



CHAPTER ONE

STRATEGIC BUSINESS MANAGEMENT THROUGH MULTIPLE PROJECTS

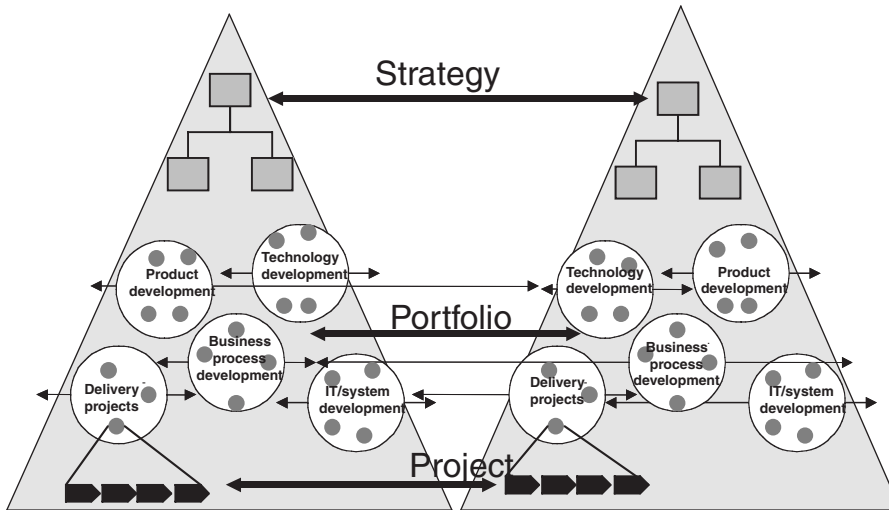
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Effective management of single projects does not suffice in today's organizations. Instead, the managerial focus in firms has shifted toward simultaneous management of whole collections of projects as one large entity, and toward effective linking of this set of projects to the ultimate business purpose. This approach is contained in concepts of project-based management, programs, and portfolios. Portfolios of different project types are typically positioned under the governance of organizational units or responsibility areas (see Figure 1.1). Management processes above projects must link projects to business goals and assist in reaching or exceeding the expectations set by company strategy.

One major starting point for the development of business-oriented management of projects in a company context was introduced in the end of 1980s in an expert seminar in Vienna, where the contribution of project management to the general world of management was discussed as contained in the concept of "management by projects" (see the chapter by Gareis). Since that time there have been an increasing number of studies on the broader role available for project-based management, project-based organizations, and project business. Recent examples of such studies include Turner (1999), Turner and Keegan (1999, 2000), Turner et al. (2000), Gareis (2000a, 2000b), Artto (2001), Artto et al. (2002), and Elonen and Artto (2003).

Early theories of organizational strategy saw "strategy as an action of intentionally and rationally combining selected courses of action with the allocation of resources in order to carry out organizational goals and objectives in order to achieve strategic fit and thereby obtain competitive advantage" (Hatch, 1997). This is based on the idea that strategy involves creating a match between organization and environment (Ansoff, 1965). Galbraith (1995) proposed that strategy establishes the criteria for choosing among alternative organizational forms. Each organizational form enables some activities to be performed well while hinder-

FIGURE 1.1. TWO COMPANIES (OR TWO BUSINESS UNITS WITHIN ONE COMPANY) WITH NETWORKED PROJECTS AND PORTFOLIOS. THERE ARE CROSS-ORGANIZATIONAL PROCESSES IN THE SHARED NETWORK AT STRATEGIC, PORTFOLIO, AND PROJECT LEVELS.



Source: Artto et al. (2002).

ing others. Choosing between organizational alternatives involves trade-offs. Strategy can help with this by pointing to those activities that are most necessary, thereby providing a basis for making the best trade-offs.

The purpose of this chapter is to introduce managerial practices relevant to strategic business management in multiple-project environments. Multiproject environments are introduced in terms of different project types, programs, and portfolios and their management. Based on the knowledge from this, we introduce issues that serve as guidelines to the theme of strategic business management of multiple projects. We conduct an analysis of content and process of strategy and how these relate to the setting of goals and objectives, and to effective decision making with multiple projects. Based on this, the chapter identifies effective managerial practices for the strategic business management in multiple-project environments. We also combine strategy with management from an applications viewpoint by looking at four case organizations.

