3

The Project as a Temporary Organization

3.1 Introduction

This chapter introduces different theoretical lenses to observe projects. It discusses the traditional perception of a project as a complex task, and the evolution of its conceptualization into a temporary organization, social system and construction. It differentiates the project from related constructs such as investment, process and programme, and discusses different project types. I close the chapter with the consequences for the research, and summarize my understanding of projects as temporary organizations and social systems, which serves as this book's theoretical lens for understanding projects.

3.2 Theoretical Lenses to Analyse Projects

Different theoretical lenses draw distinctions in the way that projects can be analysed. Each one stresses a certain perspective and thus must neglect other possible perspectives. Over the years, several perspectives on projects have developed (Söderlund 2011; Turner et al. 2010). While projects can be defined in different ways (Hodgson/Cicmil 2006), all project definitions emphasize their temporary character and (relative) uniqueness. Turner and Müller (2003: 1) state that a project has specific features such as:

- Uniqueness: no project before or after will be the same;
- Novel processes: no project before or after will use exactly the same approach;
- Transient: the project has a beginning and an end.

Generally, task related and organizationally related project definitions are differentiated (Andersen 2008). Pollack (2007) refers to this as the hard and the soft paradigm in project management. Gareis (2005) differentiates projects as tasks, as temporary organizations and as social systems. In the following sections, I discuss project definitions based on the following differentiations:

- Project as a complex task;
- Project as a temporary organization;
- Project as a social system.

3.2.1 PROJECT AS COMPLEX TASK

Traditionally, projects are defined as unique, complex tasks, whereby complexity is defined as technical complexity and the relation between its parts. Andersen (2008) states that this is still the prevailing project definition in project management standards (see Table 3.1 below). The project as a task represents a rather traditional and mechanistic paradigm. Many of the classical project definitions stress the role of a project as a production function, just as the earliest definitions of the firm in classical economics (Turner/Müller 2003). A project as a task is characterized by rationality (Borum/Christiansen 1993), represents a Taylorian way of thinking (Turner et al. 2010) and is based on the prevailing perspective before 1950, the so-called 'economic man' (Homo Economicus), who is completely self-seeking, completely rational and completely informed (Andersen 2008: 7).

Typical definitions of a project as a series of tasks are presented in Table 3.1. The definition by Cleland and King (1983)[1] is a classical one. They developed a first theory of project management which is based on the following premises (Turner et al. 2010):

- The project delivers against objectives of time, cost and scope (functionality), set outsid the project;
- Project management methods such as critical path analysis and work break down structur are essential for projects;
- Projects move through a life cycle;
- Project management comprises managing and controlling;
- The project organization is a temporary matrix and resources are drawn from the compan

Thus, the relevant objects of consideration to manage in projects are schedule, cost and scop represented in the so-called iron triangle (Cleland/King 1983). The iron triangle, also known as the trip constraint, is presented in Figure 3.1, and is considered the basis for traditional project manageme

Table 3.1 Definitions of projects as complex tasks

Author	Definition
IPMA (2006: 13)	'A project is a time and cost constrained operation to realize a set of define deliverables (the scope to fulfill the project's objectives) up to quality standards and requirements'.
PMI (2008: 5)	'Temporary endeavor undertaken to create a unique product, service or resu
Cleland and King (1983: 70)	'A complex effort to achieve a specific objective within a schedule and bud target, which typically cuts across organizational lines, is unique and is usually not repetitive within the organization'.
Meredith and Mantel (2006: 9)	'A project is a specific, finite task to be accomplished'.
Kerzner (2009: 2)	'A project can be considered to be any series of activities and tasks that: • Have a specific objective to be completed within certain specifications • Have defined start and end dates • Have funding limits (if applicable) • Consume human and nonhuman resources (i.e., money. People, equipr • Are multifunctional (i.e., cut across several functional lines)'.

1 First published 1968.

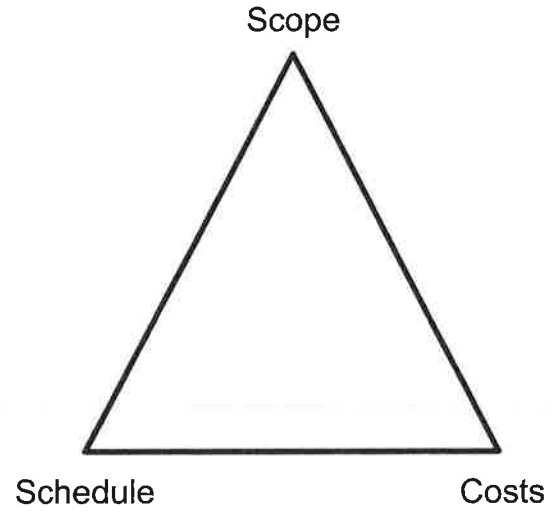

Figure 3.1 Iron triangle

Other objects of consideration relevant for managing projects, such as the project organization and the project personnel are neglected. The project organization is reduced to a specific form of organization, which is the matrix (Cleland/King 1983). Personnel are reduced to human resources required and consumed for the performance of the tasks on the project. The project is seen as protected and in isolation, and the project context is ignored (Engwall 2003).

3.2.2 PROJECT AS A TEMPORARY ORGANIZATION

The perception of projects as temporary organizations is a relatively new one, although Janowicz-Panjaitan et al. (2009) indicate that research on temporary organizations can be traced back to the 1960s, but in organizational theory, temporary organizations received little attention in these early years. A temporary organization is defined as:

> *(...) a set of diversely skilled people working together on a complex task over a limited period of time. (Godman, R.A. 1976: 494)*

The term 'temporary organization' may be perceived as a broader term than projects, as it not only refers to projects, but encounters different temporary forms of organizations, which include for example: joint ventures, consortia, presidential commissions, court juries, election campaigns, rescue operations and disaster relief operations (Janowicz-Panjaitan et al. 2009). A project may be defined as a temporary organization, but not every temporary organization is a project.

Some project definitions have already referred to the project as an organizational unit, but rather in the notion of a production unit.

> *A project is an organization unit dedicated to the attainment of a goal – generally the successful completion of a developmental product on time, within budget, and in conformance with predetermined performance specification. (Gaddis 1959: 89)*

Thus, early on, the project is perceived as an organization that focuses on a task and is dissolved after the task is accomplished (for a similar view see Sayles/Chandler 1971). In other words, the project is considered as a temporary organization that is dedicated to a specific goal and at the beginning of its existence is founded with the intention of a limited duration.

