

# pm baseline



Version 3.0

# Preface

Dear reader,

Thank you for reading **pm baseline 3.0**, the updated version of our successful **pm baseline** manual. The **pm baseline** can provide you with valuable support in your work as it concisely and comprehensively presents relevant knowledge elements and methods for project and programme management and for the management of project-oriented organisations.

The project management knowledge elements in the **pm baseline** are structured by definitions and process descriptions as well as by project management methods as they are used in the project management sub-processes (such as project start and project controlling). This makes it easy for the reader to identify the main points that are relevant to him/her.

Besides providing project management information, the **pm baseline** also includes extensive basic knowledge on programme management and on the management of project-oriented organisations. In doing so, it is important that we offer a consistently documented approach and ensure the consistent use of project management (PM) terminology.

The contents of the **pm baseline** are state of the art. Together with the IPMA Competence Baseline (ICB 3.0), they form the basis for project management certifications by **pma**. However, the **pm baseline** is neither a project management textbook nor course material and cannot replace the acquisition of specific project management knowledge.

## **pma/IPMA certification is highly regarded**

There are already more than 300,000 certified project managers worldwide. This number is growing by the day as the international importance of certification increases. International and multicultural projects are important and costly. Companies are therefore increasingly placing projects such as these in the hands of project managers with internationally valid certificates, or entrusting such projects exclusively to companies with certified project managers. The recognition of professional education and training on an internationally comparable level raises your professional status and your own personal value on the employment and project management market.

Projekt Management Austria (pma) has over 500 members, making it Austria's largest project management association. **pma** has its own organisational unit (**pma certification unit**) through which it offers multi-level 4-L-C \* internationally recognised certification as well as the internationally required re-certifications. The certification programme is validated by the International Project Management Association (IPMA) and the certificate is thus recognised internationally.

\* Four-level-certification system

## A hallmark of quality for profound competence

In the appendix of the **pm baseline**, you will find a table of reference for ICB 3.0 and taxonomy. The taxonomy sets out the scores for knowledge and experience that are required for certification as Junior Project Manager, Project Manager, Senior Project Manager and PM Executive. The reference table shows the relationship between the chapters of **pm baseline** and the competence elements of ICB 3.0.

### Project management career path

Competence	PM certification level	Role
<ul style="list-style-type: none"> <li>· expert know how</li> <li>· management experience</li> </ul>	<ul style="list-style-type: none"> <li>· Certified Projects Director (IPMA Level A)</li> </ul>	<ul style="list-style-type: none"> <li>· Manager of PM Office</li> <li>· Programme Manager</li> <li>· Member of Project Portfolio Group</li> </ul>
<ul style="list-style-type: none"> <li>· expert know how</li> <li>· broad experience in project management</li> </ul>	<ul style="list-style-type: none"> <li>· Certified Senior Project Manager (IPMA Level B)</li> </ul>	<ul style="list-style-type: none"> <li>· Senior Project Manager</li> <li>· Project Coach</li> </ul>
<ul style="list-style-type: none"> <li>· advanced know how</li> <li>· experience in project management</li> </ul>	<ul style="list-style-type: none"> <li>· Certified Project Manager (IPMA Level C)</li> </ul>	<ul style="list-style-type: none"> <li>· Project Manager</li> <li>· Member of PM Office</li> </ul>
<ul style="list-style-type: none"> <li>· basic know how</li> <li>· experience in project management e.g. as project team member or PM assistant</li> </ul>	<ul style="list-style-type: none"> <li>· Certified Project Management Associate (IPMA Level D)</li> </ul>	<ul style="list-style-type: none"> <li>· PM Assistant</li> <li>· Project Controller</li> <li>· Junior Project Manager</li> </ul>

## Basis for PM education and training

The **pm baseline** is not just useful for individuals who are learning about or who work in project management. It is also useful for project management trainers, who can use it as a guide for the preparation of project management training programmes in schools, colleges of higher education, universities and companies.

I am confident that the **pm baseline** will support you with your work in project management and wish you every success.



Mag. Brigitte Schaden  
pma President

## **pm baseline development and communication**

Versions 1.0 (November 1999) and 2.0 (July 2001) of the **pm baseline** are based on the project and programme management script of Univ.Prof.Dkfm.Dr.Roland Gareis.

Version 2.3 (January 2005) was a revised version that incorporated the findings and feedback from the **pma** certification processes with the assistance of **pma assessors** and **pma training cooperation partners**. The references in Austria were also adapted to match the current releases. Further references were also added in version 2.4 (May 2007).

In the current version 3.0, the knowledge elements and methods based on ICB 3.0 have been further enhanced.

The **pm baseline** Version 3.0 is the intellectual property of pma – PROJEKT MANAGEMENT AUSTRIA. The executive board is responsible for the content. **pma** would like to thank the **pma assessors** and **pma training cooperation partners** for their feedback and suggestions for improvement during the development of pm baseline 3.0.

The **pm baseline** will be updated periodically. All updates will be published on the **pma** website ([www.p-m-a.at](http://www.p-m-a.at)) and thus available to all interested parties.

### **Gender-specific formulation:**

For clarity, project managers will always be referred to in the female gender, but it is clearly understood that the male gender would equally apply.

### **pm baseline 3.0 project**

Project owner:	Mag. Brigitte Schaden
Project manager:	Mag. (FH) Nicola Krall
Project team:	Peter Birnstingl, MSD MSc Dr. Martina Huemann Johann Siegl Michael Wolf
Project contributor:	Dr. Angelika Basch
Graphics:	Peter Birnstingl, MSD MSc

# Table of contents

1	Project and programme management.....	6
1.1	Projects and programmes.....	6
1.1.1	Perception of projects and programmes.....	6
1.1.2	Business process, project and programme.....	7
1.1.3	Investment, project and programme.....	9
1.1.4	Project portfolio, project network, project chain.....	10
1.2	Project management as a business process.....	11
1.2.1	Designing the project management process.....	11
1.2.2	Project start sub-process.....	11
1.2.3	Project coordination sub-process.....	11
1.2.4	Project controlling sub-process.....	12
1.2.5	Project marketing sub-process.....	12
1.2.6	Project crisis management sub-process.....	12
1.2.7	Project close-down sub-process.....	13
1.3	Programme management as a business process.....	14
1.3.1	Designing the programme management process.....	14
1.3.2	Description of the programme management sub-processes.....	15
1.4	Project or programme handbook.....	16
2	Methods for managing projects and programmes.....	17
2.1	Correlation to the IPMA Competence Baseline (ICB 3.0).....	17
2.2	Methods for the project start: Defining the project scope and project context.....	17
2.2.1	Defining the project scope and project context.....	17
2.2.2	Pre- and post project phase.....	18
2.2.3	Correlation between project and business strategy.....	18
2.2.4	Relationships of the project to other tasks.....	18
2.2.5	Business case.....	19
2.2.6	Project environment analysis.....	19
2.3	Methods for the project start: Designing the project organisation.....	21
2.3.1	Project organisation forms.....	21
2.3.2	Project roles.....	22
2.3.3	Project teamwork.....	23
2.3.4	Project communication.....	24
2.3.5	Project culture.....	25
2.3.6	Leadership in projects.....	26
2.4	Methods for the project start: Project planning.....	28
2.4.1	Project objectives.....	28
2.4.2	Objects of consideration plan.....	29
2.4.3	Work breakdown structure.....	30
2.4.4	Work package specifications.....	31
2.4.5	Project responsibility matrix.....	32
2.4.6	Project scheduling.....	33
2.4.7	Project resources.....	34
2.4.8	Project costs.....	35
2.4.9	Project financing.....	36
2.4.10	Project risks.....	37
2.5	Methods for project coordination.....	38
2.5.1	To-do lists.....	38
2.5.2	Meeting minutes.....	39
2.5.3	Acceptance protocols.....	40
2.5.4	Communication plan.....	41
2.5.5	Using information and communication technologies.....	42
2.6	Methods for project controlling.....	43
2.6.1	Variance analysis.....	43
2.6.2	Project score card.....	44
2.6.3	Relevance tree method.....	45
2.6.4	Milestone trend analysis.....	46

Table of contents

2.6.5	Social project controlling .....	47
2.6.6	Adaptation of project plans .....	48
2.6.7	Control measures.....	49
2.6.8	Project progress reports .....	50
2.7	Methods for project marketing .....	51
2.8	Methods for managing project crises .....	52
2.8.1	Project crisis.....	52
2.8.2	Strategies and measures to manage a project crisis.....	53
2.8.3	Root cause analysis.....	54
2.8.4	Scenario technique .....	55
2.9	Methods for project close-down .....	56
2.9.1	Project close-down.....	56
2.9.2	Assessment of the project and project team .....	57
2.9.3	Project close-down documentation.....	58
2.9.4	Lessons learned and exchange of experience .....	59
2.10	Relationship between the methods .....	60
2.11	Specific features of programme management .....	61
3	Methods for social competence .....	62
3.1	Correlation to the IPMA Competence Baseline (ICB 3.0).....	62
3.2	Social competence in projects and programmes.....	63
3.2.1	Social competence.....	63
3.2.2	Team competences .....	64
3.3	Intervention methods.....	65
3.3.1	Overview of intervention methods .....	65
3.3.2	Feedback .....	66
3.3.3	Reflection .....	67
3.4	Dealing with emotions and diversity in projects and programmes.....	68
3.4.1	Dealing with emotions.....	68
3.4.2	Dealing with diversity .....	69
3.5	Conflict management .....	70
3.5.1	Reducing possible conflict potential.....	70
3.5.2	Dealing with conflicts .....	71
3.6	Moderation and presentation .....	72
3.6.1	Workshops, meetings and project presentations.....	72
3.6.2	Creativity methods .....	73
3.6.3	Decision methods .....	74
3.6.4	Presentation methods.....	75
3.7	Interviewing and negotiating .....	76
4	Managing project-oriented organisations .....	77
4.1	Correlation to the IPMA Competence Baseline (ICB 3.0).....	77
4.2	The project-oriented organisation .....	78
4.3	Specific organisational structures of the project-oriented organisation .....	80
4.4	Project management guidelines.....	81
4.5	Project portfolio management .....	82
4.5.1	Assignment of projects and programmes .....	82
4.5.2	Project portfolio coordination .....	83
4.5.3	Project networks .....	84
4.6	Management consulting, auditing and coaching.....	85
4.7	Human resource management in the project-oriented organisation.....	86
4.8	Process management in the project-oriented organisation .....	87
4.8.1	Process-orientation in the project-oriented organisation .....	87
4.8.2	Macro and micro process management .....	89
4.8.3	Process list.....	90
4.8.4	Process map.....	91
4.8.5	Process breakdown structure .....	92
4.8.6	Process flowchart.....	93

# 1 Project and programme management

## 1.1 Projects and programmes

### 1.1.1 Perception of projects and programmes

Projects and programmes can be perceived in different ways, as

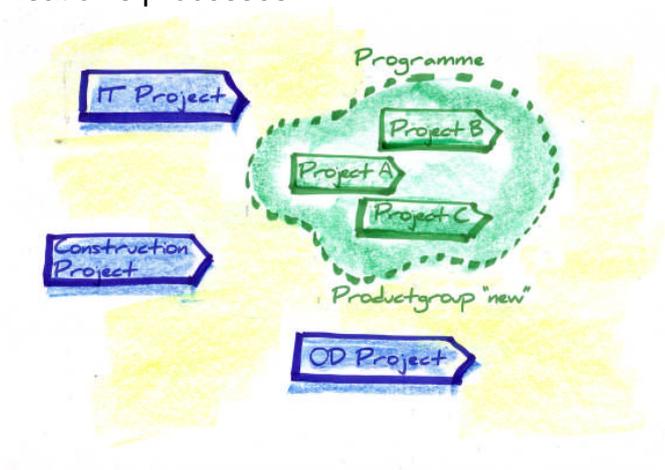
- Complex tasks
- Temporary organisations
- Social systems

Projects and programmes are complex, mostly new, risky and important tasks for the company undertaking the project. They are goal-determined tasks, as the objectives for the scope of work, deadlines, resources and costs are agreed between the project owner and the project manager.

Projects and programmes can also be perceived as organisations. In comparison to the relatively permanent structures of a company's permanent organisation (such as divisions, business units, departments), projects can be regarded as temporary organisations.

Projects and programmes can also be seen as social systems which can be clearly differentiated from their environments and at the same time have relationships to these environments. As an independent system, a project or programme has a specific purpose and its own structure. Elements of the project structure include, for instance, project-specific values and rules, project roles, project-specific forms of communication, planning and controlling methods.

The classification of projects into different project types makes it possible to analyse the challenges and potentials for project management or programme management for each type of project. Projects can be differentiated by industry, location or objective, level of specification and/or level of repetition, ownership, duration and relation to the organisation's processes.



### **1.1.2 Business process, project and programme**

A process is a clearly defined organisational procedure that involves several roles and one or several organisational units. Processes are made up of a collection of tasks and activities, have an input/output relationship, a start and end event as well as a defined goal and result. A suitable form of organisation must be selected depending on the complexity of the business process.<sup>1</sup>

Projects and programmes can be used to execute business processes. The permanent organisation is used for relatively short term processes of small to medium scope that involve a small number of organisational units. Typical examples include financial accounting processes, employee recruitment and end of year closing.

A project is a temporary form of organisation for a relatively unique, short to medium term process that involves several organisational units in particular.<sup>2</sup> Typical projects include the organisation of an event, the construction of a plant, the upgrade of an IT solution, the building of a hotel, the development of a new product, the submission of a complex quotation, the execution of an extensive feasibility study, or the production of a film.

A programme is a temporary organisation for the execution of a unique, medium to long term process of large scope that involves many organisational units. Programmes have a higher level of complexity; usually have a longer duration, a higher budget and a higher risk than projects. Compared to projects, programmes have a higher strategic importance.<sup>3</sup>

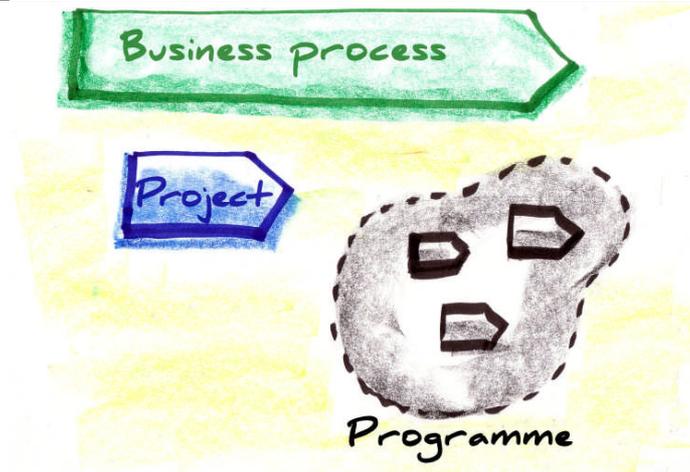
Typical programmes include the development of a new product group, the implementation of a comprehensive IT solution (such as an ERP system) in a group, the reorganisation of a group of companies into a holding group, and large-scale investments such as the Austrian Railways Station Offensive.

---

<sup>1</sup> Gareis, 2006, p.69

<sup>2</sup> Gareis, 2006, p.62-63

<sup>3</sup> Gareis, 2006, p.401



### **1.1.3 Investment, project and programme<sup>4</sup>**

An investment can be initiated through a project or programme. Projects and programmes can segment investment processes. An example of segmenting an investment process is a conception project followed by a programme in which the concept is realised. The segmentation of investment processes typically results in project chains, for example, the order processing project follows the proposal submission project. Not all components of the investment process have to be worthy of a project or programme. Typical projects in a product investment may include a product design project, product development and implementation project, and product re-launch project.<sup>5</sup>

The relationship between a project and investment becomes clear during the creation of a business case, when the costs and benefits of the investment initiated by the project or programme are considered and evaluated.

---

<sup>4</sup> Gareis, 2006, p.71

<sup>5</sup> Gareis, 2006, p.70

### **1.1.4 Project portfolio, project network, project chain**

A project portfolio is a set of all projects and programmes in a project-oriented organisation at a given point in time. It is a time-now-analysis. For organisations that have a large number of projects in their portfolio, it makes sense to have several portfolios for different types of projects.<sup>6</sup>

A project network is a subset of closely linked projects and programmes of the project portfolio that are executed or scheduled at a specific time.<sup>7</sup> A project network can be formed based on different criteria, such as activities for the same customers, activities in the same geographical region, activities in cooperation with the same partner, use of the same technology, and so on. Project networks have no clear boundaries, in other words, projects from partners or suppliers can also be included if this can contribute towards realising common objectives.

A project chain is a set of sequential projects, for example, a conception and realisation project or a pilot and follow-up project. A project chain is therefore a period analysis.<sup>8</sup> The objective of managing project chains is to ensure the continuity of the management of two or more successive projects. In doing so, personnel policy and organisational measures must be fulfilled, such as overlap among the members of project owner teams and members of the project organisation. The objective of integrating two successive projects into a chain of projects can be realised in the project close-down process of the first project and in the project start process of the following project.

A project portfolio, project network and project chain are not themselves an organisation, but represent a cluster/collection of projects and programmes.

---

<sup>6</sup> Gareis, 2006, p.489

<sup>7</sup> Gareis, 2006, p.489

<sup>8</sup> Gareis, 2006, p.489

## 1.2 Project management as a business process

### 1.2.1 Designing the project management process

Project management is a business process of the project-oriented organisation. The project management process begins with a project assignment and ends with a project approval. It contains the sub-processes project start, project coordination, project controlling and project close-down. These sub-processes of project management are related to one another. Project coordination runs over the course of the entire project.

Other possible sub-processes include "project marketing" and "project crisis management".

The objects of consideration in project management include:

- The project assignment, project objectives, project deliverables, project list of dates, project resources, project costs and project risks
- The project organisation and the project culture
- The project context (pre- and post-project phases, project environments, other projects, etc.)

The project management process requires an explicit design through communication. This design includes the selection of suitable structures and forms of communication (such as controlling meetings or project team meetings), the selection of appropriate information technology and telecommunications instruments to support communication, the definition of adequate forms of project management documentation, the use of standard project plans and checklists, the selection of suitable project management methods and the decision as to whether or not to use a project coach.

### 1.2.2 Project start sub-process

The objectives of the project start are to transfer knowledge and information from the pre-project phase into the project, agree on project objectives, create suitable project plans, design a suitable project organisation, team building, project development, establish the project as a social system, plan risk management measures to avoid and provide for crises, design project context relationships, construct a common "Big Project Picture", execute initial project marketing activities and create the basic version of project management documentation.