Different Project Types and Their Different Strategic Importance

Different project types have different strategic importance; each type typically requires different management approaches. Crawford et al. (2002), Shenhar et al. (2002), and Youker

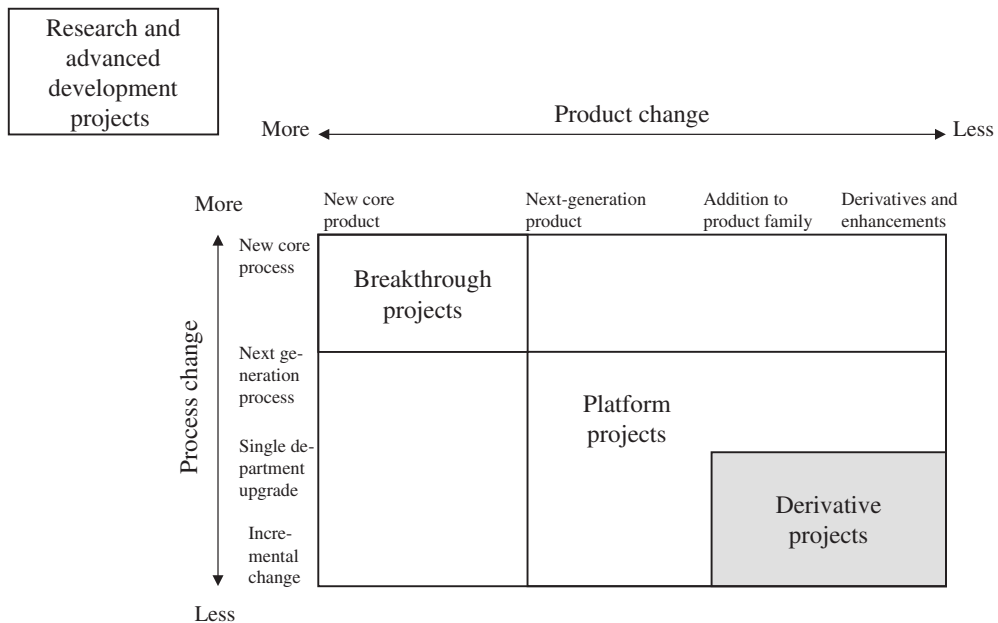
(1999) are studies of project classification that attempt to address this issue. (See Shenhar and Dvir's chapter in this book.) These are valuable in understanding not only different project types and their characteristics but also the different success criteria and respective strategic importance, and accordingly, different successful managerial practices associated with each project type.

Shenhar et al. classify projects into external and internal types, where the position or closeness of the customer (external or internal) provides the basis for the classification. This classification also considers the ultimate customer in the external markets in relation to how direct or indirect the relationship of the ultimate customer is to the project deliverable. Their starting point is innovation management literature that makes a distinction between incremental and radical innovation. Thus, according to Shenhar et al., projects can be either strategic or operational in their nature, depending on the project type.

External projects typically relate to developing products for customers in the market. Shenhar et al. distinguish between derivative, platform, and breakthrough projects, all as external projects. Wheelwright and Clark (1992) call these three project types *commercial development projects*. Based on Shenhar et al.'s considerations, derivative projects relate to extending, improving, or upgrading existing products. They typically aim at short-term benefits, and they are thus more operational than strategic in their nature. Platform and breakthrough projects relate to new product development or production processes where there is a longer-term perspective, and, accordingly, a reaching for a more strategic nature. Another interpretation of an external project is that of a delivery project where the project is in a commercial setting, and where an organization is running projects for other organizations (Turner and Keegan, 1999). Such external delivery projects are often mere production or manufacturing devices that run more or less predetermined work for an organization according to a contract between the customer and project supplier (Artto, 2001). The similarity of project-based operations with both external and internal customers is demonstrated by Turner and Keegan (1999), who defined a project-based organization as a stand-alone entity that makes products for external customers, or a subsidiary of a business unit of a larger firm that makes products for internal or external customers.

Shenhar et al. (2002) divide internal projects into problem solving, utility, maintenance and research projects. Wheelwright and Clark (1992) distinguish between internal projects based on research and development, which are a precursor to commercial development, and alliances and partnerships, which can be commercial or basic research directed. Figure 1.2 describes Wheelwright and Clark's view on different types of development projects (the figure includes four types; the fifth type—alliances and partnerships—can include any of the other four types). Mikkelsen et al. (1991) define internal projects as organizational or operational development projects, such as systems planning and implementation, the introduction of new manufacturing technology, and organizational change. Shenhar et al.'s utility and research projects usually come from a long-term perspective and can be considered as strategic projects. Problem-solving and maintenance projects usually focus on the shorter term, typically aim at performance improvements, and can be seen as operational projects (Shenhar et al., 2002).

We appreciate the consideration of strategic importance now given to project types but consider that the "strategic versus tactical" importance given to these also depends on parameters other than project type as defined by existing project classification literature. Fur-

FIGURE 1.2. MAPPING THE TYPES OF DEVELOPMENT PROJECTS.

Source: Wheelwright and Clark (1992).

thermore, the strategic importance cannot be evaluated in a straightforward manner, such as presuming that long-term projects are always more strategic, as is widely argued in the literature.

Programs and Portfolios

Guidance for the management of multiple projects in organizations can be derived from several different theoretical and practically oriented discussion arenas. The program management and project portfolio management contents are outlined in the following section.