In 1995, Rolf Lundin edited a seminal special issue of the *Scandinavian Journal of Management* with the theme 'Temporary organizations and project management',[2] and positioned the project as a temporary organization. This special issue set the ground for defining projects differently, not as tasks but as temporary organizations. Inspired by Godman and Godman (1976), Lundin and Söderholm (1995) offer a theory of the project as a temporary organization. They base it on action theory and institution theory. They differentiate temporary organizations from other kinds of organizational settings such as permanent organizations. For the differentiation of temporary and permanent organizations they use the concepts of time, task, team and transition (Lundin/Söderholm 1995: 438–439):

- **Time:** Time is crucial. There are time limits for the temporary organization, which have implications for action. The existance of an end date may be the best way of spreading a sense of urgency. In a permanent organizational setting, the focus is on survival rather than time.
- **Task:** A temporary organization is dependent on one or a very limited number of defined tasks (or focuses of attention). The task definitions provide the raison d'être for the temporary organization. The task may be regarded as unique, but could have a more standardized character. Different resources are also needed to define a temporary organization. In one sense, both task and time are constituted by resource allocations, for example, economic and material resources.
- **Team:** The team forms around the task at hand and the time available, thus focusing on individuals both as resources and as bearers of such things as conceptions and attitudes.
- **Transition:** Temporary organizations are created in order to fulfil a special purpose. This purpose also contains an element of change. The temporary organization is the means for achieving it.

To better understand the temporary organization, it can be compared with the permanent organization, as shown in Table 3.2. Packendorff (1995: 215) defines the temporary organization more specifically:

- (...) a deliberately created structure aimed at evoking a unique process or completing a unique product;
- Has a predetermined date or time-related conditional state when the organization is supposed to cease to exist;
- Has clearly stated performance goals;
- Is so complex in terms of roles and number of roles that it requires managerial skills and methods.

2 The perception of projects as temporary organizations is often related to the Scandinavian School of Project Studies (Sahlin-Andersson/Söderholm 2002). In 1994 the International Research Network on Organizing by Projects (IRNOP) was established to spread the perception of projects as temporary organizations. The network performs a bi-annual conference with a growing community. As a further indication of the increasing importance of the perception of projects as temporary organizations, a special interest group on project organizing was established in 2009, with a standing track within the annual meeting of the European Academy of Management (EURAM).

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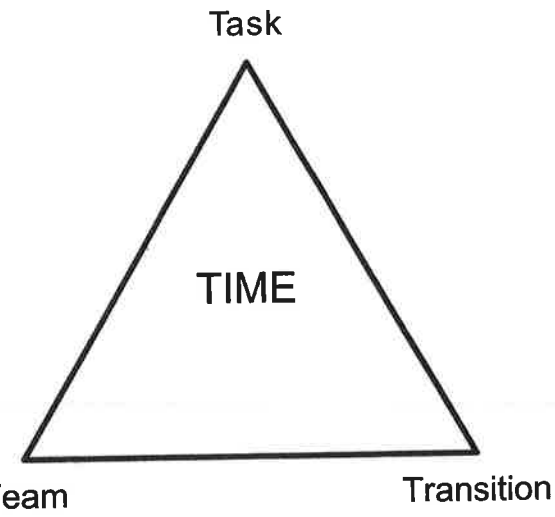

Figure 3.2 Basic concepts in the theory of temporary organizations
Source: Lundin/Söderholm 1995: 451.

Packendorff (1995) suggests that a temporary organization such as a project must have a certain complexity and scope that needs to be managed, otherwise it is not a project. Uncertainty is inherent to projects, as projects are dynamic and complex (Cicmil et al. 2009). Thus, projects are subject to uncertainty, create a need for integration and are performed as subject to urgency (Turner/Müller 2003). The PRINCE2 project management standard (OGC 2009) offers a definition that emphasizes the organizational character of the project and points out that the project creates benefits for the permanent organization, as it follows an agreed Business Case.

Table 3.2 Comparing the temporary project with the permanent organization

	Project	Permanent organization
Goal structure	Only one main task	A broad set of goals
Time dimension	Delimited time	Unlimited times, eternal, continuous
Boundaries	Given by the task	Legal boundaries
Uniqueness	Unique: Experimenting, piloting in order to create competitive advantage for the company's future	Repetitiveness of daily business
Uncertainty	Risk management as project management function	Predictable daily business
Actors	Team members chosen especially for the task Cross functional/corporate/ inter corporate co-operation as challenge	Members with different but permanent functions
Control	By way of a plan and subsequent revisions	By annual statements and/or evaluation

Source: Adapted from Heitger/Sutter 1990; Lundin/Steinthórsson 2003: 245.

Table 3.3 Definitions of a project as a temporary organization

Author	Definition
Turner and Müller (2003: 7)	'A project is a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavor managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change'.
Turner et al. (2010: 14)	'A project is a temporary organization to which resources are assigned to deliver beneficial change'.
OGC (2009: 3)	'A project is a temporary organization that is created for the purpose of delivering one more business products according to an agreed Business Case'.
Andersen (2008: 10)	'A project is a temporary organization, established by its base organization to carry out an assignment on its behalf'.
Gareis (2005: 41)	'A project is a temporary organization for the performance of a relatively unique, short- to medium-term strategically business process of medium or large scope'.

Table 3.4 Differences between the project as a task and the project as an organization

	Project as task	Project as organization
Theoretical foundation	The economic man Engineering, complex system theory	Agency theory Organizational theories
Main focus	Execute the defined task	Value creation
Project success	Keep to iron triangle, time, cost and scope (quality)	Accomplish the mission and achieve the goals
The nature of the goals	Fixed, determined at the start, revolutionary delivery	Moving targets, evolutionary development
Planning	Done at start, activity oriented	Global plan at start, rolling-wave planning, milestone oriented
Time schedule	Delivery as quickly as possible	Entrainment; deliveries that fit the receiving organization's processes
Kind of organization	Action oriented	Action and politically oriented
Leadership style	Transactional leadership	Transformational leadership
Controlling	Controlling time, cost, quality and earned value analysis	Socialization, embracing a holistic view on delivering the project as expected

Source: Adapted from Andersen 2008: 49.

