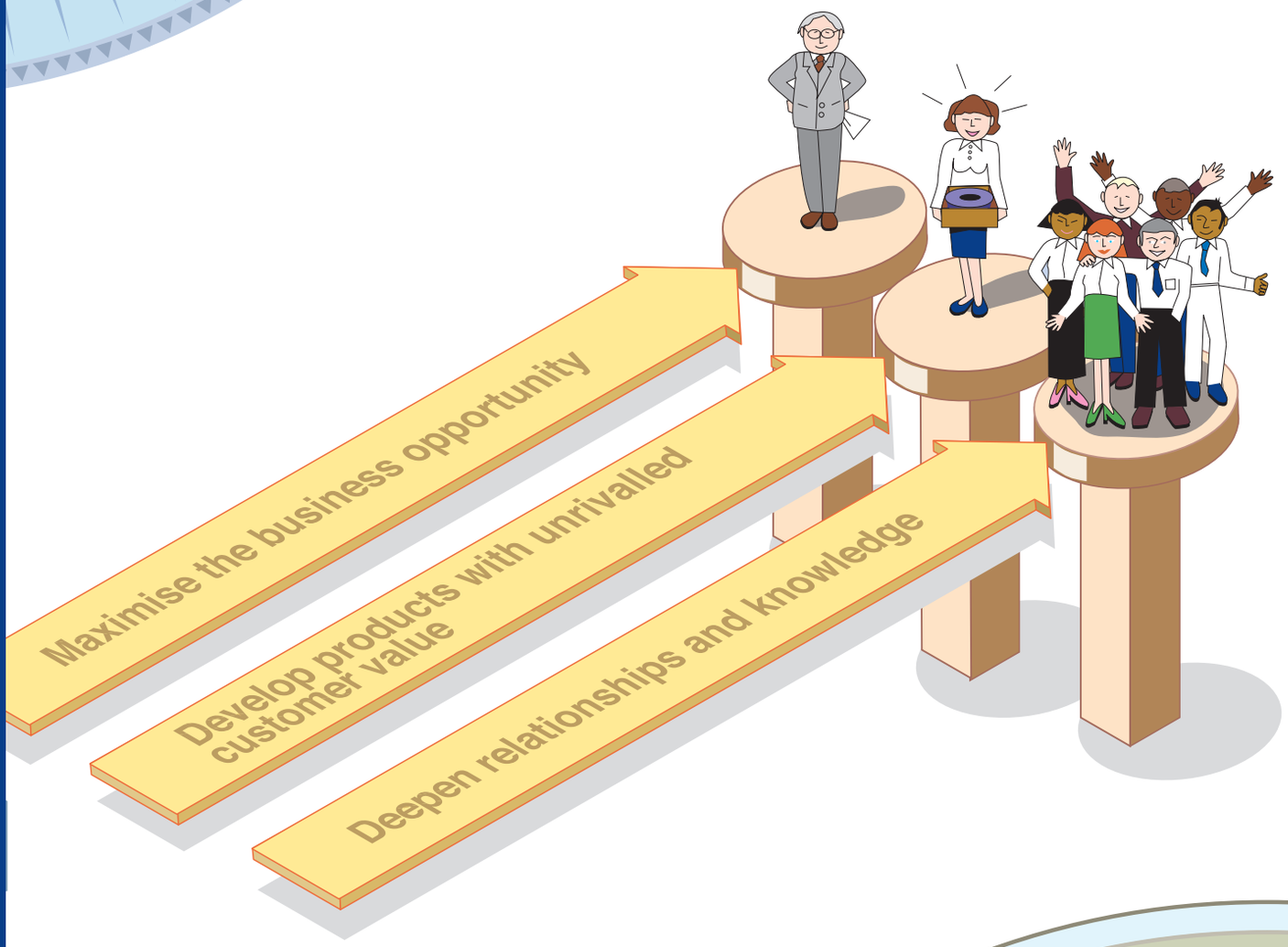
The Value Model

How to Master Product Development and Create Unrivalled Customer Value



Per Lindstedt ● Jan Burenius

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How to master Product Development and Create Unrivalled Customer Value

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Per Lindstedt and Jan Burenius
The Value Model: How to Master Product development and Create Unrivalled Customer Value

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The Value Model: How to Master Product Development and Create Unrivalled Customer Value

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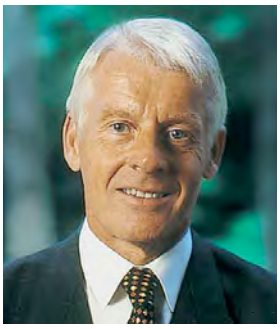
The Value Model from a management perspective

Creating an unrivalled level of customer value is a vision shared by many. It is not difficult to have opinions about customer value. Creating customer value is an art.

Why is customer value in focus? Yesterday's customers came easily to the conclusion that new products were better and therefore more expensive, but tomorrow's customers voice the opinion that new products are of course better–but they are also less expensive. This is the market's greatest challenge. It is also something I have myself experienced in my work within the car industry in Japan, Europe and the USA. I have learned from experience that there are systems and processes for creating technology, but as soon as this technology is challenged by customer expectations, the situation immediately becomes more complex.

Per Lindstedt and Jan Burenius share their business experience with us using great insight and a tremendous knowledge of the market. I believe that the authors have succeeded superbly in their ambition to help engineers think in terms of the market and customer benefits, and marketing forces to think in terms of technology and functions. It is my opinion that the book uses constructive methods to stimulate a new way of thinking, and thereby success, for those companies that adopt the knowledge offered.



Hans-Olov Olsson
Senior Advisor
Geely Holding
Fmr President and
Chief Executive Officer
Volvo Car Corporation

Atlas Copco has a long tradition of innovation that dates back to the founding of the Group in 1873. The strategy has always been to bring to the market innovative products that contribute to outstanding productivity for our customers. Our brand promise is "committed to sustainable productivity". This has enabled the company to grow to a world-leading business with activities in more than 180 countries and 44,000 dedicated employees.

Why are we so focused on innovation? Part of the answer is because it supports our goals for sustainable profitable development. We strive to increase our competitive edge by providing high-quality products that are more productive, energy efficient, safe, ergonomic, light, or that in other ways make our customers more successful.

One of our core values has been to interact with our customers and develop new products in close relationships with them. While we interact in many different ways, we believe that personal contacts are always the most efficient. Atlas Copco's vision is to become and remain First in Mind—First in Choice®. This requires a thorough understanding of the customer's business and the customer's spoken, as well as unspoken, needs. The Value Model's *Voice of the customer* concept has enabled us to further refine our methods of understanding customer needs.

The Value Model's focus on customer value fits hand in glove with our long and successful tradition of working with Value Based Selling. It is worth noting that customer value seldom has anything to do with how much the product costs to develop, produce, and deliver. Instead, it is entirely dependent upon how well customer needs and expectations are met, and the alternatives available for comparison. It is my strong belief that the Value Model is an excellent tool for any company which is passionate about creating value for its customers.

Ronnie Leten
President & CEO
Atlas Copco AB

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The Value Model from a practitioner's perspective

This book stands alone as the first comprehensive effort to integrate the total set of complex activities that define Product Generation. Years from now, this text will be regarded as the standard for defining the proper activities and techniques to be used by Marketing, Engineering and Operations personnel.

The Value Model addresses both the philosophical changes companies must make to effectively address customer's needs, as well as the specific tools and techniques development teams should employ to ensure that they create solutions which have unrivalled customer value.

The author's use of functional analysis as the underlying methodology for creating customer value through high-value solutions is coupled with other important tools and support processes such as team leadership and project management. Each section of this book provides clear summaries, detailed information, exhibits and references to other sources of information. This format allows each student to learn at their own pace and easily find additional material to amplify key issues.

I met the authors, Jan Burenius and Per Lindstedt, after I had been in the Engineering and Product Development domain for 30 years. We were evaluating consulting groups to help us improve our Product Development techniques. Based on my many years of Product Development experience, I did not expect to hear much in the way of new approaches. However, by the end of our first visit it became clear that the authors had developed a significantly improved and powerful set of techniques to create unique, high-value solutions. After two years of working with the Value model, I am completely convinced that it will revolutionize how we develop products for our customers.

Dick Arra
Fmr Director of
Product Development
ITT Industries

SHL Group is a privately owned company, serving the pharmaceutical industry with parenteral drug delivery devices, which has grown from a few people to over 3,000 employees in 25 years. The company is located in Taiwan, USA and Sweden.

