Project Management Competencies in the Project Oriented Organization

In the project-based organization, project management (pm) competences are not only required by individuals, but also by project teams and by organizations. As project management has to be considered as a core competence of the project-based organization (called in this document the project-oriented organization, POO), this competence has to be explicitly developed by the organization.

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3 Project management competences in the project-oriented organization

## Roland Gareis and Martina Huemann

In the project-based organization, project management (pm) competences are not only required by individuals, but also by project teams and by organizations. These competences have to correlate. The pm competences of individuals performing project roles, such as project owner, project manager or project team member, have to be in accordance with the pm competences of the organization as a whole as documented in its procedures. The pm competences of individuals, project teams and organizations can be described, measured and further developed. As project management has to be considered as a core competence of the project-based organization (called in this chapter the project-oriented organization, POO), this competence has to be explicitly developed by the organization.

STRATEGY, STRUCTURE AND CULTURE OF THE PROJECT-ORIENTED ORGANIZATION

A POO is one which:

● defines management by projects as an organizational strategy
● adopts temporary organizations for the performance of complex processes
● manages a project portfolio of different project types
● has specific permanent organizations to provide integrative functions
● applies a 'new management paradigm'
● has an explicit project management culture
● perceives itself to be project-oriented.

The POO considers projects not only as tools to perform complex processes, but as strategic options for organizational design (Figure 3.1). Management by projects is the organizational strategy of companies dealing with an increasingly

Strategy: Management by projects

Project-oriented
organization

Structure: Temporary and
permanent organizations

Culture: Project management and
new management paradigm
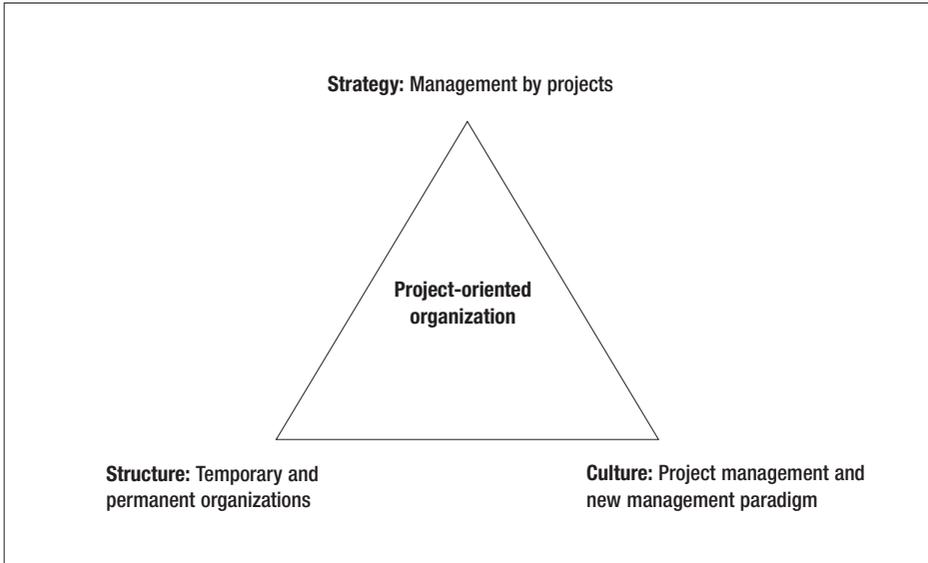
Figure 3.1   Strategy, structure and culture of the project-oriented organization

complex business environment. By applying management by projects the following organizational objectives are pursued:

● organizational differentiation and decentralization of management responsibility
● quality assurance by project team work and holistic project definitions
● goal orientation and personnel development
● organization of organizational learning by projects.

POOs perceive projects and programmes as temporary organizations for the performance of complex processes, such as contracts for external clients, as well as product development, marketing campaigns or re-engineering activities for internal clients. The more projects of different types a company holds in its project portfolio, the more differentiated it becomes and the higher becomes its management complexity. To support the successful delivery of individual projects, and to ensure the compliance of the objectives of the different projects with company strategy, the POO must adopt specific integrative structures such as a strategic centre, expert pools, a pm centre of competence and a project portfolio steering committee. Some of these permanent organizations might be virtual.