Gareis (2005) explicitly states that projects are temporary organizations, in addition to permanent structures of an organization (e.g., profit centre, department). Similarly, Andersen (2008) draws a distinction between project and the permanent organization and then sets them in relation. Andersen (2008), based on Agency Theory, stresses the assignment so that

the project is considered as an agency of the project-oriented organization. Gareis (2005) defines a project as a temporary organization to perform a business process with certain characteristics. These process characteristics comprise relatively unique, short to mid-term strategic business processes of medium or large scope. According to the organizational strategy Managing by Projects, not all task work should be organized as a project (Gareis/ Stummer 2008).

Table 3.3 shows definitions of a project as a temporary organization. What these definitions have in common is that the project is considered more comprehensively and in its specific context. These definitions emphasise the importance of the project organization and value creation, rather than the fulfilment of a predefined task. Andersen (2008) compares the project as task and the project as organization (see Table 3.4).

The perception of projects as temporary organizations has started to become the prevailing definition amongst scholars. The importance of the context for understanding the project has become of increasing relevance in project management. The traditional triple constraint perspective of the project as a task is considered as almost irrelevant to project success, but the benefits that stakeholders receive from a project are the measure for project success (Shenhar/Dvir 2007). The relevance of the relation of a project to its contexts is a perception that becomes even clearer when the project is perceived as a social system.

3.2.3 PROJECT AS SOCIAL SYSTEM

There has been a long tradition in project management to perceive projects as systems, which is strongly related with the task definition of a project, as I discussed earlier. It also strongly relates to the engineering field, where projects and project management were introduced during the 1960s (Morris 1997). A system is defined as:

> *(...) an organized or complex whole; an assemblage or combination of things or parts forming a complex or unitary whole. (Cleland/King 1983: 17)*

> *(...) a set of interrelated components that accepts inputs and produces outputs in a purposeful manner. (Meredith/Mantel 2006: 120)*

In this mechanistic way, projects are perceived as machines, in the notion of von Foerster's (1985) trivial machines, for which a particular input produces the expected output in a linear way. See Figure 3.3.

Cleland and King (1983) outline a theory of project management based on an understanding of the project as a technical system. In essence, Cleland and King´s theory suggests that a project is a complex system to be optimized. In contrast to perceiving projects as complex technical systems, it is a relatively new approach to perceive projects as social systems based on the Social Systems Theory by Niklas Luhmann (1995). Table 3.5 shows the different paradigms in managing technical systems in comparison to social systems.

As outlined in the appendix, Luhmann (1995) differentiates different types of systems, such as machines, organisms, social systems and psychic systems. Based on complexity, social systems are further differentiated into interactions, organizations and societies. Interaction represents the less complex and society the most complex social system. Gareis (2005) adds the differentiation of the organization into project or programme as temporary organizations, and companies as permanent organizations, see Figure 3.4.

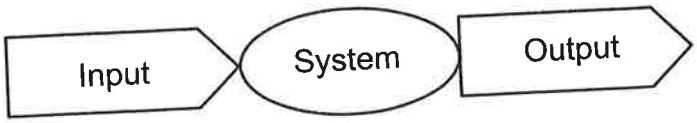

Figure 3.3 **Trivial machine: Input–system–output**

Table 3.5 **Management of technical systems versus social systems**

Technical system	Social system
Predictable	Not predictable
Not depending on the contexts	Depending on the contexts
Possible to influence directly	Not possible to influence directly
Results of influence are clear	Results of influence are unclear
Application of standards	Allowance of contradictions

Source: Adapted from Kasper 1990: 210.

In contrast to technical systems, projects can be perceived as social systems that are socially constructed. A project is a temporary organization and thus can be perceived as a social system (Gareis 2005: 40). A project as a social system clearly differentiates itself from its environments and has relations to these environments. A project requires boundaries (Sahlin-Andersson/Söderholm 2002). What is part of a project or not part is a social construction (Gareis 2005). Gareis and Stummer (2008) differentiate the internal project structures, the environment of the project and the relationships of the project to the contexts.

The internal project structures comprise: objectives, objects of consideration, strategies, scope, schedule, resources, costs, income, risks, personnel, organization, culture and infrastructure (Gareis et al. 2013). The project context comprises (Gareis et al. 2013):

- Pre-project and post-project phases;
- Relationships to project stakeholders;
- Relationships to other projects and to company strategies;
- Investment initiated by the project.

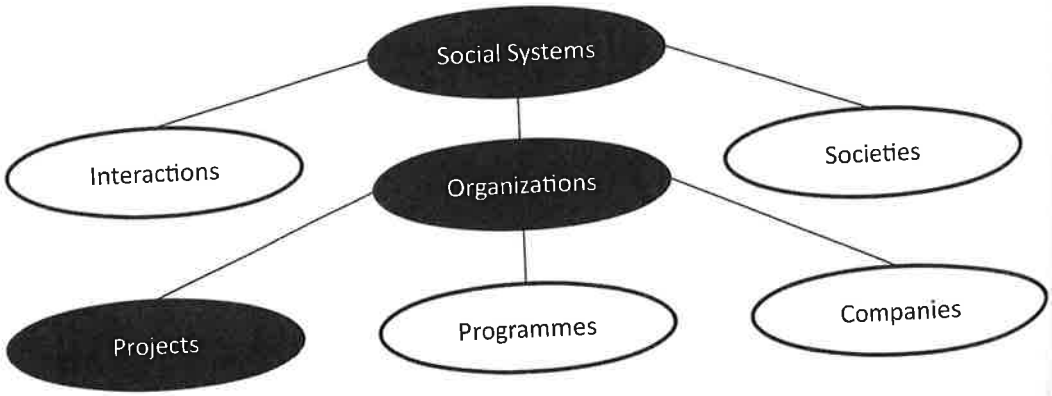

Figure 3.4 **The project as a social system**
Source: Gareis 2005: 40.