### 1.2.3 Project coordination sub-process

The objectives of project coordination are to ensure the project's progress, continuously ensure the adequate provision of information for project team members, project contributors and representatives of relevant environments, as well as to continuously support the completion of individual work packages. Project coordination begins with the project assignment and ends with the project approval. Project coordination includes: continuous quality checks of the (interim) results of work packages, ongoing communication between the project manager and project

team members and the project owner, continuous forming of relationships to relevant environments and the allocation of project resources.

#### **1.2.4 Project controlling sub-process**

The objectives of project controlling are to analyse the project status, review the "Big Project Picture", agree on and/or undertake control measures, develop the project organisation and the project culture, create progress reports, redesign the project context relationships, and execute project marketing activities. In certain circumstances, it may be necessary to agree on new project objectives. The project controlling process takes place on specific key dates several times during a project. Project controlling begins with its initiation and ends when a project progress report has been filed.

#### **1.2.5 Project marketing sub-process**

The objectives of project marketing are divided into product and process-related marketing tasks. Project marketing gains the support of both the internal and external project environments through the use of suitable communication-related methods and instruments throughout the entire duration of the project. Project marketing increases management attention and ensures the acceptance of project results. It also facilitates the identification of the project organisation with the project. Project marketing is essentially an integral project management task that must be fulfilled in all project roles. If there are a large number of project marketing tasks that are particularly important to the project, then project marketing can be conducted as a project management sub-process of its own.

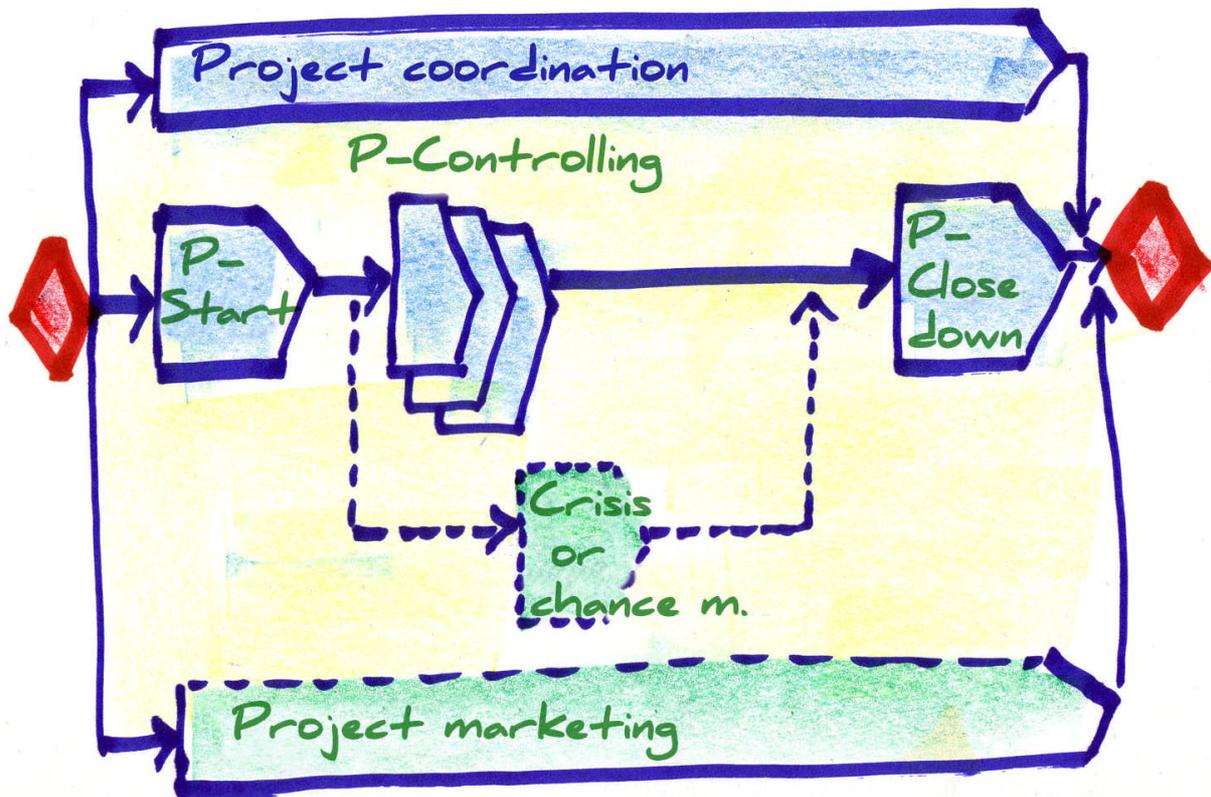
#### **1.2.6 Project crisis management sub-process**

Project crisis management starts with the definition of the crisis and ends when the end of the crisis has been communicated. Project crises form an existential threat to the project and often have surprising causes. Yet within the framework of the project start and project controlling, it is also possible to develop scenarios in order to identify potential crises. To deal with project crises, a specific process must be executed. The objectives of the project crisis management process are, for example, to manage an existential threat, ensure the continuation of the project, and limit possible damage to the project.

If opportunities for the project are recognised during the course of the project (e.g. increase in the scope of work), then corresponding measures must also be initiated and executed as part of a specific process in order to benefit from these potential opportunities.

### 1.2.7 Project close-down sub-process

The objectives of the project close-down are to create "as-is" documentation (the most recent version of the project handbook with the updated project plans per project end deadline), plan and ensure the completion of remaining work (in the post-project phase), agree on objectives for the post-project phase and possible investment evaluation, create project final reports, transfer knowledge gained (lessons learned) to the permanent organisation and to other projects, dissolve the project environment relationships, complete the project emotionally by evaluating the project's success, dissolve the project team, (possibly also) pay project bonuses and conduct final project marketing activities. The project close-down process starts with the initiation of the project close-down and ends with the project approval by the project owner.



## 1.3 Programme management as a business process

### 1.3.1 *Designing the programme management process*

Like the project management process, the programme management process can also be seen as a business process of the project-oriented organisation. It has to be fulfilled in addition to the management of the individual projects of a programme.

The programme management process begins with the programme assignment and ends with the programme approval.

Programme management is carried out continuously throughout a programme, but also energetically in the individual programme management sub-processes, programme start, programme coordination, programme marketing, programme controlling and programme close-down.

The objects of consideration in programme management include:

- The programme assignment, the programme objectives, the programme deliverables, programme schedule, programme resources, programme costs and programme risks
- The programme organisation and programme culture
- The programme context, (pre- and post-programme phases, programme environments, other programmes and projects).

The programme management process also requires an explicit design through communication, which includes the selection of appropriate structures and forms of communication as well as the selection of suitable information technology and telecommunications instruments to support communication.

The same methods can be used in programme management as in project management, and they take into account the relevant specific features (e.g. programme objectives, work breakdown structure, and so on) from a programme perspective.

### **1.3.2 Description of the programme management sub-processes**

The programme management process is basically the same as the project management process, except that the programme marketing sub-process has a particular significance. The programme management process is divided into the following sub-processes:

- Programme start
- Programme coordination
- Programme controlling
- Programme marketing
- Programme crisis management, if required
- Programme close-down

A programme begins with the programme assignment and formally ends with the programme approval. The programme start and programme close-down are limited in time and are only performed once in the programme. The programme controlling sub-process is a periodic process and is performed several times in the programme. Programme coordination and programme marketing are continuous processes.<sup>9</sup>

---

<sup>9</sup> Gareis, 2006, p.405

## 1.4 Project or programme handbook

Handbooks are created for documentation purposes both for projects and programmes. Programme handbooks are created in the same way as project handbooks. The project handbook is described briefly in the following.

The project handbook is used to document all the current project contents related to project management and the project results. The project management part is created within the framework of the "project start" project management sub-process and it documents all the relevant planning results of the project. It provides the basis for all further project management activities during the course of the project. The project results documents are filed in a second part. It is advisable to organise the content structure in accordance with the project management sub-processes or the work breakdown structure.

The project handbook represents a central instrument of communication, which aims to establish a common reality of the project early on during its creation in the project team. Its systemic project description and consistent structure provide a clear insight into the project development.

The project handbook can be made available both as a hardcopy and electronically.

The project management part of the project handbook forms the basis for the project implementation for the project team. It is important to ensure that all project team members have access to the current version. Adaptations or additions (such as progress reports or to-do lists) are made by the project manager in the course of project controlling and project coordination.

In the "project close-down" sub-process, the planning documents in the project handbook are evaluated and the final report created. The project handbook is an important document for the learning organisation.



# 2 Methods for managing projects and programmes

## 2.1 Correlation to the IPMA Competence Baseline (ICB 3.0)

This chapter presents a selection and enhancement of the most important methods for the project management technical competences described in accordance with ICB 3.0. The following project management methods are structured by the project management sub-processes in which they are predominantly used. This does not exclude, however, that some methods can or must also be used in other project management sub-processes.

The methods for project management technical competences are also used in a similar way in programmes. Specific features of programme management will be pointed out at the end of this chapter.

Note on assignment: Assignment belongs to the time context of a project, in other words, to the pre-project phase. As a result, project start methods are also used in the pre-project phase in order to create a first draft of the project plan or a draft of the project handbook.

## 2.2 Methods for the project start: Defining the project scope and project context

### ***2.2.1 Defining the project scope and project context***

In the pre-project phase, the project scope is already defined for the first time as regards timing, task and social aspects. To do this, the project start and project end events, the project objectives and a first draft of the project organisation (e.g. potential project team members) are defined.

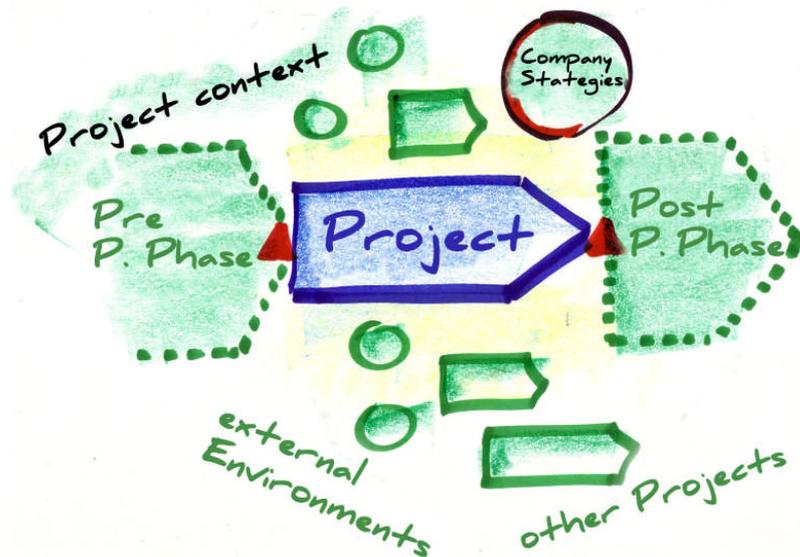
By defining the project scope, three different forms of project context - time, task and social - can be defined and assessed.

The time context is the product of the difference in time between the project start date and project end date together with the pre- and post-project phase.

The analysis of the task context takes the following into account:

- The correlation between the business strategy and project
- The relationship between the project and other tasks (programmes, projects, etc.) and business framework
- The connection between the project and the underlying business case.

The social context is considered in the project environment analysis. It distinguishes between internal and external project environments.



### **2.2.2 Pre- and post project phase**

Through the definition of the project start and project end events, which define the project scope in terms of time, the pre- and post-project phases are considered as the time project context. Knowledge of the history that brought about the project is important for the understanding of the project and the development of suitable project structures. Information from actions, decisions, agreements and the documentation of these has to be transferred from the pre-project phase to the project. The expectations regarding the post-project phase also influence both the scope of work to be carried out and the strategies for designing the project environment relationships.

### **2.2.3 Correlation between project and business strategy**

When analysing the correlation between the strategies of the company and the project, it must be clarified whether and how the business strategies brought about the assignment of the project, and in what form and to what extent the project contributes towards realising these business strategies. It must also be determined whether the project influences the ongoing further development of the business strategies.

### **2.2.4 Relationships of the project to other tasks**

Relationships between a project and other tasks (programmes, projects, etc.) performed simultaneously within the company can be of a synergetic or competing nature. The goal therefore is to establish dependencies with regard to the objectives, the methods, the resources deployed and the necessary interim results.

### **2.2.5 Business case**

All projects must contribute towards the success of the business. The business consequences of an investment or change initiated by a project can be presented as a "business case".

The business case not only aims to record and evaluate the direct project costs and benefits, but also the consequential costs and benefits to be derived from these.

Economic calculations (net present value method, internal rate of return method, annuity method, and so on) must be used to evaluate an investment.

The business case includes all processes and activities from the project idea to the end of utilisation of the project results, in other words, it includes the pre- and post-project phase. These undergo an economic analysis. This checks whether all expenditure from the project idea, to the project execution through to the use of the project results is cost-effective compared to the returns from the utilisation phase.

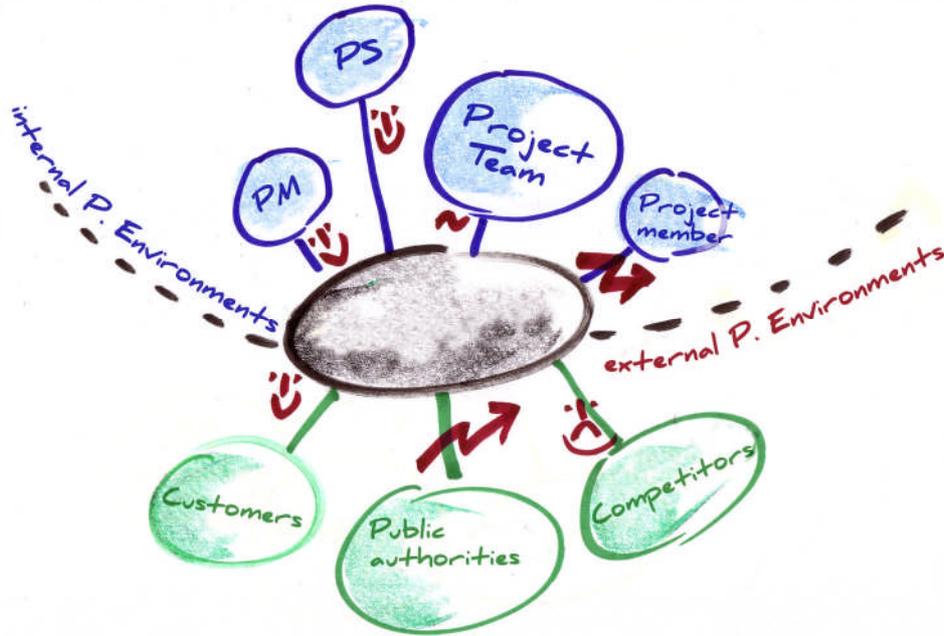
### **2.2.6 Project environment analysis**

The project environment analysis is one method of analysing and evaluating the relationships, expectations and influences on the project through internal and external social environments. The results of the analysis are used to derive the necessary activities for designing the environment relationships. Designing the project environment relationships is a project management task.

It must be determined which environments are "relevant" for the project and significantly influence the project success.

Relevant project environments can differ in internal and external project environments. External project environments include, for example, the customer, supplier, banks and also divisions and departments of the company undertaking the project. External project environments are primarily interested in the project end result. Internal project environments are social environments that make a significant contribution in the course of the project and assume project roles within the project organisation.

The relationships between the environments and the project can be evaluated and this evaluation should be presented using symbols (e.g. +/-, etc.). Appropriate measures are derived for relationship management from this evaluation.



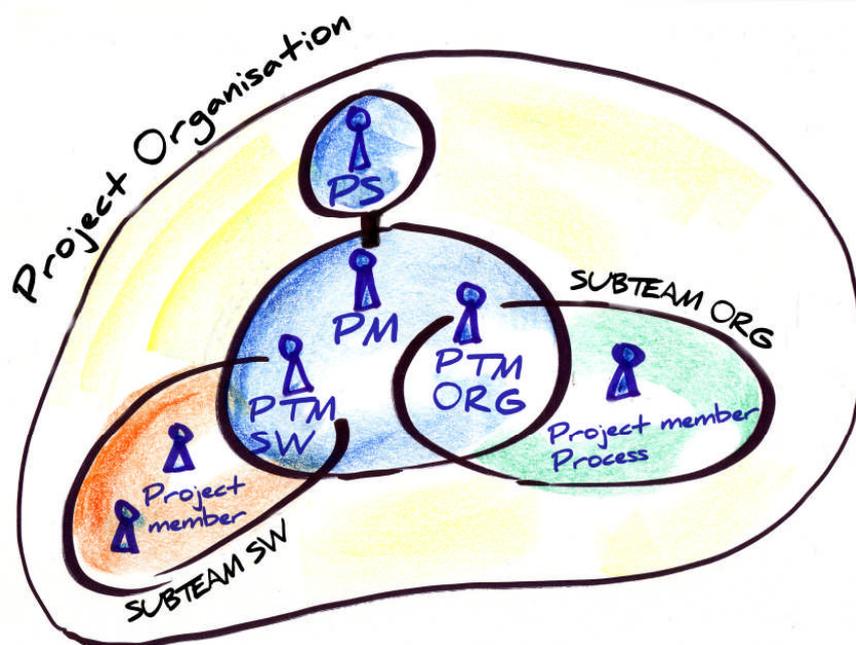
## 2.3 Methods for the project start: Designing the project organisation

### 2.3.1 Project organisation forms

There are three main forms of project organisation in project management: influence project organisation, matrix project organisation and pure project organisation. In influence project organisation, the project manager has a staff function without formal managerial authority. She follows the execution of the project and consults with her superiors about the activities to be carried out. The matrix project organisation is characterized by the division of managerial authority between the project manager and the line manager of the project team member or project contributor. In the pure project organisation, the project manager has formal authority over the project team members and project contributors. In this form, organisational independence is often supported by the fact that those taking part in the project temporarily leave their original departments and are given a common work area.

A project organisation can be strengthened by the delegation of decision-making powers and responsibilities to the project team members, and by the integration of customer representatives into the project, for example, thus making the organisation relatively autonomous.

The project organisation chart illustrates the project roles, their interrelationships and the project communication structures.



### 2.3.2 Project roles

A role is defined as a set of expectations of the person in the corresponding role. Project roles are defined by the description of assignments, competences, responsibilities and behavioural expectations. The objectives of defining project roles are to clarify the collaboration in the project team, support the social project boundaries to the line organisation and consider specific role requirements.

It is possible to differentiate between individual roles and group roles.

