manufacturing have customers and to be able to understand who they are and what they want is vital for the success of any business. An organisation has both internal and external customers. The external customer can further be divided into two groups, intermediate and final customers (Akpolat, 2004). The intermediate customer is represented by e.g. distributors, dealers or franchisee that provides the organisations products or service to its final customer. The final customer is the one who will use the provided product or service, and is therefore the end user.

Internal customers are entities inside the organisation e.g. all employees can be either customers or suppliers depending on their work and if they receive or provide an output (Akpolat, 2004).

Identifying the customer correctly and meeting their requirement is essential for the business, if the customer does not receive the attention necessary there is a risk that the customer will take its business elsewhere (Akpolat, 2004).

To be able to answer to all these customer's described above the focus of attention in any organisation should be on identifying and satisfying the real needs of the customer, both internal and external to the organisation (Swedish Standards Institute, 2005).

Often when setting up a project there is a mismatch between the customer's intent and capability. There have been many examples of this through history, evidence of what seemed to be perfect products but still failed success since they were not what the customer wanted (Thiry, 1997). The problem occurs when customer and supplier have different views of the definition of performance e.g. for a product or if they have the same definition but do not place the same relative importance to its functions.

According to Thiry (1997) this mismatch could be anticipated by the use of VM since this management style should strive to find the real needs and wants of the customer. The basis of customer value is to identify the design criteria and the areas of improvement that are meaningful in the customer's perception of value.

Lindstedt & Burenius (2003) explains further that the ability to have customer focus or strive to increase customer value will determine profitability, growth and for how long an

organisation can survive on the market. This statement is based within the premises that today's customer always seek to maximize their purchasing value.

The organisation who can contribute with the highest value when comparing price and performance of their product or service will receive the customer's confidence and are trusted with the business (Lindstedt & Burenus, 2003).

Organisations that can not provide a high customer value will encounter great difficulties on the market and may face the risk of being out of business.

As described in fig 1 customer satisfaction can be achieved by increased value in two ways, either by higher satisfaction of needs or by reducing cost of resources. However there is also an issue with the use of a high customer focus related to value that needs to be addressed, the customer will not only strive for a good value but also to have a good development of value over time, achieving good value on one occasion is simply not enough (Lindstedt & Burenus, 2003).

To be able to address these issues regarding the development of value an organisation needs to be skilled in handling both satisfaction of needs and reduction of resources.

Cost reduction is a normal way of increasing sells however cost reduction result in less revenue and only cost reduction will not make the customer to want your product not even if the price is zero, if it has no value to the customer.

In the same way it is not possible to only use the satisfaction of needs since this will most likely result in to high costs and other products or services on the market will become more interesting for the customer.

In conclusion a skilled and successful organisation will therefore always try to identify its customer and meeting their requirements and has an ongoing relation with its customer during the projects and by doing this balance the relation of value to achieve profitability, growth and survival to its own organisation.

#### **2.5.1.4 Creativity**

Today nothing stays the same everything is constantly changing and there is no expectation within organisation's and their daily work. To be able to react to change effectively creativity needs to be encouraged and supported (Brabandere, 2005).

Creativity thinking is concerned with new ideas and new perspectives. This is a process to get relived from old ideas and old constrains, creative thinking is focused on change (De Bono, p 117, 1999).

Thiry (1997) further explains some benefits in relation to creativity such as overcome the natural resistance to change and to encourage people to express themselves and their thoughts, however it is also important to control overpowering individuals in a tactful way. All these aspects of creativity make it an important topic in projects and VM.

### **2.5.1.5 Quantitative Evaluation**

The main purpose of any project evaluation should be to improve the projects performance and improve future projects in the organisation and is an assessment for use by top management (Mantel et al. 2001).

According to Lindkvist (2001) knowledge can be one of the largest resources an organisation has. However it's often a lack of use in consideration to this resource and therefore the organisation can miss the real purpose of an evaluation, to learn from it and improve future project (Lindkvist, 2001).

To be able to achieve the set targets and objective for a project there is a need for a strategic or a project plan. However a project plan needs constant evaluation to ensure that the plan is followed and set goals are reached due to that even the best planned project contains some unreliability's (Wisén & Lindblom, 2004).

### **Evaluation during the Project**

According to Mantel et al (2001) a project evaluation should not be limited to just an after-the-fact analysis instead it is recommended to evaluate at certain key points during the project. This progress evaluation helps the project team and the managers to spot and handle unforeseen weaknesses (Wisén & Linblom, 2004).

According to Martin (2006) a project benefits from performing an early evaluation with the purpose to ensure that the planned inputs are sufficient to achieve the projects goal and objective in consideration to quality and quantity. An example where this early evaluation is beneficial is when a harsh competition on the market with many competitors who strive to gain the buyers trust, which may lead to lowered cost or a faster completion to a level where goals and objectives may need to be reconsidered in relation to e.g. quality. If the early evaluation is not performed in a situation as describe the project and the organisation may suffer in the future.

### **Post-Project Evaluation**

Post-project evaluation is the most common way to evaluate projects and the most common use is to determine if the finished project has reached the set project plan with its goals and objectives (Martin, 2006).

However as previous discussed (Lindkvist, 2001) another very important reason for evaluation is to use the gained knowledge from the resent project and improve the project process for future projects. This evaluation gives managers in the project organisation a good opportunity to be more efficient in up coming projects by implementing improvements to the project managing process (Mantel et al. 2001).

The aim of this evaluation is to understand the reasons for success or failure of a project and to use or avoid this in future projects.

Some of the issues described by Martin (2006) that should be addressed in an evaluation should be:



- Have the project objectives been achieved?
- Which aspect of the project went well?
- Which aspects went less well?
- What would be done differently the next time?

The last type of evaluation that will be addressed is where an evaluation is performed some time after the projects has been completed. The reason for performing this type of evaluation is to investigate the long term impact of the project and see whether the long-term aims were achieved effectively (Martin, 2006).

## **2.5.2 Human Dynamics**

In any organisation the people involved are likely to be their most valuable resource. Therefore this resource should be used in the best possible way (Swedish Standards Institute, 2005).

### **2.5.2.1 Communication**

The relationship and communication between participants are essential for the success of VM. Involved people should be aware and even better if trained in communications. Within the concept of VM communication between individuals in different parts of the organisation or disciplines should always be encouraged. This should be achieved by promoting teamwork and as mentioned above by promoting communication (Swedish Standards Institute, 2005).

The project success relies on good communication and it is necessary both to link the stages and to facilitate the progress within each stage of the project by communication. The flow of communication needs to be manage to be able to produce, collect and distribute the information in an appropriate way, this determines how the information can be used and by whom (Martin, 2006).

According to Martin (2006) there are two main areas of information related to projects that needs to be managed. The first information is the plans for the project that needs to be communicated to the participants regarding what should happen, when and how. The other type of information is what actually happens, so that completion of plans can be confirmed or revisions be made. It is vital that the people interested in the project or its outcomes receive both types of information.

Some examples of issues that a project manager needs to address can be:

- Who needs information?
- What information do they need?
- When do they need the information?
- What hinders exists that can limit the information?

A problem with the information that needs to be considered up close is the quality of the information. The information should be relevant, clear, accurate, complete, up to date, and appropriate.

### **2.5.2.2 Teamwork**

In many organisations the day to day work is performed in the form of projects. The structure of projects implies for the use of teams to be able to be efficient. The definition of a team is described by Katzenbach & Smith (1998) "A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable".

According to Boddy (2002) there are good reasons to use teams when working in projects including complementary skills, wider perspective, creating a recognised forum, ownership of the solution, a sense of challenge and learning.

A good team should be a composition of differences which gives the team the ability to combine complementary skills beyond those of any individual member (Boddy, 2002).

The use of multidisciplinary teams, which consist of participants from different parts and levels of the organisation, is essential to gain completeness and consensus regarding the application of VM. This type of team has the advantage compared with a single-discipline team since they have a better opportunity to realise the impact of the problem or solution in a wider organisational perspective (Kaufman J.J 1998).

The multi discipline team also enables an improved function in direct relation to VM when it comes to define the needs and objectives which can be in depth analysed by the team from every possible angle to find appropriate solutions.

To be able to have a well functioning team, consideration should be taken to the different roles necessary for the project needs to be addressed, and include a well balanced mix of all technical and managerial disciplines needed (Swedish Standards Institute, 2005). And the use of participants from different levels of the organisation can ease communication and prevent misleading facts (Thiry, 1997)

Other benefits that can be gained by the use of teams are that in organisations there may be complex problem of social or business nature. Teams and team work have the ability to let people with different background work together and consider problems and solution from their perspective and give the participants the chance to express their opinion (Boddy, 2002).

To concluded, teams and team work are essential for projects, the work form contributes to a better and wider understanding, an enhance of communication between the involved people, participants have complementary skills and can therefore learn from each other and the team creates a feeling of involvement and ownership for the project.

### **2.5.2.3 Change**

Changes in today's organisational work are unavoidable and as explained previously the work form of project is used for just this reason. One of the basic principles of VM is that change should always lead to an increased value. Therefore there is a need to manage change within the project so that the team can be efficient and creative even with continues changing environment and not just visual change as something negative. The ability to handle change effectively and challenge the status quo to seek new solutions is important issues to the project success.

The idea of encouraging change comes from the fact that everything can be improved in relation to how we do it today which also can be related to the customer focus since the organisation needs to improve there products or services toward the customer and their satisfaction (Bergman & Klefsjö. 2001).

### **2.5.2.4 Satisfaction**

According to Briner et al. (2004) effective project teams need to celebrate collective and individual achievements and successes during the project, this helps the involved participants to feel involved and satisfied.

Team rewards make the involved people feel valued and supported for the work that they perform in support of the team goals. Further it has been shown that organisations that use rewards for the project teams and their efforts made create a supportive environment for team success (Kanaga & Browning, 2003).

Satisfaction in the project work can also be related to internal relationship within the team including bad attitudes, mistrust and power struggles. As an example, low levels of trust and cooperation can stem from a low level of understanding the purpose of the team, therefore it is vital to have a clear purpose, well balanced team and good organisational support (Kanaga & Browning, 2003).

### 2.5.3 External and Internal Environment

The environment which an organisation exist within should always be taken into consideration in any management action or situation (Swedish Standards Institute, 2005). VM strives to look at the broader environment such as the organisations customer, suppliers', legal constrains, ecological considerations.

These pre-existing conditions may act as constrains but can also be used as opportunities and can exist either internal or external to the organisation. Constrains can be national or international laws that creates restrictions for the organisation or internal policies or cultures within the organisation. Opportunities can be revealed in new legislation that opens up for new markets.

	<b>External Environmental Considerations</b>	<b>Internal Environmental Considerations</b>
	laws and regulations, local, national or international	internal policy or organisational rules
	national or international customs, codes of practice, social and economic behaviour etc	staff know how and competence
	market conditions, competitors and suppliers	culture of the organisation and relationship between people
	physical boundaries and infrastructure	existing organisation and processes for doing business
	limited availability of resources	financial limits
	ecological limits	

Table 1. External and Internal Environment

These considerations should always be taken into account to be able to follow set rules but also to spot opportunities. However most of these considerations can be change by e.g. top management and therefore environmental constrains should not be taken for granted (Swedish Standards Institute, 2005).

## 2.5.4 Effective use of VM

There are a number of different tools for achieving and sustain VM in an organisation. In the standard for VM (Swedish Standards Institute, 2005) the structure of VM and how it relates to an organisations management structure is described, see fig 2.