The operational challenges have shifted gradually from the management of small numbers of customer projects to deciding on what R&D investments to approach for the future. Facing the latter challenge we needed a more structured approach to value creation. Studying various subject matter literature, however good in many aspects, was not sufficient to get a complete and coherent picture of this challenge, there was something missing.

Eventually, I received the advice to look into Value Model from a colleague. The described methods and tools were very useful from both a theoretical and practical standpoint. In particular, the description of the functional domain which links the companies' world to the customers' world has proven to be extremely useful and applicable in several aspects of product development, e.g. quality by design and innovation. Value Model practice and thinking gives SHL a common language and a focus in our innovation work that is of great value, and it can be highly recommended to any organization.

Rasmus Renstad
Director of Product
Development
SHL Group

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The Value Model from an academic perspective

Requirement errors are the single biggest reason why new products fail. Missing requirements, misunderstood requirements, and misinterpreted requirements all contribute to a mismatch between the products we design and the customer needs they are intended to meet. The situation is compounded by design teams eager to develop solutions before problems are clearly defined and by corporate managers anxious to rush products to market in order to reap an early return. Is it any wonder that so many new products fail to realize the objectives contained in their business plans.

Jan Burenius and Per Lindstedt address the challenge of developing new products that provide superior value – for their customers and for those who seek to serve them. The Value Model offers easy to learn, simple to use tools and techniques for analyzing what customers are trying to do and determining what they need to help them do it. They will enable product teams to establish a firm foundation upon which new product designs can be built.

The Value Model takes a holistic approach to the product development process. What might otherwise seem abstract and complex becomes straightforward and easy to understand with the use of the Value Model, although it still involves extensive work.

The technological part of the product development process is structured correctly both theoretically and practically. The concept of customer value, which is central in the Value Model, supports accurate decision-making in the development process.

In addition, the Value Model deals with two other important dimensions that are often neglected in an educational context, or treated separately. One dimension is to nurture and support employees' stimulation and motivation, and the other dimension is to guarantee that the sponsor receives a product that meets financial expectations. It' s important to understand the relationship between these three dimensions, and the Value Model does an excellent job of exploring and describing their interactions. The Project Manager's role in the development process is therefore made very apparent.

The Value Model is a practical approach and navigation aid that utilizes several different modern product development methods and approaches in a thoughtful and clear manner. That is why I, as a professor, choose to use the Value Model in the Master program for Mechanical Engineering.

The Value Model is an extremely useful addition to the product development library. The information it contains can guide teams through a maze of issues that must be successfully navigated on the road to exceptional products. This information is clearly presented in straightforward text and simple illustrations that lend themselves to self-paced study and handy reference. The book is certain to become a standard for many years to come.

Michael Pennotti,
Distinguished
Service Professor
Stevens Institute
of Technology

C Magnus Evertsson
Professor
Product and Production
Development
Chalmers University
of Technology

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Acknowledgements

We would like to thank all the people who have in different ways contributed to making this book a reality. Unfortunately there is not enough room to name all of our customers or the participants in our courses or our colleagues within various projects who have over the years provided us with so many constructive opinions on the **Value Model.**

A special thanks to the following people and organisations:

- Sven-Erik Wetterfall, previously responsible for FMoT, the Forum for Management of Technology at ABB. Sven-Erik was the first to believe in our ideas of an integrated model. He gave us the confidence and support we needed to start developing the **Value Model**.
- Dick Arra and Ulf Bengtzelius, ITT Industries, and Lasse Pesonen and Sami Leppänen, Nokia, who have provided us with their valuable opinions and given us the opportunity to verify many of our concepts.
- Victor Fey, Stefan Hallberg, Oskar Juhlin, Martin Edlund and Linda Magnusson for their opinions and support.
- Ina M. Andersson, who has provided the illustrations for and layout of this book.
- Pauline Ericsson and Catherine Williams who have helped us with the English language.
- Last but not least we would like to extend a special thanks to all the companies and organisations that have granted us the use of pictures and material for this book. These have done much to help exemplify and clarify the fundamental thoughts presented.

Finally, thanks to our families for their active support and participation that have made the creation of this book a reality.

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The authors

We, Jan Burenius and Per Lindstedt have worked together since the early 1990s. Value Model specialises in providing guidance, training and tools aimed at making development work within different companies and organisations more effective. We have much in common:

- we both hold Master of Science degrees in Engineering from Chalmers University of Technology
- we have both completed academic studies in Business Administration and Economics in addition to our technical education
- we both have considerable experience within many different types of Swedish and international industries alike
- both of us are fascinated by product development and new ways of thinking.

The Value Model has worked within an international network of consultants. This network has given us access to a unique range of expertise and insight into how companies throughout the world that are today's global leaders in their field are organised and pursue product development work. Examples of companies and customers with which we have worked are 3M, ABB, Atlas Copco, Scania and Xylem. The easiest way to contact us is via e-mail at the addresses below:

- per@valuemodel.com
- jan@nimba.com

Thank you for the confidence you have shown in us by buying our book. We hope it will be a Valueable asset.

The team behind the book

Below is a short presentation of the other members of the team behind this book.

Ina M. Andersson did the graphic design and illustrations in the book. She has a Bachelor of Arts degree in art education and graphic design from Konstfackskolan, Stockholm. She divides her working day between art education, graphic design, illustration and her own artwork. Ina lives in Stockholm with her husband and two children.

Pauline Ericsson translated the book from Swedish to English. Born and educated in Scotland, Pauline moved to the USA in 1976 where her work included writing and editing travel information. In 1984 Pauline moved to Sweden where she now lives with her husband and son. In 1990 she started her own business, offering translation (Swedish–English) and administration services.

Catherine (Kate) Williams proofread the book. Kate is from England. She has a Master's degree in Social Sciences and has worked with the English language as a freelance editor and proofreader since 1987. She lived in the UK and America before moving to Sweden in 1999 with her husband and teenage son. Kate has clients in a wide variety of fields in business, publishing and academia.

Any of the above can be contacted through e-mail: info@valuemodel.com.

The team:
Jan Burenius, Per Lindstedt, Ina M. Andersson, Pauline Ericsson and Catherine Williams

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Preface

This book consists of the two following sections:

- **Value Model Basics**

The first section of the book aims at defining and explaining how customer value can be turned into a practical tool. Customer value is an excellent instrument with which to guide an organisation towards greater success for customers and employees alike, as well as for shareholders.

- **Value Model Practitioners' Guide**

The second section of the book is a handbook aimed at those working with the development of new products at a more practical level. This provides practical and concrete advice regarding how to successfully implement a product development project.

Both sections expand on our work model, the **Value Model**. This model is a synthesis of both our own experiences and our findings of *Best Practice* examples taken from an international field. Over the past ten years, the **Value Model** has been applied with great success in numerous development projects within various environments. The model also provides the framework for our training programmes.

To gain maximum benefit from the book, an explanation of its structure is provided here. Every chapter consists of five parts, all of which are printed on different-coloured backgrounds.

Summary
Every chapter is introduced with a summary on a green background. Our aim is to provide a quick overview regarding the contents of the chapter. The quickest and best way to get a feel for the book is to begin by reading all the summaries. In less than one hour, this will provide you with an overview of the whole book and all of its fundamental concepts.

Structure and Fundamental Concepts
The chapters then continue on a white background just like this. Here we provide the framework of the **Value Model** and a more in-depth look at the fundamental concepts on which the model is based.

Definitions
Definitions form the third part of the chapters. They appear on a brown background and include important definitions linked to the **Value Model**. As some of our definitions deviate from the traditional, it may be advisable to study these if you feel unsure about the meaning of the different concepts.

Examples and Anecdotes
The fourth part contains Exhibits appearing on a blue background. These provide concrete examples or anecdotes. Their purpose is to provide variation and enlightenment about the contents of the chapter and make links to conclusions reached by other models, specialists or authors.

Practical Guidelines
Finally, on a yellow background, you will find concrete tips for carrying out the different activities in practice. These sections are aimed at providing more in-depth knowledge for those involved with the practical work of implementing different development projects.

The following three colours also have a special meaning:

- **Red**
- **Amber**
- **Green**

These colours indicate the conceptual phases within the **Value Model** and help in navigating both the book and the model.

What you are now holding in your hand has been finely chiselled from dialogues with several thousand people who have participated in our training and in different projects over the past few years. The material is constantly undergoing development and we are very interested in hearing your point of view.