Project-related roles for individuals are, for instance:

- Project owner
- Project manager
- Project team member
- Project contributor

Project-related roles for groups are, for instance:

- Project owner team (e.g. steering committee)
- Project team
- Sub-teams

When defining project roles, it is advantageous to choose suitable project role names for the project task, as this increases the transparency of communication and the project organisation chart. Examples of this include "Development project team member", "Testing project contributor" or even "Training sub-team".



### 2.3.3 Project teamwork

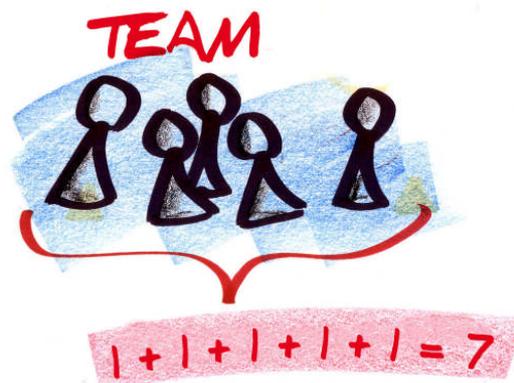
As projects have a large number of interdependent activities as content, the borders of individual organisational units must be crossed in order to fulfil these. This requires cooperation between different specialist divisions and the development of specific organisational structures. Teamwork is thus the basic requirement to ensure the success of a project.

The objective of the composition of project teams is, however, not to maximise the "sum of qualifications" of the individual project team members and project contributors, but to optimise the qualification of the team as a whole.

Key success criteria for good teamwork in particular include clear objectives, clear allocation of roles, active participation of all members, good communication, rules and standards, motivated team members and clear decision-making authority.

In order to establish a project-specific identity within the project team, the team must work together to develop a common "Big Project Picture". A project start workshop is ideal for doing this. The "Big Project Picture" must also be consistently re-established during the further course of the project, for instance in project controlling.

Particular attention must be paid to the team development phases, from team building to breaking up the team. The project manager can actively control this. The traditional team development phases of Tuckman include<sup>10</sup>: (forming phase ("Forming"), conflict phase ("Storming"), rule phase ("Norming"), work phase ("Performing") and breaking up ("Adjourning").



<sup>10</sup> Tuckman, 1965

### 2.3.4 Project communication

The one-to-one meeting, kick-off meeting and project start workshop forms of communication can be combined in the project start process. A project start workshop is needed in order to ensure suitable project management quality.

The objective of the one-to-one meeting between the project manager and the project team member is to provide information on the project and exchange expectations each other may have about working together. The basic orientation provides a good basis for the participation in future forms of communication.

The objective of a kick-off meeting is for the project owner and project manager to inform the project team and other relevant environments about the project. This is "one-way communication" and lasts from 2 to 3 hours with little opportunity for interaction.

The objective of a project start workshop is for the project team to clarify the project goals together, to further develop project structures, to refine and/or enhance all the required project planning documents, and to develop the "Big Project Picture". The interaction of the team members in the workshop makes a substantial contribution to the development of the project culture. A project start workshop lasts between 1 and 3 days and takes place in a moderated form, usually outside the workplace, possibly in a hotel. The resulting document is the project handbook.



### 2.3.5 Project culture

As an independent social system, a project has a culture. The project culture can be defined as the project values, norms and rules as a whole.

Project culture cannot be described directly, but can be observed in the capabilities and behaviour of the project organisation members, the planning and controlling methods, the forms of project communication, and so on.

Project-specific values set standards for what is regarded as good, valuable and desirable. Consciously and subconsciously, they determine the behaviour of the project team members and give them orientation.

Methods for developing a project culture are the establishment of a project mission statement, project name, project slogan, project logo, the development of a project glossary, and the organisation of project-specific "social" events.

Project-specific rules, such as the information technology to be used in the project, meeting attendance, and so on, are intended to give project team members orientation and can be summarised in the project handbook.



### 2.3.6 Leadership in projects

Leadership activities in projects are carried out by the project owner, the project manager and the project team. Different leadership styles are used in projects, such as the autocratic, the cooperative, the democratic and the situational leadership style.<sup>11</sup>

The functions of leadership are, for instance <sup>12</sup>

- Providing information
- Agreeing on objectives and assigning tasks
- Informing and deciding
- Giving feedback, reflecting, encouraging learning and further development
- Creating the conditions for motivating team members, for example, through delegation
- Directing energy in the project.

From a systemic perspective, the key element of leadership is target-oriented communication – intervention. Individual persons or teams are managed. Leadership in projects and programmes is closely linked with the project management sub-processes project start, project controlling, project coordination, project close-down and with the design of these.

Leadership activities include giving orientation to the project team members, motivating and further developing the project organisation members. To ensure performance, the project team members must be given freedom of action, which tends to be reduced during the course of the project.

Although leadership activities have to be carried out continuously, event-oriented leadership is also required. In event-oriented leadership, energy in projects can be directed through events, such as project workshops, project presentations and milestone celebrations. Energy cannot be maintained at a continuously high level throughout the entire duration of the project. Leadership methods have to be adjusted and deployed according to the team composition and culture.

---

<sup>11</sup> Rattay, 2003, p.48-52

<sup>12</sup> Gareis, 2006, p.141-152



## 2.4 Methods for the project start: Project planning

### 2.4.1 Project objectives

Projects can be seen as goal-oriented organisations. In the course of the project, objectives have to be achieved with regard to content, schedule and budget. The project objectives should clarify the meaning of the project and define or describe the desired results at the end of the project. A holistic project view ensures the consideration of all objective perspectives. Objectives can be broken down into main objectives (targets) and additional objectives.

Additional objectives can be process-related objectives such as personnel development in project management. They provide additional synergies that go beyond the defined scope of work of the project.

Project objectives must be formulated operationally as regards both the desired quality and quantity. The achievement of objectives must be measurable at the end of the project. The objectives should be corroborated by a results plan. With the definition of non-objectives, the functional project boundaries can be defined more clearly, if required.

The project objectives are specified and listed in the project objective plan. There, they can be divided into the aforementioned main objectives, additional objectives and non-objectives accordingly.

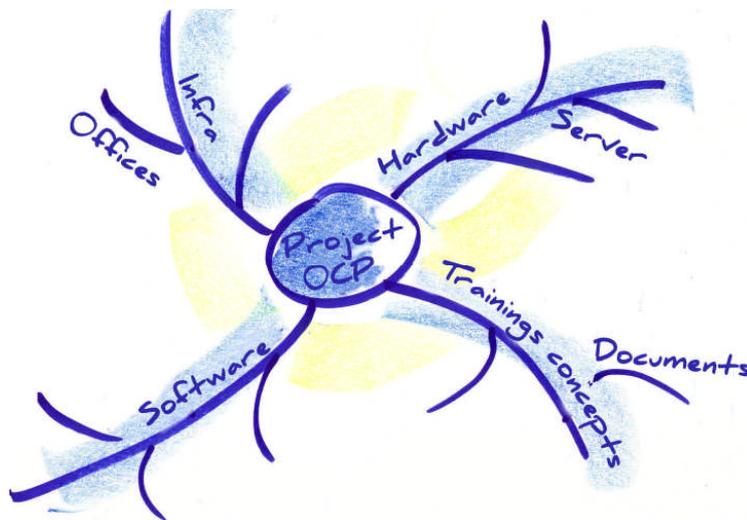


## 2.4.2 Objects of consideration plan

The objects of consideration plan is a method that structures the material and immaterial objects of consideration (e.g. results, interim results) to be considered and created in a project into their components. The objects of consideration of project management are not part of the objects of consideration plan. The objects of consideration plan displays the individual objects of consideration and their interrelationships in a hierarchical structure, either graphically or in a table. The objects of consideration plan provides orientation or assistance when creating the work breakdown structure.

The objective is to create a common view of the objects of consideration to be created amongst the project team members and the representatives of relevant project environments (such as the customer, supplier or partner). The objects of consideration components can be structured by functions, parts, and so on. Presentation methods such as mind maps, tables or object breakdown structures (OBS) can be used to visualise this.

Certain objects show important project results or deliverables of the project as a subset of the objects of consideration plan. These can provide the basis for requirements specifications, specification lists, bills of material, and so on.



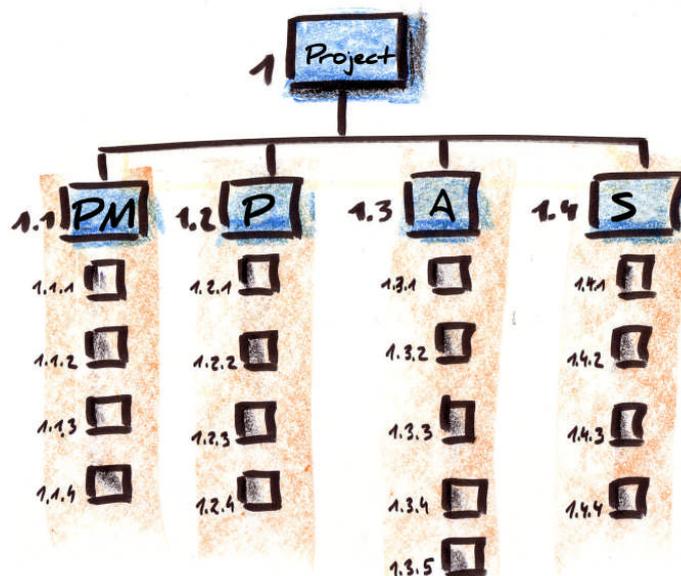
### 2.4.3 Work breakdown structure

The objective of the work breakdown structure (WBS) is to display performance planning by phases as a tree diagram. Thinking in terms of project phases helps project members to structure projects in a process-oriented way. The WBS contains all the tasks to be performed in a project, displayed as work packages.

Level 1 of the WBS tree displays the project, and level 2 is a process-oriented structure of the project by phases, where possible. The project phases are different for each project, although they can be standardised for certain types of projects. As of level 3, the tree displays the work packages.

The work breakdown structure is:

- A basis for the agreement of objectives (work packages) between the project manager and the project team
- A classification of the project into work packages that can be planned and managed
- The basis for implementation planning, scheduling, costing and resource planning
- A central communication instrument in a project

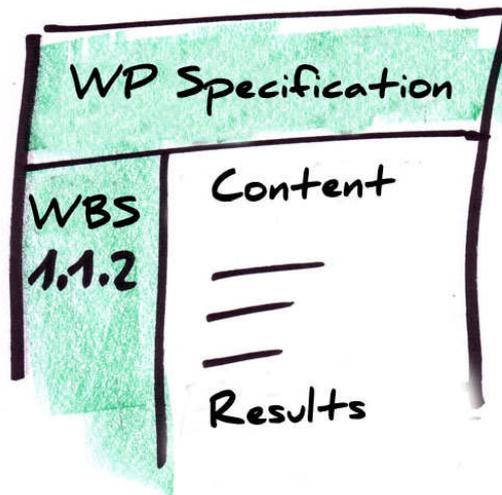


### 2.4.4 Work package specifications

The contents and results of work packages are defined in work package specifications. They are used as a basis for the agreement on objectives between the project manager and the persons responsible the work package (project team members). The objectives of work package specifications are to:

- Clarify the content of each work package
- Clearly differentiate one work package from another
- Recognise interfaces/dependences between work packages
- Define results
- Define the evaluation and measurement of work performance progress of work packages (in connection with the results)
- Give orientation for the work of the project team members and establish commitment

Work package specifications do not specify all work packages, but just the most important ones (e.g. new, critical, complex and costly work packages).

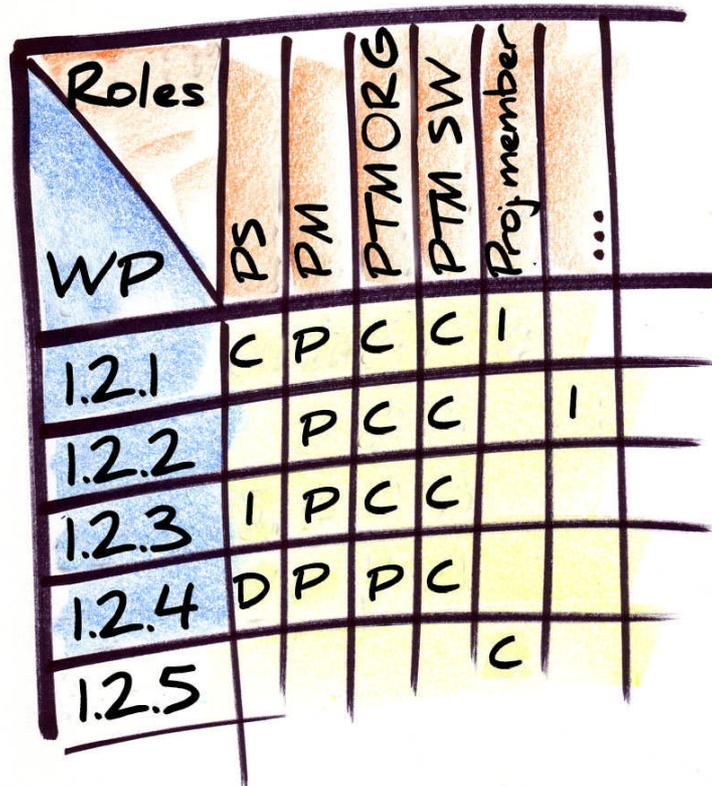


### 2.4.5 Project responsibility matrix

The project responsibility matrix documents how functions to be performed in work packages are distributed to project roles and project environments.

The intersection cells of the matrix (work packages and project roles) show the functions to be performed. This organises how project organisation members work together to process the work packages.

Frequently used functions include, for example, realisation responsibility ("D"), cooperation ("M"), information needs ("I") and decision ("E").



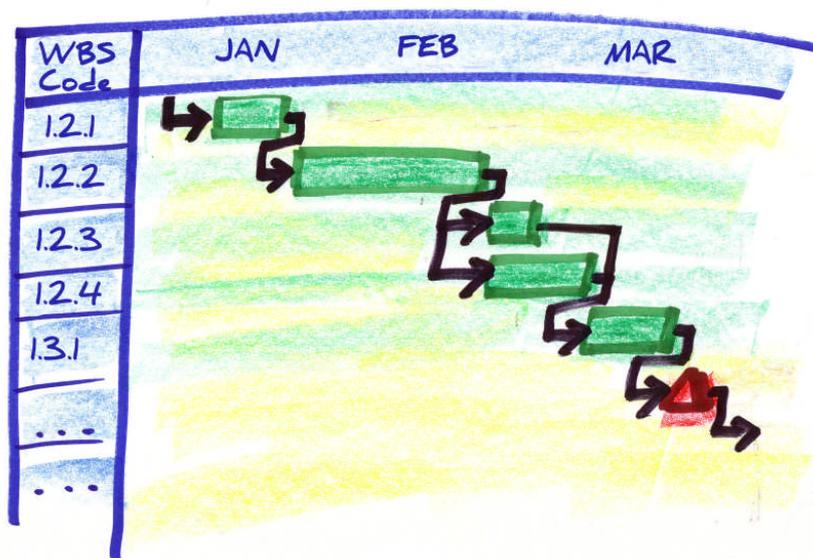
Roles	PS	PM	PTMORG	PTMSW	Proj member	...
WP						
1.2.1	C	P	C	C	I	
1.2.2		P	C	C		I
1.2.3	I	P	C	C		
1.2.4	D	P	P	C		
1.2.5					C	

## 2.4.6 Project scheduling

When planning the project workflow and list of dates, a decision needs to be made regarding the planning contents, planning depth and the planning methods to be used. Scheduling objects can either be the entire project or portions thereof, such as the individual project phases. Different scheduling methods can be used for different planning objects.

When planning the project workflow and list of dates, the milestone planning, project deadline list, bar chart, linked bar chart and network planning methods can be used. Milestone planning is the crudest planning method and absolutely vital. The work breakdown structure with its work packages is used as the basis for this.

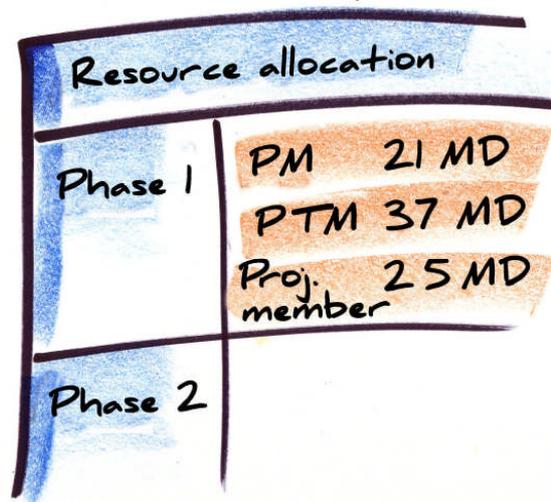
Milestone planning, project deadline lists, bar charts and network planning complement each other. The efficient use of one or more scheduling methods depends on the complexity and dynamics of the particular project. The information requirements for the application of the various scheduling methods and the achievable results differ.



### 2.4.7 Project resources

The objective of resource planning is to determine and display the required project resources over time and to determine the over- and under-allocation of project resources with the project resources available. Resource histograms can be used to provide a clear overview of the requirement and availability of scarce resources for a project. Any scarce resources determined must be optimised in good time with regard to availability and costs, and agreed with the line manager. Typical project resources include, for example, personnel with different qualifications, equipment, finance and materials.

The creation of a resource plan allows all the human resources required over the course of the project to be displayed in a clear structure according to phases.



Resource allocation	
Phase 1	PM 21 MD
	PTM 37 MD
	Proj. member 25 MD
Phase 2	

### 2.4.8 Project costs

Project cost plans are used to record and document project costs and to provide a clear overview project costs and their development. The objects of consideration in cost planning are the work packages of the work breakdown structure. Project-related cost plans can be created for individual work packages, for individual object components, for sub-assignments and for the project as a whole. The structure of the project cost plan should match the structure of the work breakdown structure in order to make integrated project planning and integrated project controlling possible. Types of costs can be differentiated according to functional criteria, such as personnel costs, material costs, equipment costs, administrative and sales costs, costs for minimising risks, according to cost centres as direct and indirect costs, and according to activity, as fixed or variable costs.

It is essential to differentiate between project costs, project payments and project expenses.