Archer and Ghasemzadeh (1999) define a project portfolio as a group of projects that are conducted under the sponsorship or management of a particular organization (see their chapter in this book). They point out that these projects compete for scarce resources. The three well-known objectives of portfolio management are as follows (Cooper et al., 1998):

- Maximizing the value of the portfolio
- Linking the portfolio to the strategy
- Balancing the portfolio

Dye and Pennypacker (1999) define project portfolio management as the art and science of applying a set of knowledge, skills, tools, and techniques to a collection of projects to meet or exceed the needs and expectations of an organization's investment strategy. In PMBOK (2000), project portfolio management refers to the selection and support of project investments or program investments that are guided by the organization's strategic plan and available resources. A strategic task of project portfolio management is to maintain corporate identity and ensure linkages between projects and constrain the impact of individually implemented projects with no links to other projects (Lundin and Stablein, 2000). According to Platje et al. (1994), a portfolio is a set of projects that are managed in a coordinated way to deliver benefits that would not be possible if the projects were managed independently. This definition is similar to many definitions introduced for a project program. For example, Turner (1999) and Poskela et al. (2001) emphasize that projects in a program are a coherent group that is managed in a coordinated way for added benefit. Murray-Webster and Thiry (2000) define a program as a collection of change actions (projects and operational activities) purposefully grouped together to realize strategic and/or tactical benefits. (See the chapter by Thiry on program management.)

From the strategic management point of view, the main driver for the management of multiple projects in different forms—for instance, programs—is the change in the business environment of an organization (OGC, 2002). Changes in the environment imply system or organizational changes (Ackoff, 1999). In these changes, program management provides a framework for the management of complexity and risk with the general intent of implementing business strategies and initiatives, or large-scale change (OGC, 2002).

The management of risk and uncertainty can appear in different ways. For example, in the R&D area, the important task of a business manager may be to increase risk to balance the portfolio of projects for business benefit. We can see this from findings illustrating how radical projects with high risk have the highest business potential (Loch, 2000).

Programs usually represent entities that have a determined purpose, predefined expectations related to the benefits scheme, and an organization, or at least a plan for organizing the effort. A program is set up to produce a specific outcome that may be defined at a high abstraction level of a "vision." According to PMBOK (2000), a program consists of several associated projects that will contribute to the achievement of a strategic plan. Many programs also include elements of ongoing operations. Program management helps to organize, manage, accommodate, and control adaptation and changes such that the eventual outcome meets the objectives set by the business strategy (OGC, 2002). Program management includes the management of interfaces between projects, prioritization of resources, and a reduction in overall management effort (Turner, 1999). The objectives of projects under the same project program are interdependent (Platje et al., 1994). Turner (1999) emphasizes the importance of the overall strategic resource sharing scheme related to program management. Such strategic resource sharing is implemented through a well-organized balance of responsibility, where the program directors' responsibility is to link programs with corporate objectives, the overall corporate plan, and corporate resource plan. OGC (2002) defines program management as the coordinated management of a portfolio of projects that change organizations to achieve benefits that are of strategic importance.

Constructing a Theoretical Framework

The previous sections introduced aspects of existing knowledge on multiproject environments and attempted to show the need for new knowledge in the area of strategic business management of multiple-project environments. Based on this analysis, and the needs reflected by it, we can identify the following issues:

1. How can multiple projects be collectively aligned with business strategy in a manner that generates enhanced benefits for the whole business?
2. What is the role of specific projects in implementing, creating, and renewing business strategies?
3. How best can strategic business management be applied in organizations with multiple projects, and what are the relevant managerial practices for accomplishing this?

The preceding three questions are addressed in this remainder of this chapter via current strategy, business administration and project management literature, as well as findings from four case organizations.

Strategy and Strategic Management

In ancient military terminology in Athens, *Strategos* referred initially to attributes of the general commander in the army. The word strategy later was expanded to include the art of managerial skills for employing forces to overcome opposition (Mintzberg et al., 1995). Ancient military terminology and early strategic management literature emphasize the relative position of an organization to its external competitive environment, with emphasis on activities necessary to achieve a desired position (Chaffee, 1985). The concept of strategy has also used contributions from other disciplines, such as industrial organizational economics approach, resource-based approaches, ecologist-evolutionary approaches, and systems thinking approaches (Pavón, 2002). These emphasize, among others, the importance of rational decision making, and learning as an issue that shapes strategies.

The variety of attempts to express the specific nature of the strategy has led different authors to create different strategic schools (see, for example, Chaffee, 1985; Mintzberg et al., 1995). Mintzberg et al. (1995) introduced five Ps of strategy as a means to show the complex nature of strategy, where the Ps include definition of strategy as a Plan, Ploy, Pattern, Position, and Perspective. This last P—perspective—emphasizes sharing visions and mental images inside the organization to form a common understanding and culture, as strategies are abstractions in individuals' minds. This is consistent with Chaffee's (1985) *interpretative view*, which focuses on corporate culture and symbolic management as essential means to motivate participants and potential participants in ways that can favor an organization. This view makes a clear distinction with traditional strategic literature (see, for example, Chandler, 1962; Andrews, 1971; Hofer, 1975; Mintzberg, 1978) by suggesting that organizations' behavior is rather irrational in nature.