The POO is characterized by the existence of an explicit pm culture, such as a set of pm-related values, norms and procedures. Further, in order to manage a

POO successfully, the application of a new management paradigm is required. Traditional management approaches emphasize detailed planning methods, focusing on the assignment of clearly defined work packages to individuals, relying on contractual agreements with clients and suppliers and using the hierarchy as a central integration instrument. Compared with this traditional approach, the new management paradigm can be perceived as comprising the core concepts of lean management, total quality management, business process re-engineering and the learning organization, which are:

● organization as competitive advantage
● empowerment of employees
● process-orientation
● teamwork in flat organizations
● continuous organizational change
● customer-orientation
● networking with clients and suppliers.

PROJECT MANAGEMENT AS A BUSINESS PROCESS OF THE PROJECT-ORIENTED ORGANIZATION

By perceiving project management as a business process of the POO, the methods of process management can be applied to designing the pm process. By describing the pm process, by defining its objectives and by defining its deliverables, it is possible to measure the quality of the pm process. The pm process consists of the following subprocesses:

1. Project start
2. Project control
3. Project coordination
4. Management of project discontinuities
5. Project close-down.

Objects of consideration in the pm process are the project objectives, the scope of work, the project schedule and the project costs, as well as the project organization, the project culture and the project context. The achievable deliverables of each pm subprocess, such as the different project plans, the project culture, the defined strategies to manage project environment relationships, project progress reports, minutes of project meetings, and so on, can be compared with the resource requirements for the performance of the pm subprocess.

PROJECT MANAGEMENT COMPETENCES OF INDIVIDUALS AND PROJECT TEAMS

Project management competence can be defined as the ability to perform the pm process efficiently. The pm competence relates to specific pm tasks to be fulfilled, and it exists if there is pm knowledge as well as pm experience. In the POO, pm competences can be differentiated for individuals, for project teams and for the organization.

The pm competences required by individuals differ according to the different project roles they fulfil. The following project roles can be performed by individuals:

1. Project owner
2. Project manager
3. Project management assistant
4. Project team member
5. Project contributor.

The specific pm tasks to be performed, such as by the project manager, can be described in a role description. Figure 3.2 is a role description for a project manager.

The pm competence of a project manager is the ability to fulfil all responsibilities specified in the role description. Besides the pm knowledge and the appropriate pm experience depending on the project type, a project manager needs product, company and industry knowledge. In international projects cultural awareness and language knowledge are prerequisites too. The pm knowledge and experience required by the project manager depend on the pm approach applied by the POO. According to a process-oriented project management approach, the project manager requires knowledge and experience not just to apply pm methods but to design the pm process creatively. The ability to design the pm process relates to:

● the selection of the pm methods appropriate for a given project
● the selection of the appropriate communication structures
● the facilitation of the different workshops and meetings
● the selection of the participants for the different workshops and meetings
● the decision to involve a project coach
● the definition of the appropriate form for the pm documentations (project handbook, project progress reports, project close-down report)
● the definition of a project marketing strategy.

To perform successfully, a project team requires a specific team competence in

Objectives
- Representation of the project interests
- Assurance of the realization of project objectives
- Coordination of project team and of project contributors
- Representation of the project to the relevant environments

Organizational position
- Reports to the project owner
- Is a member of the project team

Responsibilities in the project assignment process
- Formulation of the project assignment with the project owner
- Definition of the core team members with the project owner

Responsibilities in the project start process
- Organization of the project start process (with the core team members)
- Know-how transfer from the pre-project phase into the project with the project team members
- Agreement on project objectives with the project team members
- Development of adequate project plans with the project team members
- Design of an adequate project organization with the project team members
- Development of a project culture, establishment of the project as a social system with project team members
- Performance of risk management and discontinuity management with the project team members
- Design of project context relations with project team members
- Implementation of project marketing with project team members

Responsibilities in the project coordination process
- Disposition of resources for the performance of work packages
- Controlling the results of work packages, ensuring the quality of work packages
- Approval of work package results
- Communication with members of the project organization
- Communication with representatives of relevant environments
- Project marketing