Projects need to be considered in their contexts. Bakker (2010) points to the importance of the organizational and social context to explain project behaviour. A project is embedded in its contexts and needs to make sense of its contexts to deliver the purpose, or why it was created (Engwall 2003; Sahlin-Andersson/Söderholm 2002). Following on from this, the characteristics of a project as a social system are described (Heitger/Sutter 1990: 138):

- The project has to relate itself to many different project stakeholders;
- Normally, there is a high diversity and lack of clarity of expectations of the project stakeholders towards the project;
- Predictability of 'what happens, if' is rather low, or in other words, uncertainty and risk are rather high;
- Concrete definition of project success is difficult and determined from the specific point of view from the particular project stakeholder.

Engwall (2003) draws similar conclusions. He states: 'no project is an island', but suggests that any project is dependent on events and expectations outside the project. In contrast to the traditional view of projects in isolation, he extends the perspective of the context using a time dimension as well as the organizational context. Projects are considered as history dependent and organizationally embedded, as shown in Figure 3.5. The construction of project boundaries comprises different perspectives, which also relate to each other.

The project as a temporary organization may also be perceived as a social system. The systemic perception provides an additional lens that stresses the importance of the project contexts to understand the project. As outlined before, the project as a social system needs to differentiate itself from its surroundings, but at the same time is dependent on its contexts and needs to design relationships to the social environments (stakeholders) as part of their social context (Luhmann 1995). In taking a systemic-constructivist perspective to construct project boundaries, we may again differentiate a time-, a social- and a content-related context dimension (Gareis 2005; Huemann 2002).

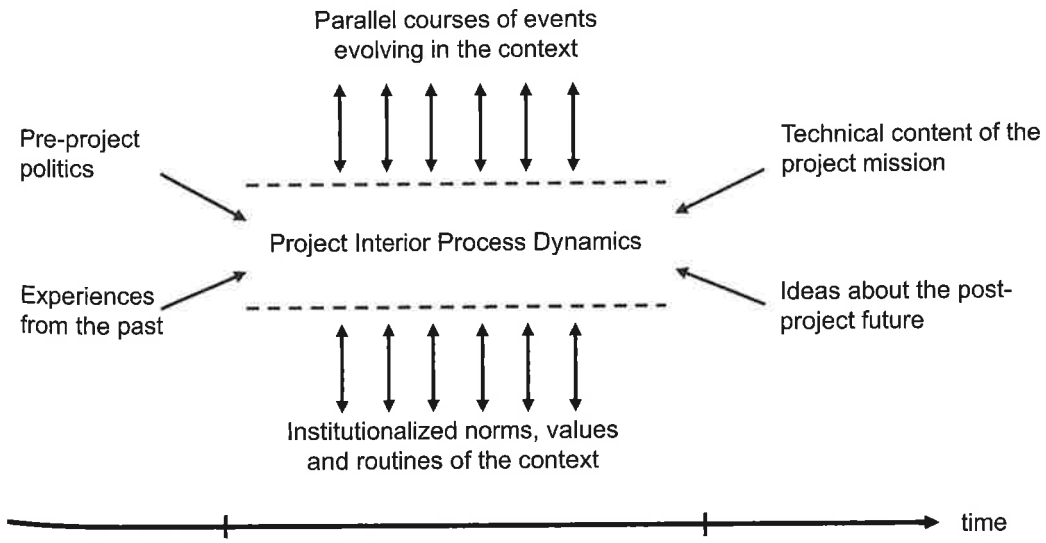

Figure 3.5 No project is an island
Source: Engwall 2003: 805.

A project has a planned start and end date. The time-related project context therefore comprises the pre-project and the post-project phase. Before the project, there is the pre-project phase, during which some decisions are already made, which may influence the project very strongly – for instance, the selection of central suppliers to work with. After the project is closed down, there is the post-project phase. There are particular expectations in the pre as well as the post project phase that influence the project. As projects are temporary, time is of central importance, indicating a start and a planned end of a project. As time for organizations is especially limited and not open ended or eternal, the time dimension influences the behaviour on the project (Lindkvist 1998), as deadlines and milestones tend to increase the pace and sense of urgency.

The content-related perspective comprises the boundaries of the contents: the task, or more precisely the business process that is fulfilled by the project. There are objectives to be fulfilled within the project, as well as other objectives like so called non-objectives, which can be excluded from the project. The content-related context comprises the contribution to the investor organization's strategy, the contribution to the business case, and the relation to other projects.

The social context comprises relevant social environments, more commonly labeled as project stakeholders, as shown in Figure 3.6. Social environments can be differentiated into project external and project internal social environments. Project external environments are for instance clients, users, suppliers, project partners, competitors, and so on. Internal project environments comprise the project personnel such as the project manager, the project team members and the project owner. It is important to differentiate who becomes a member of the project organization and in which role, and who remains in the social environment. By differentiating the project from its social context, it also becomes clear that designing relations to relevant environments (project stakeholders) becomes important.

The project manager, project team members and project owner are considered as part of the internal social environment of a project. The relationships between the project and these players need to be explicitly managed and this is closely related to project HRM, described later in this book.