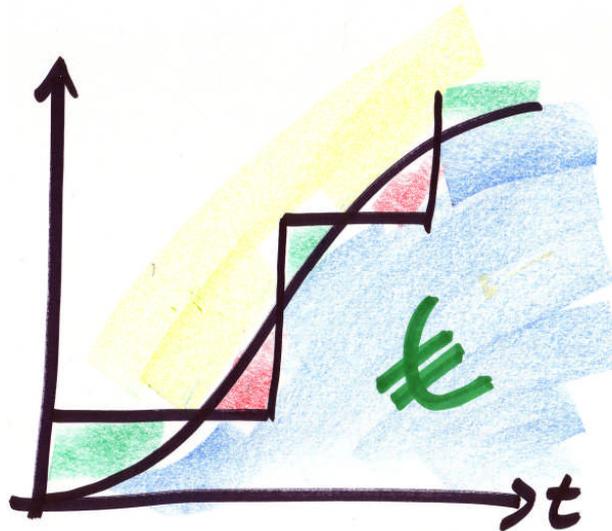
A hand-drawn diagram of a table structure. The table has two columns. The left column is labeled 'WP' (Work Packages) and contains five rows, each with a green shaded rectangular area. The right column is labeled 'Costs' and contains a large Euro symbol (€) in the center.

### 2.4.9 Project financing

Financing can be a scarce resource in a project. Project finance plans are graphical or tabular representations of the timing of project-related cash inflows and outflows.

The objective of project finance planning is the planning of project-related liquidity. By calculating the payments surplus in a given period, the requirement or availability of financial resources can be planned.

The financial resources required must be financed on a project-by-project basis. The interest charges arising from the financial resources required must be calculated as project costs.



### 2.4.10 Project risks

Project risk is defined as the possibility for positive (opportunity) or negative (danger) deviation from the project objective. Project risks are events or developments that affect project performance (quality), deadlines, costs or revenues. As a rule, project risks are evaluated in monetary terms.

Risk management in projects is a project management task. In the course of the project risk management process, a risk assessment, risk response and risk monitoring is performed based on the project specifications.

The risk assessment comprises the risk identification, risk analysis and risk evaluation. Risk analysis is defined as the likelihood of events occurring together with the impact of these on the project. Risk is evaluated by comparing the risks analysed (risk expected value) with the tolerable project risk. If the risk expected value is greater than the tolerable project risk, then preventive risk response measures must be planned.

Even if the risk expected value is below the tolerable project risk as a result of the preventive risk response measures (avoidance, reduction, transfer) planned, additional corrective risk response measures can be planned. Both preventive and corrective risk response measures must be taken into account in the project costs and shown separately.

Risk monitoring is used to control the effectiveness of the measures for the risk response and the recurring analysis of the risk expected value.



## 2.5 Methods for project coordination

### 2.5.1 To-do lists

To-do lists are an important method within the framework of project coordination. Project team and sub-team meetings take place for communication purposes in the project coordination process. To-do lists are used to support this communication. A to-do list is a list of actions to be performed in relation to work packages with assigned responsibilities and deadlines. To-do lists are used by the individual project team members for operational planning and for reaching agreements. To-do lists are used in addition to the work breakdown structure and to work package specifications.



To Do's			
WHAT	WHO	WHEN	COMPL.
Develop design	Peter P.	2 <sup>nd</sup> June	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

## **2.5.2 Meeting minutes**

Meeting minutes are created in order to ensure that the outcome of meetings and the agreements made within them are documented.

Meeting minutes contain the following:

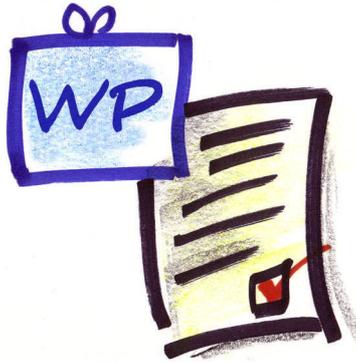
- Names of the meeting participants
- Meeting objectives and contents
- Key statements
- Decisions made
- Agreements as regards the next steps
- Formal information (such as date, duration, place).

Forms should be used to create meeting minutes in order to standardise the project documentation.

The meeting minutes appendix mostly contains a list of agreed actions/measures that are to be transferred to a central to-do list.

### 2.5.3 Acceptance protocols

Acceptance protocols are used to document the formal completion of work packages. They release the person responsible for the work package from the work to be performed for the project manager.



### 2.5.4 Communication plan

The communication plan created in the project start process must be applied or implemented accordingly. It governs all forms of communication with the organisational specifications for the execution of communication activities, for example, as a tabular list.

Project communication tasks have to be carried out throughout the entire project by all members of the project organisation. These include ongoing communication with the project owner's team, the project team members and the project contributors as well as ongoing project marketing for relevant project environments.



### 2.5.5 Using information and communication technologies

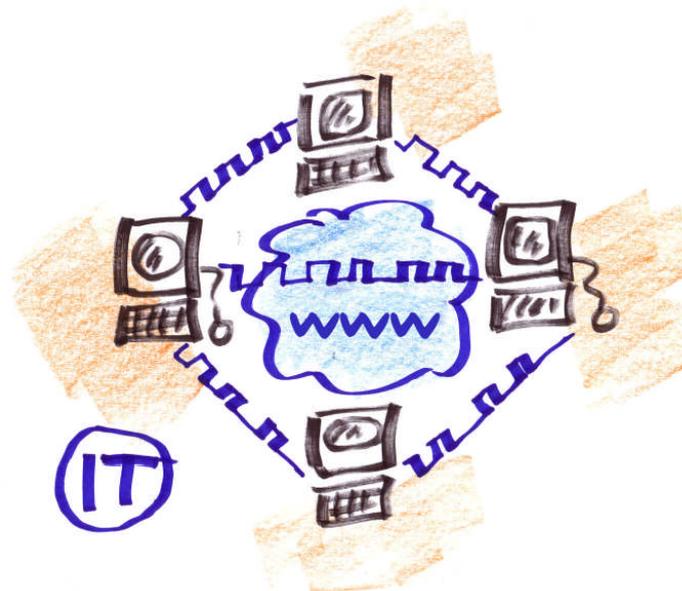
For communication within the framework of project coordination, the available information and communication technology (ICT) should be used specifically for its intended purpose. Besides phones and mobile phones, the Internet is a particularly suitable communication medium. Applications such as e-mail, Internet platforms, forums and instant messaging can be used. The project manager must ensure that communication by means of ICT is agreed with all project team members and project contributors.

The project manager must specify together with the project team the information that is absolutely vital for the project implementation as well as the form (as analogue or electronic data) in which it is required.

Different storage systems can be used to store and save the documents (e.g. document management systems).

A standard storage structure must be defined so that documents can be retrieved quickly (for instance, in accordance with the work breakdown structure). This structure should apply both to the storage of the analogue and electronic documents available.

A standard naming convention ensures faster and easier identification of the relevant data contents.

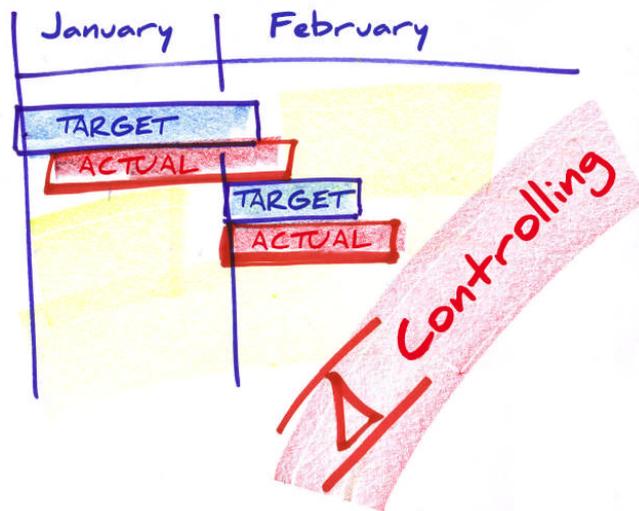


## 2.6 Methods for project controlling

### 2.6.1 Variance analysis

In the course of the project, it is essential to perform periodic project controlling. This involves determining deviations of the actual data from the planned data and initiating directive corrective measures. The planning documents in the project handbook provide the basis for this.

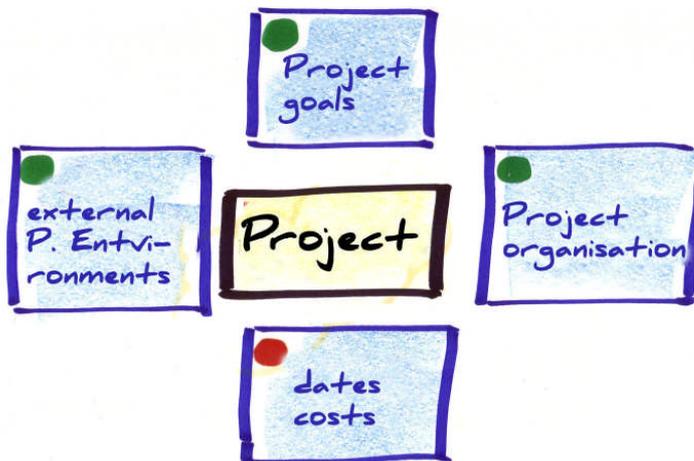
In particular, performance, quality, costs, resources and schedules must be considered, as well as the social aspects.



### 2.6.2 Project score card

The project score card aids the visualisation of the project status and forms a basis for managing the project. The following criteria can be taken into consideration: Project objectives, project performance, costs, schedule, project organisation and external project environments.

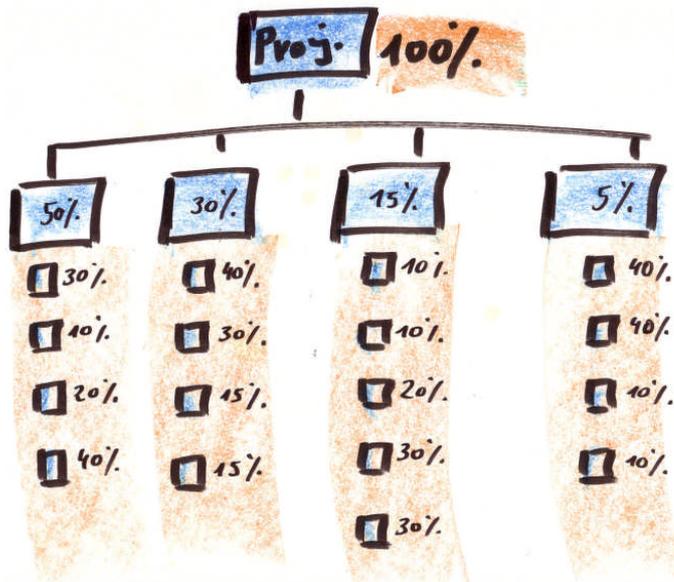
The status is defined in relation to a particular point in time for each criterion and "traffic lights" can be used to aid visualisation: On target – green, in difficulty – yellow, in a crisis – red.



### 2.6.3 Relevance tree method

Using the relevance tree method, the progress of the project phases (or work package groups) and the overall project can be calculated in percent based on the progress of the work packages. A relevance tree can be developed by weighting the work packages or phases in percentage values (based on a standard weighting criterion).

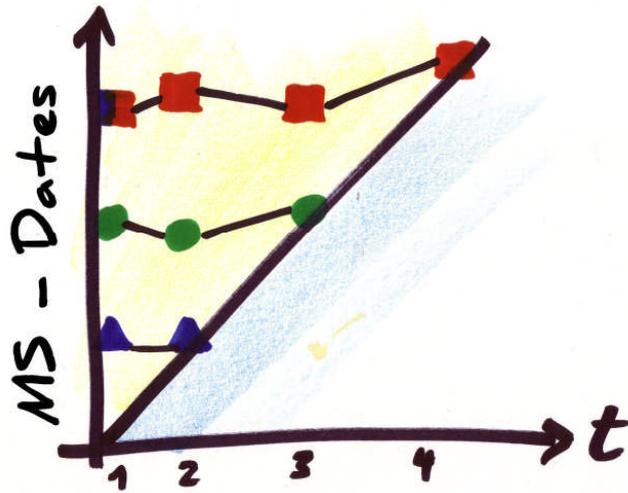
The weightings defined determine the relevance of work packages in relation to their particular superior phase ("relative relevance") and in relation to the project ("absolute relevance"). The relevance of a work package for the entire project can be calculated by multiplying the relative relevance of the work package by the absolute relevance of the superior phase.<sup>13</sup>



<sup>13</sup> Gareis, 2006, p.350

### 2.6.4 Milestone trend analysis

Milestone trend analysis looks at the development of the milestone deadlines as part of deadline controlling. The milestone deadlines are evaluated based on the milestone plan within the framework of controlling meetings. Using a matrix in which the current milestone deadlines are entered on the vertical axis and the reporting periods on the horizontal axis, the trend can be visualised very clearly and communicated to the relevant project environments.

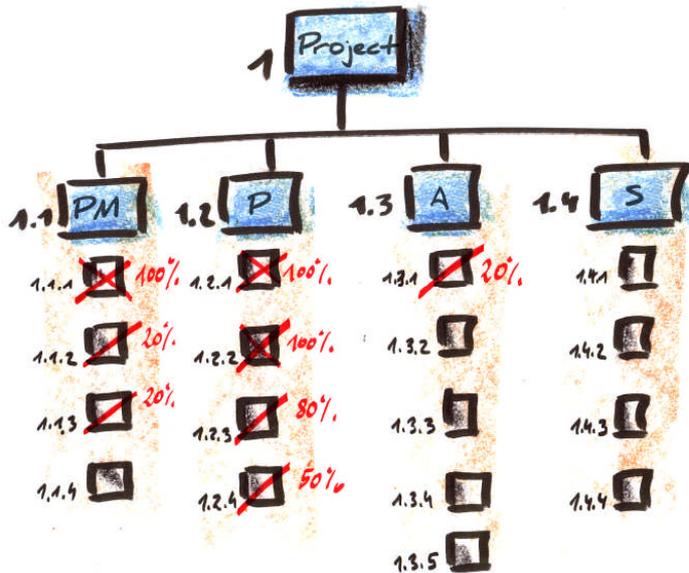


### **2.6.5 Social project controlling**

Social controlling includes analysing and managing the project organisation, the project culture and the project environment relationships. The methods to be used here for social controlling essentially build on the project management methods already mentioned. Other examples of methods include one-to-one meetings, mood barometers, one-point voting or multi-point voting and the flash feedback method. These methods must test the functionality of the project organisation structure, reflect the project culture lived and assess the suitability and impact of the activities to design the environment relationship. Any necessary changes must be carried out or initiated.

## 2.6.6 Adaptation of project plans

In the project controlling process, the project plans created in the project start process may need to be adapted. These not only include the work breakdown structure, the bar chart, the risk analysis and project environment relationships, but also the project organisation and the project culture.



### **2.6.7 Control measures**

Control measures must be planned and executed based on the deviations determined in the variance analysis.

Control measures include, for instance:

- Arranging overtime
- Deploying new staff
- Deploying new technology
- Outsourcing
- Changing the project organisation
- Changing the process structure.

To-do lists or the work breakdown structure can be used, for example, to plan the required control measures.

### **2.6.8 Project progress reports**

The project progress report is the formal result of the project controlling process. Project progress reports must be created periodically and describe the relevant project status as well as the planned control measures. If necessary, different project progress reports can be created for different target groups (e.g. project owner, customer, and project team).

The project progress report contains the overall project status, the status of the project objectives, the project performance progress, the project list of dates, the project costs, the project risks, the project environment relationships or context, the project organisation and the status of the project culture.

## 2.7 Methods for project marketing

Projects require a detailed explanation due to their complexity, dynamics and novelty. The objective of project marketing therefore is to communicate the strategies pursued and the desired project results to the relevant project environments.

A distinction can be made in projects between object-related/product-related marketing activities and process-related marketing activities. Project marketing activities are essentially to be performed by all members of the project organisation.

A good marketing concept allows the target-oriented use of different marketing methods alongside the project management sub-processes.

The instruments of the communication policy are available for project marketing. All activities that build confidence, encourage identification with the project, provide information and establish common ground with the internal and external project environments support project marketing.

Methods for project marketing include:

- Project documentation: project handbook, project reports and so on
- Informal communication such as word-of-mouth advertising, discussions over coffee or lunch
- Use of project name, project logo for giveaways such as stickers, pens, and so on
- Printed materials: creation of project folders, project newsletters, project articles in company magazines
- Project-related events: project information sessions, project visits, project inaugurations
- Internet: project platform, project website

Methods for product-related or project result-related marketing include:

- SWOT analysis
- Competitor analysis
- Market analysis
- Market segmentation
- Development of a marketing mix (application of methods from the communications policy, product policy, pricing policy and distribution policy)



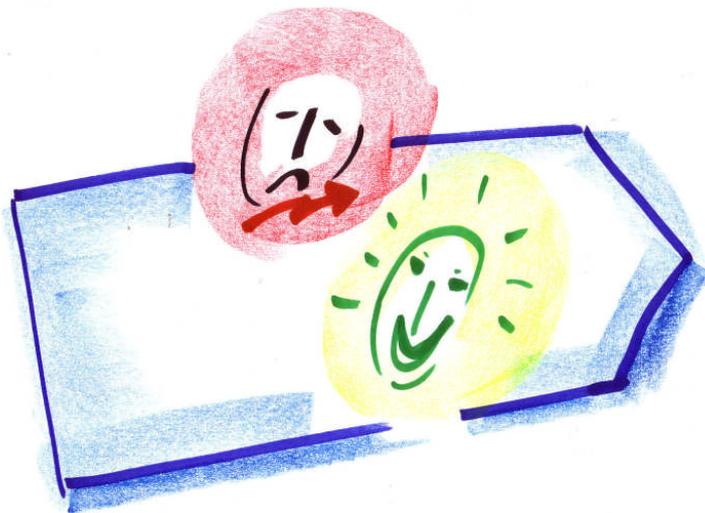
## 2.8 Methods for managing project crises

### 2.8.1 Project crisis

A project crisis is a negative deviation from the project objectives, which causes the project to deviate significantly from its planned course and which threatens the very existence of the project.

The management of a project crisis triggers a separate project management sub-process in project management. A project opportunity can, however, also lead to serious deviations, which trigger a project management sub-process such as this.

The result of the response process to a crisis can be the termination of the project or the continuation of the project under changed conditions (organisation, costs, deliverables or deadlines).



### **2.8.2 Strategies and measures to manage a project crisis**

To manage a project crisis, response strategies are defined and measures planned and "controlled". The strategies should be defined in relation to the project environment. Controlling the response measures is of major importance here. The completion of the sub-process for managing a project crisis must be communicated clearly.

Crises that arise in the course of the project have to be recognised and dealt with by the project manager and her team. The decision as to whether a project crisis exists lies with the project owner.

- Defining a project crisis or opportunity
- Planning immediate measures
- Root cause analysis
- Planning alternative strategies
- Completing a project crisis or project opportunity

### 2.8.3 Root cause analysis

In project crisis management, a root cause analysis helps to identify immediate measures to remedy problems and offers a learning opportunity for future projects.