Responsibilities in the project control process
- Organization of the project control process (with the core team members)
- Determination of project status with project team members
- Agreement on or planning of corrective actions with project team members
- Further development of project organization and project culture with project team members
- Redefinition of project objectives with project team members
- Redesign of project context relations with project team members
- Project marketing with project team members
- Preparation of progress reports with project team members

Responsibilities in the management of a project discontinuity process
- Organization of discontinuity management process (crisis or change management) with project owner
- Contributions to the contents of the crisis or change management with project team members

Responsibilities in the project close-down process
- Organization of project close-down process with project core team
- Emotional close-down of the project and regarding the content with project team members
- Transfer of know-how into the line organization with project team members and representatives of line organization
- Final project marketing with project team members

Figure 3.2   Role description 'Project Manager'

addition to the pm competences of the single project team members. The pm competence of a project team is the ability to commonly create the 'Big Project Picture', to solve conflicts in the team and to agree on common project objectives. A project team needs the ability to cooperate in workshops and meetings. The common development and the application of project plans, such as a work breakdown structure, a schedule, a project environment analysis, and so on, have to be understood as tools to support communication in the project team.

PROJECT MANAGEMENT COMPETENCES OF ORGANIZATIONS

Not just individuals but also organizations have the capability to gather knowledge and experience and to store them in a 'collective mind' (Senge 1994; Weik and Roberts 1993). Willke (1998) describes organizational knowledge as hidden in the systems of organizational principles, which are anonymous and autonomous and define the way organizations work. It is hard to imagine that organizations possess a 'collective brain', but one could find the organization's knowledge and experience, for instance, in standing operational procedures, descriptions of work processes, role descriptions, recipes, routines and databases of product and project knowledge.

To describe and measure organizational competence, models of organizational maturity can be applied. The first model relating to the measurement of the quality of the software development process, the SEI Capability Maturity Model, was developed by the Software Engineering Institute (SEI) (Humphrey 1989; Paulk *et al*. 1991). During the late 1990s several specific maturity models to describe and measure the organizational pm competence were developed (Fincher and Levin 1997; Goldsmith 1997; Ibbs and Kwark 1997; Hartman 1998). Most of them are based on the PMI's *Guide to the Project Management Body of Knowledge* (PMI 2002). Traditional maturity models use four to five steps to describe and measure the competence to perform a specific in an organization. The scale usually used is initial, repeatable, defined, managed and optimized according to the SEI Capability Maturity Model (Paulk *et al*. 1991) (see Figure 3.3).

THE PROJECT MANAGEMENT COMPETENCE MODEL

The Projektmanagement Group of the University of Business Administration and Economics in Vienna developed a model of pm competence for self-assessing and for benchmarking the pm competence of organizations (Gareis and Huemann

Maturity level	Description
5 = optimized	● Continual improvement of process
	● Continual collection of data to identify
	● Analysis of defects for prevention
4 = managed	● Process is quantitatively measured
	● Minimum of metrics for quality and productivity exist
	● Collection of process experiences
3 = defined	● Process defined and institutionalized
	● Process groups defined
2 = repeatable	● Process depends on individuals
	● Minimum of process control/guidance exists
	● Highly risky in case of new challenges
1 = initial	● Ad hoc process, not formalized
	● No adequate guidance
	● No consistency in product delivery

Figure 3.3 Maturity levels of the SEI Capability Maturity Model

1998). The basis for pm competence is the project management process model described above, with its sub processes. For the description and measurement of the pm competence, we suggest not the steps of the traditional maturity models but a spider's web, with six axes (Figure 3.4):

1. Project start
2. Project control
3. Project coordination
4. Management of project discontinuities
5. Project close-down
6. Design of pm process.

The spider's web has the advantage that it is a multidimensional representation of the pm competence, allowing the maturities of different pm subprocesses to be visualized. The pm competence of a company or a business unit is presented by the shaded area, which results from connecting points of pm competence on the scale of the spider's web axes. For the pm subprocesses on the spider's web scale, four levels of competence are defined:

0. Not defined
1. Partly defined
2. Defined
3. Standardized.

These are described further in Figure 3.5. In traditional maturity models, the maturity level 'optimized' is usually considered too. Our pm competence model
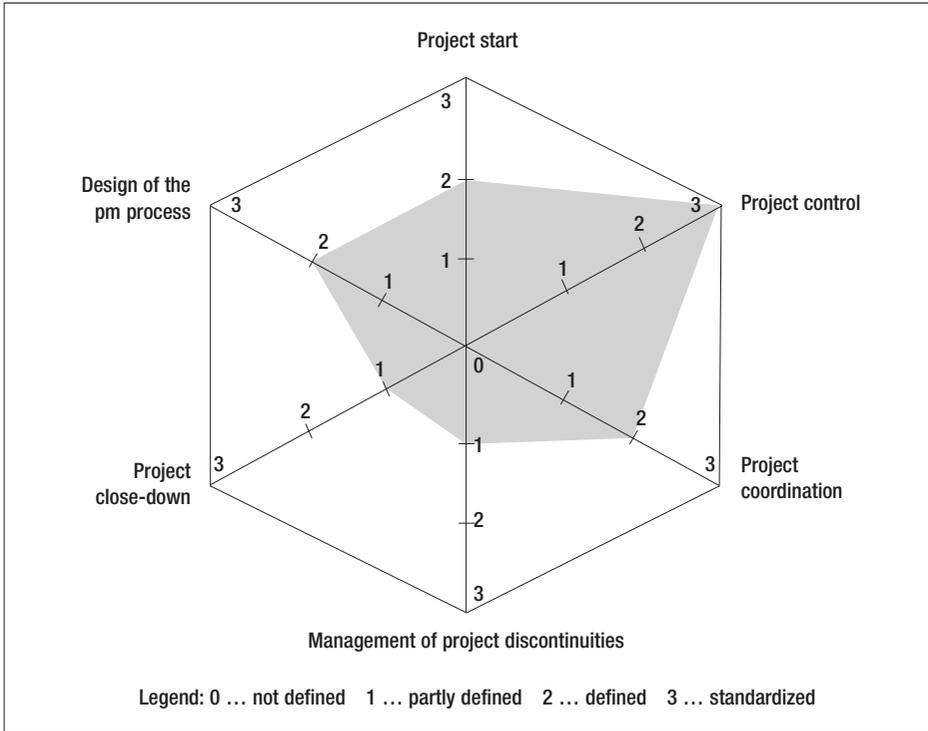
Figure 3.4   Spider's web presentation of the organizational pm competence

does not consider optimization, because it cannot be observed at the level of the single project and it does not apply to the pm subprocesses, but to the pm process as a whole. So the further development and optimization of project management is not part of the pm process but has to be considered as a separate business process.

Figure 3.4 represents the pm competence of a POO that has a lot of competence in project control, as it has a standardized control process, where it applies all required pm methods for all project types. The project coordination, the project start and the design of the pm process are scored 'defined'. Further improvement is primarily necessary regarding the project-close down and the management of discontinuities, where the pm competence is 'partly defined', that is only a few methods are applied for only a few project types.

The assessment of the pm competence of an organization is based on an Information Technology (IT)-supported questionnaire with about 80 questions. As an example, the questions relating to the project start process are grouped into questions regarding project objectives, project risk, project context relationships,

Scale	Description
3 = standardized	All required pm methods applied for all defined project types
2 = defined	Many pm methods applied for all defined project types
1 = partly defined	Few pm methods applied for many projects
0 = not defined	Few pm methods applied for a few projects

Figure 3.5   Maturity scale for the pm subprocesses

project organization and project culture (Figure 3.6). For the single questions the current pm practice is assessed according to the following answer possibilities:

1. Always
2. Sometimes
3. Seldom or never.

A weighting system is used to relate the answers to the questions to the competence points on the scales of the spider's web. As the single pm subprocesses have different impacts on the project performance, different weights are assigned to the pm subprocesses. The results for the project start process are the basis for all other subprocesses, therefore, it is perceived as the most important one.

B4.1: Which documents of project organization result from the project start process?

Question	1	2	3
Internal project assignment			
Project organization chart			
Project role descriptions			
Project responsibility matrix			
Project communication structures			
Project-specific organizational rules			
Project-related incentive systems			
Others (please state: ………………)			

Figure 3.6   Sample question of the pm competence questionnaire

BENCHMARKING ORGANIZATIONAL PROJECT MANAGEMENT COMPETENCES

In a pm benchmarking research project with companies from different industries pm competence was applied (Gareis and Huemann 1998). Figure 3.7 shows the practice of nine companies regarding documentation in the project start process. Partners 1, 2 and 3 are from the engineering industry, partners 4, 5 and 6 are from the IT industry, while partners 7, 8 and 9 are from the service industry. The engineering and IT companies perform primarily external projects, while the companies of the service industry mainly perform internal projects.