Please pay a visit to our homepage at **www.valuemodel.com** where you can find current information about the **Value Model** as well as practical assistance that can be downloaded for your own project. **Welcome on board and good luck!**

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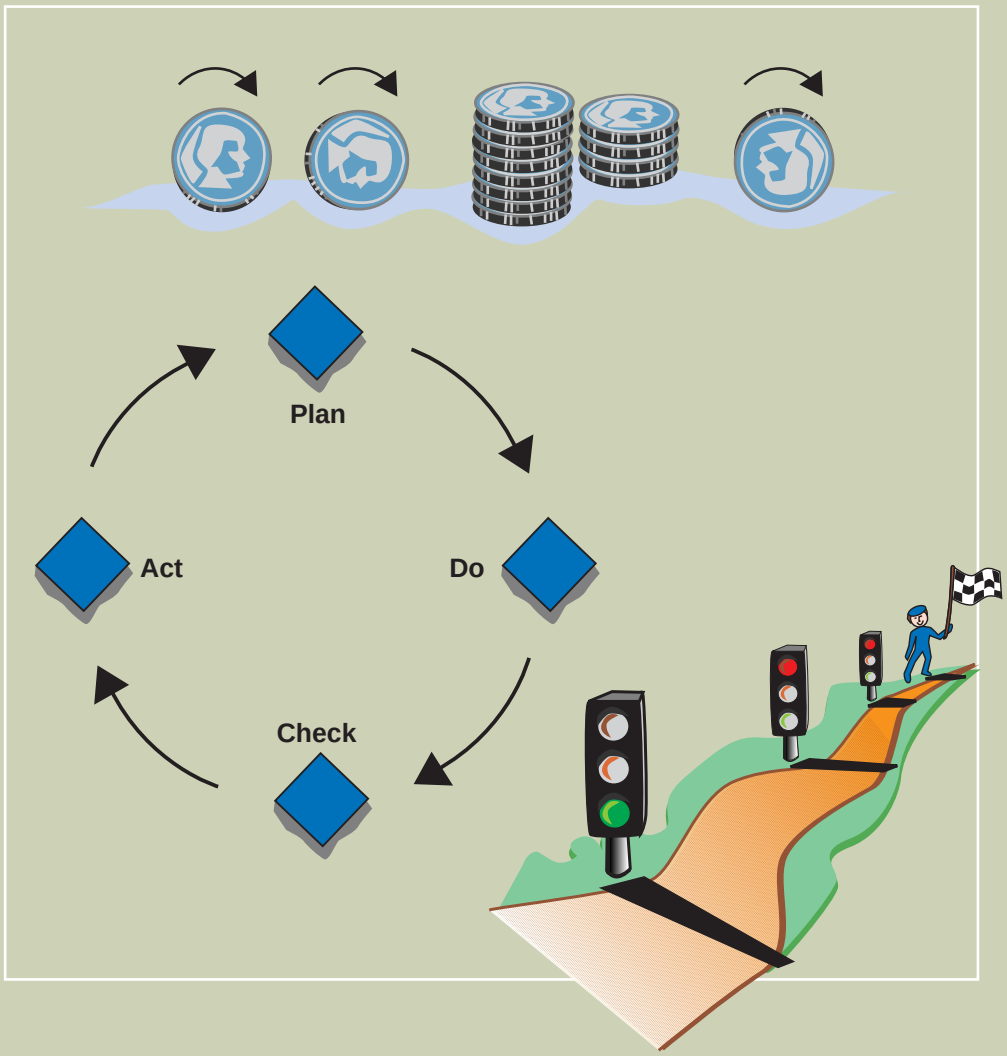

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Chapter 7

Introduction to Project Management: A Support Process

7.1 Summary

Project Management is one of the two support processes within **the Value Model**. Its customer is the sponsor. The sponsor is satisfied if the project results in a successful business venture without having had to take excessive risks. Here is a summary of the process features:

Objective
Your objective is to maximise the business opportunity for the entire life cycle of the product.

Characteristics of the Process
A journey towards the objective, divided into separate stages.

Your Focus as Project Manager
Several repetitions of the **red, amber** and **green** phases, at least once during each stage.

Traditional project management methodology is, to a large extent, derived from methods and concepts adapted for construction projects. These types of projects are large, static and focus on managing resources. Our experience of these methods and concepts is that they are less suited to development projects, which are often smaller, more dynamic and focus on creating new knowledge. Fundamentally, we are very pragmatic. What works in practice is worth learning and using, and what doesn't work must be changed and improved. What you will find in this book are only the things we believe are worth learning, because they have repeatedly proved their strength in the trenches. They have helped numerous project managers accomplish successful projects. We have excluded theoretically and academically interesting theories for the benefit of hands-on techniques. Much can be classified as common sense, but don't let yourself be led up the garden path. Common sense is

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not the same thing as common practice. Here are some of the differences between our approach to project management, as compared to more traditional approaches:

- Avoid late and expensive changes by using a pro-active approach, rather than using a philosophy of *full speed ahead and deal with problems when they arise*.
- plan in teams, in order to build commitment and understanding, and keep a documented record of the result, rather than developing the plan yourself and then selling it to the stakeholders.
- begin planning work by establishing the end results to be achieved by the project, in the form of a project definition, rather than starting by figuring out what activities need to be carried out.
- make the project more effective by building it on a foundation of broad and clearly defined project segments, rather than trying to add in parallel activities and create a whole at the end of the project.
- divide the project into separate stages, within which each stage has its own objective, so that any eventual termination is regarded as one of the possible outcomes, rather than a sign of failure.
- work with two plans that are both updated after each stage: one overall plan describing the whole project and one detailed plan describing the next immediate stage, rather than planning the entire project in detail from the outset.
- improve estimations by working analytically in the short-term perspective and statistically in the long-term perspective.
- utilise resources skilfully (rather than merely in a routine manner) when making allocations to different activities, to avoid bottleneck situations.
- simplify project follow-up by budgeting and following up deliverables, rather than activities.
- master the *big bad wolves* of the project by clarifying and preventing risks and changes, rather than just reacting to what occurs.
- focus on the business case, rather than time and costs alone.

In some organisations *project* is a mysterious phenomenon that can take many different guises. You will ruin the project concept if any and all tasks are called *a project*. The project concept should be reserved for strategically important tasks with significant business impact. Therefore, every organisation needs to pin down criteria that distinguish those tasks within your organisation to be regarded as projects and those tasks to be regarded as something else. This is the only way to attain a project definition that is valid, meets the needs of your organisation and works in practice:

A project is a task that meets the project criteria established by your organisation.

This chapter reviews possible criteria to be used for securing a unified definition of the projects within an organisation – criteria that promote the effective management of projects. It is always better to run a small number of projects vigorously, instead of a large number of projects with inadequate staffing, thereby creating bottleneck situations.

The chapter concludes by highlighting some of the principal organisational forms available for the management of projects. We will discuss the advantages and disadvantages of:

- a project-based organisation
- functionally organised projects
- matrix-based projects.

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7.2 Fundamental Principles and their Link to the Value Model

The **Value Model** comprises one main process and two support processes. One of the support processes deals with defining, planning, organising and following up the work. We call this process **Project Management**, and the sponsor is its customer. The sponsor represents the owner's sphere of interest and the sponsor is satisfied if the project results in a profitable business venture without major risks having been taken. The objective of this support process is therefore to maximise the business opportunity for the entire life cycle of the product.

Our approach to **Project Management** may be perceived as different and somewhat confusing for those of you experienced in traditional methods of project planning and management. Some areas will be familiar to you and some will be new. We have excluded everything that, in our experience, doesn't work in practice. That is, if you are working with product development within a dynamic environment. Hopefully you will find new and interesting methods of structuring and following up your projects. These methods are often simpler and more intuitive than traditional methods.

The first point is to avoid late and expensive changes by using a pro-active approach, rather than a philosophy of *full speed ahead, and deal with problems when they arise*. Success is frequently a race against the clock, especially when working within a rapidly developing market. This may produce an attitude within the organisation that there is no time for upstream work, such as planning. Instead, the team gets its skates on and *zips off*.

This is an over-zealous and misdirected attitude that often results in massive delays and costs, due to late changes. Symptoms of bad planning and organisation appear at the end of the project, when problems arise. By then, the solutions available are often few and expensive. These types of afflictions cannot be cured. They can only be prevented, by working upstream in the process. Many action-oriented people experience this as annoying and ineffective. When managing your project it is therefore important to take into consideration the presence of psychological opposition. Resistance to a pro-active approach can be significant within yourself, your project team and other stakeholders. This hurdle must be cleared. An unbeatable strategy, but one that often becomes just a cliché is ***get it right from the start.*** The process is aimed at getting as much as possible right from the start. However, as the purpose of a development project is the creation of new knowledge, it is of course impossible to foresee everything. As project manager, your focus is therefore on the creation of a rotating planning structure, adaptive to new knowledge created and lessons learned. The first task is to clarify the objective and the journey ahead, and then to find a quick and safe passage to the first destination. Finally, throughout the journey, you must keep track of your whereabouts and, if required, make necessary corrections so that the project can be steered to a clearly defined completion of the stage in question.