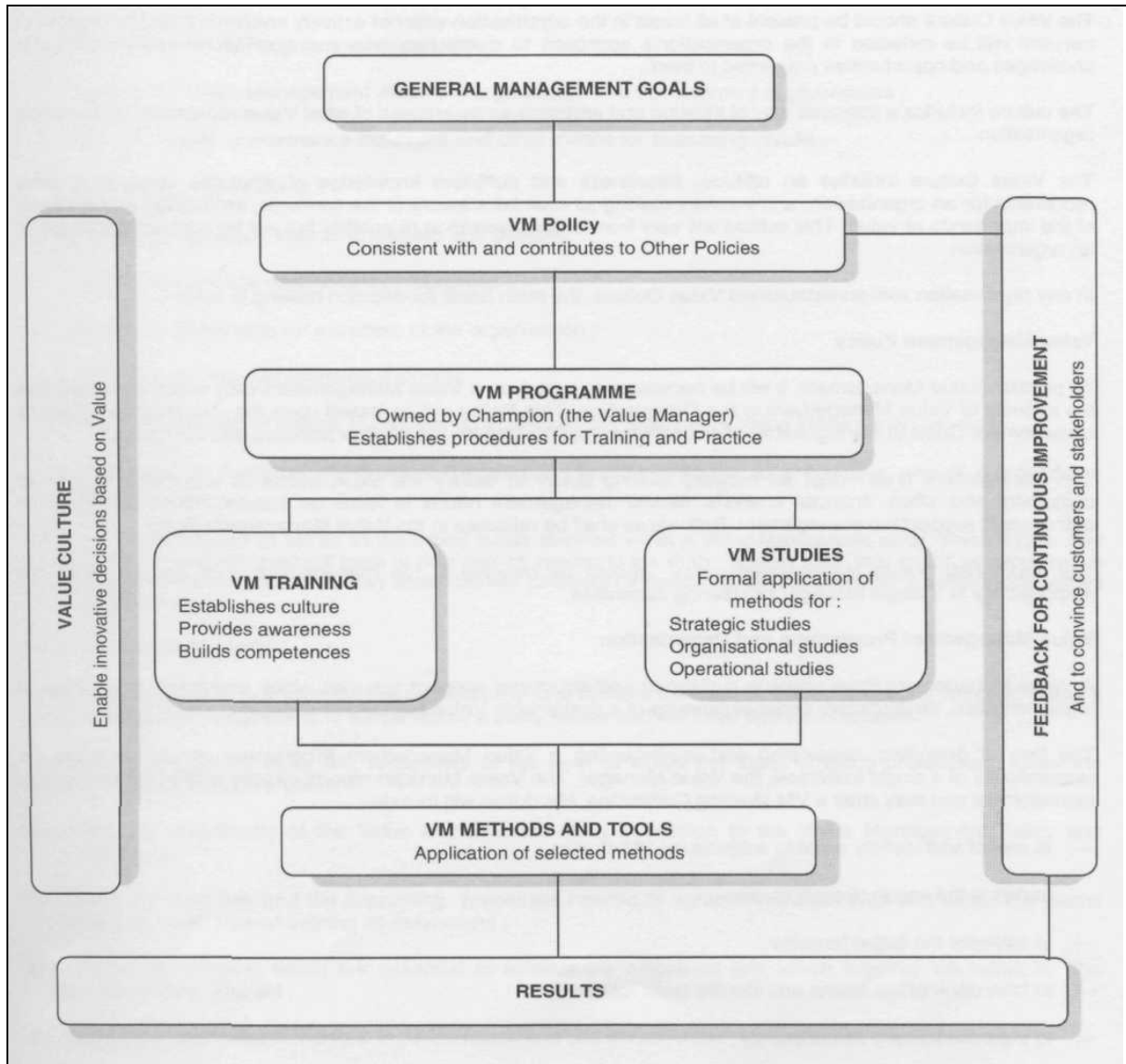


Fig 2. The Value Management framework

### **General Management Goals**

According to Andersson et al (2006) VM's main objective is not to define the organisations main goal and objectives directly, instead VM breaks down the main goals to a more concrete level and then defines what values that needs improvement to be able to reach the goal of the organisation.

### **VM Policy**

To be able to use and practise VM the organisation needs to implement a VM policy which will address all issues related to value management. A VM policy should be based upon the organisations general management goals at the highest level since these will affect all other activities (Swedish Standards Institute, 2005).

It is important that the policy is recognised and supported from all levels of the organisation so that VM can be used as effectively as possible and that all people involved can use methods and techniques in an appropriate way (Andersson et al, 2006).

### **VM Programme**

The VM programme includes a planned and structured array of activities which shows how to implement, develop and maintain a sustainable VM policy. This process should be made the responsibility of a single person, The Value Manager.

The Value manager's duties should include identification of suitable subjects that would benefit from a VM study define the scope of such study and estimate the benefits of the target (Swedish Standards Institute, 2005).

Further it is the Value Manager's responsibility to form the teams and identify team leaders for the study and to organise training if necessary.

### **Value Culture**

The value culture includes a common way of thinking and embraces what value means to the whole organisation (Swedish Standards Institute, 2005).

This culture is of great importance for the use, application and development of VM and should be present at all levels of the organisation whether actively involved or not.

Important characteristics for the value culture are attitude, awareness, and sufficient knowledge of what the concept of value represents to the organisation. The culture can and will vary between organisations but should stay consistent within a single organisation (Swedish Standards Institute, 2005).

According to Andersson et al (2006) the purpose of using the framework shown in fig 2 is to create the value culture in the organisation. In this value driven organisation the value principles become the foundation for decision making throughout the organisation in both large and small matters.

### **VM Training**

To be able to use VM effectively in an organisation VM Training needs to be performed to secure an adequate level of competence within the organisation. The VM training seeks to improve the value culture, provide awareness within the organisation and to build competence (Swedish Standards Institute, 2005).

According to the Standard (Swedish Standards Institute, 2005) the VM Training is required in different areas such as among senior managers, this is to be able to support value management activities from a high level in the organisation, the training needs to aim towards the people that will use and apply the methods and models such as team leaders and VM study leaders, team members needs training to effectively adapt and participate effectively and also all others staff to further develop and increase awareness of the concept of VM.

### **VM Studies**

The VM study involves the application of appropriate VM methods and tools to a specified area or subject defined in the VM programme (Swedish Standards Institute, 2005).

As defined in the Standard for Value Management (Swedish Standards Institute, 2005) regardless of level each chosen subject should go through certain sequences.

1. Define objectives of the VM study in relation to the VM policy and Programme
2. Identify methods and supporting process needed to achieve objectives and select teams
3. Identify functions which are essential to achieving the objectives
4. Identify how to measure changes in performance and use of resources
5. Set targets for performance and use of resources for each functions in the most effective manner for the organisation as a whole
6. Apply methods and supporting processes to identify innovative ways of achieving the targets
7. Select and validate proposals for improvement
8. Implement the proposal which have been decided by the decision maker
9. Monitor and measure outcomes and compare with targets
10. Feedback results for continues improvement

(Swedish Standards Institute, 2005)

### **Feedback for Continues Improvement**

To enhance the performance of the organisation the results should be related back to their participants, leaders, project managers and other involved people. In this way it is possible to create a learning organisation that uses and learn from previous experiences (Andersson et al, 2006).

### **2.5.4.1 Specific VM Methods and Tools**

This chapter will list some of the most common tools for VM which have been taken from the VM standard. It should also be noted that these tools may exist in modified version since there is and have been a constant development of them since their origin.

#### **Value Analysis (VA)**

The definition of VA is an organised and creative approach which uses a functional and economical design which aims to increase value of a VA subject.

Value analysis is also what created or what VM developed from and is according to the VM standard a common tool to undertake in a VM study. This tool helps formulate problems and solve them correctly and efficient.

When applied to products VA aims to provide in order, the service which the customer and user have requested and secondly to optimise the use of resources of the organisation and/or the end user.

In VA the human factor is of great importance since this embraces factors like effective teamwork, membership requirements, team leadership, personal behaviour requirements etc.

Environmental consideration should also be taken in the environment where VA is carried out such as effects of and on the organisation, its customer and supplier, of statutory and legal constraints as well as ecological requirements.

#### **Function Analysis (FA)**

FA is what distinguish VM from many other management techniques and have made it possible for VM to survive and develop over 50 years (Thiry, P 42, 1997).

It should be stated that FA has many similarities to VA and is often included in VA.

Basically FA is a technique to break down the product, process or service into functions and reveal how the functions relate to each other and how they can improve the value towards the customer (Andersson et al, 2006).

According to the VM standard (Swedish Standards Institute, 2005) FA also improves communication among those that are involved in the definition, the design and those who develop the product.

FA requires the participants to abstract themselves from solutions and instead think in terms of objective and end results. By using this type of thinking methodology constrains are removed and creativity encouraged (Swedish Standards Institute, 2005).

In the overall picture FA has the role of being the principal tool for VM and investigates the VM subject's functions, structure and characterise the functions and to set cost objectives for them (Swedish Standards Institute, 2005).



In order to ensure consensus within the project and full coverage of the current problem function identification techniques has been developed as a complement to the basis of FA. One of the most frequently used in relation to FA is Functional Analysis System techniques or FAST. This technique is used to effectively organise functions that has been listed during a FA and will effectively enhance the further work of building up a coherent model of the functions.

### **Functional Performance Specification (FPS)**

FPS can be used on products, services or processes and between client and a supplier, inside enterprises or between different departments (Swedish Standards Institute, 2005) The purpose of using FPS is to encourage developer to use creative solution and enhance the dialog between the developer and the customer and to find solution that gives as high value as possible to both interests (Andersson et al, 2006).

FPS is a way of creating or describing the objectives in terms of functions needed without setting demands on technical solutions. The functions are listed and described by value criteria's and the lowest level of acceptance (Andersson et al, 2006).

### **Design to Cost (DTC)**

A management method that from the start of the development phase of a product or service includes the production cost and is considered to the end of that phase where it is set and should be considered as a parameter and should be fulfilled in a similar way to the technical parameters (ref). In relation to VM a function has a set cost and therefore increased value should be achieved without increasing cost for the function (Andersson et al, 2006).

### 3. Research Method

The investigation can be divided into two parts. First part will aim to clarify the relation between VM and two selected project models. The second part will investigate the relation between real life projects and VM, it should be stated that the projects also uses the project models in their projects. The purpose of these investigations is to see how VM is used in projects today and more specific on the Swedish market.

To be able to perform a valid research of the chosen topic there is a need to choose an appropriate research method. This method should be able to address all the different aspects of the research and establish an understandable and reliable investigation. The investigation in the dissertation will strive to find relation between a management theory, VM, and how projects are performed today via the use of project models, flexibility is needed in the research to be able to spot any similarities and relations.

#### Qualitative Research

The chosen methodology for the investigations is to use a qualitative approach since the investigation aims to address VM in projects and since this theory isn't widely used in projects in Sweden there is a need to be flexible in the investigation rather than rely on the statistics of a quantitative research. This approach corresponds well with the fact that it is difficult for the researcher to know what to expect from the research and knows perhaps just roughly what he/she is looking for (Qualitative versus Quantitative Research, 2004).

As explained by Widerberg (2002) quality relates to the character or the properties of something whilst quantity is related to the amount of the character or the properties of the same. Therefore the qualitative researcher searches for behaviour or a meaning of a subject. The quantified researcher is more focused on how often or if the event of study occurs (Widerberg, 2002).

The qualitative researcher uses all tools available deploying whatever strategies, methods, or empirical materials at hand. When performing a qualitative research the form of practise to be used in the study does not necessarily need to be set in advance since it depends on the questions asked and the question asked depends on its context (Denzin & Lincoln, 2000).

The qualitative research is often related to the use of interviews as the tool of research and will also be used in this dissertation (Wideberg (2002).

The interview will strive to establish a dialogue with the interviewee to generate a discussion surrounding the main topic and questions (Rudestam & Newton, 1992) and use open ended questions to receive in-depth responses reflecting the interviewee's experiences, perceptions, opinions, feelings, and knowledge (Patton, 2002).