Generally, we can observe differences in pm competences for the performance of internal and external projects and of different industries. A comparison for internal and external projects showed that in internal projects 'softer pm methods', such as the project scenario analysis and the project environment analysis, are applied more frequently than in external projects. In a comparison of different industries, engineering companies seem very methods-oriented, while IT companies emphasize the design of the project organization too. Some IT companies apply, for instance, integrated project organizations, involving client and subcontractor representatives in the project team and in the project steering committee. Project-

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B 4.1: Which project organization documents result from the project start process?

| | always | sometimes | seldom or never |

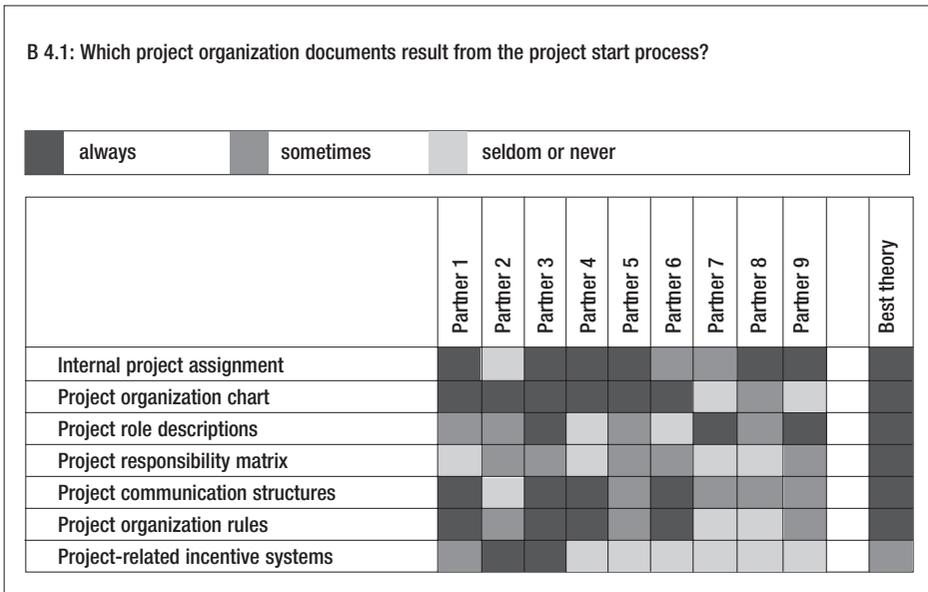|	Partner 1	Partner 2	Partner 3	Partner 4	Partner 5	Partner 6	Partner 7	Partner 8	Partner 9		Best theory
Internal project assignment											
Project organization chart											
Project role descriptions											
Project responsibility matrix											
Project communication structures											
Project organization rules											
Project-related incentive systems											

Figure 3.7   pm benchmarking results regarding the design of project organizations

related incentive systems are used in engineering companies only. Furthermore, the following commonalities and differences could be observed:

● Internal project assignments are almost always a result of the project start process.
● Organizational charts are more frequently prepared by companies performing external projects.
● Project organization charts, descriptions of project roles and responsibility matrices partly do not result from the start process.

The column 'Best theory' shows the pm competence thought to be required by the Projektmanagement Group.

FURTHER DEVELOPMENT OF ORGANIZATION PROJECT MANAGEMENT COMPETENCES

Core competences, as defined by Prahalad and Hamel (Prahalad and Hamel 1990; Hamel 1994), are an organization's fundamental capabilities; an integration of skills that are competitively unique. This means that these capabilities are difficult to imitate. The core competences enable the company to deliver a fundamental customer benefit and therefore contribute to the long-term survival of the company.