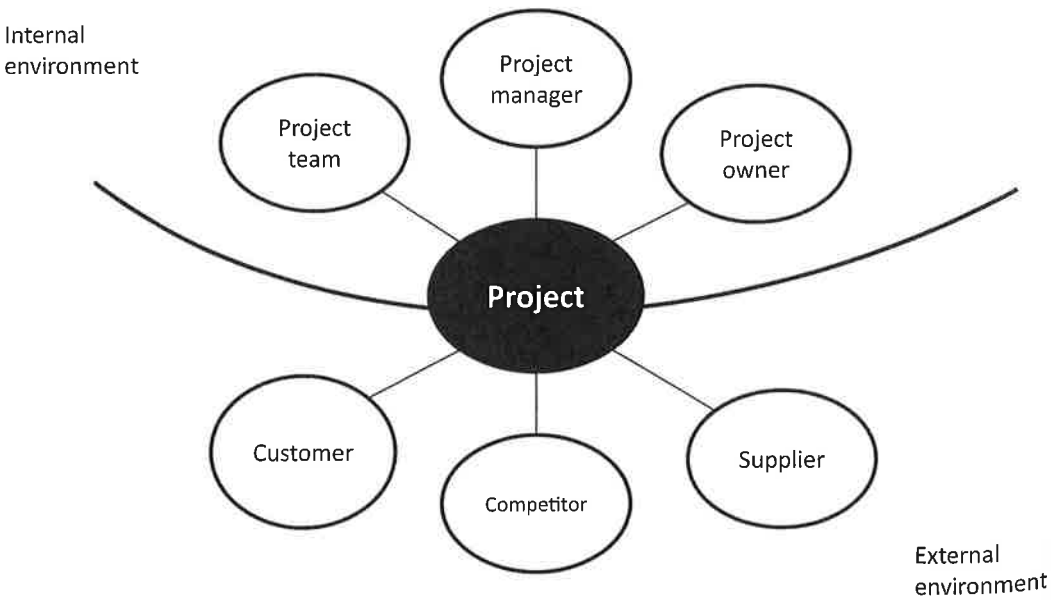

Figure 3.6 Social environments/stakeholders of a project

The project boundaries might change in the course of the project. Similarly, Sahlin-Andersson and Söderholm (2002: 243) state that project boundaries do not appear automatically when a project is formed, they need to be created. As projects are dynamic, these project boundaries are not set in stone once and for all, but can change during the course of the project. Thus, the project boundaries need to be actively managed during the course of the project. A project is a construction to be differentiated from its context, but determined and closely related to its contexts, as *no project is an island* (Engwall 2003).

3.3 Differentiating from and Relating Projects to other Constructs

Although there is an emerging consensus on perceiving projects as temporary organizations in the project management research community, still no shared understanding on the term project exists. To provide a clearer perception on this term, I offer a differentiation from other related constructs, such as investment, process and programme.

3.3.1 PROJECT AND INVESTMENT

Investments are long-term employment of capital in assets, for example in buildings and machinery, but also in customer relationships, products, organization or in personnel. Thus, investments can be customer relationship related, product, and/or market related, infrastructure related, organizational related and personnel related. An investment can be initiated by a project, which is then followed by the utilization of the investment object created by the project; finally the investment life cycle ends with de-investment after the end of the utilization of the object (Gareis 2005; Gareis et al. 2013). Figure 3.7 illustrates this relationship.

Project definitions often refer to beneficial change as the purpose for the project (e.g., Turner/Müller 2003). The change perspective relates the project to the investment life cycle, which is initialized by the project. Lundin and Söderholm (1995) suggest that projects are means for organizing change. But the relation between project and change is widely confused. The last sentence in the quote below is misleading, as the project is dissolved at the project end.

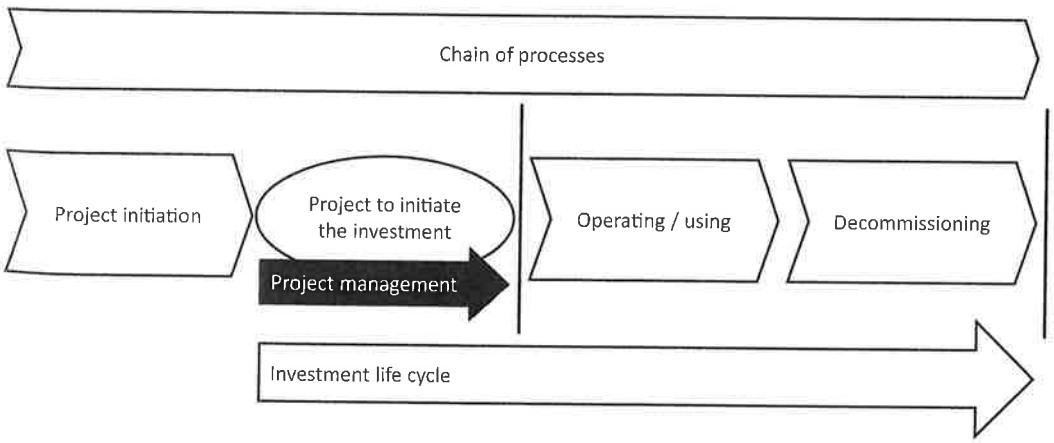

Figure 3.7 Investment and project
Source: Gareis et al. 2013: 31.

> *This purpose also contains an element of change. Some change is needed, and the temporary organization is the means for achieving it. There is an expectation that there should be a qualitative difference in the temporary organization 'before' and 'after'. (Lundin/Söderholm 1995: 439)*

Nevertheless, change may relate to the project itself or to a different social system for which the change is organized by the project (Gareis/Huemann 2010). Projects are complex and dynamic, thus change is inherent and is managed within the project through project controlling. On the other hand, change may relate to a different social system. When the project is considered as a case of a new product development, the temporary project will be dissolved when the project objectives are fulfilled. But the company for which the new product was developed needs to adapt itself, for instance, to sell the product to new future markets. So in this case, the project dissolves, but the social system which has to change is the company for which the project was performed.

Projects can segment the investment life cycle. An example of how an investment life cycle is segmented is a conception project followed by a project to implement the concept, or a bid project followed by a contract project, if the bid has been won. Thus, the segmentation of an investment typically leads to a chain of projects. But not all parts of the investment life cycle are required to be performed in projects. Figure 3.8 shows the typical projects within a product investment, an infrastructure investment and a customer relationship investment (Gareis 2005).

Table 3.6 A basic project management life cycle

Stage	Name	Process	Outputs
Germination	Concept	• Identify opportunity for performance • Diagnose problem	• Initial options • Benefits map • Commit resources to feasibility • Estimates ±50%
Incubation	Feasibility	• Develop proposals • Gather information • Conduct feasibility	• Functional design • Commit resources to design • Estimates ±20%
Growth	Design	• Develop design • Estimate costs and returns • Assess viability • Obtain funding	• Systems design • Money and resources for implementation • Estimates ±10%
Maturity	Execution	• Do detail design • Baseline estimates • Do work • Control progress	• Effective completion • Facility ready for commissioning • Estimates ±5%
Metamorphosis	Close-out	• Finish work • Commission facility • Obtain benefit • Disband team • Review achievement	• Facility delivering benefit • Satisfied team • Data for future projects

Source: Turner et al. 2010: 206.