Early studies on strategic management focused on the content of strategy. Later literature distinguished between the content of the strategy and the process of strategy formulation and implementation (Chaffee, 1985). A distinction was made between an analytically objective strategy formulation process and a behavioral implementation process (see Andrews, 1971; Fredrickson, 1984; Pettigrew, 1992). Organization theorists tended to emphasize the meaning of *human processes (e.g., decision styles) in strategy making* (Burgeois, 1985), which started with rationality as a principal assumption of strategy process (see, for example, Andrews, 1971; Ansoff, 1965; Porter, 1980). From this, strategy management research introduced ideas of bounded rationality as a means to circumvent the reality of aspects of “organizational anarchy” within an organization (Simon, 1957; Cohen et al., 1972). This emerging recognition of an existing imperfect rationality in organizations has shifted toward emphasizing the extent and type of involvement of individuals in the organization or its environment (stakeholders) in strategy process (Hart, 1992). For example, Chaffee’s (1985) emerging school of interpretative perspective on strategic management is an example of seeing the importance of individuals’ involvement in strategy making. We can conclude from this that strategy is, and is accepted as, an important concern of the whole organization, not just its top management, and that motivation arises as a more crucial element of strategy realization.

Strategy Formulation and Implementation

Strategic processes comprise both strategy formulation and implementation. The strategic management literature mainly focuses on the strategy formulation aspect, with less attention given to strategy implementation (Aaltonen and Ikävalko, 2001). Andrews (1995) identifies organizational structures as requirements for the efficient implementation of intended actions. These structures include elements such as information systems and relationships enabling execution and management of subdivided activities. Moreover, Andrews (1995) states that one critical requirement for the successful implementation of strategy is to ensure that decisions made by managers and senior managers are consistent with the organization’s goals and objectives. Leading the organization to intended goals and objectives requires measurement of the current state or performance of actions, analyzing the gap between the current and intended state, and making corrective actions. Diagnostic control systems are traditionally recognized as an important means of controlling the intended performance of the organization (see, for example, Simons, 1995). These systems are supported by defined performance characteristics called *critical performance variables* or *key success factors* that serve as indicators for achievement of organizational goals in the means of efficiency and effectiveness (Simons, 1995).

The balanced scorecard method introduced by Kaplan and Norton (1992) is a good example of a way to measure the performance of an organization in enhancing the achievement of organizational goals and strategy implementation. The scorecard can be used to derive objectives and measures related to company vision and strategy that can be derived to further project-specific objectives that are well aligned with business strategy. The strategic objectives to be measured fall into four perspectives:

- Customer
- Financial

- Internal business process
- Learning and growth

Employee capabilities, technology, and corporate climate contribute to the organization's capability for learning and growth (Kaplan and Norton 2001).

The success domains/dimensions in some project success studies are analogous to the four perspectives of balanced scorecard introduced by Kaplan and Norton (1992, 1996). For example, Shenhar et al. (1997) introduce the following four dimensions of project success:

- Project efficiency
- Impact on customer
- Business success
- Preparing for the future

In general, project success studies contribute to definition of requirements for decision-related information used, for instance, in project selection criteria or in performance measures.

Another contribution of project success studies is their indication of the most relevant managerial areas and even managerial practices that can serve as enablers for success (see the chapter by Cooke-Davies). Although many project success studies still limit their views to the success and successful management of one single project only, they can also introduce the important aspect of the overall context where a single project occurs. This extends the evaluation of success toward strategic issues that take a viewpoint of the whole business. According to Saravirta (2001) and Kotsalo-Mustonen (1996), the relevant success domains are related to the following:

- Strategy (e.g., new competitive advantage, reference value)
- Relationship (e.g., client satisfaction)
- Situation (e.g., learning by doing, unlearning)
- Product/service (e.g., commercial success, quality)
- Project implementation (e.g., cost, time, process quality)

Furthermore, evaluation of success depends on the stakeholder and its perspective on the project. From Morris and Hough (1987) and Rouhiainen (1997), we can derive the following synthesis of what the important success domains are:

1. Technical performance, project functionality, client satisfaction, and technical and financial performance of the deliverable for the sponsor/customer
2. Project management: on budget, on schedule, and to technical specification
3. Supplier's commercial performance: commercial benefit for the project service providers
4. The learning that project stakeholders acquire

Emergent Strategies

Mintzberg (1978) examined the relation between an organization's intended strategy and its realized strategy. Mintzberg showed that in addition to intentional strategies, strategies can also include unintentional, emergent components. Strategies emerge from different sources and from different levels of organization. Mintzberg proposes that the concept of realized strategy consists of intentions that lead to deliberate strategy, intentions that lead to unrealized strategy, and emergent strategies that develop in the organization without a priori intentions. Simons (1995) explains that an emergent strategy process consists of actions of individuals at all organizational levels to seize the opportunities and deal with the problems.