Causes for a project crisis can be unclear project assignments, inadequate project planning, inefficient project organisation, missing reporting structure, the insolvency of a partner or customer, legislative changes or the destructive influence of the media.

Causes for project opportunities can be the use of synergy effects, joint use of resources with companies or other projects, or the increase in the required scope of work.

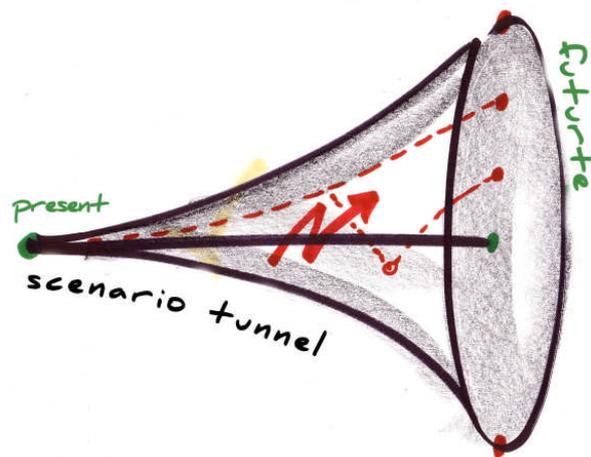


### 2.8.4 Scenario technique

The scenario technique can be used for the early detection of a project crisis.

The objective of the scenario technique is to describe possible future states of a project. This is a future-oriented perspective, rather than one that is oriented in the past.

In the scenario technique, several scenarios (best case, worst case, trend scenario) will be worked out to broaden the spectrum of the behavioural strategies.



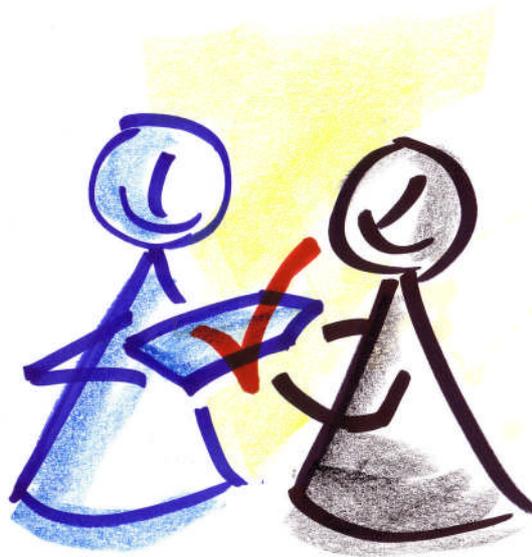
## 2.9 Methods for project close-down

### 2.9.1 Project close-down

In the project close-down, agreements are made for the post-project phase. The relationships between the relevant environments are dissolved with the project close-down and a final project marketing activity carried out. An important objective of the project close-down is to ensure the transfer of acquired know-how to the permanent organisation.

Project management methods for the project close-down include:

- To-do lists for remaining tasks and agreements for the post-project phase
- Project final reports
- "As-is" project management documentation
- Final presentations of the project results, publications
- Lessons learned
- Dissolving the project organisation



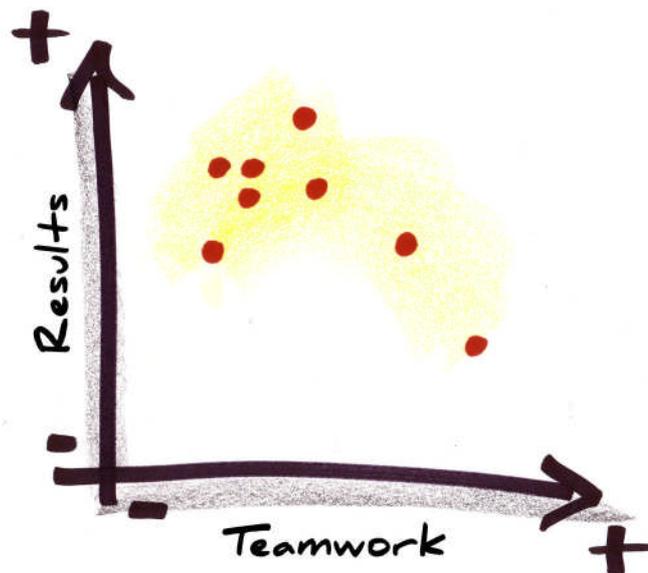
## 2.9.2 Assessment of the project and project team

In the project close-down process, the project and project team undergo an assessment.

Assessment criteria include:

- Content-related criteria: performance fulfilment, fulfilment of additional objectives, adherence to the schedule and cost objectives
- Process-related criteria: quality of the project teamwork, relationships to relevant environments

The performance assessment can be made in one-to-one meetings, group meetings, other meetings or workshops. The following methods can be used for performance appraisal: written or verbal; reflection, feedback, questionnaires, mood barometer. The appraisal can be linked to the payment of a project bonus.



### 2.9.3 Project close-down documentation

The project final report contains the presentation of the project results, the assessment of the realisation of the project objectives and the reflection of the project experiences in relation to the individual project phases and the project environment relationships.

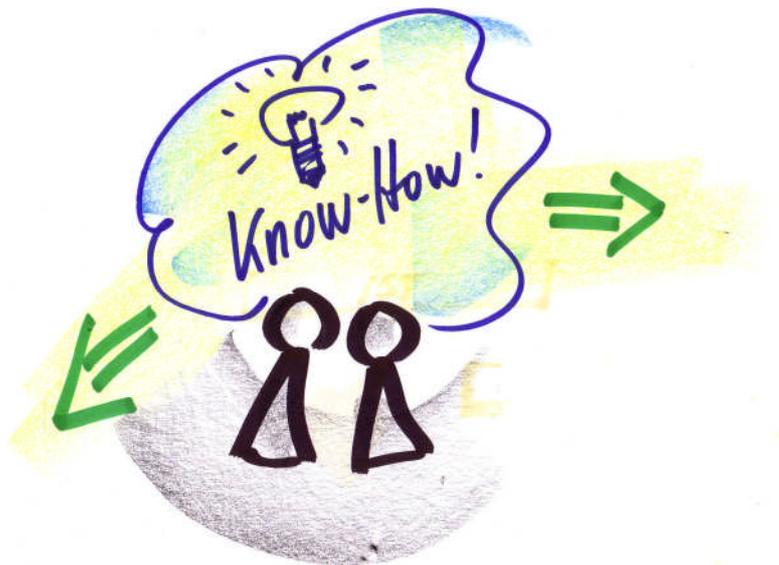
The project final report must be created for a specific target group. It can be structured either by project phases or by the relationships with the relevant project environments. The "As-is" project management documentation (summary of the most recent version of the project plans) is an appendix to the project final report.



### 2.9.4 Lessons learned and exchange of experience

To safeguard the knowledge acquired and experience gained during the course of the project, corresponding methods must be applied both during and in particular in the project close-down phase:

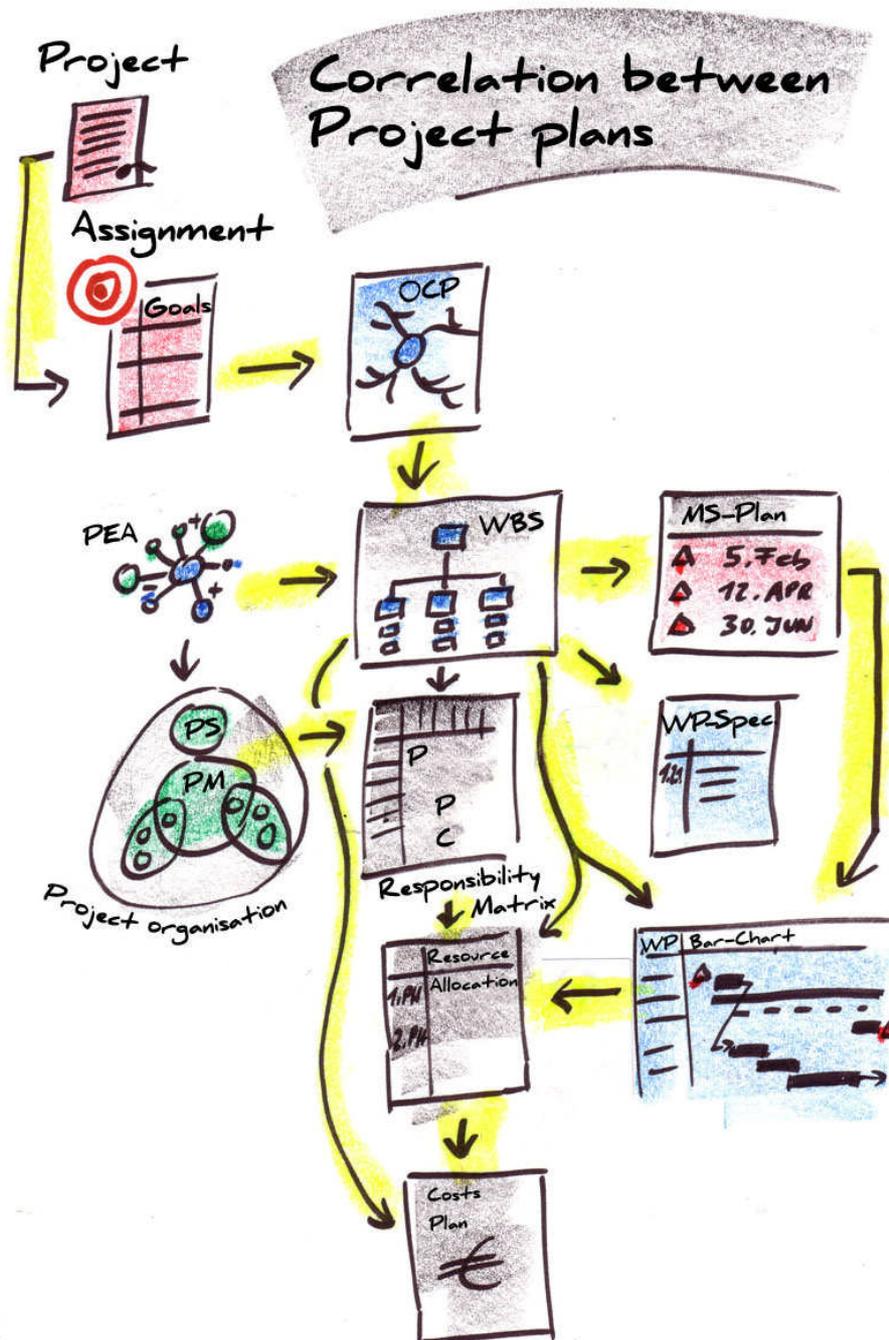
- Brief exchange of experience in project meetings and the documentation thereof
- Introduce a constructive error culture ("we can learn from our mistakes")
- Write and publish micro articles
- Carry out debriefings
- Hold workshops to exchange experiences between the project manager and the project team members
- Create and update project databases
- Experience reports, lessons learned and best practices
- Participate in or set up knowledge communities for the project manager, project contributors and staff from the permanent organisation
- Archive but also make project documentation and experience reports available in the project management office



## 2.10 Relationship between the methods

In the course of planning and creating the project planning documents, the interrelationships between the project management methods must be taken into account.

The relationship between the central project management methods is illustrated as follows:



## 2.11 Specific features of programme management

Due to the wide scope of a programme, it contains several projects that pursue a common, superior and usually strategically important programme objective. The programme management process is essentially the same as the project management process. As the business process for project-oriented organisations, it contains the sub-processes programme start, programme coordination, programme controlling, programme marketing, and possibly also programme crisis or programme opportunity management.

The differences between projects and programmes produce the following advantages or benefits:<sup>14</sup>

- Autonomy of projects in a programme
- Reduced complexity as a result of smaller and more manageable project organisations
- Difference between programme owner (team) and project owner (teams)
- Different project owner (teams) for different projects in the programme
- Flat programme organisation
- Creation of several manageable project documents and a slim integrated programme document.

The methods for programme management are essentially the same as the project management methods and are used in a similar way, taking into account the specific features of programme management.

A programme needs to be organised in a specific way to allow projects to be autonomous and yet also benefit from synergies. Typical programme roles are the programme owner, the programme manager and the programme team. The role of the programme owner role differs from that of the project owner. Typical structures of communication in the programme are programme owner meetings and programme team meetings.

Specific demands are made on the programme manager due to the complexity of the programme and the integrative functions that have to be fulfilled. This role requires many years of experience in project management and a high level of social skills.<sup>15</sup>

The programme manager is responsible for realising the project objectives. Due to the high amount of management and marketing effort involved in programmes, it is advisable to set up a programme office to support the programme manager on an operational level.

---

<sup>14</sup> Gareis, 2006, p.402-403

<sup>15</sup> Gareis, 2006, p.419

# 3 Methods for social competence

## 3.1 Correlation to the IPMA Competence Baseline (ICB 3.0)

This chapter presents a selection of the key elements of behavioural competences described in accordance with ICB 3.0. In ICB 3.0, behavioural competences include personal, activity and implementation-oriented competences, leadership competences and social competences. The **pm baseline** focuses on the social competences in projects and programmes and defines social competence as the potential of a person in a role to act in a cooperative and self-organised way. Social competence is thus the potential of a person in a role to build relationships with others, to engage creatively with others and to behave in a group-oriented and relationship-oriented way.<sup>16</sup>

Competences can be described from various perspectives.<sup>17</sup>

- Personality traits (motivation and personality psychology)
- Disposition to work and occupation (occupational psychology)
- Technical competence (educational qualification and certification)
- Social communication requirements (social and communication psychology)

The **pm baseline** regards social competence as the disposition to work and occupation, but also indicates other methods of social competence.

---

<sup>16</sup> Erpenbeck/ von Rosenstiel, 2007, p.XXIV

<sup>17</sup> Erpenbeck/ von Rosenstiel, 2007, p.XXV

## 3.2 Social competence in projects and programmes

### 3.2.1 Social competence

Social competence in projects and programmes includes knowledge and experience for designing the project management or programme management process.<sup>18</sup> Social competence in projects and programmes is the potential to

- Establish relationships and communication in the project and with the relevant environments
- Constructively deal with conflicts in the project and with the relevant environments
- Facilitate the ability to reflect in the project and with the relevant environments
- Deal with emotions and diversity (individual differences and similarities) in projects and when dealing with the relevant environments
- Use appropriate methods of intervention.

Knowledge and experience is needed to ensure the appropriate use of methods such as feedback, reflection, moderation and presentation methods, and intervention methods.

It is not just the project manager who requires social competence, but the project owner, project team members and project contributors too.



<sup>18</sup> Huemann, 2002

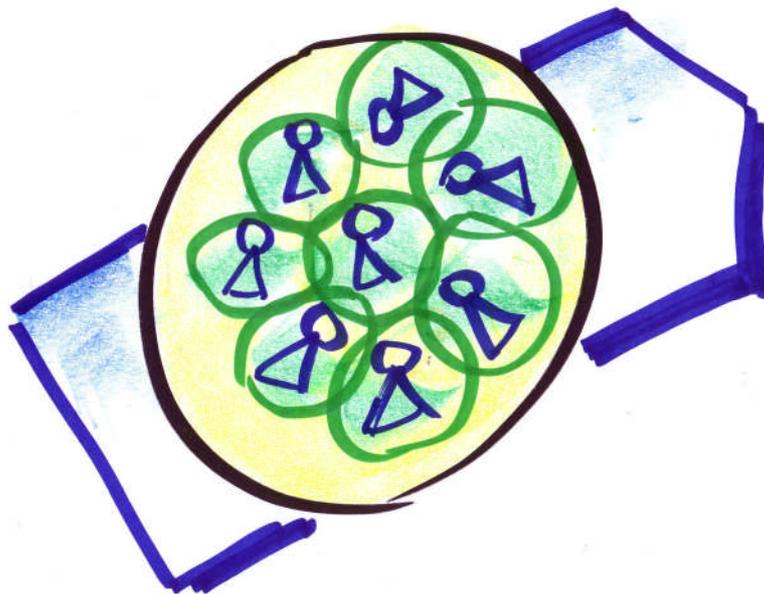
### 3.2.2 Team competences

Teamwork is of utmost importance in projects and programmes. There are various types of teams, for instance project teams, programme teams, project owner teams and sub-teams. Besides requiring individual competences, teams need team competence in projects and programmes.

This must be established for every team, and includes:<sup>19</sup>

- Establishing commitment in the team
- Learning in the team
- Creating the "Big Project Picture"
- Safeguarding synergies in the team
- Resolving conflict in the team
- Jointly designing the project management process
- Establishing confidence in the team
- Creating a common value base

The knowledge and experience gained from working together in the project or programme and the use of methods such as feedback, reflection, and group development, provide the basis for team competence.



<sup>19</sup> Gareis, 2006, p.140

## 3.3 Intervention methods

### 3.3.1 Overview of intervention methods

Intervention is understood to mean target-oriented communication. It is intended to have a certain effect on the communication partner. An intervention is therefore an attempt to control something.

A key intervention method is observation, which is at the beginning of every control attempt. A distinction is also made between written, verbal and analogous intervention methods:<sup>20</sup>

- Examples of written intervention methods include letters, documentary analyses, proposals, protocols, plans, and so on.
- Examples of verbal intervention methods include interviews, content input, presentations, moderation, feedback, reflection, reframing, and so on.
- Examples of analogous intervention methods include stories, sketches, myths, images, sculptures, constellations, and so on.



<sup>20</sup> Königswieser/Exner, 2004; Hiller/Majer/Minar-Hödel/Zahradnik, 2007, p.227-259

### 3.3.2 Feedback

Feedback is a method of communicating to a person how her behaviour in a certain situation is perceived by another person. Feedback is given by a person or group of people to another person or social system. Feedback therefore comprises giving feedback and receiving feedback. The Johari window developed by Joseph Luft und Harry Ingham represents the theoretical basis of feedback<sup>21</sup>. This model identifies 4 areas in the "window":

- Open/free area: known to self and others
- Blind spot: not known to self, known to others
- Hidden area: known to self, not known to others
- Unknown: not known to self or others

The objectives of feedback are to enable learning and further development of individuals and teams, thus increasing the scope of action of the open person. Feedback is always subjective. There are various forms of feedback including written feedback, verbal feedback and 360-degree feedback, for example. 360-degree feedback is also known as full-circle feedback, multi-rater feedback, multi-level feedback, upward appraisal, and peer review. In addition to a self-assessment, feedback is collected from the relevant environments. For a project manager, this may include feedback from the project owner, project team members, project contributors, supplier representatives, customer representatives, and so on.

The feedback process includes the roles of feedback giver and receiver. Feedback rules must be observed both for giving and receiving feedback.