When one stage is accomplished, and the next is to be commenced, the activities are repeated again. Corrections and adjustments are made in accordance with the results achieved and the knowledge gained through evaluation of the newly completed stage. This work method can be compared to the four activities in the Deming circle (Imai 1986):

- plan
- do
- check
- act.

Our observations are that if planning is carried out only once, at the beginning of the project, it will slowly but surely slip out of control, bit by bit. Differences between the grandiose project plan describing all the activities in detail, from start to finish, and the actual project work carried out, become increasingly larger the further the project progresses. When these differences finally become unacceptable, urgent corrections and re-planning are required. This re-planning is regarded as a sign of failure, rather than a natural part of the working process. In the worst scenario, it can be used as an argument that planning is pointless. We have also observed that similar problems occur if the check and act activities are omitted. This also discredits the value of planning due to lack of feedback, insight and knowledge. **A pro-active working**

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pattern is established by dividing your project into several separate stages in which a full Deming circle is completed.

The second point is to plan in teams, in order to build commitment and understanding and keep a documented record of the result, rather than developing the plan yourself and then selling it to the stakeholders. We have never experienced a better way of creating commitment to a project than ensuring the initial involvement of all the players and parties concerned. People can easily distance themselves from the project if they feel left out. This is not necessarily a desire to have one's own wishes carried out, but is more often based on a psychological feeling of being ignored or slighted. Therefore, one of the main objectives of planning work is to develop a unified feeling of commitment and responsibility amongst all the players and parties concerned. Do this by inviting the key people to participate in planning work and creating opportunities for them to express their views. Participating in this work ensures that they also have to listen to other points of view. In this way, an ongoing exchange of views and ideas is set in motion and continues until a project plan acceptable and supported by all is produced. A project that has been finely chiselled in this way stands upon a stable platform. Under these circumstances, there is no room for pushing responsibility onto someone else if the going gets tough further into the project. **The best project plan is always one in which everyone feels involved and which everyone is committed to carrying out.**

Thirdly, begin planning work by establishing the end result to be achieved by the project, in the form of a project definition, rather than starting by figuring out what activities need to be carried out. Moving the focus of the project from activities to deliverables directs attention onto the customer. Activities are *HOWs* that describe the internal process. Deliverables are *WHATs* that describe the benefits to the customers. Compare the project with a factory. Current production philosophy is based on creating a "pull" in the factory using the Kanban system and the "Just-in Time" organisation (Imai 1986). In the same way, we want to create a pull in the project. The project is not to produce a whole range of deliverables that someone, some day, might be interested in. It is only to produce those deliverables requested and pulled by the customers. Your responsibility as project manager is to ensure that the project is initiated with a close dialogue with the customers in which agreement is reached on what deliverables are to be produced and the way in which they are to be approved. Don't forget that a project has many customers, both internal and external. All these customers have their own specific needs. The result of this customer dialogue must therefore be a list of deliverables to be produced by the project.

The list of deliverables reflects what is to be done. No more, no less. It is the fine print in your contract with the sponsor. When the customers have approved all the deliverables on your list, the project is finished. *Clear as crystal*. **Consistently directing focus on deliverables results in more attention being centred on the customer in the project and paves the way for creating a successful conclusion.**

The fourth point is to make the project more effective by building it on a foundation of broad and clearly defined project segments, rather than trying to add in parallel activities and create a whole at the end of the project. The key to reducing a project's lead time lies in reducing late changes and having as much of the work as possible carried out in parallel. The opposite of working on a parallel basis is working on a sequential basis, in which the project is carried out one activity at a time, and only when one activity is completed can the next one begin. Within a typically sequential development project, development and design are completely finalised before the project moves on to production. Marketing comes last, in its own individual stage. Sequential projects are characterised by long lead times and extensive late changes.

The concept of shifting work from a sequential basis to a more parallel basis is often called "Concurrent Engineering", or "Simultaneous Engineering". The underlying concept of "Concurrent Engineering" is to simultaneously develop the product and all its related processes such as production, service, distribution and marketing. "Concurrent Engineering" is characterised by cross-functional integration and parallel processes (Swink *et al.* 1996).

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Successful "Concurrent Engineering" demands that the project, as well as the product and all its related processes, be managed with the above concept definition in mind. This requires, at the outset, a discussion with your sponsor and team to reach agreement on which segments are to be included in the project. In this respect, segments can often be compared to functions within a company. Three segments where substantial advantages are gained by increased parallelism are development, production and marketing. Future business depends greatly on the ability of these segments to interact with each other, contribute to the project and accommodate the result of the project. We prefer to call them segments rather than functions in order to emphasise the importance of regarding the project from a holistic point of view. It is often segments other than the traditional functions within the company that require attention. Examples of these are knowledge and technology. The best results are gained by concentrating on working with a handful of the following segments:

- project
- market
- finance
- technology
- product
- production
- organisation
- legal requirements
- knowledge.

Special projects or situations may well have other segments to be highlighted. Defining these segments at the outset, and taking them into consideration during the definition, execution and follow-up of the project will maximise parallelism.

A clear and broad focus on the customer also serves to illustrate that most projects have external customers as well as internal recipients of the result. Unfortunately, it is often the case that important internal deliverables are overlooked, for example, the experience and new knowledge gained from a project. This knowledge can provide valuable benefits to others and to future projects. **Building the project from the outset on clearly defined segments reduces lead-time and improves quality by ensuring that no important areas are missed.**

The fifth point is to divide the project into separate stages, with each stage having its own objective, so that any eventual termination is regarded as one of the possible outcomes, rather than a sign of failure. Most organisations find it easy to start projects, difficult to guide them to a clearly defined conclusion and almost impossible to end bad ones in time. Too many projects suffer from *tunnel vision*. Imagine you have to blast a tunnel through a mountain. You start on one side and slowly blast your way forward. The further into the mountain you get, the more difficult it becomes to terminate the project, irrespective of the problems, costs, or delays being suffered. A tunnel with only one entrance will be perceived as a failure and a fiasco. Stopping such a project a bit down the line is almost impossible. If the overall opinion is that the only road to success is to carry out the entire project, *tunnel vision* is in effect. Even if you are not blasting tunnels through mountains, your project can suffer from *tunnel vision*. In this case, the tunnel is mental. It is a mindset that can lead to unsound decisions and the waste of valuable resources.

One relevant measure for all organisations is the number of successful, terminated, development projects they have had over recent years. It is a clear warning signal if there are none. Either the company is suffering from *tunnel vision,* or only *safe* projects, that is to say, risk-free projects, are being carried out. All forms of development are associated with risks, especially if there is a desire to be in the lead and continually deliver unrivalled customer value. We believe that a certain degree of experimentation and risk-taking is a prerequisite for maintaining a leading position. It is part of the learning process. **Dividing the project into clearly defined stages and the creation of a culture within which the termination of a project is regarded as a natural part of operations are important steps towards improving the output of a project portfolio.**

Point six is to work with two plans that are both updated after each stage: one overall plan describing the whole project and one detailed plan describing the next immediate stage, rather than planning the entire project in detail from the outset. This book is stimulatingly free from methods like WBS, Work Breakdown Structure, and similar (Kezbom,

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Schilling, Edward 1989). These methods most certainly work well for large, long and static projects. The working environment within which future development engineers will find themselves will, however, be characterised by concentrated and intensive involvement in a dynamic market environment. The entire approach to the work in hand must therefore be changed in order to meet these new requirements. Previously, development projects were very similar to large construction projects. Objectives were clear and static. The entire project could be planned from start to finish with reasonable accuracy. Today's development projects, on the other hand, are better compared to games of poker in which the stakes are profitability and growth. You only know your own hand. To gauge your opponents' hands, you have to learn how they play. Depending on the hand you are dealt, you must decide how much money you dare put in the pot in order to stay in the game. It is just as important to bow out in time when you are dealt a bad hand, as it is to dare to play for high stakes when dealt a good hand. He who fights and runs away, lives to fight another day. Skill wins in the long run, luck only wins on a few odd occasions. This puts completely different requirements on how a project should be planned, carried out and followed up.