The emergent perspective of the strategy process seems to focus now on organizational learning (see the chapter by Lampel and Jha) and works to identify strategy as the cumulative impact of operative decisions taken by management (Christensen, 2000). Lindblom (1959) explained strategic management from the policy formation viewpoint, by seeing policies as consisting of small, politically acceptable, disjointed decisions. Moreover, Quinn's (1995) logical incrementalism proposed that strategies should rely on flexibility and experimental applications to move from broad concepts toward specific commitments, and strategic decisions should be made at the last possible moment in order to utilize the most topical and available information for minimizing risks. Quinn's argument is based on recognition of the biases that are found in reality among the formal "systems planning" and "power-behavioral" approaches of strategy formation in organizations. Good strategies are not formulated in a comprehensive master plan. According to Quinn, the formal systems planning approach relies on quantitative data ignoring vital qualitative, organizational, and power-behavioral factors, which often tend to represent the dynamic, time-related attributes of organizational success. Power-behavioral perspectives focus on psychological issues, trying to understand the influence of human dynamics, power relationships, and organizational processes in strategy formation. However, power-behavioral approaches can introduce drawbacks associated with ignoring the normative component of rationality in strategic decision making. Quinn thus emphasizes the importance of "process limits" in strategic decision making and management.

Process limits deal with issues such as timing and sequencing, building comfort levels, developing consensus, and selecting and training people. These imperatives can become the determinants of the system itself, and they finally determine the outcome of the decisions. This resembles Mintzberg and Waters' (1985) umbrella strategy perspective, where top-managers define boundaries and guidelines for the organization to operate, and where within these boundaries individuals in the organization can take initiatives. Mintzberg and Waters's study illustrates that even if the goals and objectives for the organization are predetermined at the top level of the organization, managers at the middle level can, by their actions and decisions, affect the formation of strategy. Burgelman (1983) supports this while proposing that in addition to induced strategic behavior, there exists also an autonomous strategic behavior within the organizations, and that behavior develops outside of the strategic umbrella defined by top management. This autonomous behavior appears when people at the operational level notify the resources provided by the organization as a means to utilize new opportunities (Floyd and Wooldridge, 2000). In his later study, Burgelman (1991) reported evidence from a longitudinal case study of Intel Corporation. The findings indicate that successful firms are characterized by both top-down strategic intent and bottom-up experi-

mentation and selection process. Hart (1992) further developed the idea of organization-wide involvement in strategy formation and claimed that strategy making is an organizational capability that determines an organization's success or failure.

The preceding can be summarized as confirming that the role of individuals can be extremely important in viable strategy formulation and implementation. Projects and the individuals who work on them are particularly important. This is supported in the literature concerning product development and internal development projects, which emphasizes the project manager's role as a champion, gatekeeper, facilitator, or coach, and the top management representative's involvement and supporting role (Loch, 2000; Terwiesch et al., 1998, Brown and Eisenhardt, 1995; Eisenhardt and Tabrizi, 1995; and Mikkelsen et al. 1991). An important managerial problem is to encourage projects and individuals in their role in emerging strategies to create new ideas and renew existing strategies.

Thus, the challenge of successful strategic management may lie in managing the tension between creative innovation and predictable goal achievement. This tension occurs by

- reconciling unlimited opportunities with managers' limited attention;
- implementing top-down strategies while allowing bottom-up strategies to emerge;
- creating predictable environments while maintaining innovativeness; and
- controlling actions while simultaneously allowing the organization to learn new ones (Simons, 1995).

The ability to learn is raised as one major sources of sustainable competitive advantage in many companies. The study by De Geus (1988) provides a good example of the impact of learning to the success of companies. He examined the survival of Fortune 500 companies and found that one-third of the companies listed in 1973 had vanished by 1983. A key source of the success of the survivors was their ability to learn by continuously exploring opportunities for new business and organizational development. The emphasis should be placed on focusing that organizations are doing the right things, rather than doing things right. This capability of an organization to question its underlying policies and goals is called *double-loop learning*. Senge (1990) proposes creative tension in organizations as a principal building block of learning organizations. Creative tension is created by integrating pictures of desired future and current reality. However, this creative tension differs from solving existing problems in an undesired state of current reality. Rather, it comes from individuals' intrinsic motivation and generative learning with its emphasis on continuous experimentation and feedback. Brown and Eisenhardt (1997) argue that managers learn from possible futures. Small losses through experimental products that fail, or futurists' predictions that do not come true, are probably the most effective learning devices. A variety of probes creates hands-on experiences (experimental products and experimental strategic alliances) and indirect experiences (meetings). Eisenhardt's 1997 study suggested semi-structures that would ensure responsibilities, ownership, prioritization, and communication. Semi-structures relate to quasi-formal structures (committees, teams, task forces, information exchange relationships and arrangements) introduced by Schoonhoven and Jelinek (1996). Hence, in board meetings that represent gates or reviews, practical issues such as agendas, visual aids, and other decision support mechanisms, together with chairing, coaching, facilitating, and

communication issues may play an important role as knowledge-sharing meetings and meetings for learning.