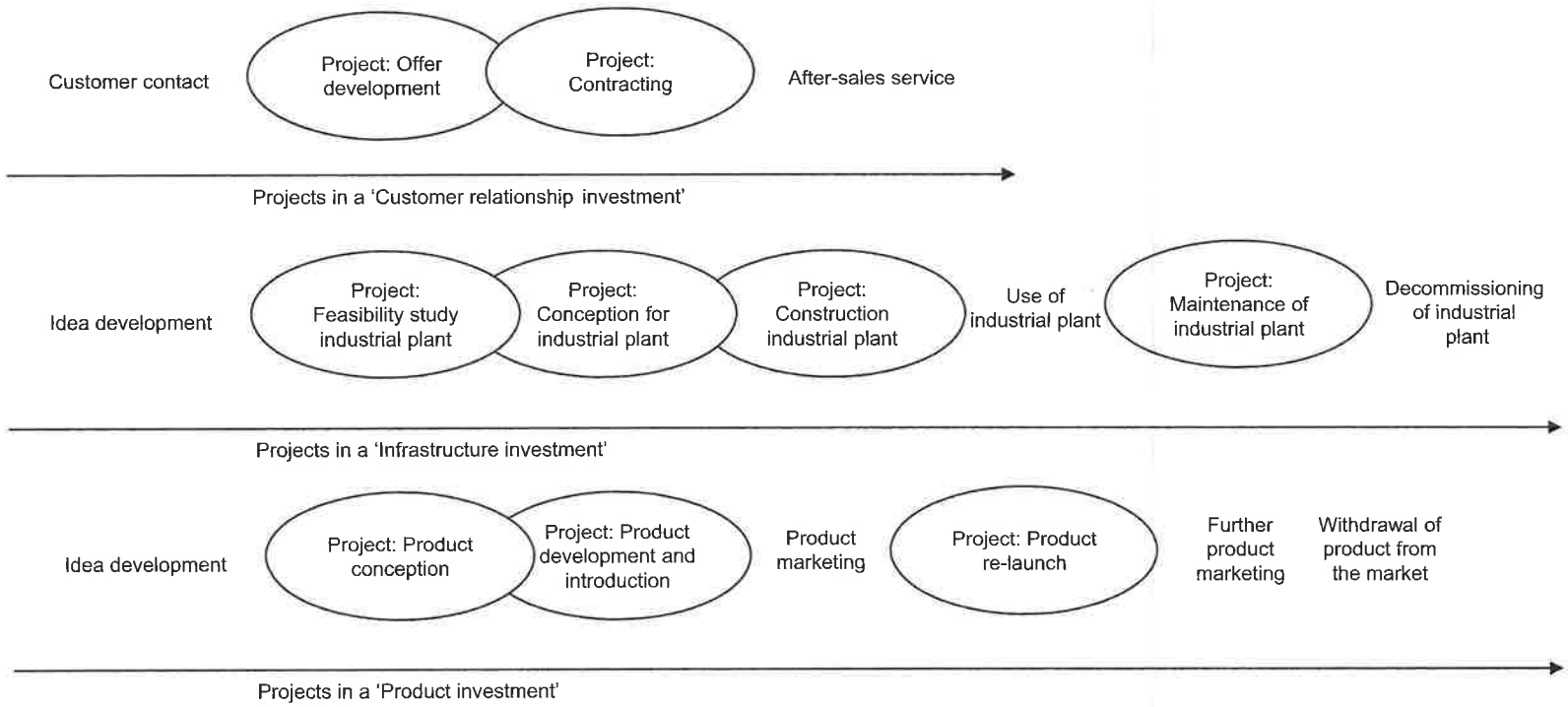

Figure 3.8 Segmentation of investments by projects

Source: Gareis 2005: 50.

A related perspective is provided by project (management) life cycle models, such as in Table 3.6 (Turner et al. 2010). Project life cycle models differentiate between phases or stages, but also consider the whole or a huge part of the investment as a project. In extreme cases the missing differentiation between projects and investment then leads to the notion of 20–30-year 'projects', especially when the maintenance of the object is also included. While in literature and in practice the project and the investment are often not adequately differentiated, I do make this distinction.

3.3.2 PROJECT AND PROCESS

A business process is a defined organizational work flow, conducted by several roles and/or organizational units. A process consists of a cluster of tasks, has input-output relations, has a distinct start and end event, and defined objectives and results. Scholars suggest that many companies are challenged to link project and business processes (Gann/Salter 2000). Gareis and Stummer (2008) investigate the relation between processes and projects and define different types of processes based on process characteristics. They argue that the process is the basis for how an organization is selected to perform the process. Gareis (2005) differentiates between process types and relates these to how organizations prepare to perform the process, as shown in Figure 3.9.

Repetitive processes of small to medium scope, with a rather short duration and one or a few contributing organizational units, are performed by the permanent organization. Typical examples are the recruiting of an employee, the opening of an account, the payment of an invoice, and so on, or relatively unique processes of medium to large scope, where some contributing organizational units are performed by a project. Typical projects are the organization of an event, upgrade of an IT solution, development of a new product, preparation of bid, performance of a feasibility study or the production of a movie (Gareis 2005).

Process characteristic	**Attribute**		
Frequency	often	once	once
Scope	small-medium	medium-large	large
Importance	low	medium-high	high
Duration	short	short-medium	medium-long
Resources	few	some	many
Costs	low-medium	medium-high	high
Number of organizations	few	several-many	many
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Type of organization	Permanent organization	Project	Program

Figure 3.9 Adequate organizations for different process types
Source: Gareis 2005: 22.

Table 3.7 Programme definitions

Author	Definition
OGC (2007: 6)	'Programs, (...) initiate, monitor and align the projects and related activities that are needed to create new products or service capabilities, or to effect changes in business operations'.
PMI (2008: 1)	'A program is a group of related projects managed in a co-ordinated way to obtain benefits and control not available from managing them individually'.
IPMA (2006: 13)	'A program is set up to achieve a strategic goal. A program consists of a set of related projects and required organizational changes to reach a strategic goal and to achieve the defined business benefits'.
Gareis (2005: 357)	'A program is a social construct. It is used as a temporary organization to fulfill a unique and business process of large scope'.

3.3.3 PROJECT AND PROGRAMME

As indicated in Figure 3.9, projects may also be differentiated from programmes. Both projects as well as programmes are temporary organizations, but programmes are based on processes with larger scope, involve more organizational units and are consequently more socially complex. Programmes usually have a longer duration, a higher budget and higher risk in comparison to projects. Programmes are strategically more important. Typical programmes are the development of a new product family, implementing an enterprise resource planning system in an organization, a merger or the reorganization of a holding. As a programme is a relatively new concept, there is still a lack in understanding and theoretical underpinning. In literature, programmes are mostly defined as consisting of several projects and related tasks aimed at reaching a common goal. Table 3.7 provides an overview of programme definitions found in literature.