Project management can be perceived as a core competence of a POO, as it creates a competitive advantage. If a company has pm knowledge and experience, projects can be performed more efficiently than in companies without pm competence. Project management adds value to the customer. To ensure this competitiveness permanent further development of the pm competence is necessary. Project management competences have to be described, assessed and further developed for organizations, teams and individuals. The pm competence model described above can be applied to assess the status of the organizational pm competence of a POO and to identify potential for the further development of this competence in an organizational learning process. Similarly, individual and team learning have to be organized. Instruments for the further development of the pm competences have to be differentiated for individuals, teams and the organization as a whole (Figure 3.8). Instruments to develop the pm competence of individuals include self-assessments and training (classroom, on the job). Instruments to develop the pm competences of teams include workshops, reflections and supervisions. Instruments to develop the pm competences of the project-oriented company at an organizational level include pm benchmarking and organizational development projects.
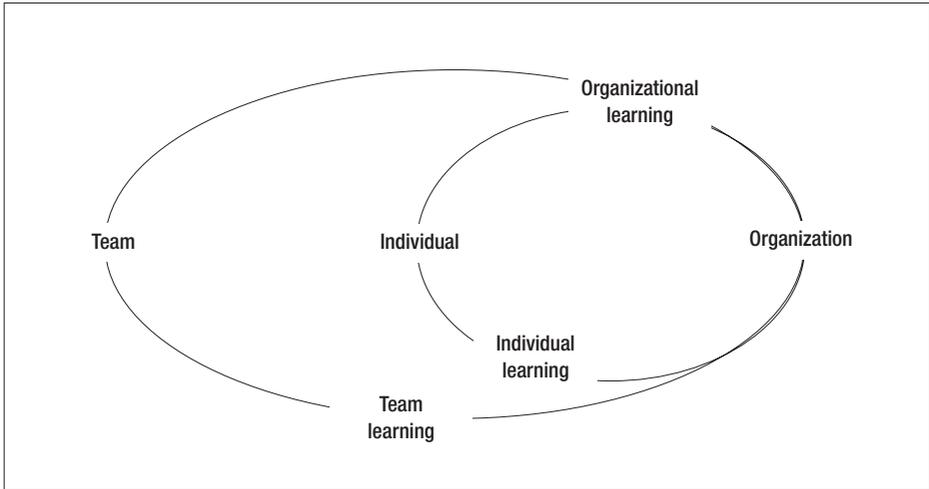
Figure 3.8   Relationships between individual, team and organizational learning

SPECIFIC MANAGEMENT COMPETENCES IN THE PROJECT-ORIENTED ORGANIZATION

Even if project management is established as a core competence of a POO, additional competences to manage further specific processes are required, such as:

● programme management
● project assignment and project evaluation
● project and programme auditing and coaching
● project portfolio management.

These competences must be described, assessed and further developed.

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Project Management Competencies of the Project-Oriented Organization. Not just individuals, but also organizations have the capability to acquire knowledge and to experience and store it in a "collective mind" (Senge 1994; Weik and Roberts 1993). Willke (1998) describes organizational knowledge as hidden in organizational principles that define the way organizations work. Â The project management competence of the POO can be described and assessed with a "project management competence" model (Gareis and Huemann 1998). The project management competence can be presented in the POO "spider web" model (Figure 7). Figure 7: POO Spider Web. Project-Oriented Organizational Structure. Management functions are often described in four categories: Planning, Organizing Â These are the functional organization, project-oriented organization, and a matrix or hybrid structure. In this post, the second in a series, we will investigate the characteristics, advantages, and disadvantages of a project-oriented organizational structure. Project-Oriented Organizational Structure. Â An example of a project-oriented organizational structure is shown in the figure here. In contrast to the functional organizational structure, the project team structure is highlighted. Overall, the organizational structure in a project is simpler and less hierarchical. Team members are often co-located in a project-oriented organization. There she teaches project management to graduate and post graduate students. Her research focuses on Competences in the Project-oriented Company. Martina Huemann works as trainer and consultant in ROLAND GAREIS CONSULTING and is project manager within programm I austria â€" the Austrian project management initiative. Projekt management group. â€¢ We provide high quality education and research services in project management at the. Â In the project start process the following PM-methods for the design of the project organisation are used: Project organisation chart, descriptions of project roles, responsibility matrix. In the Project-oriented Society. In the IT-Industry. In the telecommunications industry.