Organizational Design and Decision Making from a Strategy Perspective

As we have already indicated, any individual, and especially managers at the middle level (e.g., project managers), can, by their actions and decisions, affect the formation of strategy. The early strategic literature suggested that this approach of strategy formation by individuals at the lower organizational levels may not be effective. Instead, the early strategic literature suggested that strategic issues must be placed as part of a higher-level strategy process at the top level of the organization (e.g., Mintzberg, 1978; Ansoff, 1965). Shendel and Hofer (1979) extended this executive-focused view of strategic management to include other organizational levels. They specified three distinct organizational levels where strategic consideration should happen. First, at the corporate level, the main question is what business the organization should be in. Second, at business unit level, the focus is more on how to compete in that given business. Third, there is the integration of subfunctional activities and the integration of functional areas with the environment. The focus and perspective on strategy thus changes by levels.

Hart (1992) studied different models of strategy-making processes and classified five principal models of the strategy-making process according to the distribution of power in the organization: command, symbolic, rational, transactive, and generative modes. The command mode represents one extreme, where the role of top management is dominant and the participation of other members of the organization is limited to strategy implementation. At the other extreme, in a generative mode, the role of the top manager is to sponsor new ideas—for instance, project proposals emerging from the bottom of the organization—and guide those initiatives to a strategic direction. Moreover, Hart (1992) proposed that the three middle modes of strategy making (symbolic, rational, and transactive), characterized by better use of resources and organizational capabilities, led to higher levels of performance than the two extreme modes. He concluded that the strategy process should be considered as an issue that concerns the whole organization. Moreover, Hart (1992) proposed that strategy making is a capability of an organization that influences its overall performance, and organizational success requires multiple modes in strategy making.

Loch's (2000) study of a European technology manufacturer provides an excellent example of how the organizational setting is arranged in a multiproject environment in terms of distribution of power. It also emphasizes the importance of decision making as an important part of organizational design. Loch identified three different project clusters that defined how the manufacturer initiated and executed product development. An interesting finding was that there was no actual difference in success among the three clusters. Each of the three approaches had its strength. The first cluster, "formal process" projects, used the company's institutionalized product development process and relied on the Stage-Gate process recommended by Cooper (1994), and the formal process supports professional execution of the majority of all new product development projects (Cooper and Kleinschmidt 1987; Cooper, 1994); The second cluster, "under-the-table-projects," represented small teams or "skunk works" (Wolff, 1987) that supported organizational experimentation for new and

unstructured ideas and flexibility (Quinn, 1985). The third cluster, comprising “pet projects,” or “sacred cows,” (projects determined by a powerful senior manager; see, for example, Meredith and Mantel, 1999), can be effective for difficult actions that need management support from a high level, and patience.

Two important weaknesses of undifferentiated process use were what Loch called “rigidity” and “lack of linkage.” First, rigidity appears as the formal process where a company follows a relatively rigid Stage-Gate process and is perceived as inflexible in adjusting to specific project needs. Employees resorted to under-the-table projects because the formal process was too rigid and no alternative structure was available. Loch argued that the formal process may be too heavy-handed for incremental projects and too structured for radical projects. Second, lack of linkage occurs where there is a lack of structure for feeding unofficial under-the-table projects into the formal process. Loch argues that many companies suffer from the problem of new-product development not being integrated with strategy. He suggests that the company should develop a customized project portfolio with strategic positioning of projects, and a corresponding mixture of processes to meet its strategic innovation needs. Moreover, Loch considers that the lack of training of business unit managers in general strategy and technology management limit their ability to link strategic context and new-product development approach.

Our analysis of the role of managerial boards, and project and other teams pointed to an emphasis on meetings and reviews that relate to appropriate cross-organizational communication and decision-making processes. From an organizational design viewpoint, Ackoff (1978, 1981) introduces boards and board meetings as major organizational vehicles for participation and communication in what he calls a *circular organization*. McGrath (1996) provides an example of how cross-organizational cooperation is organized through teams, boards, or committees in a managerial model with practical orientation for product management and new product development. A product development project is conducted by a cross-functional core team. The core team is directly responsible for the success of the project, and the team is empowered with full authorization. The core team generally consists of five to eight individuals with different skills and a core team leader. The core team does not have the classical hierarchical approach to organization. Product development decisions are made by the product approval committee designated with the authority and responsibility to make them. The committee members are representatives of senior management representatives. Because the committee is a decision-making group, it should remain small. Four to five executives is an appropriate size. In some cases the committee is the company’s executive committee. The decisions are made at phase reviews that are decision-making sessions that occur at specific milestones of the product development. Specifically, the product approval committee initiates new product development projects, cancels and reprioritizes projects, ensures that products being developed fit the company’s strategy, and allocates development resources. While the core teams and the product approval committee are for short-term product development, the mid-term technology development is organized in a similar manner through technology development teams and a senior review committee. The senior review committee is a decision-making body of senior scientists and business managers that oversees technology development projects via technology phase reviews. Technology transfer teams with evolving team membership transfer the technology to product development projects (McGrath, 1996).