Feedback is used particularly in project controlling and in the project close-down, but also in crisis management or in the project start.



<sup>21</sup> Luft, 1971

### 3.3.3 Reflection

Reflection can be defined as the collective exchange and thinking (out loud) of a learning process. Reflection is performed by a person or the group itself. In projects, for example, it is performed by the project team. The objective of reflection in the project or programme team is to establish the ability to work and to provide a common perspective of a situation. Through reflection, the project team is able to view the project from a Meta level and hence from a different angle. Reflection thus allows the project team to develop and learn.

Different forms of work for structured reflection include flash feedback, mood barometers, point methods, associative procedures.

The reflection method is used particularly in project controlling and in the project close-down, but also in crisis management or in the project start.



## 3.4 Dealing with emotions and diversity in projects and programmes

### 3.4.1 Dealing with emotions

There are emotions, such as joy, fear, anger, satisfaction and happiness in projects and programmes. Emotions are short-lived and intensive feelings of individuals or teams and relate to something or somebody. For example, the project team can be happy about achieving a milestone or annoyed by the fact that the project owner has extended the project objectives.

A distinction must be made between dealing with personal emotions and dealing with the emotions of others. A key method of dealing with emotions is reflection.

Emotions can be <sup>22</sup>

- Process-related, for example, at the project start, in project controlling, in the project crisis, at the project close-down
- Structure-related, in other words, emotions that develop as a result of the general project framework
- Triggered specifically, for instance to manage the energy in the project, to exert specific pressure by scheduling project events, to reduce tension by reflecting on cooperation in the team.

---

<sup>22</sup> Gareis, 2006 p.143-151

### 3.4.2 Dealing with diversity

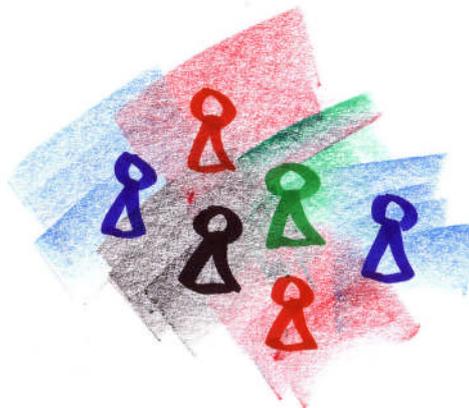
Project teams are usually heterogeneous teams. The objective is to create sufficient diversity in the project and manage this. Diversity includes the similarities and differences between the project team members.

Differences arise through the selection of project team members with different functional skills, professional experience and project experience, of different ages and gender, and who belong to different hierarchies, organisation cultures and national cultures, and so on.

Similarities arise through the selection of team members with a common history, similar functional skills and the same type of environment contacts, and so on. The number of similarities and differences required in a project team is determined by the project requirements. It is also necessary to look at the project environments for this. The project environment analysis can be used as the basis for this.

Suitable methods for analysing diversity are those that reveal the similarities and differences in the team, for example, sculptures and introductory rounds. To manage diversity, confidence-building and team-building activities are used, which encourage team members to get to know each other and respect each other. Furthermore, appropriate structures must be in place in the project (e.g. task assignments, agreements on working hours) in order to respect the different needs of the team members and enable them to work together as a team.

Dealing with diversity is required particularly in the assignment process in order to achieve diversity. In the project start and in social project controlling, it is needed to manage diversity.



## 3.5 Conflict management

### 3.5.1 Reducing possible conflict potential

A conflict is a situation in which the different expectations of individuals clash.<sup>23</sup> One objective of conflict management is to identify potential conflicts and to prevent conflicts from arising from these. It is about counteracting conflicts in the project/programme or with the respective environments, minimising them, if possible, or taking precautions in case a conflict arises.

It is extremely important to detect possible potential for conflict early on. Methods for doing this include the scenario technique, project environment analysis and sensitivity analysis.

All project management methods support the reduction of conflicts, as they define the structures and objectives of a project and, in this way, dispel uncertainties and ambiguities. Different interests in the project come to the fore and can be handled. Through joint development of the project plans, agreement on a common perspective ("Big Project Picture") can be reached. Other key methods for reducing conflict are the use of team-building and confidence-building methods, such as addressing taboos, feedback, reflection, establishing rules and uncovering expectations.

Preventive strategies and measures are developed to provide for the event of a conflict arising. By defining preventive processes, structures and responsibilities for conflict situations, damage can be limited and conflicts resolved efficiently. Measures to prevent conflict include, for example, communicating and using feedback and reflection methods, mediation, and defining rules and standards in (potential) conflict situations. The corresponding design of contracts with relevant environments and creation of structures as a measure to prevent conflict must be understood (for instance, the definition of an escalation model for conflict situations).

The identification of conflict potential, measures to counteract or reduce conflict potential, and provisions for a conflict situation must be taken into account particularly in the project start and in project controlling.



<sup>23</sup> Rattay, 2003, p.197

### 3.5.2 Dealing with conflicts

The objective of dealing with conflicts is to resolve, handle, or limit a conflict situation in the project, programme or with relevant environments, where possible, or to prevent the conflict from escalating or even to bring it to a head.

Various strategies can be used to handle conflicts, such as compromise, consensus or battle.

Methods for dealing with conflicts in projects and programmes include perception, analysis, diagnosis, problem-solving, discussion, negotiation (with or without a third party), conflict moderation as part of a workshop or meeting, mediation, team reflection, systemic constellations, the Tetralemma approach or reframing. The level of escalation and the type of conflict must determine the type of method selected.



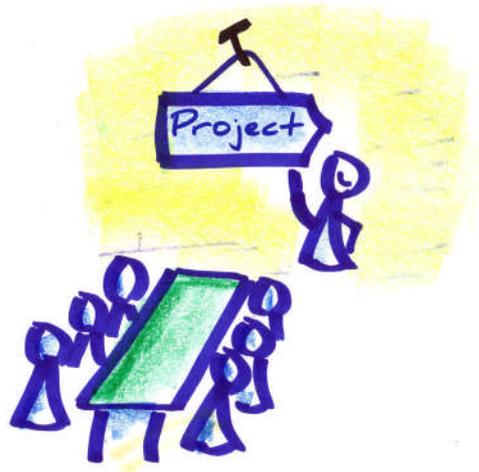
## 3.6 Moderation and presentation

### 3.6.1 Workshops, meetings and project presentations

In projects and programmes, solutions are frequently worked out or communicated in workshops, meetings or during project presentations. These different forms of communication are used to organise collaboration in project management, but also within the processes in projects and programmes. They help to ensure the acceptance of the project or programme results.

Professional preparation, execution and follow-up, appropriate selection of participants and appropriate use of work methods, as well as suitable room layout and design are all factors for success. Project management plans can also be used to support communication.

Workshops (e.g. project start workshops, project closure workshops, workshops to work through project results), meetings (e.g. controlling meeting) and project events (e.g. kick-off meeting, presentation of project results) are elements for the design of the project management process and are particularly important for project marketing.



### 3.6.2 Creativity methods

Creativity methods are used to produce a wide variety of ideas on a topic. The first step is to simply generate many ideas without evaluating them. The next step is to structure, combine and improve these ideas.

Typical creativity methods include brainstorming and brainwriting. Brainstorming is about producing a large number of ideas, allowing associations to be given free rein without evaluating them. Brainwriting is a written variation of brainstorming and can also take place electronically. It is therefore also ideal for brainstorming in virtual teams.

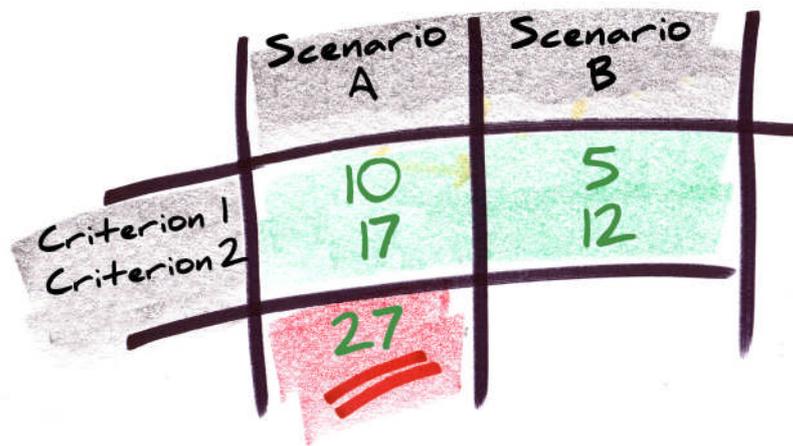
Mind mapping is another method often used in projects. Besides using mind mapping to map hierarchical dependencies, it can be particularly useful for mapping content or associations that belong together.



### 3.6.3 Decision methods

A whole range of decisions need to be made in projects. It is possible to differentiate between individual decisions and group/team decisions. The ability of the group to visualise the decision options and criteria and clearly understand the decision are key factors for success. The process of decision-making can be supported using various decision methods.

First of all, the choices must be worked out. If several choices are available, these are evaluated using, for example, a rating matrix, a cost-benefit analysis, point method, ranking, and so on.



	Scenario A	Scenario B
Criterion 1	10	5
Criterion 2	17	12
	<u>27</u>	

### 3.6.4 Presentation methods

There are many occasions for presentations in projects and programmes, for instance the presentation of the interim results or final results to the customer, the presentation of the project status to the project owner, and so on.

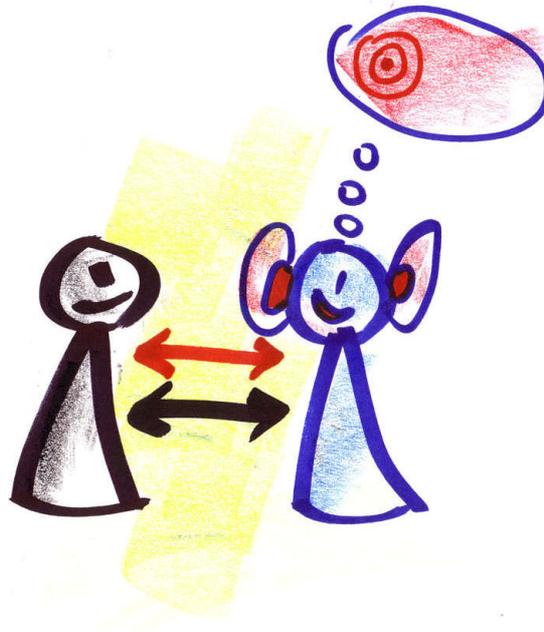
A professional presentation consists of preparation, execution and follow-up. In the preparation of the presentation, for example, the objectives must be defined and the presentation adapted to the target audience. For project-related presentations, project management plans are often used to aid visualisation. The presentation follow-up should evaluate whether the presentation objects were achieved and what learning experiences the presenter gained.



### 3.7 Interviewing and negotiating

A negotiation is a type of interview and is used in specific situations. There are many situations that call for negotiations in projects and programmes. Typical examples of negotiation situations include negotiating the project budget with the project owner, negotiating a reduction with a supplier, negotiating in a conflict situation with a customer.

The objective of a negotiation is to represent a point of view or to convince the other party to accept an offer. Various negotiation strategies can be used. The basis for good negotiation is active listening to collect information about the motives and requirements of the other party. A variety of questioning techniques can be used.



# 4 Managing project-oriented organisations

## 4.1 Correlation to the IPMA Competence Baseline (ICB 3.0)

This chapter presents a selection of the key elements of the project management context competences described in accordance with ICB 3.0. It describes the model and specific features of the project-oriented organisation.

## 4.2 The project-oriented organisation

A project-oriented organisation is one that<sup>24</sup>

- Uses "Management by projects" as its organisational strategy
- Uses project and programme management to carry out extensive and complex processes
- Has set up project and programme portfolio management
- Has specific permanent organisations for integrating project and programme management
- Has an explicit project and programme management culture.

The most important structural feature of a project-oriented organisation is the use of temporary organisations in addition to permanent organisations to carry out temporary processes. Whilst temporary organisations (projects and programmes) contribute to the differentiation of the project-oriented organisation, permanent structures support integration. Permanent structures of the project-oriented organisation include expert pools, project portfolio groups and the project management office.

The objectives of the project-oriented organisation are to achieve organisational flexibility through the use of temporary organisations to carry out projects and programmes, delegate management responsibility in projects and programmes and ensure organisational learning through the use of project and programme potential.

The project-oriented organisation is strongly process-oriented and uses project and programme management, project and programme assignment and project portfolio management as specific business processes. The project-oriented organisation has specific organisational structures, such as a PM office.

The organisational-specific degree of development of a project-oriented organisation can be determined based on Capability Maturity Models such as the "Project Excellence Program"<sup>25</sup>, the "Project-oriented Company *mature*"<sup>26</sup> or scoring models using performance figures.

---

<sup>24</sup> Gareis, 2006, p.43-51

<sup>25</sup> Patzak/Rattay, 2004, p.463

<sup>26</sup> Gareis, 2006, p.589-597



### 4.3 Specific organisational structures of the project-oriented organisation

The project-oriented organisation requires specific organisational structures such as a project management office, a project portfolio group and expert pools.

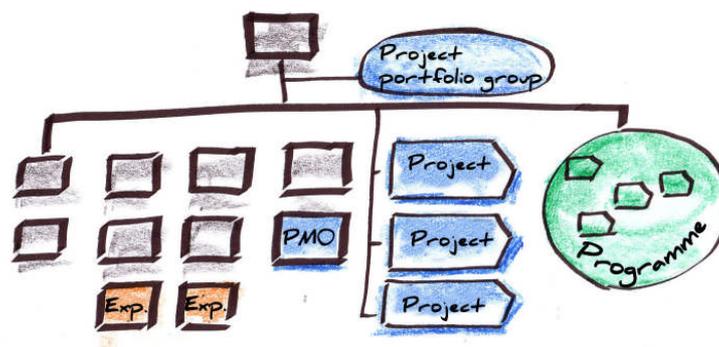
The project management office<sup>27</sup> offers services for project and programme management including, for example, provision of project management support, management support for projects and programmes, assistance in the fulfilment of personnel management processes and services for project portfolio management.

The project portfolio group<sup>28</sup> is responsible for managing the project portfolio of the project-oriented organisation. The objective of project portfolio management is to optimise the project portfolio results and minimise the project portfolio risk. The tasks of the project portfolio group are to:

- Assign projects and programmes
- Coordinate the project portfolio
- Enable networks of projects and programmes to be established
- Decide on the project or programme portfolio design

A project management expert pool contains suitably qualified project management staff, who can be made available to execute projects and programmes. The manager of the expert pool is responsible for the recruitment and development of the expert pool staff and for knowledge management in the expert pool. Large organisations often have several expert pools, for example, IT organisations can have a pool of software developers, operating system experts, storage experts, and so on.

Projects and programmes have a high strategic importance in a project-oriented organisation and should therefore also feature in the organisational chart.



<sup>27</sup> Patzak/Rattay, 2004, p.490

<sup>28</sup> Gareis, 2006, p.552

## 4.4 Project management guidelines

Project management guidelines<sup>29</sup> define project management standards to ensure quality in project and programme management. The guidelines specify when processes are to be treated as projects or programmes, what methods are to be applied to manage them, what roles are required, as well as reporting standards, decision-making powers, forms, checklists, and so on.

The management guidelines specification can be chosen for a specific organisation or generically by following the **pm baseline** as closely as possible.

These guidelines represent a minimum standard in the project-oriented organisation, are to be applied throughout the organisation and can be enhanced through the use of project management tools, such as tools for risk management, for calculating projects costs, and so on.

---

<sup>29</sup> Patzak/Rattay, 2004, p.477

## 4.5 Project portfolio management

### 4.5.1 Assignment of projects and programmes

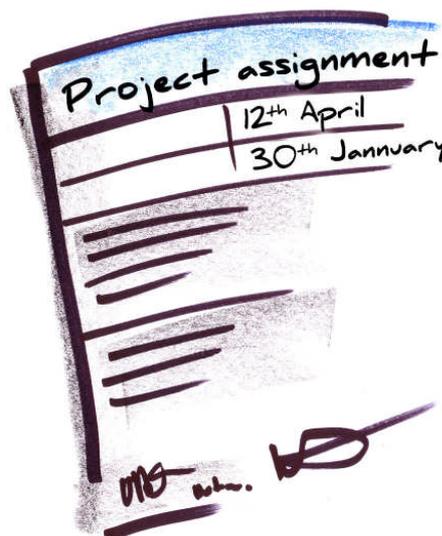
The assignment of a project or programme is a business process of project portfolio management. The following description refers both to projects and programmes. This process begins with the emergence of a product idea, contains an investment evaluation and ends with the assignment of the project manager. Decisions have to be made in the assignment process concerning the realisation of an investment or the form of organisation required to initialise this.<sup>30</sup>

A project needs a project assignment in order to formally start. The project assignment includes:

- Project idea development
- Investment proposal development
- Decision making
- Awarding the project or programme assignment

Methods for the project assignment process are the investment proposal, the investment portfolio, the business case analysis, the project proposal and the project assignment.

The project assignment is a written assignment from the project owner to the project manager to execute a project. The project assignment must be documented in a standardised form that contains the most important project data.



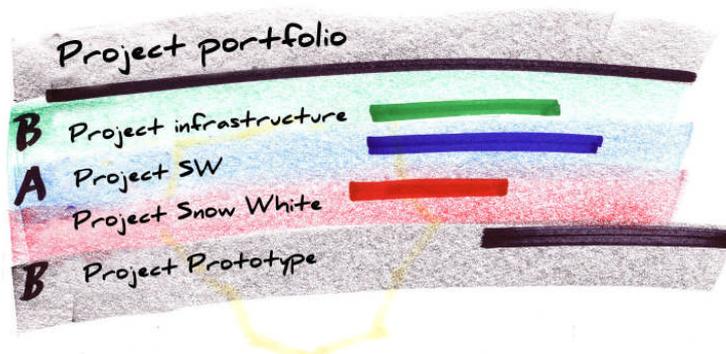
<sup>30</sup> Gareis, 2006, p.492-512

#### 4.5.2 Project portfolio coordination

The tasks of project portfolio coordination are to:<sup>31</sup>

- Optimise the results of the project portfolio (not the individual projects and programmes)
- Select the projects and programmes to be started
- Interrupt and cancel projects and programmes
- Define project and programme priorities
- Coordinate internal and external resources
- Organise learning from and between projects and programmes

The basis for project portfolio management is a project portfolio database with aggregated project data such as project type, project key figures, and so on. Project portfolio management requires specific project portfolio reports. Typical project portfolio reports include a project portfolio budget, a project portfolio resource plan, a project portfolio risk matrix, a project portfolio progress graph, and a project portfolio score card.