The possible weakness in using the qualitative approach when performing this kind of study is, since the study only handle a restricted number of participants there is a risk in losing reliability in comparison to the more statistical based approach of quantitative research. Other issues with qualitative approach could be the time consuming process and perhaps it is not enough to just perform the survey once, it's also more difficult to generalize results from the investigation compared to a quantitative approach. However, a qualitative research gives a more in depth view of the situation (Qualitative versus Quantitative Research, 2004). There is also a risk when performing a qualitative research that the research becomes unique and therefore can't easily be repeated and evaluated once more.

### **3.1 Research Questions**

The study will aim to:

- Reveal similarities between VM and the chosen project models
- Evaluate if VM is used in projects

To be able to address these questions the key issues described in the literature review has been used, which are with sub categories:

- Management Style
  - Value and functions
  - Customers and stakeholders
  - Creativity
  - Evaluation
- Human dynamics
  - Teams and teamwork
  - Communication
  - Change
- Internal and external Environment
- Methods related to VM

As mentioned previously the investigation is of a qualitative nature this implies that more questions may arise or the existing once could be altered. However the main areas will not be altered a copy of the Interview questions can be found in appendix C and D (Swedish and English versions).

### **3.2 Research Procedure**

The procedure of the research can be divided into three stages. These stages aim to build up the research and give the essay an easy and understandable progress. However the

main purpose of the structure is to investigate how VM is used first at a theoretical level and then see how it is used in real projects.

At the first stage of the research a literature review needs to be created, this is done by performing a review of the existing theories with in VM and existing management theories. This part aims to review and define VM.

The literature review uses the Swedish Standard for Value management (2005) as a core since this creates a good and credible definition of VM.

The second stage of the research reviews the theories of the existing project models and perform qualitative interview with persons working with or in relation to the project models. These interviews are performed to increase the creditability of the evaluation of the project models since some of the theories related to the models are meant for educational purposes.

The theories and data received from the interviews related to the project model is then concluded and evaluated in relation to the literature review and VM. This part will show how the models relate to VM.

The third part will look towards the relation between VM and real projects. This part of the investigation will be performed by the use of qualitative interviews performed on project managers or people related to projects.

These stages will then be evaluated and concluded to show the result of the investigation and if the purpose of the dissertation has been reached.

### ***3.3 Tools and Instruments***

To be able to analyse and evaluate the received data from the interviews these should be recorded. The recordings should then be analysed and written down for easier access and evaluation.

During the interview a template of questions have been used (see appendix C and D) to create some structure to the interview however this template has only been used by the researcher and has not been used as a questioner for the interviewee.

### ***3.4 Sample Population***

The interviews have been performed with six different people. The first two interviews was performed on people directly related to the project model, these people worked with the project model, the first interviewee worked with the development of one model and the second interviewee work with indoor sales of the project model. These people were chosen by contacting the organisations who develop the project model and asking for people who would like to participate in the research.

The four remaining interviews are performed with persons working with or leading projects. Theses persons where in a similar way as the developer chosen to participate in

the interviews where the researcher contacted there organisation and asked for people who would like to participate.

### ***3.5 Limitations and Delimitations of the Research***

The limitation of the study is that two project models will be used and one person will be interviewed which is directly linked to the model and then four people working in projects will be interviewed, two users of each model. A total of six interviews will be performed.

A clear limitation that needs to be addressed is that this study will is not to be seen as an evaluation of the project models in any other way then in relation to VM. Also this study will not compare the project models against each other.

## **4. Results**

This chapter will show the data gained from the study performed. The result chapter has been divided into two parts, one for each project models.

In each part the result from the investigation performed on the theoretical material together with the data received from the interview with the developer of the model will be shown and will be followed by the interview results from the interviews with the two project managers. The result from each interview will be summarized in an overview table with the purpose to enhance the understanding for the reader and make it more accessible for the next discussion chapter.

The tables will show an interpretation of how well the project model or the interviewee correlates in relation to the key issues defined in the theoretical framework. The grading will go from 1 to 5 where 5 represent a full correlation with the theories, 4 high correlation, 3 medium correlation, 2 low correlation of VM and 1 shows no correlation to the theories. These grading has been decided by the researcher and is an interpretation of the correlation between the answers from the interviews and the theoretical review.

### **4.1 Results Project Model A**

These results show the answers from the interviews with first the person involved with the development of the project model A and then the results from the two managers working in projects where the project model is used.

#### **4.1.1 Result from Theory Material and Interview with Developer**

The person interviewed in relation to project model A works with the development of the project model and has done this for more 15 years and has been involved to some extent in all different version created of the project model.

#### **Projects and Project Models**

According to the interviewee projects create clear goals and are a more effective work form for most organization especially in relation to the constant change that occurs in most organizations. Projects also enhance and promote teamwork. To be able to be efficient in projects a project model can be used to implement a structure and make the project more visible and the model also create measurables for the project. Other improvements when using the project model is that it allows work over organizational boundaries and the organization becomes more efficient in the use of resources for projects.

#### **Value and Functions**

In project model A value is central even if it is in an early state of the overall development of the model. According to the interviewee the focus so far is upon manage

the hypothetical value in the project so it does not get lost in the constant changes of the project rather than establish new values. Further it is important to demand from the project sponsor that the value is considered and prioritised in the project.

In project model A value is considered at different levels of the project. At the steering process the projects expected value is assessed in relation to the risk which then will affect investments done in the project or in the next phase of the project.

During the project management process value is divided into three phases. First is value analysis, this phase determines the value that can be expected for different stakeholders but also what value that will be gained from running the project. In this part there is also an analysis and identification of factors affecting the value, i.e. benefits from increased stakeholder satisfaction versus cost over for delivery. This is carried out during the project analysis phase.

The second phase is called value definition and is performed during the project planning phase. As the name suggests in this phases the value opportunities from the previous phase is further evaluated and then definitions regarding what actions are needed for manage the value and also define what should be expected from these actions.

The last phase is performed during the execution phase. The identified value opportunities should be communicated to the project and value owners should be appointed these should report regularly to the Project manager. The model also states that to be sure that the value is correct, monitoring of the projects should be performed and if there are changes that affect the value aspects a new analysis may need to be done.

The project sponsor should be the one who defines high value and that it is included in the project specification so it can be agreed upon according to the interviewee

According to the interviewee Project model A lacks the Concept of function and the procedure of identifying functions. The idea for further version of the model is to strive to implement function as a part of the project triangle which now includes cost, time and quality. According to the interviewee this would make it possible to define demands from the aspects of function and further, a work break down structure could easily be applied to this and enhance project management work. However this is still on a concept state.

### **Customer Focus**

It is clear that the customer focus is important in project model A and it emphasis the importance of managing the customer interface. The model links this interface to its different functions. The steering functions are responsible for the business-oriented interface towards the customer e.g. tenders or customer contracts. Further it is the steering functions responsibility to the negotiations regarding these documents regarding changes to the requirements or exceptions to the agreements.

The project management function is responsible to report and keep the customer up to date on the progress of the project, managing the financial issues that may arise during the project, handling new or change requirements in the project and finally handing over the project outcome to the customer.

The responsibility for the execution function lies within solving and supporting the customer regarding technical issues and to assist the customer in acceptance tests.

Project model A shows that the role of the customer as a stakeholder is different depending on the type of project. In the customer project where a customer makes a request to the organisation the identification of the customer is easy and can be present to a large extent in the project. In a product provision project where the aim is to introduce a new product to a market the situation is not as clear regarding the identification of the customer and no other customer than the presumed buyer can be identified. The last example displayed in the project model A is the internal project where the aim is to change something in its performance or the structure of the organization. In this case the performance and efficiency should be seen as the customer requirements which need to be fulfilled.

The common view for all these types of projects is the importance to achieve a clear and well analyzed view of the customer requirements and needs at an early state, and if possible these should be verified together with the customer.

This is further supported by the interviewee that states that the project sponsor has the main responsibility for the customer relations however it is necessary to constantly work with the demands from the customer to be able to achieve them and this is in the model fulfilled by always have a focus on the customer and strive to include the end user in the project.

It is important according to the interviewee that the project sponsor is not the customer and the project model always recommend that there is a internal project sponsor and therefore it is important to understand that there is an external customer and the importance of his/her needs.

It is important to first identify the stakeholder and customer and then identify their needs and wants. According to the interviewee when this is established decisions must be made regarding the needs and wants that are relevant to fulfil for the project and closely work together with the customer to reach consensus.



### **Evaluation**

Suggestions for improvement should constantly be dropped to the project management and sent out to the organisation as the project proceeds, small evaluations can be performed during the project at each tollgate. However the focus of evaluation according to the interviewee is performed after the project is finished. A final report is written regarding how the project was executed and what possible improvements should be considered for future projects. The interviewee further explains that evaluations at each tollgate is a recommendation for projects and relates to the size of the project, if the project has a relatively short life span evaluations at each tollgate is unnecessary since they are more likely to create too much work doing them than benefits coming out from performing them.

Evaluations also depends of the newness of the project if in an organisation the same project is being executed over and over again a final evaluation would be sufficient. Upon the question "what is the goal with performing evaluations in projects" the interviewee replies "there is no point in doing an evaluation if you do not know what to use it for" and further explains that the main purpose is to learn from each project performed and letting others know what was done in the project and what should be considered in the future. Another important aspect of evaluation is that the people involved get a chance to sit down and discuss and consider the different aspects of the project so that they learn from the project and can increase their level of maturity for the next project.

### **Creativity**

According to the interviewee creativity is encourage by using project as a work form however creativity is something that the project model uses to vaguely.

### **Human Dynamics**

#### **Teams and Teamwork**

According to Project model A teamwork has a built in flexibility which corresponds well with projects and its constant changes. This makes teamwork a prerequisite for successful projects.

Project model A has created a list of aspects that needs to be consider and developed for an effective teamwork.

- Alignment  
A common understanding of the project goal and how the team should reach the goal
- Commitment  
The participants should be committed to the project and their own assignments and should show both motivation and self confidence.
- Respect

Respect and appreciation for the work performed should be the base for any project and respect toward the roles assigned to others

- Involvement  
Team members take an active part in and use their skills, knowledge and experience in project activities.
- Confidence  
Self confident people who also are confident regarding the project work are more efficiently in projects and have more energy for project work

The person responsible for the team is the Project manager who is responsible for integrating and coordinates all efforts achieved by the project team. To be able to succeed for the project manager and the team a close cooperation between Project manager, team leader and team members must exist.

Another aspect explained in project model A is the importance of establish teamwork at all levels of the project to gain the benefits of people working together in teams throughout the project organisation and its different functions. This aspect is also discussed and supported during the interview where the interviewee also explains that the project can benefit from using multidisciplinary teams.

Project model A shows an awareness of different cultures when performing projects and how they affect the project and how to manage this to achieve a well functioning project. The model further shows that culture is about people coming from different backgrounds and therefore belongs to different cultures such as nationality or regional cultures but also different gender, social background, level of education or coming from different organisations has a cultural impact and affects the team and the project.

### **Satisfaction**

The aspect of satisfaction for the involved participants is important according to the interviewee even if it is not written clearly in the theory for the project model. However many of the things included in the model has often a purpose to do just this to motivate, creating involvement etc.

### **Communication**

Project communication is about analysing the prerequisite and the need for communication and information in the project and to establish effective routines for information management in the project.

It is important that the flow of information is managed during the entire project and at the conclusion phase the experiences gained archived and made available for future projects.

A big part of a effective teamwork is built upon good communication according to the interviewee.

Communication and integration are the two aspects that merge the different areas of knowledge of the project management function together. The area of communication includes planning of communication and what should we should communicate and to whom. The project model shows how to work out a well functioning communication model for a project.

According to the interviewee important aspects are such as that you should have a well planned flow of communication which includes all and gives correct information to the right people without overflowing them with information which can be considered as a risk with communication.