Because both customer preferences and technological opportunities may change, the entire project cannot be planned in detail from the outset. Therefore you need two different plans: one overall plan describing the whole project and one detailed plan describing the next immediate stage. New knowledge is gained along the way and this must be successively integrated into the plan. Planning is therefore not an activity carried out only at the beginning of the project, but needs to be repeated several times in order to optimise business. How frequently you need to repeat the planning cycle depends on the level of uncertainty in the project. Obviously, *new to the world* type development projects have an inherently much higher level of uncertainty than a line extension project. In the same way, some markets are more dynamic than others. Assessing the level of uncertainty gives a feeling for how long each stage should be.

We recommend that only imminent work that can be evaluated with a high enough level of precision be planned in detail. This way, every stage is deftly carried out, aimed at a clearly defined stage objective in the detailed plan. After each stage, the project in its entirety is reviewed and the overall plan updated. If things look promising, the next stage is planned in detail. If not, the project is terminated or changed. To terminate a project after having successfully carried out one stage and having acquired new critical knowledge is not a failure. Every stage in a project is like a new hand in the game of poker. These are the rules of the game. Stacking the deck won't work in the long run. Our entire methodology is based on this way of thinking. **A rotating planning structure, adaptable to new knowledge created and lessons learned, will provide a dynamic and adaptive project plan in touch with reality.**

Point number seven is to improve estimations by working analytically in the short-term perspective and statistically in the long-term perspective. Studies made regarding project capabilities for assessing time and costs are not encouraging. Some believe all estimations have to be doubled in order to attain a truer figure, while others believe they should be multiplied by π. Whichever constant is used, it's a sure indication that the underlying estimation process is weak and all too often leads to a mug's game. The project manager first estimates the resources, but before presenting the figure to the sponsor he or she doubles the estimate. Not in order to get a better estimate, but to have some room for the budget squeezing made by the sponsor, because he or she knows that the figure presented is exaggerated. The point is, they are both having the wool pulled over their eyes. Instead, an open and constructive process is required, aimed at getting as close as possible to a realistic estimate.

In the short term, which is normally the next immediate stage, approach the work analytically. This means breaking the work down as far as possible into different activities and estimating the resources required for each one individually. If this can't be done with accuracy, it's an indication that the stage is too long. Divide the project into more stages, to gain a better overview of each one. A rule of thumb here is the Morse Code SOS, Save Our

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Souls, which is three short, three long, three short signals. A project should therefore:

- be commenced with a couple of short stages, in order to address all the strategic questions pertaining to the project
- be carried out with a couple of longer stages, when more portions of the work have become routine
- be finalised with a couple of short stages, when the result and responsibility are transferred to the normal organisation.

The analytical approach is not feasible from a long-term perspective, because there is often a large degree of uncertainty involved. Many strategic questions cannot be answered at the outset, despite in fact that these answers will influence both the consumption of resources and the time schedule. An alternative approach to improving estimations of time or cost for the whole project is the statistical one. This means that each estimation, whether in time or money, is always associated with a certain degree of probability. Compare this to the time it takes to travel to and from work every day. If you drive, you will no doubt understand what we are getting at. Some days, traffic flows well and the journey doesn't take long. Other days, the flow of traffic is slow and the journey takes much longer. Any estimate on how long it takes to drive to and from work will always be associated with a certain degree of probability. Depending on the probability required, a figure somewhere between the fastest and the slowest time is selected. One practical example of this is that you leave a little earlier than usual if you have an important meeting first thing in the morning, just to be on the safe side. The probability of being on time increases, the earlier you start your journey. Estimating time and cost within a project works the same way. The principle problem of diffusion is the same. Therefore, submit several figures instead of just one. Estimations should be made based on at least the following three figures:

- the most probable figure, or the target value aimed at
- a pessimistic figure, when most things move at a snail's pace. An estimate that you should be able to beat 9 times out of 10.
- an optimistic figure, when everything goes like clockwork. An estimate you can only meet 1 time out of 10.

Use the analytical approach to estimate time and resources for the next immediate stage. The sponsor is within his rights to expect a high degree of accuracy on these figures, maybe plus or minus 10%. Use the statistical approach to estimate revenue, time and resources for the whole project. In the early stages, it would not be fair of the sponsor to expect exact figures. On the contrary, a wide spread between the pessimistic and optimistic figure is normal. However, after each stage new estimates are made and the accuracy of these should increase. **By working with different degrees of accuracy in the overall plan for the whole project, and the detailed plan for the next immediate stage, estimates will better define the inherent uncertainty associated with all development projects.**

Number eight in our list is to utilise resources skilfully (rather than merely in a routine manner) when making allocations to different activities, to avoid bottleneck situations. Always start by highlighting critical areas and bottlenecks within the project. These areas are the real battlefields. If they don't have sufficient resources, full support, uninterrupted time and good working conditions, they can jeopardise the entire project. The key word here is concentration. Concentrate resources in critical areas of the project to improve the quality of the work performed and to reduce fragmentation and set-up time. It's the best way to ensure throughput. In most cases, it's better for a team member to work on the project every Monday, instead of 20% of his/her time. Likewise, it is often even better if, during a critical phase, he/she can work 4 consecutive days, rather than 4 Mondays in a month.

Another common thief of resources is the search for information. Allowing meagre project resources to waste time searching for information due to inefficient routines, or hard to attain documentation, is unacceptable. It is relatively easy today to build up a virtual home for the project on the Intranet or the Internet. Gather and structure information so that it is clear and easy to find. **Concentrating resources on critical areas within the project, and making all essential information easily available, avoids both delays and frustration within the project group.**

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Point number nine is to simplify project follow-up by budgeting and following up deliverables rather than activities. Another acronym that cannot be found anywhere else in this book except as an exhibit for information is EVA, Earned Value Analysis. We believe the basic philosophy in the method is correct: the status of a project cannot be judged by comparing budgeted costs with actual costs, without taking into consideration the actual work carried out. However, we believe that there are easier ways to reach the same result.

The base elements of a project are the deliverables. The aim of the project is to produce all the deliverables and have them approved. Every deliverable must therefore have a clearly defined customer and an agreement on how the customer will approve the deliverable. A deliverable is either approved or not approved. In any given moment within a project there are a number of approved deliverables and a number of deliverables under production. The obvious way to simplify follow-up is therefore to budget and follow up the deliverables. Of course, problems arise if the number of deliverables under production is too big, often due to neglect of approval and verification: the project produces deliverables, but fails to ensure the customer's approval of them. Instead, work presses on with producing the next deliverable. Such a situation is, firstly, a problem of quality and, secondly, a follow-up problem. **By focusing on, and ensuring, customer approval of every deliverable, the quality of the work carried out is guaranteed and follow-up simplified.**

Next, master the *big bad wolves* of the project by clarifying and preventing risks and changes, rather than just reacting to what occurs. Building on our analogy of the project as a journey, there are two types of wolves in the woods that have wounded and killed many projects. One is called *Risks* and the other *Changes.* To a large degree, they can both be eliminated with the use of pro-active and preventative work methods within the project.

As individuals, we have a built-in ability to learn from our mistakes. This ability is considerably less developed within organisations. A number of risks can therefore be considered chronic. The same mistakes are repeated time after time, project after project. Risks of this nature can be eliminated relatively easily with the aid of risk analyses, based on historical checklists. Computer programs are available today that ask questions and automatically evaluate risks, based on the answers received. An efficiently carried out risk analysis can therefore reduce the pack of wolves to just a few loners: these animals may be difficult to predict, but will be easier to identify. If risks can be reduced to just a few, the capacity of the project, and its ability to deal with these risks, has been increased.

Many changes are of the WIBNI type, **W**ouldn't **I**t **B**e **N**ice **I**f. When customers are faced with the final product, you finally get to hear all the points of view you have been looking for throughout the entire project. The best way to reduce these is to ensure swift and early feedback using three-dimensional computer models, prototypes and all other means of producing a physical example of the final product. Only when customers can see, feel, smell, taste and try, can their valuable opinions emerge. **Dealing with risks and changes in a lively, ongoing manner is one of the most important characteristics of a professionally conducted project.**

The last point is to focus on the business case, rather than time and costs. In our experience, many projects and organisations pay far too much attention to the consumption of resources. Of course, keeping these under control is very important, but it is only one side of the coin. The other side is the benefits of the project, i.e., the revenue it can generate. Carrying out a project with the objective of keeping resource consumption to a minimum is only a justifiable strategy if there is an acute shortage of resources within the company, which is seldom the case. One way to analyse whether your own project, or a project portfolio within the company, is focused on costs or on business, is to ask the following million-dollar question:

- **If the project is delayed by one month, how will this affect the business?**

Our experience shows that far too few projects are able to answer this question satisfactorily and are, therefore, according to our definition, focused primarily on costs. How can a project be optimised

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and controlled in a business-like manner if this question cannot be properly answered?