Important factors—or enablers—for project success often represent issues that are significant from the viewpoint of organizational design. For example, Mikkelsen et al. (1991) studied internal organizational and operational development projects and reported that the characteristics and roles of project managers and top managers were important drivers for project success. Furthermore, according to Brown and Eisenhardt (1995), important success factors of product development include cross-functional teams enabling cross-organizational integration, effective internal and external communication, powerful project leader, and senior management support. Brown and Eisenhardt also discuss the important role of team tenure that reflects the effectiveness of the pattern of working together, the important role of gatekeepers who are individuals that supply external information to the team, and the important role of a team group process that enables effective internal and external communication within the team and with customers, suppliers, and other individuals in the organization. Loch (2000) investigated a larger body of work on new product development and concluded that the following success drivers would represent good management practices: customer orientation and demand pull, cross-functional cooperation, top management support, existence of a champion, good planning and execution with a strong project manager, and the use of a well-defined process with formal measures. The success factors of new product development have slight differences according to the industry, though (e.g., Eisenhardt and Tabrizi, 1995; Terwiesch et al., 1998).

Goal Setting in Time and Aspects of Timing in Relation to Doing the Right Thing

Recent project management and business management literature has raised various aspects of managing time as one important issue in determining how overall efficiency can be achieved (Yeo and Ning, 2002; Steyn, 2002; DeMarco, 2001; Perlow, 1999; Goldratt, 1997). This literature, however, often argues that efficiency of timely performance would contribute to other indirect benefits in terms of efficiency and even effectiveness in overall performance. However, when discussing the management of time, the literature too often emphasizes the aspect of just doing the work efficiently instead of the more strategic dimension of doing the right things. This issue is introduced by Rămö (2002) by focusing on different notions of chronological and nonchronological time in organizational settings. He refers to Drucker's (1974) well-known discussion on efficiency and effectiveness, arguing that efficiency is concerned with doing things right. This is reflected in managerial approaches such as Taylor's scientific management or Deming's Total Quality Management, which both are concerned with doing things right and [just] in time (Rămö, 2002; Drucker, 1999). Such approaches emphasize exact clock time—*chronos*. They require efficiency and doing things right, which requires management and improvement of what is already known. Effectiveness, instead, is doing the right things (Drucker 1974). Rămö (2002) suggests that Drucker's discussion on the difference between efficiency and effectiveness also implies a dualism of time: clock time (*chronos*) emphasizes the chronological sequences of activities and, accordingly, rules efficiency, while the nonchronological aspect of time (*kairos*) relates to right timing and, accordingly, is essential for effectiveness. Seizing windows of opportunities requires a good sense of timing. *Chronos*, or clock time, does not govern such a sense of timing which, instead, it is based on a *kairic* feeling for the right moment (Rămö 2002).