Within a project the status report works as a tool of communication and communicates the progress of the project to all involved participants and stakeholders.

It is important for the well being of the project that the information regarding the project has easy access through what is called a project library according to the project model which will enhance the communication in the project.

In relation to communication there are different responsibilities related to it. The project sponsor is responsible for areas such as stating a security level for the communication, approving communication plan, supporting the project by promoting it in its organisation and towards external stakeholders, being visible and available in the project work and encourage an open atmosphere.

The next role that has a high level of responsibility for communication is the project manager who should analyse prerequisite and the need of communication and define a framework for communication and prepare an communication plan and after the communication plan has been established the project manager should make the information easy to access for the project members but also making it possible for the members to communicate with each other and to the stakeholders. The project manager should also continually react to request for information and also review the communication in the project and updating the communication plan if needed.

The members themselves also have some responsibility for the communication in the project by seeking the information necessary for their assignment, share their knowledge or experience that can help others and adhere to security regulations and other rules or routines for communication.

### **Change**

Changes whether they occur in the project or its organisation or an unexpected market change the impact is high on the project. It is therefore important to plan for changes from the start and try to anticipate them at an early state.

According to the interviewee during planning of the project and up to tollgate 2 changes occur and are directly dealt by analysing the change that have occur the impact it has on the project in relation to time, cost, value, scope and characteristics. After the analysis is done the needed procedure to secure the project is decided upon and the necessary actions are implemented. Also important according to the model that all involved are informed about the changes in the project and what caused them.

If change occurs after tollgate 2 it is important to have a change control routine and that it is implemented into the project. Here the change is handled more strictly and it is important to inform stakeholders of the changes and their risks.

If change occurs in the project that is of a business oriented nature it is upon the project sponsor to decide the impact of the change and the future of the project.

### **External and Internal Environment**

All boundaries, laws or regulations must be identified and analyzed both regarding the project but also for the organisation. And upon this a quality plan can be made, The overall aspect of always searching for opportunities within the different areas of the environment that the projects exist within is encouraged by the project model and to be able to always strive to work smarter in the project work.

**Methods and Tools**

The project model recommends some of the methods for example Function Analysis and Value Analysis and supports them however this is just a recommendation.

Level of correlation with VM	1	2	3	4	5
<b>Management Style</b>					
Value				X	
Functions		X			
Customer focus					X
Creativity		X			
Evaluation					X
<b>Positive Human dynamics</b>					
Communication					X
Teams and teamwork					X
Change				X	
Satisfaction			X		
<b>Internal and external environment</b>					
				X	
<b>Methods and tools</b>					
			X		

Table 2. Summary from theoretical material and interview regarding project model A

#### **4.1.2 Results from Interview 2, User of Project Model A**

For the second interview for the project model A the interviewee has a managerial position and is responsible of the project managers in his department. This interview is done in relation to real projects and not in relation to the project model however the project model A is used in the organisation.

##### **Projects and Project Models**

According to the interviewee the main benefits gained in working in projects are that you have well defined assignment which is easily measurable in consideration to the goal and requirements, time, and cost. To be able to live up to this definition it is important to state the goal, requirements and inputs on an early state and strive to live up to them during the project.

The advantage of implementing a project model to the organisations projects creates a common terminology for all involved and creates an easy way to understand where in the lifespan the project currently is. This makes it possible to see what is expected from the different people involved, project manager, stakeholders' and sponsors.

The definition of different roles and responsibilities becomes very clear when using the project model which according to the interviewee makes the project more effective and many of the discussion that could have arisen are avoided.

In relation to the connection between the project and top management the interviewee states that it is important to define what the top managements role is towards the project and the project manager must be able to to some extent steer the top management so that the project receive the help needed from top management since it is the top management that enables the resources needed for the project.

##### **Value and Functions**

According to the interview the concept of value exists in the organization and it is a constant focus of what is important for the project to achieve which is clearly related to the definition of value from the standard with its equation with satisfaction of needs divided by use of resources.

To be able to reach the set needs on value it is important to demand decisions from the project steering group to decide what the most important aspects are however it is the project manager who has to take the consequences for the value.

According to the interviewee the most important measure to take if a project needs improved value is to consider what the project is trying to achieve and take the time together with the customer to sit down and analyze the current situation and define what needs to be done to reach a high value. It is also important to remember that the requirement specification should be iterative and constantly reviewed.

In relation to functions the interviewee explains that this is central to the organization in which he works and instead of produce and sell solutions they sell functions. However difficulties may arise when offering functions since many of the organizations' customers are of a technical nature with high knowledge of what they want and need and therefore they neglects the importance of functions.

Also the functions aspect can be lost during the project when the customer can affect the project and then often demand a product and therefore also will get it.

### **Customer Focus**

According to the interviewee a part of the Project Managers role is to use the customer as a spokesman for what should be done in the project. The interviewee continues that it is often favourable for the project members to have a clear view of who the customer is and show that this is the person who will use the result from the project and that he/she explains about the expectations and wants of the project result. The contact with the customer should be continuous throughout the project so that all expectations and needs are updated so that the customer receives the correct product.

In the organisation of the interviewee it is not the Project Manager that has the responsibility of identify the customer this should be done by a Product Manager.

Even if a relation between the project members and the customer is favourable there can be situations where there is a risk involved, the project members must always go through the correct people before changing anything that can affect the project. If the customer have a close connection with a project member and ask for change this could arise serious issues for the project as a whole if corrections or changes are made without the approval from e.g. the Project Manager.

### **Evaluation**

According to the interviewee evaluation should be done in the project at each tollgate where assessments exist that should be reached in different areas. The Project Manager should also write a final report of the project and the project work. The evaluation is done in two aspects the project result and how well did we perform in the project. In relation to the project performance customer and sponsors can be involved in the evaluation as well. The organisation also uses something called work improvement reviews where the involved people sit down and list things that has been good an things that needs to be improved. This can be used by the project manager as a foundation for the final report. The aim with performing evaluations should be to not repeat mistakes, the interviewee says that mistakes are always done but there is no need to make the same mistake twice.

The problems in the organisations projects are that often the project manager is eager to start the project as soon as he/she can and neglect the importance of reviewing previous project reports.

### **Creativity**

In the project work creativity is not encouraged since it is seen as the creative phase already is past and when the project has started everyone involved should focus upon getting their part done in time and according to set requirements. However creativity can be encourage in other forms according to the interviewee creativity forums can run alongside with the project where new ideas and improvements can be evaluated but should not interfere with the actual project. The interviewees general idea of creativity is that it is a good thing that should be encourage but it must be under settled conditions.

### **Human Dynamics**

#### **Teams and Teamwork**

Upon the question what are the benefits of working in teams the interviewee believes that it is a prerequisite for us as human to function and further continues that people that do not like working in teams are often hard to involve in projects and are therefore less desirable in projects. Teams are a building block for projects where the people involved benefits from each other.

In the organisation multidisciplinary teams has been used in projects however it is often difficult to use this type of teams since they involve people from different parts of the organisation and it is rare that a project member are involved in only one project which creates high demands on the project manager to just keep this type of team organised. However the interviewee believes in this team and perhaps it will be easier to use them in the future.

When assembling a team for a project the project manager can only demand a certain competence for the task at hand and is not part of the assembling process this is done by the section manager.

#### **Satisfaction**

The most important aspect when discussing satisfaction for the involved people in the project the interviewee indicates that clear goals in the project are of great importance since this shows when the project reaches its goal and the participants now what they are working for.

#### **Communication**

According to the interviewee communication has a clear role in all projects which allow the people involved to understand what is happening in the project, this creates a common understanding regarding the project and aspects that affect the project. Communication also gives satisfaction for the participants and is important for the cooperation in the project.

The interviewee experience is that there is too little communication in many projects and sees no negative aspects in relation to communication in project and states that "if you don't have anything to say you should at least say that you have nothing to say".



The organisation encourages good communication and strives to help the involved people to improve their communication skills.

### **Change**

All project experience change and this should be considered in the planning so it affects the project work as little as possible. According to the interviewee the project manager should not be much affected by change as long as he/she has the resources needed for the project execution it is up to the project steering group or the sponsor to handle changes. If change occurs which affect the project the project manager should receive new directives and implement them to the project. At this stage it is vital with good communication between the project steering group and the project manager.

### **External and Internal Environment**

Consideration is always taken to the environment which the project exists in according to the interviewee and should be included in the project specification which is written by the project manager. There is not only risk that are identified but also opportunities in the environment.

**Methods and Tools**

The interviewee explains that they do not use these methods according to their definition. However there are some aspects of them that is used such as the function identification according to function analysis, uses a similar technique as Functional performance specification but more in relation to the requirements and not so much related to the functions and in this way breaks down the requirements so that they can be solved by different parts of the organisation, or the concepts of design to cost in their development.

Level of correlation with VM	1	2	3	4	5
<b>Management Style</b>					
Value					X
Functions				X	
Customer focus				X	
Creativity			X		
Evaluation				X	
<b>Positive Human dynamics</b>					
Communication					X
Teams and teamwork				X	
Change				X	
Satisfaction				X	
<b>Internal and external environment</b>					
				X	
<b>Methods and tools</b>					
			X		

Table 3. Summary from interview 2

### **4.1.3 Results from Interview 3, User of Project Model A**

The interviewee person is senior manager consultant which consists of support to other companies in all issues regarding project management and has previously also been a project manager.

#### **Projects and Project Models**

According to interviewee the benefits of working in projects are that it gathers skills and have clear and well defined goals. Projects produces short term results in comparison to the line based work performed in the organisation. Both work forms are necessary for an organisation, the line woks more with long time issues whilst the projects exist on a more short term basis.

A project model gives the involved people a common terminology and the participants in the project can easily understand at what state the project is and what is expected of them.

The relation between top management is often depending on the personality of the top management. According to the interviewee there is usually one manager that is responsible for both the line and the project performed in the organisation. The relation between the project manager and this manager will have an affect on the project and the project can experience change if this manager is replaced.

However in general there should always be a connection and some involvement from the top management and the project. The level of the relation is often depending on the project and the hierarchal level of the project within the organization.

#### **Value and Functions**

The interviewee is not certain about his current workplace and their use of value as a concept. However in a previous organisation there was a very high focus on value and securing a high value towards the customer even if the value term never were used. The organisation also looked towards different values which were established such as customer value and value created for the organisation such as new areas of knowledge. The interviewee also explains that it was often a conflict between creating a value and how much it was allowed to cost.

The concept of function was also used but not expressed as VM however there was a focus upon creating and searching for functions of a product rather then a technical solution. The use of different levels of functions was also used to achieve a main function that function was then broken down into new lower level functions.

#### **Customer Focus**

Customer focus is important for the project. There are often different levels of customers and this need to be addressed.

There is a lot of work done in relation to the project to identify its customers and further the interviewee explains that the organisation that he works within have a department that focus upon securing demands and requirements and keeps the project up to date. However it is still difficult to have all involved in the project aware about its customer.

### **Evaluation**

The focus of the evaluation is upon the performance of the project work and not upon the product produced. The interviewee explains that there are three important aspects for an evaluation, how well did the steering function of the project work, how good was the management of the project and how well did we succeed with the product produced by the project.

During the project there is project revision continuously performed which can be seen as an evaluation which shows the state and the progress of the project.

The purpose and the goal of performing all kinds of evaluation is to improve the project work however the interviewee sees some problems with the use of the evaluation in the next project and the interviewee explains the importance of easy access of previous evaluations.

### **Creativity**

Creativity is in general always good according to the interviewee, however sometimes it needs to be controlled since in projects and after a certain point the focus should be upon getting the result done and producing the project deliverables.

### **Human Dynamics**

#### **Teams and Teamwork**

The greatest benefits from working in projects are that the involved people can inspire and be inspired from each others.