If this figure is not available, we usually help calculate it. Of all the analyses done so far, our record amount is twice the entire project budget. In that particular instance, this meant that a delay of 16 days incurred lost revenue equivalent to the entire project budget. This insight was lacking and the project was delayed by more than three months, mainly due to lack of resources. Without doubt, resources must be used economically, but every penny spent has to be viewed in relation to the benefits and revenue it can generate. A business-orientated mindset is required throughout the project and it should cover the entire business venture for the product under development – from cradle to grave. Under these circumstances, it does not suffice to merely attain profitability. Instead, you have a responsibility to maximise profitability, based on the resources you have been entrusted and empowered to use. **Project managers of the future must therefore develop a businesslike professionalism, responsible for creating new, profitable business.**

What would happen to the throughput in the project portfolio and the quality of the work performed if all projects were characterised by:

- an established pro-active working pattern, dividing all projects into several separate stages in which a full Deming circle is completed
- everyone feeling involved and committed to carrying out the project plans
- a consistent focus on the deliverables in each project, aimed at creating a clear customer focus and paving the way for successful conclusions
- from the outset, being built on clearly defined segments, so that no important areas were left behind or neglected
- a culture in which the termination of a project was regarded as a natural part of operations, so that valuable resources were not wasted
- a rotating planning structure adaptive to new knowledge created and lessons learned, supplying thereby dynamic and adaptive project plans in touch with reality
- different degrees of accuracy being used in the overall plan for the whole project, and the detailed plan for the next immediate stage, so that estimates better describe the inherent uncertainty associated with all development projects
- resources being concentrated on critical areas within the projects and all essential information being made easily available, to avoid both delays and frustration within the project groups
- focusing on, and ensuring, customer approval of every deliverable to guarantee the quality of the work in all projects, as well as simplifying follow-ups
- risks and changes being dealt with in a lively, ongoing manner in all projects
- all project managers having a businesslike professionalism and taking responsibility for creating future profitable business.

If you believe that the above has a significant impact on future profitability and growth, you need to train your sponsors, project managers, and teams, to become good practitioners in the **Value Model**.

Characteristics of, and qualities distinguishing, **Project Management** can be summarised like this:

Objective
Your objective is to maximise the business opportunity for the entire life cycle of the product.

Characteristics of the Process
A journey towards the objective, divided into separate stages.

Your Focus as Project Manager
Several repetitions of the **red, amber** and **green** phases, at least once during each stage.

7.3 Definition of the Project Concept

The word *project* is used today in so many different connections that it has almost lost its meaning. As consultants, we often ask different organisations how many projects they have. Some organisations have great difficulties in answering the question clearly. We have concluded that the only durable definition of a *project* is: ***A project is a task that meets the project criteria established by your organisation.***

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If you have no established criteria for what a project is, then you either have no projects at all, or you have nothing but projects. The word and concept lack meaning and content.

The first step towards organising projects is therefore to decide the criteria to be met if the tasks are to be called, and treated as, a project. Listed below are some general criteria that can be included in the definition:

- the objective of the task is to bring about a change
- the task has strategic meaning
- the objective of the task is of a *one-off* nature
- the task is manned by a temporary organisation
- the organisation is cross-functionally composed
- the task is limited in time and content
- the task is of minimum size, with regards to resources or man hours
- necessary resources are allocated for carrying out the task
- the most important players – the customer, sponsor, team and project manager – are appointed and named
- the decision has been made by the sponsor to approve the task as a project.

Depending on the criteria to be used and highlighted, several different definitions can be created. Even the classic definition of the word project is included within these criteria: ***A project is an endeavour, limited in time and undertaken by a temporary organisation, to create a unique product.***

What, then, do we call the type of working assignment that lacks several of the above characteristics? We jokingly call it a *con-ject* rather than a *pro-ject*, the difference being a *con-ject* is just one big con. A *pro-ject* is carried out by a *pro-fessional* and a *con-ject* by a *con-man*, and therefore all you get is a lot of *con-gestion*.

A common question we are asked is "When does a project start?" Is it when the project manager is appointed? Is it when the sponsor has approved the project plan? Is it even possible to pin down a specific point in time? This is our normal answer:

All projects start as an idea, somewhere. The starting point for a development project is often the identification of an opportunity or a threat. The idea is tested and discussed within the company and, if the opportunity or threat is considered important enough, a feasibility study is commenced. An interesting measure is the distribution of feasibility studies based on opportunities and threats, respectively. The probability of success has been found to be low for copycat or ho-hum products (Cooper 1986). If a large share of the feasibility studies is based on threats or responses to moves by competitors, it can be an early warning signal that the results of future development projects will be questionable.

Often, someone has worked on their own initiative and put together a few pages on the subject before the official feasibility study begins, a so-called pre-feasibility study. A number of typical milestones along the way are then:

- idea
- pre-feasibility study
- feasibility study
- project definition
- stage 1, 2, …
- completed project.

The journey is a gradual concretisation of an idea. It completely lacks steps, even if, as above, a number of commonly occurring milestones may arise. The project becomes a project when it has been concretised to the degree that all the criteria defining a project within your organisation have been met.

Only those work tasks that meet the criteria put in place for a project shall be designated and treated as projects. The solution for identifying when a work task becomes a project is therefore when the company decides upon, and consequently applies, a number of the said criteria.

Consequently, a project is something that is sharply marked off from its surroundings:

- **it starts when all the criteria defining a project within your organisation have been met**
- **it ends when all its deliverables have been approved by the customers.**

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7.4 Alternative Forms of Project Organisation

Another important factor that will affect the throughput and productivity of the projects within an organisation is the way in which they are established internally. The following three main alternatives exist:

- a project-based organisation
- functionally organised projects
- matrix-based projects.

Exhibit 7.7 portrays a graph of these three principal alternatives. Every alternative has its own advantages and disadvantages, as follows.

The most cultivated form of a project-based organisation has permanent jobs and established posts to manage core processes only. Only operations of a continuous and repetitive nature are pursued in a permanent and streamlined organisation. The rest of the organisation works with projects. Examples of companies with this kind of structure are consulting companies, software businesses, or advertising agencies. The project-based organisation has the following advantages and disadvantages:

- Advantages

The project contains all the expertise and resources required, which means that reporting channels and disruptions can be kept to a minimum. Complex projects can be handled and productivity is high. The project manager acts as the managing director for the project and everyone reports to one manager only.

- Disadvantages

From a greater perspective, there are risks for sub-optimisation and wastage of resources, as these cannot always be used optimally. A common problem is also the recruiting and readjustment of those participating in the project. Not everyone enjoys hopping from project to project. Some people perceive this as being too insecure.

The functionally organised project is subordinated to a function within the ordinary organisation. For example, the development department has its own projects, just as the marketing department has its. They borrow resources from each other, but reporting is done to that part of the organisation under which they are subordinated. Examples of companies with this type of structure are process industries and certain production industries. Advantages and disadvantages of this type of organisation are, for example:

- Advantages

The big advantage is the distinct focusing and concentration on accomplishments. The long-term responsibility for the development of expertise is, of course, attached to the functional organisation in which the project can be an important instrument. This form of organisation also normally provides a more effective use of resources than a pure project organisation does. Reporting and focusing on the objective can be maintained because reporting channels are clearly defined and uncomplicated, because there is only one manager involved.

- Disadvantages

Disadvantages lie, most of all, in the conflicts that can arise between different projects, or in that linemen can take the upper hand. Every functional department prioritises its own projects and no one has a clearly defined responsibility for the whole. This sub-optimisation can be detrimental to the organisation.

Within a perfect matrix organisation, a project organisation is built parallel to the functional organisation. The project becomes a functional area that independently reports directly to management. The difference between a project-based organisation is that the project, in this case, often lacks its own personnel resources. As companies have more and more organised themselves around processes, the matrix organisation is now very common. Advantages and disadvantages are, for example:

- Advantages

Properly set up, this type of organisation solves the conflicts that arise between short-term objectives and the long-term accumulation of knowledge. Most projects today also need cross-functional expertise. It also allows great flexibility, in that resources can be effectively allocated between projects and line work, according to needs and necessary prioritising at any one time.