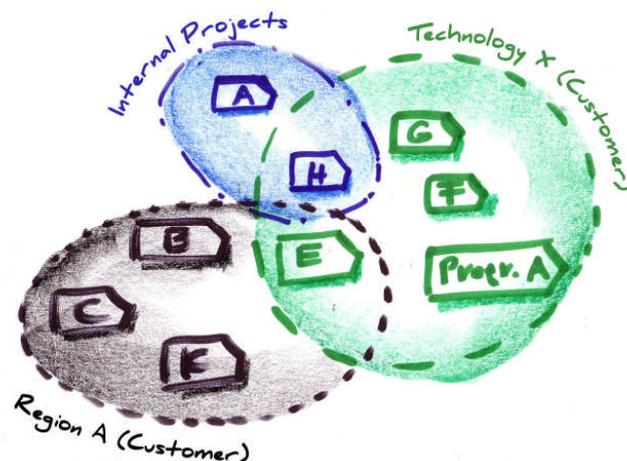
<sup>31</sup> Gareis, 2006, p.513-528

### 4.5.3 Project networks

Project networks are social networks of closely linked projects and programmes.

Project networks represent a process in the project-oriented organisation. The common intention of the network partners is to encourage the organisation of learning and creation of synergies in the project network through periodic or even event-driven communication.<sup>32</sup> It is the task of the project management office and the project portfolio group to initialise or encourage the project networking process. Project networking in a project-oriented organisation can be either periodic or situation-dependent communication.

A project chain as a set of sequential projects represents a special form of project network. A project chain is viewed over a period of time and can be made up of projects and programmes.<sup>33</sup>



<sup>32</sup> Gareis, 2006, p.528-536

<sup>33</sup> Gareis, 2006, p.537

## 4.6 Management consulting, auditing and coaching

Management consulting, auditing and coaching are key processes of the project-oriented organisation whose objective is to increase the management quality of projects and programmes and thus contribute towards safeguarding the project's success.

Project management consulting is used primarily to develop the project management competence of the project and can make a practical contribution towards achieving the project or programme objectives with instructions for action. It therefore looks at the individual project management sub-processes or the entire project management process.<sup>34</sup>

Project auditing looks at both the project and programme management quality and the quality of the work content, and shows deviations from the project or programme management standards. Project auditing is performed by the audit owner, who works together with the auditors, the representatives of the project and relevant environments of the project to be audited in a temporary system (auditing system).<sup>35</sup>

Project and programme management coaching is used to develop individual and team competences in project-oriented organisations. Project and programme management coaching is considered to be an interactive people-oriented consulting and accompanying process for developing individual and team competences.<sup>36</sup>

Audit!

WBS project "SW"				
Criterion	Weighting	Rating	Weighted rating	Interpretation
Execution	20	3	0,6	F...
Structure	30	2	0,6	Be...

<sup>34</sup> Gareis, 2006, p.456-459

<sup>35</sup> Gareis, 2006, p.463-485

<sup>36</sup> Hiller/Majer/Minar-Hödel/Zahradnik, 2007

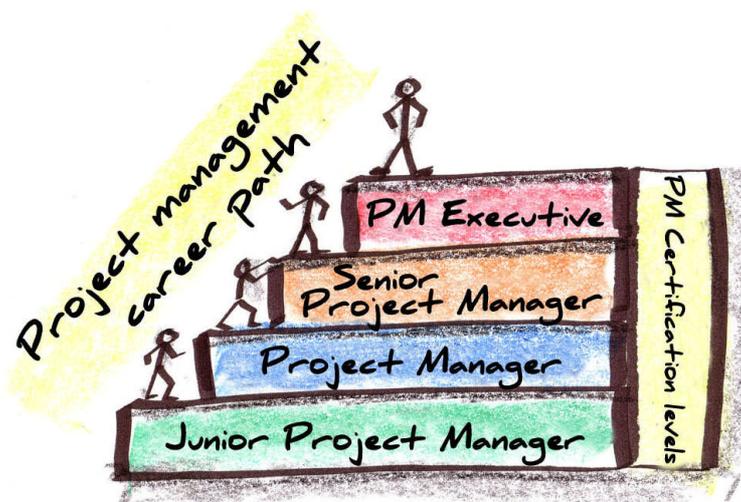
## 4.7 Human resource management in the project-oriented organisation

Human resource management has specific features in project-oriented organisations. Specific human resource management (HRM) processes include recruiting, scheduling, developing and discharging project management personnel.<sup>37</sup>

The development of project management personnel plays a key role in further developing the "maturity" of project-oriented organisations. Target groups for further training are the project manager, project owner, project team members, project contributors and members of the project portfolio group and project management office. The methods used include: tests, self-assessments or external assessments and assessment centres, "on-the-job" or "off-the-job" project management training, practical training, job rotation, coaching and mentoring by the project manager.

Project management certification serves to prove individual project management competences and ensure a uniform standard in project management in the project-oriented organisation.

The project manager job description is well-established in a project-oriented organisation and it has its own career path. The establishment of a project management career path in a company facilitates long-term competence development in particular. The project management career path is often classified into project management certification levels. In the project-oriented organisation, the management, expert and project management careers are classified equally alongside each other, allow permeability and complement each other.



<sup>37</sup> Gareis/Huemann in, 2006, p.600-624; Lang/Rattay, 2005, p.101-135

## 4.8 Process management in the project-oriented organisation

### 4.8.1 Process-orientation in the project-oriented organisation

The project-oriented organisation can also be regarded as a process-oriented organisation. The benefits of the process orientation arise from the improved quality of the results and the increase in organisational efficiency. The integration of the process orientation and project orientation increases the complexity in a process and project-oriented organisation, which can only be reduced again by coordinating the roles and communication structures.<sup>38</sup>

The project or programme management process is well-established as a central process in the process landscape<sup>39</sup> in a project and process-oriented organisation. Projects and programmes use existing processes in a process and project-oriented organisation.

Implementing the process-oriented strategy requires

- Using process management to plan, set up and control processes and process portfolios
- Firmly rooting process management in the organisation by defining specific roles and communication structures
- Ensuring process management competence by defining specific training and further education activities.

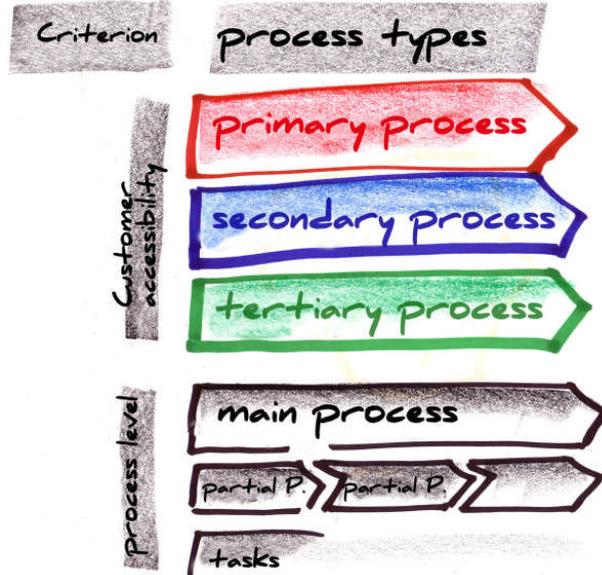
Processes can be viewed according to different criteria. These different views allow processes to be categorised by process types:

For example, process types can be differentiated according to customer proximity (primary, secondary and tertiary processes) and to organisational functions (acquisition, procurement, order processing, controlling). The strategic management results provide an important basis for identifying processes.

---

<sup>38</sup> Gareis/Stummer, 2006, p.65-70

<sup>39</sup> Wagner/Käfer, 2006, p.37-38



#### **4.8.2 Macro and micro process management**

In process management, a distinction is made between macro and micro process management. Macro process management regards the process portfolio of an organisation as the total of all processes and their interrelationships. Methods applied in macro process management include the process list, process map, networks of processes, process owner list and process portfolio reports.<sup>40</sup>

Micro process management looks at individual processes and their sub-processes. Methods applied in micro process management include methods for process planning such as process definition, process breakdown structures, process flowcharts, process responsibility charts, process organisation charts and process ratios. A distinction must be made between the process report and process benchmarking for process controlling.<sup>41</sup>

---

<sup>40</sup> Gareis/Stummer, 2006, p.87

<sup>41</sup> Gareis/Stummer, 2006, p.87

### 4.8.3 Process list

The process list <sup>42</sup> displays a clear overview of all processes of the given organisation structured by process types, and contains the start and end event of each process.

A process list is created by first identifying the processes and then structuring them by process types.

The result of the process identification is summarised by category in a process list, which contains a process name as well as a start and end event for each process. The process list is one prerequisite for the creation of the process map.

**Process list**

Code	Process	Start	Finish
P 1	Consulting	Contact	Documentation filed
P 2	After sales support	....	....
P 3			
P 4			

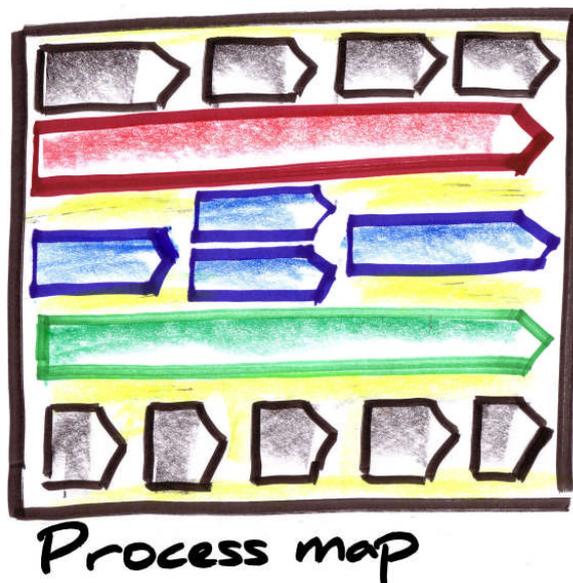
<sup>42</sup> Gareis/Stummer, 2006, p.87-91

#### 4.8.4 Process map

The process map<sup>43</sup> contains a graphical display of the processes in an organisation and is used in different levels of detail as an important communication instrument in the organisation. The arrangement of the processes in order in the map can emphasise their significance for the organisation.

Processes can be selected for display in a process map by process groups, for example. Whilst the ordering of processes in the process map highlights the significance of individual processes for the organisation, it also communicates values such as the importance of customers.

The process map should be a highly-abstract graphical display.

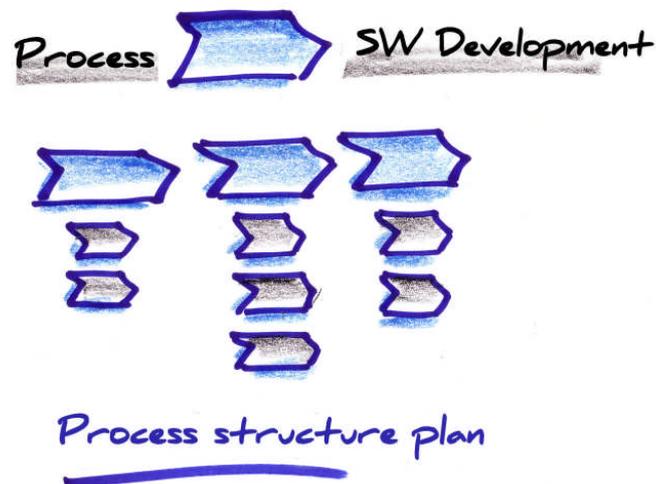


<sup>43</sup> Gareis/Stummer, 2006, p.92-93

### Process breakdown structure

The process breakdown structure<sup>44</sup> is the hierarchical display of the sub-processes and tasks of a process. The hierarchical classification levels used include main process, process, sub-process, task and sub-task, if required. The number of levels of detail depends on the scope of the relevant process. The processes assigned to the main process can be fulfilled just in themselves or also as part of other main processes.

The process breakdown structure represents the basis for planning the process flow and for the process organisation.



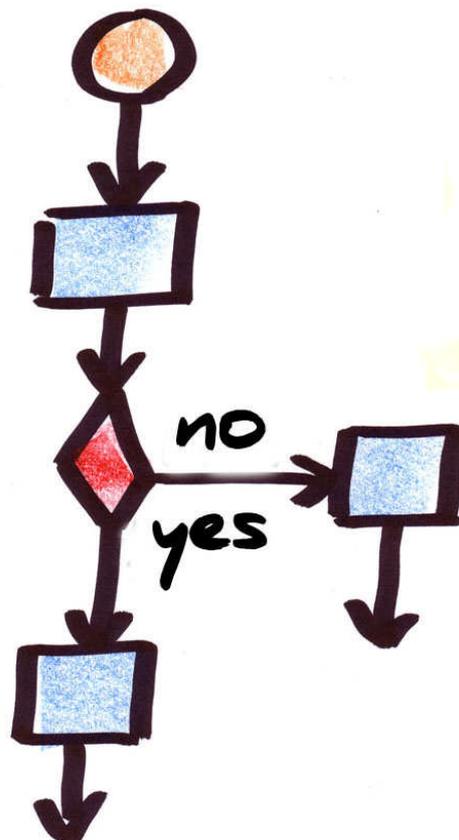
<sup>44</sup> Gareis/Stummer, 2006, p.117-120

### 4.8.5 Process flowchart

The process flowchart<sup>45</sup> represents the process tasks on a time scale and their interrelationships. Key methods for creating a process flowchart include the flowchart, the event-driven process chain, the value-added chain diagram and the network diagram.

The process flowchart can show events, tasks, decisions and relationships between the tasks, for example. To do this, the tasks and decisions must be ordered chronologically. In a flowchart with swim lanes, responsibilities and results can also be illustrated.

The process flowchart describes the tasks of a process or sub-process and is used for planning process content.



<sup>45</sup> Gareis/Stummer, 2006, p.117-120

## Bezugstabelle pm baseline 3.0 zu ICB 3.0

Die folgende Bezugstabelle zeigt den Zusammenhang zwischen den Kapiteln der pm baseline 3.0 und den 46 Kompetenzelementen der ICB 3.0.

### 1. Projekt- und Programmmanagement

pm baseline, 2008 Version 3.0	ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch (vgl. Kapitel)
<b>1.1 Projekte und Programme</b>	3.1 Projektorientierung 3.2 Programmorientierung
1.1.1 Wahrnehmung von Projekten und Programmen	3.1 Projektorientierung 3.2 Programmorientierung
1.1.2 Geschäftsprozess, Projekt und Programm	3.1 Projektorientierung; 3.2 Programmorientierung
1.1.3 Investition, Projekt und Programm	3.1. Projektorientierung 3.2 Programmorientierung
1.1.4 Projektportfolio, Projekte-Netzwerk, Projekte-Kette	3.3 Portfolioorientierung
<b>1.2 Projektmanagement als Geschäftsprozess</b>	3.4 Einführung von Projekt-, Programm- und Projektportfoliomanagement 3.5 Stammorganisation
1.2.1 Gestaltung des PM-Prozesses	3.1 Projektorientierung 3.5 Stammorganisation
1.2.2 Teilprozess Projektstart	1.19 Projektstart
1.2.3 Teilprozess Projektkoordination	1.16 Überwachung, Steuerung und Berichtswesen
1.2.4 Teilprozess Projektcontrolling	1.16 Überwachung, Steuerung und Berichtswesen 1.3 Projektanforderungen und Projektziele
1.2.5 Teilprozess Projektmarketing	1.18 Kommunikation 1.2 Interessierte Parteien und Umwelten
1.2.6 Teilprozess Projektkrise	2.12 Konflikte und Krisen
1.2.7 Teilprozess Projektabschluss	1.20 Projektabschluss
<b>1.3 Programmmanagement als Geschäftsprozess</b>	3.2 Programmorientierung 3.5 Stammorganisation
1.3.1 Gestaltung des Programmmanagement-Prozesses	3.2 Programmorientierung 3.5 Stammorganisation
1.3.2 Beschreibung der Programmmanagement-Teilprozesse	3.2 Programmorientierung 3.5 Stammorganisation
<b>1.4 Projekt- bzw. Programmhandbuch</b>	1.19 Projektstart 1.17 Information und Dokumentation

## 2. Methoden zum Management von Projekten und Programmen

pm baseline, 2008 Version 3.0	ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch (vgl. Kapitel)
<b>2.1 Zusammenhang zur IPMA Kompetenzrichtlinie (ICB 3.0)</b>	kein vergleichbares Kapitel
<b>2.2 Methoden zum Projektstart: Projektabgrenzung und Projektkontext</b>	1.19 Projektstart
2.2.1 Projektabgrenzung und Projektkontext	1.2 Interessierte Parteien und Umwelten 3.9 Gesundheit, Sicherheit und Umwelt
2.2.2 Vor- und Nachprojektphase	1.3 Projektanforderungen und Projektziele
2.2.3 Zusammenhang zwischen Projekt und Unternehmensstrategie	3.5 Stammorganisation 3.6 Business
2.2.4 Beziehungen des Projektes zu anderen Aufgaben	1.2 Interessierte Parteien und Umwelten 3.6 Business
2.2.5 Business Case	1.3 Projektanforderungen und Projektziele
2.2.6 Projektumweltanalyse	1.2 Interessierte Parteien und Umwelten 3.9 Gesundheit, Sicherheit und Umwelt
<b>2.3 Methoden zum Projektstart: Design der Projektorganisation</b>	1.19 Projektstart
2.3.1 Projektorganisationsformen	1.6 Projektorganisation
2.3.2 Projektrollen	1.7 Teamarbeit
2.3.3 Projektteamarbeit	1.7 Teamarbeit
2.3.4 Kommunikation in Projekten	1.18 Kommunikation
2.3.5 Projektkultur	1.6 Projektorganisation
2.3.6 Führen in Projekten	2.1 Führung
<b>2.4 Methoden zum Projektstart: Projektplanung</b>	1.19 Projektstart
2.4.1 Projektziele	1.3 Projektanforderungen und Projektziele
2.4.2 Betrachtungsobjekteplan	1.10 Leistungsumfang und Lieferobjekte
2.4.3 Projektstrukturplan	1.9 Projektstrukturen
2.4.4 Arbeitspaket-Spezifikationen	1.9 Projektstrukturen
2.4.5 Projektfunktionendiagramm	1.16 Überwachung, Steuerung und Berichtswesen 1.17 Information und Dokumentation
2.4.6 Projekttermine	1.11 Projektphasen, Ablauf und Termine
2.4.7 Projektressourcen	1.12 Ressourcen
2.4.8 Projektkosten	1.13 Kosten und Finanzen
2.4.9 Projektfinanzmittel	1.13 Kosten und Finanzen 3.10 Finanzmanagement
2.4.10 Projektrisiken	1.4 Risiken und Chancen