The composition of the teams are not made by the Project manager he/she can only apply for the different areas of expertise that is required for the project it is then the line manager who decides who should work in the project.

#### **Satisfaction**

To feel satisfaction is always important not just in project work and according to the interviewee an important aspect of satisfaction is to be able for all involved to see the benefit that they create in the project and to see that their individual work leads to a end product. This also motivates the participants in the project. The project manager should constantly promote the project and its positive impact on the organisation to show that the project is important and in this way motivate the project members.

### **Communication**

A high level of communication is important for any project however according to the interviewee one aspect that is often forgotten is the importance of communication in the entire project and not just for the project manager. If there is a lack in communication there can be severe result such as the project member is working without a full and correct description of the task at hand. In the interviewees opinion it is important that the people who communicate or should communicate has meet each other at least once and explains that this will enhance the communication.

### **Change**

Changes always occur and often affect the project and there are many different types of changes that could have great impact on the project or even cancel them. However the interviewee also explains that are changes that have a positive influence on the project such as an increase in project budget.

In interviewee explains that one way to handle changes is to write a change proposition which usually is not done by the projects instead of some other group in the organization.

### **External and Internal Environment**

The environment should always be considered and most be followed and this environment often pushes the development and therefore it is important to be aware of them. External conditions can according to the interviewee also create new markets especially in relation to new laws and regulations.

**Methods and Tools**

Value analysis is something that the interviewees' organisation talks about however the interviewee has not yet seen it in use. However in previously organisation he explains that the concept was used even if not the term of value analysis and the same goes for function analysis.

The other methods are not familiar by name to the interviewee but the basic definition for them is used in organisation where he previously worked.

Level of correlation with VM	1	2	3	4	5
<b>Management Style</b>					
Value					X
Functions					X
Customer focus				X	
Creativity			X		
Evaluation				X	
<b>Positive Human dynamics</b>					
Communication				X	
Teams and teamwork				X	
Change			X		
Satisfaction					X
<b>Internal and external environment</b>					
					X
<b>Methods and tools</b>					
			X		

Table 4. Summary from interview 3

## **4.2 Results Project Model B**

These results show the answers from the interviews with first the person involved with the development of the project model B and then the results from the two managers working in projects where the project model is used.

### **4.2.1 Result from Theory Material and Interview with Developer**

The interviewee has been working with the project model for over five years and is currently working as an indoor salesman for the project model.

#### **Projects and Project Models**

The general description of projects according to project model B is that projects is a effective way to perform a goal oriented work in a temporary organisation. Some characteristics for a project are a project has a start and an end, has a goal and should deliver a result, is unique, brings change to its organisation and has its own budget. Implementation of a project model to a project has many advantages according to the interviewee such as that it creates a structure to the project work and makes it repeatable, creates routines and a common understanding of what needs to be done and therefore creates a value to the organisation.

#### **Value and Functions**

In relation to value project model B uses the term benefits which is similar to the concept of value and will be shown briefly in this part.

An analysis of the benefits secures that the projects which contributes most to the benefits for the organisation is started and performed.

The management of the benefits is done continuously during the project in different steps, starting with a assessment of the benefits which leads on to starting the project and is a foundation for decision point 1, the second phase is to make an analysis of the benefit and is performed parallel to the projects preparation phase and here more consideration is taken to the benefits created by the project also risks that would limit the organisation from gaining the benefits, the third phase which is a steering phase implies that if changes occur in the project the benefits may need to be updated and changed as well. The last phase is benefit realisations and this aims to secure that the benefits are gained and returned to the organisation.

According to project model B the benefits that can be gained from a project is divided into assured and possible benefits where assured benefits are those that give a direct affect to the organisation such as increased earnings and lowered outcomes which most likely will occur if the project succeeds. The possible benefits are those that are not yet fully identified and might improve cost, time and quality. These create benefits for the organisation but are difficult to measure directly.

### **Customer focus**

A successful project according to project model B is when the customer is satisfied and the project deliverables contributed to the customer's goal.

According to project model B the purpose of using the model is to initially and during the project continuously check the benefits and customer experienced quality.

The interview person explains that customer relation is important and used for securing the quality of the project deliverables and there is a constant interaction between the customer and the project to achieve this. Further, at each decision point the customer should be involved so that the customer is up to date with the project and the progress.

In project model B it is stated that in an early state the customer should be identified and included in the established goal of the project and also included in the project directives. This shows an early awareness of the importance of customer relations in projects.

Project model B also address customer focus when it comes to handling the different deviations that might occur during projects and refers to the commitment made to the projects and points at the commitment made to adept the result to the customers current need and further make the project flexible to the customer demands.

In the project model it is described in regards to the benefits that the work should aim to strengthen the customer's competitive ability.

### **Evaluation**

In project model B there are checklists attached to each decision point which point out areas that needs to be controlled and there are checklists for the project manager, project owner and a common checklist for all involved in the project. This implies that evaluation is performed continuously during the project.

In the project model decision point 8 is used for evaluation and to wind up the projects different parts, this is performed after the project deliverables has been handed over.

At this stage a final report is written which is a report of the work done in the project. In the checklist for this decision point includes is there a plan for feedback to be used for others project, which creates an important aspects to evaluation since this shows that the current project has some responsibility for the next project and that it should be able to gain experiences from previous projects. The interviewee who explains the importance of having routines for the feedback so others can benefit from it also strengthens this aspect. The project model also points at the importance of searching for similar projects performed in the organisation before starting the new project.

### **Creativity**

According to interviewee 4 creativity is important for the project members involved in the project however it must be under ordered circumstances or else creativity can create complications such as if a project member is creative and develop something that is not coherent with the project specification and therefore can affect the project in a negative



way. However if this project member would have informed the project manager about the idea a implementation to the project could have been made so it improves the product and the project.

## **Human Dynamics**

### **Teams and Teamwork**

According to interviewee the project model creates greater understanding for the involved people in the project and the risk of miss understanding is reduced significantly. Regarding the composition of the project team the interviewee explains that it is important to strive to have a good mix of people with different social skills and knowledge.

The material made available to this investigation describes the aspects of team and teamwork vaguely.

### **Satisfaction**

The project model regards that everything in the project should be executed in accordance to all involved and that all involved should be aware of their contribution to the project and this creates satisfaction amongst the project members.

### **Communication**

During the interview the interviewee explains the importance of managing communication so that the correct information reaches the right people. A risk according to the interviewee is that people within the project can be overwhelmed by information. To be able to increase the level of communication in projects project model B teaches communication skills during the education of the project model.

### **Change**

Change is something that often occurs in projects and therefore the project model put a lot of effort on this subject according to the interviewee.

Since the project model encourages a constant review of the requirement specification that involves a continuously contact with the customer this enables new requirements and wishes regarding change. To be able to handle these changes the project investigates these demands and then change or updates the project specification. The approach for the changes may vary from different projects and the impact on the project.

The project model includes checklist for when changes occur and includes aspects such as what is allowed to change, what initiated the change, is resources appointed to the investigation work, how and when should the measures be taken and how should the measures decided be financed.

The impression of the project models' way of addressing changes occurring in project is thorough and it address the importance of being aware of changes and how they should be handle effectively.

**External and Internal Environment**

There is little indication from the project model in relation to the project environment. However the project model does use risk and opportunity analysis which could relate to the project environment. Also the interviewee is uncertain about aspects relating to the project environment.

**Methods and Tools**

The interviewee is not aware of the methods presented in relation to VM and the theory material does not indicate any use of these methods or similar.

Level of correlation with VM	1	2	3	4	5
<b>Management Style</b>					
Value				X	
Functions	X				
Customer focus					X
Creativity			X		
Evaluation					X
<b>Positive Human dynamics</b>					
Communication				X	
Teams and teamwork			X		
Change					X
Satisfaction			X		
<b>Internal and external environment</b>					
		X			
<b>Methods and tools</b>					
	X				

Table 5. Summary from theoretical material and interview regarding project model B

#### **4.2.2 Results from Interview 5, User of Project Model B**

The interviewee person has worked with in many different organisations with many different managerial positions and is currently working as a manager consultant and is also involved in education of the project model.

##### **Projects and Project Models**

According to the interviewee projects makes it possible to focus upon a limited area of work for a limited time period. The project can efficiently optimize the resources used and by producing a wider picture in the project also limit the expenses. However the interviewee does not think that running projects in itself is more cost efficient then other work forms.

By implementing a project model to a project contributes to a common understanding of the procedures in the project and all involved is up to date on the progress of the project. the project model with its different decision points creates clear directives on what aspects that needs to be fulfilled before starting the next part of the project, this makes it possible for the project manager to not be to rash regarding the progress of the project and the preliminary work can be made thorough. Further the interviewee explains that the project model makes it possible to avoid that the project only focus on achieving results.

##### **Value and Functions**

In relation to value the interviewee starts with separating two aspects, the project result and the benefits created by the project. The project manager is responsible for the project and its results however the project manager is not responsible for the benefits that the project creates for the organisation. The benefit created by the project is upon the project sponsor or who ever ordered the project. This can be related to the fact that this type of benefit is in relation to the organisation and the actual created benefit is first analysed some time after the project is finished and handed over.

According to the interviewee there are several different benefits identified and uses examples as the image created towards the organisation from a project. Benefits can and often change during the project and are up-dated by a constant contact with the sponsor, future users and the project.

It is the sponsor or the person who ordered the project who should define the wanted benefits expected from the project often defined in terms of lowered cost or increased sales.

In relation to function the interviewee explains that they do not use functions but there are some similarities to how they achieve there benefits.

##### **Customer Focus**

During the interview the interview person explain that in projects it is important to have a high level of customer focus and should be central when planning a project. In each project there are different customers and customer roles. The person who orders the

project is one type of a customer for the project however the end user is the real customer and in relation to the result more important according to the interviewee. It is important to use stakeholder mapping in the beginning of the project to clarify which customer exist in relation to the project and their role towards the project. Also stakeholder mapping should be done to reveal all future user of the project outcome and their role in the project. The interviewee explains that it can be difficult as a project manager to relate to the customer and one needs to find channels for communicating with the customer this is particular difficult in project that includes and affect a lot of people. In relation to the project member and the customer their relation is that they participate the same meetings, however there does not seem to be a more in depth connection between them.

### **Evaluation**

The evaluation is done in the form of a final report according to the interviewee and includes positive and negative aspects of how the project was performed. Further this report also includes how the customer experienced the project deliverables and if it was to satisfaction of the requirements.

The evaluation focus upon how the project was performed and less or not at all on what benefits the project created. The benefits created by the project are evaluated in the benefit analysis, which is performed some time after the project has ended. The definition of how to measure the benefit and what benefits that should have been achieved from the project should be made before the project started.

According to the interviewee the final report is the main evaluation however there are also some evaluations performed during the project in the form of status reports often performed at the decision points in the project and includes an analysis of the risk and opportunities for the project.

Unfortunately the final report from a project is one of the least used resources according to the interviewee. The interviewee continues to explain that often there are many projects that are performed in his organisation with new project managers who perhaps are not aware of the opportunities that lies within the final reports, and therefore do not use those already written or does not commit to writing new once after the project has finished. There is a need to enable the knowledge and the experience to be handed over to the organisation and should not be bound to just the person who performed the project. This problem can be related to both the accessibility of the information but also the fact that many project manager's haste in and out of projects and focus to much on producing quick results.

### **Creativity**

Creativity is encouraged but only exists on the production level and not at a steering level.

## **Human Dynamics**

### **Teams and Teamwork**

The main purpose to work in team is to combine competences in the organisation to improve performance, since all efforts and knowledge put together always is more effective than that of a single individual.

The interviewee continues to explain that this is often a great challenge to manage these competences so they strive towards the same goal.