3.4 Project Types

3.4.1 THE PURPOSE OF DIFFERENTIATING PROJECT TYPES

Organizations have several reasons for differentiating projects into different project types (Gareis 2005; Turner et al. 2010):

- Strategic alignment: to assign priority for projects within their investment portfolio, track the efficacy of their investment in projects, create strategic visibility;
- Promote the project management approach: to decide that the process is done as a project, differentiate projects from operations, provide a common language for project management within the organization;
- Create project capabilities: to develop project type specific standards, assign appropriate project personnel;
- Give orientation to the project organization.

To differentiate projects into different types allows specific challenges and potentials to be analysed. Literature on project types has mostly focused on tailoring project management practice to suit the specific project type (Shenhar/Dvir 2007).

3.4.2 GENERAL MODELS

For instance, Shenhar and Dvir (2007) suggest a categorization based on the familiarity of the technology, and differentiate four project types:

1. Low technology: well-known mature technology.
2. Medium technology: adaptations of familiar technology.
3. High technology: first use of new technology.
4. Super-high technology: radical new developments.

A well-known project typology (Andersen 2008; Turner 2009) is presented in Figure 3.10. The differentiation is based on how well known the goals of the project are, and how well known the process/method to achieve the goals are. So four project types are defined:

- **Type 1 projects:** Both goals as well as methods/process for achieving the project goals are well defined. A typical example is an engineering project, the project team can move quickly into the planning of the project. These are known as earth projects, built on a solid foundation.
- **Type 2 projects:** Goals are well defined, but the methods/process for how to achieve them are not. A typical project can be found in product development, when the functionalities of the product are defined but, like goals, the process/methods for how to achieve them are not. These are labelled water projects.

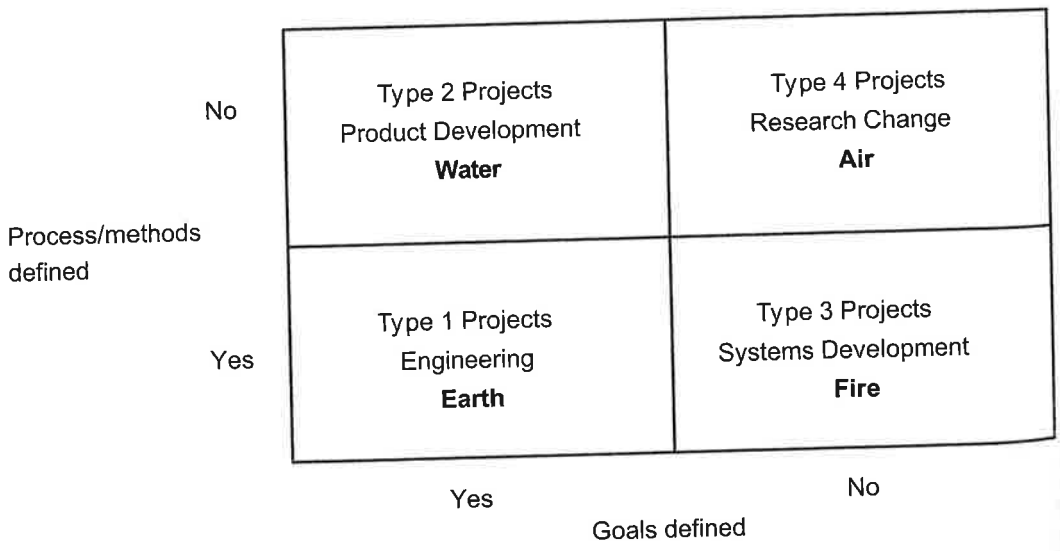

Figure 3.10 Goals and process matrix
Source: Adapted from Andersen 2008; Turner 2009.

- **Type 3 projects:** The project goals are poorly defined, but the methods/process are well defined. A typical example is an information system development project. These projects are labelled fire projects.
- **Type 4 projects:** Both goals as well as methods/process to achieve the project goals are not well defined. Typical examples are research or change projects. These are labelled air projects.

3.4.3 DIFFERENTIATION CRITERIA

An empirical study identified that project-oriented organizations categorize their projects in different ways. Attributes used include (Crawford 2005):

- Application area/product of project;
- Stage of life cycle;
- Stand-alone or grouped;
- Strategic importance;
- Strategic driver;
- Geography;
- Project scope;
- Project timing;
- Uncertainty, ambiguity, familiarity;
- Risk;
- Complexity;
- Customer/supplier relations;
- Ownership/funding;
- Contractual issues.

Commonly used differentiation criteria are industry, location, ownership, duration and relation to business process (Andersen 2008; Crawford 2005; Turner et al. 2010). Table 3.8 offers a categorization of project types.

Table 3.8 Project types

Criterion for differentiation	Project type
Industry	Construction, engineering, IT, pharmaceutical, non-profit organizations
Investment type	Customer relations (contracts), products and markets, infrastructure, personnel, organization
Investment phase	Study, conception, realization, re-launch, or maintenance
Location	National, international
Degree of repetition	Unique, repetitive
Customer	Internal customer, external customer
Duration	Short-, medium-, long-term
Relation to business process	Primary, secondary, tertiary process

Source: Gareis 2005.

Table 3.9 Projects by industry type

Sector	Industry
Engineering and construction	Building
	Infrastructure
	Process plant
	Defence
	Aerospace
	Environmental, waste, sewerage
Information and telecommunications	E-commerce
	Information technology
	Information systems
	Telecommunications
Services	Arts, entertainment, broadcasting
	Recreation and sport
	Business and consulting
	Education and training
	Financial services and insurance
	Health and social services
	International development
Industrial	Automotive
	Electronics
	Manufacturing
	Chemicals and pharmaceuticals
	Food
	Research and development

Source: Adapted from Turner et al. 2010.

Differentiation by industry: Table 3.9 provides an overview of industries that perform projects. There is obviously a strong correlation between the industry and the technology applied. The construction industry tends to do construction projects. In some industries such as the defence industry, the pharmaceutical industry, or research and development, a range of types of projects is performed. However, there are specific features of the projects particular to the industry, such as specific technology and specific markets.