- Disadvantages

Everyone working in a matrix organisation knows that the complex communication and co-ordination structure puts great strain on co-operation. Conflicts and solutions sometimes hamper the adv-

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antages that, in theory, exist within this type of organisation. It is also important to create the right balance between projects and the line, so that equal parties carry out negotiations. One way to accomplish this is to allocate the economic resources to the project and the personnel resources to the line organisation. The idea here is to create a clearer customer-supplier relationship between the project and the line. To work well in practice, this requires a project manager efficient in communicating and negotiating.

It is, of course, impossible to generalise about which type of organisational form is best. We believe there should be room for all three to exist. In special crisis situations, perhaps independent projects have to be created outside the normal organisation. This is especially true if the project is competing, fully or in part, with the existing organisation. Projects of this type are sometimes called *garage projects,* because they are often sent off to the periphery of the company's premises. They can often accomplish great achievements, as described so elegantly in Tracy Kidder's book, *The Soul of a New Machine* (Kidder 1981).

Projects of a strategic character, requiring input from many areas of the organisation, can be advantageously carried out within a matrix or cross-functional structure. On the other hand, it is hardly effective to carry out all projects based on this pattern. Finally, the functionally organised project should most certainly also be allowed in those instances where the nature and content of the project makes this possible and it does not lead to sub-optimisation.

All in all, a picture is created that demands a deep understanding of the nature of the project by company management. **Every individual case has to choose its own correct organisational form and make the organisation accept and respect a pluralistic view on how project work is to be organised.**

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Exhibits • Chapter 7

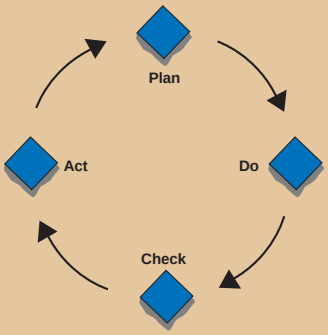
7.1 Definition of Project Management: A Support Process

One of the support processes in the **Value Model** is intended to ensure that the work is carried out in a resource-effective and reliable manner. This is a process in which a project is defined, divided into stages and then implemented stage by stage. It is a repetitive process in which planning, implementation and reviews are repeated several times. The objective is to please the sponsor and we refer to this process as **Project Management**. The sponsor is pleased if the project results in a profitable business venture without having had to take undue risks.

The process can be summarised like this:

Objective
Your objective is to maximise the business opportunity for the entire life cycle of the product.

Characteristics of the Process
A journey towards the objective, divided into separate stages.



Your Focus as Project Manager
Several repetitions of the **red**, **amber** and **green** phases, with at least one repetition during each stage.

A project is something that is clearly distinguished from its surroundings:

- it starts when all the criteria defining a project within your organisation have been met
- it ends when all its deliverables have been approved by the customers.

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Project Criteria

7.2 Project: A Concept Definition

The word *project* is used today in so many different connections that it has almost lost its meaning. We believe that the only durable definition of a *project* is:

A project is a task that meets the project criteria established by your organisation.

If you have no established criteria for what a project is, then you have no projects. Or, to be more accurate, anything can be defined as a project. The word lacks meaning and substance.

The first step towards organising projects is therefore to decide the criteria to be met if the tasks are to be called a project. Listed below are some general criteria that can be included in the definition:

- the objective of the task is to bring about a change
- the task has strategic meaning
- the objective of the task is of a *one-off* nature
- the task is manned by a temporary organisation
- the organisation is cross-functionally composed
- the task is limited in time and content
- the task is of minimum size, with regards to resources or man hours
- necessary resources are allocated for carrying out the task
- the most important players – the customer, sponsor, team and project manager – are appointed and named
- the decision has been made by the sponsor to approve the task as a project.

Depending on the criteria to be used and highlighted, several different definitions can be created. Even the classic definition of the word *project* is included within these criteria:

A project is an endeavour, limited in time and undertaken by a temporary organisation, to create a unique product.

The chosen criteria should be ones that you know, from experience, are important for achieving success and not just the *same old ones as usual*. There is room here for organisations to improve their effectiveness if tailor-made definitions, for example definitions based on their own unique situations, are used.

Larger projects are sometimes called programs especially if they consist of severall sub-projects.

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7.3 Words of Wisdom

Little words of wisdom can be found throughout this book. At this particular point, we have combined several of them into something completely new.

Hoare's modified law
Inside every large project is a small project struggling to get out.

Murphy's first law
The things that go wrong are the things that will cause the most damage.

Hofstadter's law
It always takes more time and resources to complete the project than expected, even if you take Hofstadter's law into account.

The general law of projects
Hoare, Murphy and Hofstadter are alive and well and members of your team.

7.4 Familiar Types of Projects

Everyone knows what a project is, but almost nobody can describe this mysterious phenomenon. Over the years, we have put this trivial question to several hundred experienced project managers, from different project environments. The overall impression is that a common interpretation is lacking. Maybe that's why a *project* can take on so many different guises. We have:

Creeping projects
Come out of nowhere and disappear into nothing.

Bureaucratic projects
Almost impossible to get going and even more difficult to terminate.

Abandoned projects
All, especially the sponsor and project manager, deny their existence.

Attractive projects
When the project finally becomes successful even its most severe critics maintain that they have supported it all along.

False projects
Consist only of an account number somewhere in the financial system as cover for dealing with costs for other projects that have been officially terminated.

Exemplary projects
Projects that can be read about but are hard to find in reality.

Normal projects
A mixture of crises, confusion, hard work and 400 litres of coffee.

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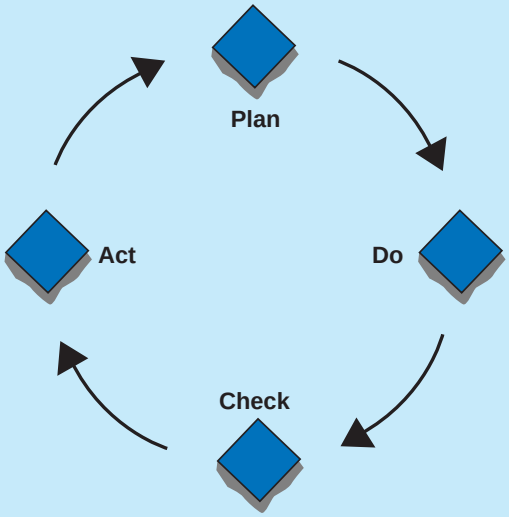

7.5 The Deming Cycle

A general method for guaranteeing good results when structuring and implementing work tasks is to apply the Deming Cycle. It is a tool for assuring continuous improvement by repeating four fundamental activities:

- Plan
- Do
- Check/Study
- Act.

Larger tasks, for example, a development project lacking complete information and expertise at the outset, can be advantageously divided into different stages. Each individual stage should be subjected to the entire Deming Cycle and be planned, carried out, evaluated and corrected before the next stage is commenced. In Japan, the Deming Cycle is widespread and has developed in several different directions (Imai 1986). One such development is defining a company's entire business operation as a sequence in which construction, production, sales and research are repeated.

7.6 The Art of Creating an Unsuccessful Project

A good test for ascertaining whether or not you are writing something trivial is to form the negative. For example, an expression like **curing illness is good** is meaningless, because its negation, **not curing illness is good**, is absurd. Thomas Ögren (Ögren 1984) has applied this principle to project methodology and concedes that the results laid out below are rather entertaining. Some of them have been sharpened a bit to highlight their meaning and we have also added some of our own pitfalls.

Pitfall number 1

By all means call whatever you are doing a project, and yourself Project Manager, especially if you can thereby also demand an increase in salary. If you have been a project manager previously, for example, been in charge of lighting the bonfire at the Scouts, demand the title of Senior Project Manager. Make sure to get new business cards printed as quickly as possible and distribute them throughout the organisation.

Pitfall number 2

If you are asked to be a project manager, always answer YES with no reservations, especially if the project is not defined and lacks a sponsor and a steering committee. The more projects you are project manager for, the better.

Pitfall number 3

Make sure the project doesn't get any clear directives: a few general and verbal ones are OK, but not any more than that. If you are forced into producing written directives, make sure nothing that you promise is measurable. Wording like "increasing the total effectiveness of the entire company by 30% " is excellent: it sounds good, nobody can measure it and it can easily be explained away. If your back's against the wall, refer

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to the latest re-organisation as being a part of your strategy. No manager ever dares question re-organisations.