In most projects in the organisation where the interviewee person works the project manager is given a team to work in the project and the project manager is not involved in assembling the team. However the project manager can change the responsibilities for the different persons given to him or have them replaced if necessary. In this way the project manager have some even if limited control over the composition of the project team.

The interview person also explains that in long term project aspects such as social skills can be considered when assembling a project team. The reason for looking towards these kinds of issues in long term project and not in other project can probably be related to that the project members have less time to get to know each other and therefore this aspect will not affect the project.

### **Satisfaction**

The satisfaction for the involved people in the project is of course important and a great challenge for the project manager to achieve according to the interviewee.

During the interview it is explained that to be able to have a high level of satisfaction it is to recommend having a budget especially made for this purpose.

In all projects it is important to have a completion phase at the end of the project and to show appreciation to the involved project members, this should be performed even if the project failed its purpose.

### **Communication**

Communication is vital for a project and without it the project will fail. In accordance with the project model the interviewee explains that there is a matrix that shows which information that should go to whom, when and how they should be transmitted to them and explains that this can effectively be used in projects and also that it is important to plan for communication in the project.

In the organisation there is some training in communication skills but this is always outside of the project.

### **Change**

Requirements can always change and changes are something that often occurs in project. The project manager should always be well prepared for changes and plan for them. It is important for the project manager to have self confidence in what he/she does and always rely on that what he/she does contributes value to the organization.

### External and Internal Environment

According to the interviewee there is always internal and external environment that affects project in the organisation and therefore it is important to be aware of this. However the interviewee does not believe that it is not up to the project to look towards these issues.

The chance to affect the environment is possible easier in regards to the internal then the external environment.

### Methods and Tools

In relation to Value analysis and function analysis the interviewee explain that this is not anything that they use however they use benefit analysis which uses similar definitions.

Level of correlation with VM	1	2	3	4	5
<b>Management Style</b>					
Value				X	
Functions		X			
Customer focus					X
Creativity			X		
Evaluation			X		
<b>Positive Human dynamics</b>					
Communication				X	
Teams and teamwork				X	
Change				X	
Satisfaction				X	
<b>Internal and external environment</b>					
			X		
<b>Methods and tools</b>					
			X		

Table 6. Summary from interview 5

### **4.2.3 Results from Interview 6, User of Project Model B**

The interview person is responsible for the process in the IT department in his organisation and has previously also been involved in project management.

#### **Projects and Project Models**

Projects enhance the focus on what needs to be done and clarifies goal and target of the current task. The interviewee also explains that projects also visualise the deliverables in a project.

By introducing a project model to an organisation the project manager get an effective tool to support the project work. To what extent a project manager uses the project model is up to the current project manager and the interviewee does not think the project model strengthens the project by itself.

#### **Value and Functions**

The concept of value is not used in the organisation in question however the interview person is interested in the method and would like to see an organisational change towards a more value oriented structure.

The organisation in the current state uses projects for problem solving that arises and does not consider what values or benefits they can create for the organisation but there is some indications that this might change in a not to distant future.

In consideration to the concept of functions the interviewee answers similar to previous, there is an interest from project managers but not yet possible.

#### **Customer Focus**

The interviewee explains that the customer should always be in focus and it is important to listen to what the customer wants and strive to deliver to these expectations to the customer rather than just producing what the project sponsor have ordered. This aspect correlates well with the customer relations according to VM where the customer should have a strong relation into the project. However the interviewee says that this is an actual problem at his work since the top management wants the project to deliver what the project sponsor decides or order. During the interview it becomes clear the project is mostly used as a problem solving tool.

The project manager is usually aware of who both the customer and the end user is since in the organisation where the interviewee works the project sponsor is regarded as the customer. However the interviewee explains that the project manager has low influence on the project sponsor regarding the end user and therefore it is difficult to get a good connection between the actual customer and the project.

### **Evaluation**

According to the interviewee evaluation is decided by the project manager and there is no guidelines from the organisation. In the current projects a basic evaluation created by the project manager is to evaluate aspects such as budget, fulfilment of requirements and an evaluation of the project process. The interviewee thinks that it would be interesting to include the customers' experiences of the project in the evaluation as well.

The evaluation is performed after the project and a final report is written. In the current situation no evaluation is done during the project.

The purpose with doing the evaluation is to see how well the guesses made from the beginning was correct and that goals and requirements were achieved. Also according to the interviewee important to have and look at success factors.

Today there is no common access area for the evaluation. However there are plans to implement a place for documentation of the project reports to the organisation so that others can access the information and learn for future projects. .

### **Creativity**

The interviewee explains that creativity is something good but it can some times be counterproductive, the best situation is where you have a well-balanced team. Sometimes it is necessary to "press stop" and not allow creativity to get out of hand and instead focus on what needs to be achieved in the project.

### **Human Dynamics**

#### **Teams and Teamwork**

According to the interviewee teamwork creates an environment where the participants become enthusiastic and feel a purpose in what they are doing. This is created in the team. In the organisation where the interviewee works project teams are composed by a process where the project manager asks for competences that he/she needs to succeed with the project. The project manager mostly looks for technical skills but can also consider aspects such as social skills for the individual team members.

#### **Satisfaction**

Satisfaction is something that the interviewee sees as absolute to have for an effective project. The interviewee explains that it is important to focus on the deliverables and give feedback to the project members so they can see their contribution to the project also important to show that the project manager trusts that the members will achieve the goal of the project. To create a good atmosphere to work in is an important aspect for the project member.

#### **Communication**

Communication creates understanding and support in the project and it is important according to the interviewee that everyone involved have the chance to speak up and



ventilate their thoughts if they so choose too, even if their suggestions do not correlate with the current task.

The outcome of the project can be affected by how it was decided to communicate in the project.

### Change

According to the interviewee change affects how the project proceeds in the organization and in the project such as if employees quit. Today there are problems with change and how it affects other aspects and the interviewee believes that this needs to be improved.

### External and Internal Environment

In relation to the environment which the project exists in the interviewee explains that the internal environment is considered but less towards the external and opportunities within it. This could be related to the use of projects as a problem solving tool and not to use projects to create higher value to the organization.

### Methods and Tools

The interviewee does not use any of the described methods but is interested in them and thinks they could improve projects.

Level of correlation with VM	1	2	3	4	5
<b>Management Style</b>					
Value		X			
Functions		X			
Customer focus			X		
Creativity				X	
Evaluation			X		
<b>Positive Human dynamics</b>					
Communication				X	
Teams and teamwork				X	
Change		X			
Satisfaction					X
<b>Internal and external environment</b>					
		X			
<b>Methods and tools</b>					
	X				

Table 7. Summary from interview 6

## **5. Discussion**

The aim of this discussion will be to discuss the results presented in the result chapter in relation to the theory of VM stated in the theoretical review chapter.

### **5.1 Projects in General**

In the beginning of each interview some general questions was stated with the main purpose to start off the interview in an appropriate and easy understandable way so that the interviewee could feel secure and comfortable, since these questions just regarded the general perception of projects and project models.

However another aspect of these questions is to see what parts that is important to the interviewee and compare that to the VM view on why to use projects.

The study shows that some of the aspects that are beneficial when working in projects are, and agreed upon by all interviewees' is that it creates clear goals, is reactive to the constant change that so often occur in organizations, promotes teamwork, concentration of skills from the involved members, exist on a short term basis and every project is unique these definition are common in most literature regarding projects (PMI, 2004) and also in the theory of VM and described in the theoretical review chapter of this dissertation.

The study shows that there are some differences between the interviewee regarding why to use and implement a project model however the main reason which all have mentioned is to create a structure for the projects performed in the organization and to create a common terminology within the project.

### **5.2 Management Style**

In consideration to the areas included in management style, value and functions, customer focus, Evaluation and creativity the overall relation with VM is high. The areas with the highest correlation are shown in the areas of value and customer focus, where both project models and interviewed managers show an high awareness of the importance of these aspects. In some areas the correlation is low such as the concept of functions or creativity which is both highly promoted by VM however this may be an affect that origins from just that, the concept of function is highly related and specific for the use of VM and therefore it is possible that if VM never been used the use and understanding of functions will be low. A more detailed discussion of the findings of the results of the study in the described areas follows.

#### **5.2.1 Value and Functions**

The investigation has shown that in relation to value both project models shows awareness of this issues and the importance for both the project and the organisation. Both models use an identification process to realise the different aspects that affects the value of the project. Project model A looks at value at different levels of the project both

in the steering level and on the project management level this correlates well with VM that describe the importance of always strive to identify the different values for different situations and whom they may affect. However the highest similarity from project model A is gained from the project management process where according to the model the value is divided into three phases which include identification of values for different stakeholders, aspects affecting values, definition of value, monitoring and securing the value. This shows the importance of value for the project and that a high effort is put into reaching it.

Project model B also uses a number of different steps in relation to their benefits where benefits are identified and an evaluation of the benefits and risk assessment of issues that could prevent the organisation to gain the benefits from the project. Both model also states that if change occur during the project the value or benefits may need to be reconsidered and the analysis be remade to secure the value.

An interesting issue in project model B is that the concept of benefits even if it is similar to Value it is focused upon the benefits gained only for the organisation and there is little indications on the relation between values created for e.g. the customer or to the product produced by the project. However both project models use a high use of value which is similar to VM and the importance of this value affects the outcome of the projects and the efficiency of the organisation.

In consideration to the investigation done in real projects the result shows that all but one uses the concept or similar to it, and also the one who currently does not use value but is interested in the concept and believes that there are changes in the organisation towards this. All interviewed people have roughly the same view on value and projects, projects should create a value.

An interesting aspect that is shown in the study is that there is a clear link between value and the customer and during the interview comments has been made such as if change occur it is important to review the wanted or the expected value from the project and involve the customer when doing it. This shows a high similarity with VM since its definition often relates or uses the customer as a starting point for achieving a good value.

In consideration to function the project models has a low correlation to it and as explained by the interviewee for project model A identification of functions and the use of functions is a lack in the project model however the interviewee also explains that it would be good to use function as a part of the triangle explained in chapter...

Project model B shows no correlation to the concept of function.

The investigation shows that there is a higher use of the concept of function in the projects than in the project models. Two of the interviewees (3 and 4) explain that they use or have used functions in their organisation by producing or selling a function rather than a specific product. The other two managers interviewed did not use functions in their project. However the low use of function shown in both relation to the project models and the manager interviews can be related the fact that function and function analysis is in

relation to the other issues rather specific for VM and therefore if you do not use VM the use of function will not be used either.

A limitation in relation to the areas of value and function that needs to be addressed is that since VM is not a widely spread theory it is difficult to explain VM point of view on value and perhaps even more regarding functions. This is a limitation that has been difficult to affect since the interviews have been time limited and the importance has been to investigate the overall correlation to VM and not specific areas.

With this limitation in mind and when considering the definition of value as can be seen in fig.1 where value is represented by the satisfaction of needs divided by resources needed, the satisfaction is defined by different functions as can be seen in chapter 2.5.1.1 which implies that in order to achieve high value in accordance with VM, functions must be included.

For the results gained during the research this means that value as defined by VM is important to the projects however since the use of functions is overall low the value should be presented as an awareness of its importance rather than an ability of the projects or the project models on how to achieve it.

### **5.2.2 Customer Focus**

It is clear that both project models have a high awareness of the importance of customer focus including early identification, continually interaction and the importance of what the customer wants and need to be satisfied with the outcome of the project. This shows a full correlation with value management and the importance of customer relations in projects today.

From the interviews performed with the managers they also highlight the importance of customer focus and that most of the interviews show a high level of relation between costumers and the projects and that they have great influence of the projects. However the investigation also shows that in some organisation even if the project manager understands the value of having a good relation to the customer and listening to his/her needs and wants, the top management is more focused on getting the job done according to what was ordered in the first place. This does not correlate to VM since this is more an approach to use projects as a problem solving tool and not as a way for the organisation to increase its value.