<b>2.5 Methoden zur Projektkoordination</b>	1.16 Überwachung, Steuerung und Berichtswesen 1.17 Information und Dokumentation
2.5.1 To-Do-Listen	1.16 Überwachung, Steuerung und Berichtswesen
2.5.2 Sitzungsprotokolle	1.16 Überwachung, Steuerung und Berichtswesen
2.5.3 Abnahmeprotokolle	1.16 Überwachung, Steuerung und Berichtswesen
2.5.4 Kommunikationsplan	1.16 Überwachung, Steuerung und Berichtswesen 1.18 Kommunikation
2.5.5 IKT-Mittel einsetzen	1.18 Kommunikation
<b>2.6 Methoden zum Projektcontrolling</b>	1.16 Überwachung, Steuerung und Berichtswesen
2.6.1 Soll-Ist-Vergleich	1.16 Überwachung, Steuerung und Berichtswesen
2.6.2 Project-Score-Card	1.16 Überwachung, Steuerung und Berichtswesen
2.6.3 Relevanzbaummethode	1.16 Überwachung, Steuerung und Berichtswesen
2.6.4 Meilensteintrendanalyse	1.16 Überwachung, Steuerung und Berichtswesen
2.6.5 Soziales Projektcontrolling	1.16 Überwachung, Steuerung und Berichtswesen
2.6.6 Adaption der Projektpläne	1.15 Änderungen 1.16 Überwachung, Steuerung und Berichtswesen
2.6.7 Steuerungsmaßnahmen	1.15 Änderungen 1.16 Überwachung, Steuerung und Berichtswesen
2.6.8 Projektfortschrittsbericht	1.16 Überwachung, Steuerung und Berichtswesen 1.17 Information und Dokumentation
<b>2.7 Methoden zum Projektmarketing</b>	1.2 Interessierte Parteien und Umwelten 3.7 Systeme, Produkte und Technologie 3.9 Gesundheit, Sicherheit und Umwelt
<b>2.8 Methoden zum Management einer Projektkrise</b>	1.4 Risiken und Chancen 1.8 Problemlösung 2.12 Konflikte und Krisen
2.8.1 Projektkrise	1.4 Risiken und Chancen 2.12 Konflikte und Krisen
2.8.2 Strategien und Maßnahmen zum Managen einer Projektkrise	1.4 Risiken und Chancen 1.8 Problemlösung 2.12 Konflikte und Krisen

2.8.3 Ursachenanalyse	1.8 Problemlösung
2.8.4 Szenariotechnik	1.8 Problemlösung
<b>2.9 Methoden zum Projektabschluss</b>	1.20 Projektabschluss
2.9.1 Projektabschluss	1.20 Projektabschluss
2.9.2 Evaluierung des Projekts und des Projektteams	1.7 Teamarbeit 1.20 Projektabschluss
2.9.3 Projektabschlussdokumentation	1.17 Information und Dokumentation 1.20 Projektabschluss
2.9.4 Lessons Learned und Erfahrungsaustausch	1.20 Projektabschluss
<b>2.10 Zusammenhang zwischen den Methoden</b>	kein vergleichbares Kapitel
<b>2.11 Spezifika Programmmanagement</b>	3.1 Projektorientierung 3.2 Programmorientierung

### 3. Methoden zur sozialen Kompetenz

pm baseline, 2008 Version 3.0	ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch (vgl. Kapitel)
<b>3.1 Zusammenhang IPMA-Kompetenzrichtlinie (ICB 3.0)</b>	kein vergleichbares Kapitel
<b>3.2 Soziale Kompetenz in Projekten und Programmen</b>	
3.2.1 Soziale Kompetenzen	
3.2.2 Team Kompetenzen	1.7 Teamarbeit
<b>3.3 Interventionsmethoden</b>	1.18 Kommunikation
3.3.1 Überblick Interventionsmethoden	1.18 Kommunikation
3.3.2 Feedback	1.18 Kommunikation
3.3.3 Reflexion	2.3 Selbstkontrolle
<b>3.4 Umgang mit Emotionen und Diversity in Projekten und Programmen</b>	1.7 Teamarbeit 2.1 Führung 3.8 Personalmanagement
3.4.1 Umgang mit Emotionen	1.7 Teamarbeit 2.1 Führung 2.3 Selbstkontrolle 2.6 Offenheit
3.4.2 Umgang mit Diversity	1.7 Teamarbeit 2.1 Führung
<b>3.5 Konfliktmanagement</b>	2.12 Konflikte und Krisen
3.5.1 Reduktion von möglichen Konfliktpotentialen	2.12 Konflikte und Krisen
3.5.2 Handhabung von Konflikten	2.12 Konflikte und Krisen
<b>3.6 Moderation und Präsentation</b>	1.18 Kommunikation

3.6.1 Workshops, Sitzungen und Projektpräsentationen	1.18 Kommunikation
3.6.2 Kreativitätsmethoden	2.7 Kreativität
3.6.3 Entscheidungsmethoden	2.1 Führung 2.4 Durchsetzungskraft
3.6.4 Präsentationsmethoden	1.18 Kommunikation
<b>3.7 Gesprächsführung und Verhandlung</b>	2.11 Verhandlungen

#### 4. Management von projektorientierten Organisationen

pm baseline, 2008 Version 3.0	ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch (vgl. Kapitel)
<b>4.1 Zusammenhang zur IPMA-Kompetenzrichtlinie (ICB 3.0)</b>	kein vergleichbares Kapitel
4.2 Die projektorientierte Organisation	3.4 Einführung von Projekt-, Programm- und Portfoliomanagement
4.3 Spezifische Organisationsstrukturen der projektorientierten Organisation	3.4 Einführung von Projekt-, Programm- und Portfoliomanagement
4.4 Projektmanagement-Richtlinien	3.4 Einführung von Projekt-, Programm- und Portfoliomanagement
<b>4.5 Projektportfoliomanagement</b>	3.3 Portfolio-Orientierung
4.5.1 Beauftragung von Projekten und Programmen	3.3 Portfolio-Orientierung
4.5.2 Projektportfoliokoordination	3.3 Portfolio-Orientierung
4.5.3 Projekte Netzwerken	3.3 Portfolio-Orientierung
<b>4.6 Management-Consulting, -Auditing und Coaching</b>	2.10 Beratung
<b>4.7 Human Resource Management in der projektorientierten Organisation</b>	3.8 Personalmanagement
<b>4.8 Prozessmanagement in der projektorientierten Organisation</b>	3.4 Einführung von Projekt-, Programm- und Portfoliomanagement
4.8.1 Prozessorientierung in der projektorientierten Organisation	3.4 Einführung von Projekt-, Programm- und Portfoliomanagement
4.8.2 Makro- und Mikro-Prozessmanagement	3.4 Einführung von Projekt-, Programm- und Portfoliomanagement
4.8.3 Prozessliste	1.17 Information und Dokumentation
4.8.4 Prozesslandkarte	1.17 Information und Dokumentation
4.8.5 Prozessstrukturplan	1.17 Information und Dokumentation
4.8.6 Prozessablaufplan	1.17 Information und Dokumentation

# Bezugstabelle ICB 3.0 zu pm baseline 3.0

Die folgende Bezugstabelle zeigt den Zusammenhang zwischen den 46 Kompetenzelementen der ICB 3.0 und den Kapiteln der pm baseline 3.0.

## 1. PM-technische Kompetenzen

ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch	pm baseline, 2008 Version 3.0 (vergleichbare Kapitel)
1.1. Projektmanagementenerfolg	kein vergleichbares Kapitel
1.2. Interessierte Parteien und Umwelten	1.2.5 Teilprozess Projektmarketing 2.2.1 Die Projektabgrenzung und der Projektkontext 2.2.4 Beziehungen des Projektes mit anderen Aufgaben 2.2.6 Projektumweltanalyse
1.3. Projektanforderungen und Projektziele	2.2.2 Vor- und Nachprojektphase 2.2.5 Business Case Analyse 2.4.1 Projektziele
1.4. Risiken und Chancen	2.4.10 Projektrisiken 2.8.1 Projektkrise 2.8.2 Strategien und Maßnahmen zum Managen einer Projektkrise
1.5. Qualität	kein vergleichbares Kapitel
1.6. Projektorganisation	2.3.1 Projektorganisationsformen 2.3.5 Projektkultur
1.7. Teamarbeit	2.3.2 Projektrollen 2.3.3 Projektteamarbeit 2.9.2 Evaluierung /Beurteilung des Projektes und des Projektteams 3.2.2 Team Kompetenzen 3.4.1 Umgang mit Emotionen 3.4.2 Umgang mit Diversity
1.8. Problemlösung	2.8.2 Strategien und Maßnahmen zum Managen einer Projektkrise 2.8.3 Ursachenanalyse 2.8.4 Szenariotechnik
1.9. Projektstrukturen	2.4.3 Projektstrukturplan 2.4.4 Arbeitspaketspezifikationen
1.10. Leistungsumfang und Lieferobjekte	2.4.2 Betrachtungsobjekteplan
1.11. Projektphasen, Ablauf und Termine	2.4.6 Projekttermine
1.12. Ressourcen	2.4.7 Projektressourcen
1.13. Kosten und Finanzen	2.4.8 Projektkosten 2.4.9 Projektfinanzmittel

1.14. Beschaffung und Verträge	kein vergleichbares Kapitel
1.15. Änderungen	2.6.6 Adaption der Projektpläne 2.6.7 Steuerungsmaßnahmen
1.16. Überwachung, Steuerung und Berichtswesen	1.2.3 Teilprozess Projektkoordination 1.2.4 Teilprozess Projektcontrolling 2.5.1 To-Do-Listen 2.5.2 Sitzungsprotokolle 2.5.3 Abnahmeprotokolle 2.5.4 Kommunikationsplan 2.6 Methoden zum Projektcontrolling 2.6.1 Soll-Ist Vergleich 2.6.2 Project Score Card 2.6.3 Relevanzbaummethode 2.6.4 Meilensteintrendanalyse 2.6.5 Soziales Projektcontrolling 2.6.6 Adaption der Projektpläne 2.6.7 Steuerungsmaßnahmen 2.6.8 Projektfortschrittberichte
1.17. Information und Dokumentation	1.4 Projekt- bzw. Programmhandbuch 2.4.5 Projektfunktionendiagramm 2.5 Methoden zur Projektkoordination 2.6.8 Projektfortschrittberichte 2.9.3 Projektabschlussdokumentation 4.8.3 Prozessliste 4.8.4 Prozesslandkarte 4.8.5 Prozessstrukturplan 4.8.6 Prozessablaufplan
1.18. Kommunikation	1.2.5 Teilprozess Projektmarketing 2.3.4 Kommunikation in Projekten 2.5.4 Kommunikationsplan 2.5.5 IKT Mittel einsetzen 3.3.1 Überblick Interventionsmethoden 3.3.2 Feedback 3.6 Moderation und Präsentation 3.6.1 Workshops, Sitzungen und Projektpräsentationen 3.6.4 Präsentationsmethoden
1.19. Projektstart	2.2 Methoden zum Projektstart: Projektabgrenzung und Projektkontext 2.3 Methoden zum Projektstart: Design der Projektorganisation 2.4 Methoden zum Projektstart: Projektplanung 1.2.2 Teilprozess Projektstart
1.20. Projektabschluss	1.2.7 Teilprozess Projektabschluss 2.9 Methoden zum Projektabschluss 2.9.1 Projektabschluss 2.9.2 Evaluierung /Beurteilung des Projektes und des

	Projektteams 2.9.3 Projektabschlussdokumentation 2.9.4 Lessons Learned und Erfahrungsaustausch
--	------------------------------------------------------------------------------------------------------

## 2. PM-Verhaltenskompetenzen

<b>ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch</b>	<b>pm baseline, 2008 Version 3.0 (vergleichbare Kapitel)</b>
2.1. Führung	2.3.6 Führen in Projekten 3.4 Umgang mit Emotionen und Diversity in Projekten und Programmen 3.4.1 Umgang mit Emotionen 3.4.2 Umgang mit Diversity
2.2. Engagement und Motivation	kein vergleichbares Kapitel
2.3. Selbstkontrolle	3.3.3 Reflexion 3.4.1 Umgang mit Emotionen
2.4. Durchsetzungskraft	3.6.3 Entscheidungsmethoden
2.5. Entspannung und Stressbewältigung	kein vergleichbares Kapitel
2.6. Offenheit	3.4.1 Umgang mit Emotionen
2.7. Kreativität	3.6.2 Kreativitätsmethoden
2.8. Ergebnisorientierung	kein vergleichbares Kapitel
2.9. Effizienz	kein vergleichbares Kapitel
2.10. Beratung	4.6 Management Consulting, Auditing, Coaching
2.11. Verhandlungen	3.7 Gesprächsführung und Verhandeln
2.12. Konflikte und Krisen	1.2.6 Teilprozessmanagement einer Projektkrise 2.8 Methoden zum Management von Projektkrisen 2.8.1 Projektkrise 2.8.2 Strategien und Maßnahmen zum Managen einer Projektkrise 3.5 Konfliktmanagement 3.5.1 Reduktion von möglichen Konfliktpotentialen 3.5.2 Handhabung von Konflikten
2.13. Verlässlichkeit	kein vergleichbares Kapitel
2.14. Wertschätzung	kein vergleichbares Kapitel
2.15. Ethik	kein vergleichbares Kapitel

## 3. PM-Kontext Kompetenzen

<b>ICB IPMA-Kompetenzrichtlinie Version 3.0; deutsch</b>	<b>pm baseline, 2008 Version 3.0 (vergleichbare Kapitel)</b>
3.1. Projektorientierung	1.1 Projekte und Programme 1.1.1 Wahrnehmung von Projekten und Programmen 1.1.2 Geschäftsprozess, Projekt und Programm 1.1.3 Investition, Projekt und Programm

3.2. Programmorientierung	<p>1.1 Projekte und Programme</p> <p>1.1.1 Wahrnehmung von Projekten und Programmen</p> <p>1.1.2 Geschäftsprozess, Projekt und Programm</p> <p>1.1.3 Investition, Projekt und Programm</p> <p>2.11 Spezifika Programmmanagement</p>
3.3. Portfolio-Orientierung	<p>1.1.4 Projektportfolio, Projektnetzwerk, Projekte-Kette</p> <p>4.5 Projektportfoliomanagement</p> <p>4.5.1 Beauftragung von Projekten und Programmen</p> <p>4.5.2 Projektportfoliokoordination</p> <p>4.5.3 Projektnetzwerke</p>
3.4. Einführung von Projekt-, Programm- und Projektportfoliomanagement	<p>1.2.1 Gestaltung des Projektmanagement-Prozesses</p> <p>4.2 Die projektorientierte Organisation</p> <p>4.3 Spezifische Organisationsstrukturen der POU</p> <p>4.4 Projektmanagement-Richtlinien</p> <p>4.8 Prozessmanagement in der projektorientierten Organisation</p> <p>4.8.1 Prozessorientierung in der projektorientierten Organisation</p> <p>4.8.2 Makro- und Mikro-Prozessmanagement</p>
3.5. Stammorganisation	<p>1.2 Projektmanagement als Geschäftsprozess</p> <p>1.2.1 Gestaltung des Projektmanagement-Prozesses</p> <p>1.3 Programmmanagement als Geschäftsprozess</p> <p>1.3.1 Gestaltung des Programmmanagement-Prozesses</p> <p>1.3.2. Beschreibung der Programmmanagement Teilprozesse</p>
3.6. Business	<p>2.2.3 Zusammenhang zwischen Projekt und Unternehmensstrategie</p> <p>2.2.4 Beziehungen des Projektes zu anderen Aufgaben</p>
3.7. Systeme, Produkte und Technologie	2.7 Methoden zum Projektmarketing
3.8. Personalmanagement	<p>4.7 Human Resource Management in der projektorientierten Organisation</p> <p>3.4 Umgang mit Emotionen und Diversity in Projekten und Programmen</p>
3.9. Gesundheit, Sicherheit und Umwelt	<p>2.2.1 Projektbegrenzung und Projektkontext</p> <p>2.2.3 Zusammenhang zwischen Projekt und anderen Aufgaben</p> <p>2.2.6 Projektumweltanalyse</p> <p>2.7 Methoden zum Projektmarketing</p>
3.10. Finanzmanagement	2.4.9 Projektfinanzmittel
3.11. Recht	kein vergleichbares Kapitel

# Literaturquellen

- Erpenbeck, J. & von Rosenstiel, L., 2007, Handbuch der Kompetenzmessung, Stuttgart: Schäffer-Poeschel.
- Gareis, R., 2006, Happy Projects!, Wien: Manz.
- Gareis, R. & Stummer, M., 2006, Prozesse & Projekte, Wien: Manz.
- Hiller C., Majer C., Minar-Hödel P., & Zahradnik H., 2007, Projektcoaching bringt mich einfach weiter!, Wien: Goldegg.
- Huemann, M., 2002, Individuelle Projektmanagement - Kompetenzen in Projekt-orientierten Unternehmen, Frankfurt, Peter Lang.
- Königswieser, R. & Exner, A., 2004, Systemische Intervention. Architekturen und Designs für Berater und Veränderungsmanager, Stuttgart: Klett-Cotta.
- Luft, J., 1971, Einführung in die Gruppendynamik. Stuttgart: Klett.
- Lang, K. & Rattay, G., 2005, Leben in Projekten, Projektorientierte Karriere- und Laufbahnmodelle, Wien, Linde.
- Patzak, G. & Rattay, G., 2004, Projektmanagement, Wien: Linde.
- Rattay, G., 2007, Führung von Projektorganisationen, Wien: Linde.
- Sterrer, C. & Winkler G., 2006, Let your projects fly, Wien: Goldegg
- Tuckman, B., 1965, "Developmental sequence in small groups", Psychological Bulletin, 63, 384-399, Reprint in Group Facilitation: A Research and Applications Journal - Number 3, Spring 2001.
- Wagner, K.W. (Hrsg.), 2006, PQM – Prozessorientiertes Qualitätsmanagement, Wien: Hanser.



**pma** - PROJEKT MANAGEMENT AUSTRIA  
Palais Schlick  
Türkenstraße 25/2/21  
1090 Wien

T +43 1 319 29 21-0  
F +43 1 319 29 21-29

office@p-m-a.at  
www.p-m-a.at

Herausgeber: **pma** PROJEKT MANAGEMENT AUSTRIA

member of

**IPMA**  
international  
project  
management  
association