Pitfall number 4
Ensure that, as Project Manager, you alone are responsible for the project. Avoid all forms of management or steering committees. If you are forced to have a steering committee, make sure its members are the people who travel most, or have the heaviest workload in the company. That way you can avoid having the whole steering committee gathered at one time.

Pitfall number 5
Avoid all forms of project planning: so little is known about what is going to happen in the future. If, despite this, you are forced to do some planning work, make it as rough as possible and, for heaven's sake, don't involve the project group: you'll never get things off the ground. The best plan is always the one you made completely by yourself, without involvement from outsiders. Try to keep the project plan as secret as possible, so that none of the content leaks out.

Pitfall number 6
If you can't run the project completely alone, which of course is the best thing, make sure your team members meet as little as possible. That way, you can avoid unpleasant conflicts. Above all, ensure no one else but you has a total overview of the project.

Pitfall number 7
If you are forced to have meetings, avoid all forms of agenda: nobody pays any attention to them anyway. All they result in is people feeling restricted to talking about work. Prepare long, meaningless, presentations to bore the participants as quickly as possible. This is a good way of getting them to avoid coming to the next meeting. Put in comfortable chairs, serve only decaffeinated coffee and have soft lighting so that participants relax.

Pitfall number 8
Regard risks as accidents and a part of what must be expected when carrying out a project. Just make sure that someone else takes the blame, so as not to cast any shadows over the project.

Pitfall number 9
Avoid all forms of follow-up: they're only time consuming. What's done is done and there's no use crying over spilt milk. Instead, get one or more new projects going as quickly as possible so that attention is directed onto them instead.

Pitfall number 10
Clean up thoroughly after the project. Code all documentation in digital form and then make sure the computer department accidentally removes the file containing the password. That way, the organisation forgets more quickly that the project ever even existed. The more embarrassing it is for everyone to be reminded about the project, the greater your chances of being promoted to a position with a higher salary and bigger desk. You will be promoted out of sight.

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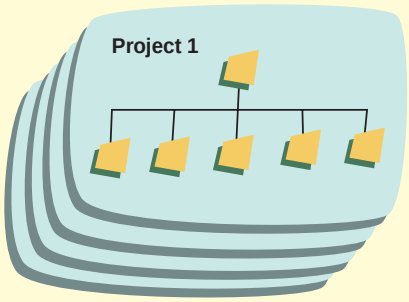
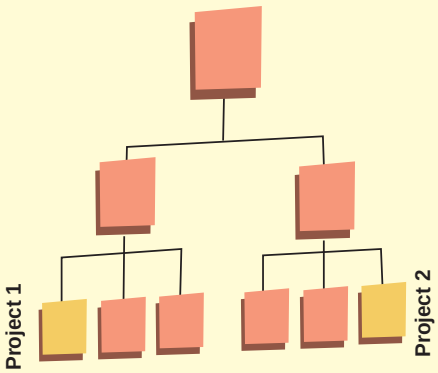
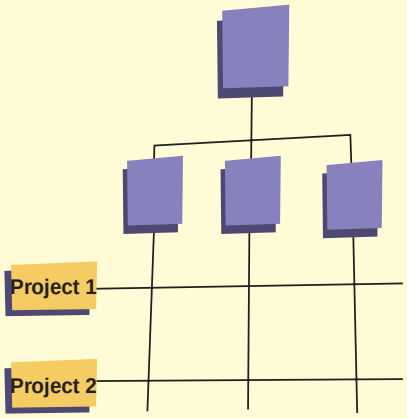
Project Based



Functionally organised Projects



Matrix-based Projects



7.7 Different Organisational Structures

This exhibit illustrates the three different ways to organise your projects, as described in section 7.5. The following three main variations exist:

- a project-based organisation
- functionally organised projects
- matrix-based projects.

7.8 Organisations of the Future

If you apply the thought process of how technical systems change over the course of time, it should follow that organisations should continue developing towards an even higher degree of flexibility. Originally, tracing all the way back to the Romans, we had purely hierarchical organisations. In its original form, the organisation grew with a fraction of ten for every level, i.e., no manager at any level was allowed to have more than 10 subordinates. The bigger the organisation, the more levels it had, as follows:

- 1 manager and a maximum of 10 subordinates
- 1 manager, 10 middle-management managers and a maximum of 100 subordinates
- 1 manager, 10 upper-management managers, 100 middle-management managers, and a maximum of 1,000 subordinates.

An organisation with 100,000 employees has 5 levels and at least 1,111 managers. Organisations of this size became rigid and bureaucratic and there was a need for cross-communication, not just upward and downward communication. The matrix organisation was born.

To increase dynamics and improve communication, matrixes were created in several different dimensions. The traditional hierarchical organisational form's basic rule that every person would only have one manager developed to the point that, in some cases, there were so many managers that no one knew who their boss really was. Many believed that there were far too many managers and started to demolish the pyramids. Flat organisations were introduced, where each manager was allowed to have a lot more subordinates and the number of matrixes could be reduced. Despite this, the dynamics and flexibility looked for were never achieved and the idea of eternal re-organisation was born.

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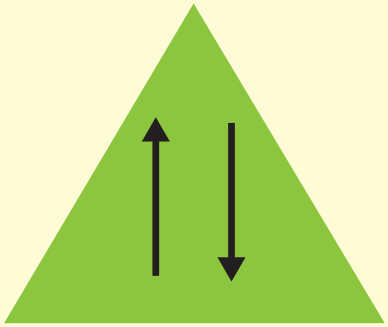
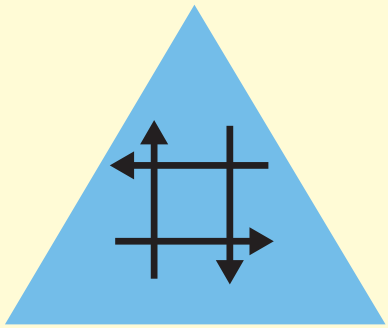
Our belief is that the flat organisation with overloaded managers working within complex matrix systems undergoing eternal re-organisation doesn't work particularly well.

We believe future organisations must be based on the following criteria:

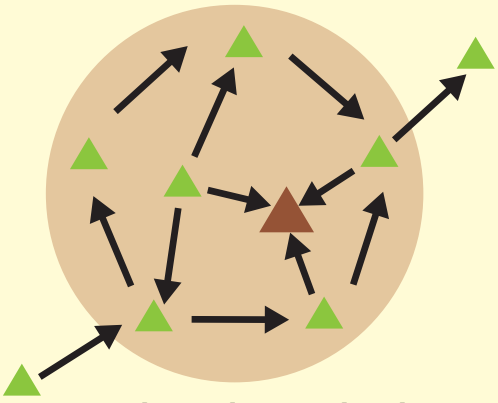
- human beings are social individuals who work best within a harmonious and relatively stable social environment. Losses are incurred each time an individual is moved to a new social environment, because building up a new social network takes strength and resources. At the same time, a new environment can provide stimulation and an interest in further development. A change of social environment must therefore be based on the individual's free choice and aspiration for personal development.
- the company has to become even more flexible and dynamic if it is to be able to respond to rapid changes in the surrounding world. The top and bottom of the pyramid change far too slowly and changes are not dynamic enough. Organisations of the future must be able to re-organise faster, more often and throughout the entire organisation, including top management and foot soldiers.



Hierarchical organisation



Matrix organisation



Team-based organisation

These two criteria are apparently incompatible, because of a paradigm: the paradigm of the individual as the smallest unit within an organisation.

What's the next step, then?

We believe in a team-based organisation. The team is made an autonomous unit with the same rights and responsibilities enjoyed by an individual today. This means that:

- each team consists of between 2 – 10 people
- the team decides itself who the members will be. You, as an individual, are employed in the team, not by the company, and the company cannot influence who shall be members of the team.
- each individual has the right to leave one team and join another. This is, of course, conditional on the new team wanting to accept him or her. No one can be forced to change teams.
- the team is compensated for its work, just as an individual is today. The team itself decides how compensation will be shared amongst the team members.
- the company has the right to reorganise the team, but not individuals within the team.

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- the team is promoted or dismissed, not specific team members.

In this way, a stable and well functioning social network surrounds each individual. If things aren't working well, the members of the team will search out other teams within which they feel happier and work better. Because the immediate surroundings are stable, a feeling of security is created which is necessary if the company is to attain the flexibility required. The team moves about between different tasks, depending on requirements and ability.

The first initial attempts have already been seen in Sweden, for example, with two individuals working half time, each sharing a manager's position. Experiences so far have been good, but there is still a lot to be learned before this form of organisation reaches perfection.

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