### **5.2.3 Creativity**

The investigation has shown that both project models and project mangers sees creativity as something good however they also see a risk with creativity such as new ideas are implemented into the project without understanding and agreement from the project manager which can have serious negative affects on the project and its outcome. Therefore the investigation has shown a rather modest approach when it comes to encourage creativity.

### **5.2.4 Evaluation**

The study has revealed that both project models encourage the use of evaluation during the project at specific points, tollgates or decision point, and this correlates well with the aspects to not just have a post project evaluation described in the theoretical review (Mantel, 2001. Wisén & Lindblom, 2004. Martin, 2006). However the main evaluation is still performed at the end of the project in both models, which also correlates well with VM.

Project model B also have in one of its decision points where the final report is written a checklist which includes the creation of a plan on how to feedback the information and lessons learned from the project to the organisation and to the next project. This action is very important and the study of the project managers shows this even better since all of them have made comments on the need for better use of the evaluations. The overall picture created by the investigation regarding evaluation is that the evaluation is performed mostly at the end of the project even if there are some small evaluation done during it but there is a need to improve the feedback and the use of that feedback to the organisation and for future projects.

To conclude the correlation between both project models and information from the project manager and VM is that evaluation is done in accordance but it is not very widely used for future projects.

## **5.3 Human Dynamics**

In the aspects of human dynamics the relation shown in the study for the different areas, communication, teams and teamwork, change and satisfaction the highest correlation has been revealed in communication and both project model and managers uses and emphasise the importance to have a high level of communication and the importance of managing communication. Teams and teamwork also shows an overall high correlation to VM however the project model B does not describe the importance and affects of team in their theory and is the only part of the investigation in this areas that does not correlate to VM.

A more detailed discussion of the different areas follows to increase the understanding of the correlations and deviations.

### **5.3.1 Communication**

Both project models show a high awareness of the importance of communication and prioritize management of the flow of communication. As shown in the study project model B educates people in communication as a step in the education of the project model.

Project model A states in the study that communication is also related to an effective teamwork which should be based on good communication and further describes different areas of communication that is different peoples responsibility and is necessary to reach an effective project.

Both models also describe the importance of having a correct flow of communication where right information goes to the right people to prevent an overflow of communication.

The investigation shows that in relation to the managers information is vital for the project success and that the choice of managing communication can have a high impact on the project outcome. One for the managers states that “if you don’t have anything to say you should at least say that you have nothing to say” which shows the importance that always strive to communicate in the project since this increase the understanding of the project and what is going on in the project. This high awareness is also found in the theory of VM which states that project success relies on good communication and it is necessary both to link the stages and to facilitate the progress within each stage of the project by communication.

### **5.3.2 Teams and Teamwork**

From the study of the project model there have been some mixed results since in project model B teams are only discussed vaguely and the other part of the investigation shows a higher awareness in relation to teams and teamwork. During the interview with the interviewee related to the model B some aspects of team are presented such as teams composition should be a good mixture of people and that the model looks towards both technical and social skills and these parts correlates with VM and its views on teams. However it is rather strange that it is not pointed out in the theoretical material regarding the project model and its importance for projects.

The investigation shows that the project model A focus on the importance of teams by a number of different aspect such as listing key issues that needs to be considered when developing teams, importance of understanding individuals in the team (background, gender, social skills), and states that it is an important task for the project manager to handle and manage the team to be efficient. This shows that the project model puts a lot of efforts into the team and realise its importance for the project in the same way as VM. In relation to the interviews made with managers the study shows that team or teamwork is a natural part of the project as a work form and the greatest benefits are that people can learn from each other by sharing their knowledge.

VM encourage the use of multidisciplinary teams to make projects more efficient and some of the managers have also used this type of team. However as explained buy interviewee 2 there are still difficulties with using the multidisciplinary teams since the use of people from different parts of the organisation demands a lot of work from the project manager just to schedule their work and keep the project organised.

### **5.3.3 Change**

In regards to change the study shows that both project models consider this thoroughly and offer support for the people involved in the project. Project model B uses checklist for handling change and an interesting aspect is that it involves to high extent the customer if changes occur by using constant review of the project specification which

includes and updates the customer on what is happening in the project e.g. if change occurs.

Project model A describes that to address change effectively the management of it must go through certain steps, before tollgate 2 changes will be directly analyzed and appropriate action will be started. After tollgate 2 a more in depth investigation must be made regarding the affects of the change and here it is important to address customer and stakeholders about the change and how it will be addressed and solved.

This part of the study clearly shows that both project models are highly aware of the importance of addressing change as it occurs to prevent any unwanted effects on the project.

Some of the findings from the interviews with the managers show that projects are always affected by change this is a part of the project as a work form. However it is important for the project manager to be aware of changes and try to plan for them as explained by interviewee 5 and further explains that it is important for the project manager to be confident in how to handle change and he/she must believe that the way the change was handle increases the value towards the organisation.

One of the managers also points out that change is not always related to something negative and that change can also give positive affects to the project.

Both interview with developers and managers shows a high awareness of the importance of the affect of change and all explains different ways of addressing and handle change which correlates well with VM.

The only aspect that perhaps is a bit vague from the results is that change is mostly related to negativity which could limit the development of project work since change contributes to new ideas and this is an aspect that VM supports and believe that change should be encouraged (Swedish standard institute, 2006).

### **5.3.4 Satisfaction**

According to the result gained from the study neither of the models show specific action to reach satisfaction amongst the project members however during the interviews with the developers it is stated that many of the aspects of the models is aiming for just this to motivate, create involvement and all involved should be aware of their contribution to the project and how it will come to affect the project outcome or the organisation.

The study also shows that the managers are well aware of the importance of satisfaction and there are some aspects that are mentioned in all interviews such as clear goals, trust and the feeling of being involved and as explained by interviewee 4 it is a great challenge for the project manager to achieve satisfaction. Only one of the interviewee mention that the project should have an end phase where appreciation is shown for the project members regardless of the outcome of the project. There seem to be a high awareness of satisfaction however how to achieve it is probably individual for the project and its project manager.

#### ***5.4 External and Internal Environment***

The study shows that project model A recommends that there should always be consideration to the projects environmental laws and regulation but also it is explained the importance to search for opportunities in the environment and always strive to improve the project work and work smarter. Project model B uses risk and opportunity analysis which can be related to looking towards the project environment.

The overall view of the managers regarding the project environment is that consideration must be taken. However there are some differences between the interviews such as the level of consideration, risk or opportunity and how is responsible to analyse it and make the decision how to address it. The conclusion is that all projects consider the internal and external environment to some extent and if possible try to see opportunities within it.

#### ***5.5 Methods and Tools***

The method presented in the theoretical review are mostly specific for VM and therefore the overall use of it in the project models investigated are low, project model A recommend some of them but this is just a recommendation.

Two of the interviewed managers have heard of or have used similar methods to what VM uses the other two does not use any of the presented methods. This shows that there are similar tools used for similar reasons even if they by name is not the same. In regards to FA and VA this result was expected since these methods are highly related and developed through VM and therefore if VM is not use the likeliness of usage is low.





## 6. Conclusions

The purpose of this dissertation has been to investigate if and to what extent VM is used in Swedish projects. To be able to address this, an investigation has been performed to reveal any use of VM in project models and projects on the Swedish market by reviewing theory of the project models and performing interviews with representatives from both the project model and from live projects.

As described in the method chapter there is two main aspects that the dissertation aims to achieve and these are:

- Reveal similarities between VM and the chosen project models
- Evaluate if VM is used in projects

During the interviews and the investigation of the project models it is clear that none of the project models or the organization directly use VM as their management theory however as the investigation has shown the relation and similarities is still high.

The study has shown that the overall similarities between VM and the two chosen project models are high and there are several issues that both project models and management tool sees and address in similar ways. The key issues that have highest similarity to VM is the concept of Value, Customer focus, Evaluation, Communication, Teams and Teamwork, change and satisfaction which has been revealed from the investigation.

In relation to the interviews with the managers working in projects the findings are similar. The investigation shows that managers are aware of the issues described in VM and pay much attention to them and similar to the findings related to the project models this is most evident in the areas of concept of value, customer focus, evaluation, communication, teams and teamwork, change and satisfaction.

The conclusion that can be drawn from this is even if project models or projects do not use VM, its principles is still widely used or shared and show an importance to projects on the Swedish market.

To further explain these conclusions the following part of this chapter explains briefly and indicates the different areas and how they correlate to VM.

### **6.1 Areas with High or Complete Correlation**

These areas or key issues are those that use the same basic definitions or very similar as describes VM in the theoretical review chapter (ch. 2) and therefore can be concluded to have high or complete correlation with VM even if the term VM is not used.

#### **Value**

The study has shown a high level of relation to VM in relation to Value both Project models and managers interviewed states that a project should create a value to the organization and both project models show this importance by the use of different

methods to reach a high value in the project. However as explained in the discussion chapter (5.2.1) the value in the investigation should be seen as an awareness of the importance of value rather than an ability to achieve a high value since the correlation to functions are low.

### **Customer Focus**

To be able to deliver successful project it is necessary to have a high customer focus so that the project can deliver the correct outcome and react to changes during the project, this is described by both the theory of VM and from the investigation which shows that both project model emphasis on identification, a continuously interaction and the importance of understanding what the customer wants and needs.

### **Evaluation**

The key issue of evaluation is an area that the investigation has shown that there are some differences between the project models and real projects. The project models show a high relation with VM regarding the importance of evaluation both during the project and after it and also show the importance of using the information received from the evaluation for future projects. The interviews with the managers also showed a high use of evaluations however most of the managers pointed out that in many projects there is no phase where old projects are reviewed and used for in the current project therefore this shows a low relation to VM and this should be improved to have better use of the evaluation that still is performed so that the organization can be more efficient.

### **Communication**

The investigation has shown that the correlation between VM, project models and the interviews with the project managers is high and they all show a high awareness of the importance of a good flow of communication in projects.

### **Teams and Teamwork**

The importance of teams and teamwork described by VM is also highly evident in most part of the investigation which therefore can be concluded to have a high correlation to VM. Some of the most clear aspect of this high relation is that both model to some extent promotes multi disciplinary teams and show the importance to manage the team to be efficient and further the managers explains that teams is a natural work form for projects and that the greatest benefits from team is that people can learn from each others knowledge and experience.

### **Change**

The study has shown that both project models and the interviews with managers from real projects show a high awareness of the importance of the affect of change and all explains

different ways of addressing and handle change which correlates well with VM and its theory.

### **Satisfaction**

To conclude the relation regarding satisfaction between the project model, projects and VM the correlation is high. Even if satisfaction is not described precisely in the theory of the project models the developers explain that many of the different aspects of the model aims for just this e.g. motivate, create involvement and all involved should be aware of their contribution to the project and how it will come to affect the project outcome or the organisation.

### **Internal and External Environment**

The study has shown that it is a must to have an understanding of the environment in which the project exist and constantly be aware of its affects e.g. laws and regulations must be fulfilled but it is also possible to search for opportunities in the environment. This shows a high correlation with VM.

### **6.3 Areas with an Intermediate, Low or No Correlation**

These areas or key issues are those that do not use the definitions of VM and therefore are said to have intermediate, low or no correlation. However there are still some correlations that will be presented and concluded.

### **Creativity**

The issue of creativity is important for VM and according to the theoretical review in chapter 2, creativity should always be encouraged. The study has shown that the project models and the project managers that where interviewed has a more restricted view on creativity and can also see a threat in it in relation to the project. Therefore the conclusion is that this does not correlate well with VM.

### **Functions**

The use of functions in projects is low and the studies has shown that neither of the project models uses functions and only two of the interviewed manager's uses or have used similar techniques. However one of the models are considering implementing it in to the model and are recommending some of the methods related to functions. To conclude the relation to the use of functions the correlation is low possibly because function is rather specific to VM.