Differentiation by location: National and international projects can be differentiated (Gareis 2005). Turner (2009) further differentiates national and international projects. For international projects, it is necessary to consider if the customer is in their home territory and the contractor is foreign, or if the contractor is in their home territory and the customer foreign, or if both are foreign to the country where the project is taking place. Specific challenges for managing international projects exist, such as in Gareis (2005). There are specific requirements for the project personnel, such as competencies like language, cultural awareness or mobility of project personnel.

Differentiation by investment type: A differentiation of projects according to their contents an indication of the type of investment that the project is related to. Gareis (2005) differentiates customer relations-related projects, which are contract projects, versus product and market-related projects, infrastructure-related projects, and personnel and organization-related projects.

Differentiation by investment phase: This entails differentiation of projects according to the investment phase to which they are contributing. It provides project types such as feasibility study, conception, realization and re-launch projects. This perception is closely linked to the notion that projects segment investments. In combination with the type of investment, for example, in a customer-related investment, we may differentiate bid projects and contracting projects.

Differentiation by degree of repetition: This relates to the nature of projects that are relatively unique. There is a continuum of unique projects to repetitive projects. The performance of a contracting project by a constructing company is a repetitive project, since all of their projects have fundamentally the same processes. Nevertheless, it is worthwhile using a project, as the customer is always different, the location is always different, and so on. In repetitive projects, project performance takes a rather routine character. Very unique projects are based on processes that are not known by the company and are one-and-only types. A specific form of a unique project is a pilot project (Gareis 2005). A project typology based on the level of uniqueness, and the extent to which the work of the project is familiar, classifies projects as runners, repeaters, strangers and aliens (Turner et al. 2010), as demonstrated below:

- Runners: These are very familiar projects, done repeatedly. Thus, standard processes can be applied;
- Repeaters: The organization has run projects quite similar to these in the past. Most of the parts are known to the organization, some parts of the project are new. But generally, there is knowledge within the organization on which the project can draw;
- Strangers: The organization has never done a project like this before. There are familiar parts, but the overall project is novel;
- Aliens: The organization has never done anything like this before. There is high risk and uncertainty.

Differentiation by customer: Projects can be differentiated based on the relationship with the customer, or whether a customer is internal or external to the company, or based on internal versus external projects (Gareis 2005). Typical internal projects are organizational development, product development, and so on. In external projects (contracting projects), the customer external to the company assigns the company to perform a service or deliver a product against a payment. It is important to stress that the assignment needs to have a certain scope and complexity to be performed in project form.

Differentiation by duration: Projects can be differentiated based on the project duration into short-term, medium-term and long-term projects (see Table 3.10). What is short-term, medium-term, and long-term is relative to the relation of the investment type. In product development, projects tend to become shorter and shorter, and short-term projects of 6–12 weeks are quite common. Infrastructure projects are generally considered to have a longer duration. Long-term projects have a duration of more than one year up to around three years.

Table 3.10 Perception of short-, medium- and long-term

	Gareis (2005)	Turner et al. (2010)	Cook-Davis (2000)
Short-term project	6–12 weeks	A couple of months	Less than one year
Medium-term project	3–6 months	Between a couple of months and one year	Two to three years
Long-term project	7–12 months*	More than one year	More than three years

Note: * With a few exceptions, for example, infrastructure projects tend to be longer.

Differentiation by relation to business process: Project types may be differentiated according to the business processes of the company to which they are linked (Gareis/Stummer 2008). Internal projects are performed to carry out support for business processes, which are, for example, organizational development, personal development and product development. External projects are performed to carry out primary processes, such as delivering products and services to external customers.

3.5 Consequences

In this chapter, I have introduced different theoretical perceptions on a project. I differentiated the perspectives of project as a task, project as a temporary organization and project as a social system. Despite projects being distinct temporary organizations and social systems, they are dependent on the project-oriented organization(s) by which they were created. Their purpose serves this higher social system or several higher systems. The purpose of the project is the contribution to an investment process, which may be, for example, a product investment or an infrastructure investment. A project as a social system is a construction that needs to be differentiated from its context, but is determined by and closely related to its context. The project boundaries are formed in a negotiation process at the project start, and must be re-negotiated during the course of the project. By these boundaries, the project reproduces itself as a distinct social system and distinguishes itself from its context and from the project-oriented organization by which it was created.

The purpose of the project is to perform a business process for which the project is organized. The business process is characterized by criteria such as uniqueness, scope and strategic importance. Projects are explicitly created to carry out business processes that cannot be carried out adequately in the permanent line organization. The project needs to draw on different competencies of personnel, who may be located in different organizational units of the company or even in different companies. To enable this co-operation, the project is established. The project delivers a tangible or intangible product, created by the members of the project in interaction with other relevant project stakeholders.

Table 3.11 shows the basic working definition of a project as a temporary organization and a temporary social system.

The specifics of the perceptions of a project as a temporary organization are summarized in Table 3.12.

The focus of this chapter was the project, which is one of the 'constituting' features of the project-oriented organization. In the next chapter, I will turn to the project-oriented organization.

Table 3.11 Definition: Project

DEFINITION: PROJECT
A project is a temporary organization for the performance of a relatively unique, short- to medium-term, strategically important business process of medium or large scope. A project is a temporary social system distinct and related to its time, content related and social context.

Table 3.12 Specifics of a project as a temporary organization

Project as a temporary organization	
Time	• Temporary, duration is planned at the beginning of project and the end is inherent in the project start • Short- to medium-term orientation • Temporality creates urgency, rhythm driven by project end date and milestones
Business process	• Relatively unique • Short- to medium-term • Strategically important • Medium or large scope • High result orientation to achieve project objectives, as this is the raison d'être of the project • Contribution to project result (even when intangible as a feasibility study) is visible for the project personnel
Personnel	• Personnel are selected based on the competency requirements of the project • Often needed for different competencies to reach project objectives • Personnel may even be integrated from external organizations, for example partners, suppliers and customers
Team	• Team structures are central to a project • Different teams within one project possible • Temporary teams
Change	• Dynamic, as projects organize change • Change object is the project itself • Change object is also the organization(s) for whom the project is delivered
Identity	• Temporary, needs to be created for the specific project • Relatively autonomous but embedded in the context • May be influenced by several organizations