## **Methods and Tools**

The study shows that most of the methods that are related to VM are not widely used by the interviewed people of the investigation or by the project model. Some of the managers explain that similar methods are used for similar reasons. However the correlation to VM regarding the methods is overall low.

## 7. Future Research

This section will list some of the possible future research that could be made in the area related to this dissertation. The suggestions are in relation to the current study and have arisen as possible solutions to some of the issues that have not been addressed or need to be further addressed in this investigation.

### **An in Depth Investigation in one of the Key Issues**

A future research could be made in one of the key issues addressed in the current dissertation to further investigate how projects could benefit from using VM. Another possibility could be to investigate a key issue that has had an overall low correlation to VM and study the benefits of a higher correlation and how to achieve it.

### **A Comparison between a Swedish Project and a Project Performed with the use of VM**

Since the comparison in this study has used a strictly theoretical view of VM, a future research could be made comparing a Swedish project that perhaps uses a project model and a foreign project that follows and uses VM.

This could be an interesting approach for companies interested in introducing VM to their organization to get some reliable facts from actual use of VM.



# Appendix A

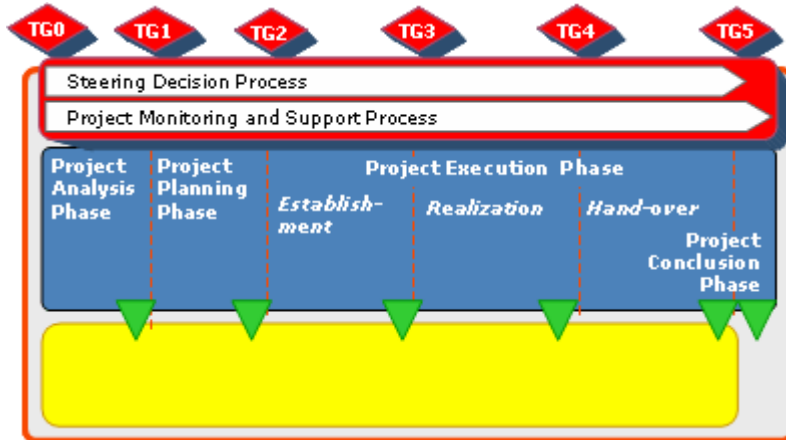


Figure 3. Project steering process of project model A

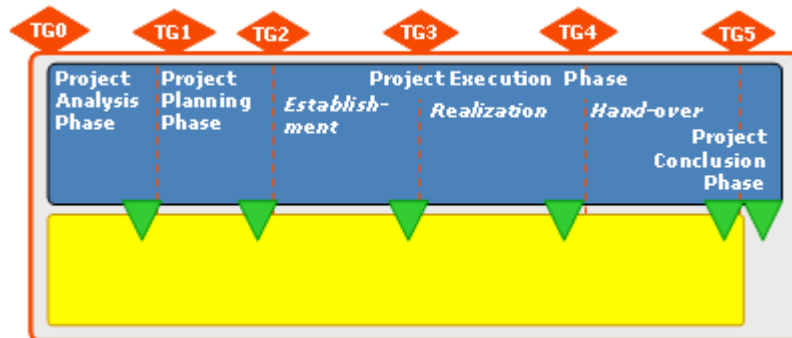


Figure 4. The project management process of project model A





## Appendix B



Figure 5 Overview of project model B



# **Appendix C**

## **Interview Questioner, Swedish Version**

### **Intervjufrågor**

#### **Introduktion**

Agenda

Presentation av mig

Presentation av IPM och Chalmers

Presentation av examensarbete

#### **Intervju**

Intervjun kommer att spelas in för senare analys

All mottagen data kommer att behandlas konfidentiellt

#### **Allmänna frågor**

Datum:

Namn på intervjuperson:

Typ av befattning

Antal år på denna position

#### **I relation till projektmodellen**

- Har du genomgått någon form av utbildning relaterad till modellen
- Uppskattningsvis hur många projekt har du medverkat i där projektmodellen använts

#### **Projekt och projektmodeller**

- Vad är fördelarna med att arbeta i projekt i jämförelse med andra arbetssätt
- Vad är fördelarna med att införa en projektmodell
- Vilken relation har "top management" (ledningen) till projekt som utförs i organisationen,

## Management Style

### *Kund fokusering*

- Vad är din syn på kundfokusering?
- Hur anser du att kundfokusering påverkar projektet?
- Vad görs för att frambringa kundens eller risktagarens krav eller önskemål
- Vad görs för att identifiera alla kunder relaterade till projektet?
- Vilken relation har kunden till dem som arbetar i projektet
- Hur kommunicerar projektledaren eller de involverade i projektet med kunden eller risktagarna och hur ofta sker denna kommunikation?

### *Värde och funktion*

Definition värde

Värde är inget absolut begrepp, värde definieras olika, för att få ett högt värde behövs olika parametrar uppfyllas. Exempel för den externa användaren kan ett högt värde definieras genom det som levereras till dem med avseende på vad de fått betala och om produkten uppfyller deras förväntningar. Definition enligt standard är värde = (uppfyllelse av krav önskemål)/(förbrukade resurser)

- Hur relaterar er organisation till värde som begrepp?
- Hur definieras värde i projekt (olika typer, mot olika intressenter, etc.)
- Vem definierar det värde som bör uppnås?
- Vilka strategier används för att förbättra eller uppnå ett högt värde?
- Vad är den allmänna uppfattningen om funktionsidentifiering?
  - Fokuserar på vad saker skall göra istället för vad de är.
  - Ett tillvägagångssätt för att möta kundens önskningar och krav där man ser till kundens behov och letar inte efter en förut bestämd lösning, Starkt relaterat med kundfokusering.

### *Kvantitativ utvärdering*

- Vilka procedurer används för att utvärdera projektet?
- Hur ofta sker utvärdering?
- Vad är ert mål med utvärdering?

### *Kreativitet*

- Vad är din syn på kreativitet
- Vad kan göras för att höja kreativiteten i ett projekt?

## Human dynamics

### *Teams och teamwork*

- Vad finns det för fördelar med att arbeta i team i jämförelse med mer individuella arbetsformer
- Hur sammansätts team i er organisation?

### *Tillfredsställelse i arbetet*

- Hur skulle du beskriva vikten av att känna tillfredställelse i projektarbete för de inblandade?
- Vad görs för att tillfredställelse för de medverkande i projektet skall uppnås

### ***Kommunikation***

- Hur anser du att kommunikation påverkar ett projekt?
- Hur sker kommunikation i ert projekt?
- Vad görs för att höja kommunikationen i projekt? (utbildning, uppmuntran)

### ***Förändring***

- Hur påverkas projekt av förändring både angående förändring i projektet eller vid organisation förändring?
- Vad är den vanligaste reaktion vid förändring (positiv/negativ)
- Om förändring sker, hur hanteras detta i relation till projektet

## **Externa och interna förhållande**

- Vilken hänsyn tas till den miljö i vilken projektet existerar, både externt och internt, i relation till e.g. Externt: lagar nationella eller internationella, marknads förutsättningar, sociala eller ekonomiska förutsättningar etc. Internt: organisations policy eller regler, personalens kunskap och kompetens, organisations kultur och relationer,
- Hur kan projektet påverkas positivt av att analysera den omgivande miljön?
- Är det möjligt att påverka den omgivande miljön?

## **Metoder**

Vilken relation har organisationen till följande projekt verktyg

- Value analysis
  - Metod för att öka värdet på ett organiserat och kreativt sätt genom användandet av både funktions och ekonomisk metodik. Målet är att höja organisationens effektivitet genom att göra dess produkter mer konkurrenskraftiga.
    - Används eller känner du till denna metod i projekt i er organisation
    - Om inte, har ni några andra metoder för att identifiera och höja värdet I projekten
- Function analysis
  - Används för att identifiera funktioner av en produkt, service eller organisation.
  - Skall fungera som ett verktyg för att stärka kommunikationer mellan de som är inblandade I definitionen, designen, och utvecklingen i ett projekt.
    - Används metoden
    - Om inte, vilka metoder eller vad görs för att öka kommunikationen mellan de inblandade I projektet och för att identifiera funktioner
- Functional performance specification

- Ett dokument som beskriver en beställares uttryck för behov och önskemål i relation till användarens föreskrifter och förhållningar. Detta skall göra att beställaren kan få förslag på den mest fördelaktiga lösningen i form av funktions beskrivning av utvecklaren, tillverkaren samt leverantören i relation till designen,
- This allows the enquirer to obtain the designer, manufacturer or supplier the design, the realisation or the proposal for the most efficient product.
  - Är detta något som används I era projekt
  - Om inte, hur utvärderas funktioner eller idéer inom projektet
- Design to cost
  - DTC är en Management metod som från början av utvecklings stadiet av en produkt eller ett system tar hänsyn till produktionskostnad. Detta pågår enda till slutet av utvecklingsfasen då produktionskostnaden överensstämmer med de uppsatta målen.
  - Den uppskattade produktionskostnaden skall behandlas som en parameter i utvecklingsprocessen som skall uppfyllas liknande de tekniska parametrarna.

# **Appendix D**

## **Interview Questions, English Version**

### **Introduction**

Agenda (describe the content of the interview)

Presentation of Hans Johnsson

Presentation of IPM, Chalmers

Presentation of the dissertation, describe the goal and purpose of the interview

### **The interview**

The interview will be recorded for later analysis

All received data will be confidential

#### ***General questions***

Date:

Name:

Type of employment:

Years of employment at current position:

#### ***In consideration to the project model***

- Have you participated in any training to use the project model?
- Roughly how many projects have you been involved in which have used the project model?

#### **Projects and Project models**

- What is your general view on projects (advantages/disadvantages)
- What are the benefits with the implementation of a project model?



- What is the relation between the top management and the projects performed in the organisation?

## **Management style**

### *Value and Functions*

- How do projects in your organisation relate to and use value?
- How is value defined in projects? (different types, towards different stakeholders etc)
- Who defines value in the organisations projects?
- What strategies are used to achieve high or improved value?
- What is the general perspective on function identification for problem solving?

### *Customer Focus*

- What is your perception on customer focus?
- How do you experience that customer relations affect the project?
- How does the organisation or the project reveal the customers requirements?
- What action is taken to identify the projects different customers?
- What relation do the participants of the project have towards the customer?
- How can the project or the project manager communicate with the customer and how often does this occur?

### *Creativity*

- What is the general view on creativity in your organisation or projects?
- How can projects benefit from a high level of creativity?
- What is done to improve creativity?

### *Quantitative evaluation*

- What are the procedures for evaluation in projects?
- How often does evaluation occur?

## Human dynamics

- In general, what can be done improve the human dynamics within a project?

### *Teamwork*

- In your opinion, what are the benefits with teams?
- Are there any negative aspects with the use of teams?
- How are teams composed in your organisation?

### *Satisfaction*

- How would you describe the importance of satisfaction for the participants in a project?
- How can satisfaction be achieved for the team or the individuals in a project?

### *Communication*

- How do you interpret that communication can affect projects?
- What is the common form for communication in your projects?
- How is communication trained or encourage in projects or the organisation

### *Encourage change*

- How does change affect projects?
- What is the common reaction to change?
- If change occurs in a project or organisational wide, how is this dealt with?  
(in consideration to project performance)

## External or internal environment

- What consideration is taken to the environment in which the project exist both internally and externally in consideration to constrains such as e.g. legal consideration?
- Is there a way that the project can benefit from analysing the current environment in which it exist in?
- Is it possible for the project to affect its own environment

## Methods and tools

What is your or the organisation's relation to the following project tools/methods

- Value analysis
- Function analysis
- Functional performance specification
- Design to cost
- Design to objectives



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