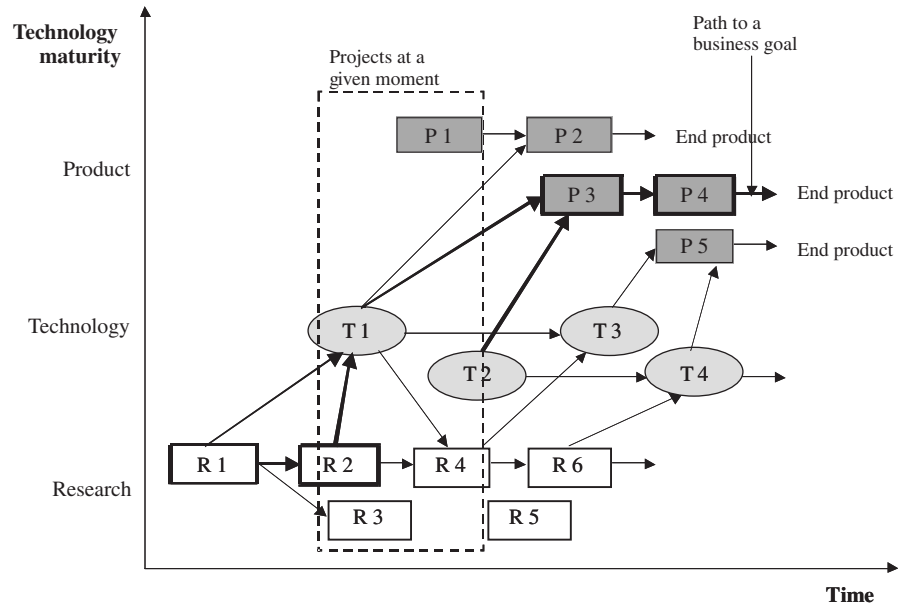
Ackoff (1999) discussed the introduction of different types of systems, with particular attention to organizations as systems. A system may have a memory that can increase its efficiency over time in producing the outcome that is its goal. A purposeful system changes its goals under constant conditions; it selects ends and means and thus displays a will. An ideal-seeking system is a purposeful system that, on attainment of its goals or objectives, then seeks another goal and objective that more closely approximates its ideal. An ideal-seeking system is thus one that has a concept of “perfection” or the “ultimately desirable” and pursues it systematically—that is, in interrelated steps. The time that it would take to reach the ideal could be considered as infinite. Ackoff (1999) introduces the concept of “ends planning” that takes an approach to different perspectives in terms of three types of desired outcomes, each related to different timely perspective. First, “goals” represent ends that are expected within the period of a plan. The goals may be related to entities like, for instance, projects. Second, “objectives” represent ends that provide right directions but are not expected to be obtained until after the period planned for. Our interpretation is that such objectives may be achieved through a collection of projects, such as programs or portfolios, during a longer time span. Third, “ideals” are ends that are believed to be unattainable but toward which continuous progress is thought to be possible and is expected. Ideals provide strategic directions that enable good portfolio decisions for selecting the right projects—and indeed whole collections of well-balanced projects—with the right strategic intent. Goals are means with respect to objectives, and objectives are considered with respect to ideals. Ackoff’s ends planning includes four steps: first, selecting a mission; second, specifying the desired properties of the system planned for; third, idealized redesign of that system; and fourth, selecting the gaps between this design and the reference scenario that planning will try to close. One additional related issue that Ackoff (1994) introduces is backward planning, and within backward planning, working backward from the present—that is, from where one wants to be right now to where one is right now.

Aalto et al. (2003) provide an example of what different timely perspectives mean in the R&D context for the management of projects and their portfolios, and the linkage between projects and portfolios. This is illustrated in Figure 1.3, as adapted from Aalto et al. (2003), with modifications to the figures presented by Groenveld (1997, 1998) and Kostoff and Schaller (2001). Aalto et al. use the term R&D to include research, technology development, and product development. Product development is the shortest-term activity. Technology development is more volatile by nature and the projects are typically focused on producing certain technologies or their combinations in the medium term. Such technologies are used in short-term product development. Research is the longest-term activity. It provides technology development with a potential for paradigm shifts and, thus, new points of departure. The interrelatedness of different projects with different time spans and purposes introduces challenges to successful R&D management in terms of how projects and project portfolios are managed.

Summary of the Theoretical Framework Construction

Table 1.1 summarizes the preceding theoretical analysis on strategic business management through multiple projects. The right column of the table presents existing artifacts that are

FIGURE 1.3. INTERRELATEDNESS OF DIFFERENT PROJECTS AND THEIR PORTFOLIOS WITH DIFFERENT TIMELY PERSPECTIVES IN THE R&D FIELD.



Source: Adapted from Aalto et al. (2003).

relevant to this topic. The left column of the table groups the artifacts by their content in the focal areas. These focal areas can be considered as important prerequisites for successful strategic business management in multiple projects environment. The focal areas are as follows:

1. Categorizing projects by their type
2. Supporting structured and flexible decision making
3. Ensuring effective communication and information transparency
4. Linking projects and strategy process
5. Establishing an organizational design to support strategic management in the multiple-project environment
6. Setting and measuring goals for different time spans in the future
7. Evaluating strategic contents, distinguishing between effectiveness and efficiency

Table 1.1 is self-explanatory. Concerning the table, only two additional explanations are raised here. First, concerning categorizing projects, we argue that the strategic content is partly specific to single projects. This occurs as the project itself is a fundamental managerial entity that interacts with its environment by producing, transferring, and receiving strategic

TABLE 1.1. EXISTING ARTIFACTS FROM THE THEORETICAL FRAMEWORK CONSTRUCTION GROUPED TO SEVEN FOCAL AREAS.

Focal Area	Existing Artifacts
1. Categorizing projects by their type	<ul style="list-style-type: none"> • Different project types are of different strategic importance. • Different project types require different managerial approaches.
2. Supporting structured and flexible decision making	<ul style="list-style-type: none"> • Structured decision-making practices (e.g., in board meetings with project-specific decisions) are important for adopting a view on whole portfolios and for linking strategy with projects. • Structured decision-making practices support the realization of strategic intentions of the organization. • Flexible decision-making practices enhance the emergence of innovative ideas and learning. Use of various types of processes in decision making (both formal and informal) increase an organization's ability to succeed. • Decision-making structures such as meetings are important for communication among top management, middle management, and project management. In addition to communicating the intended strategy component top-down, the meetings and their communication serve to foster grounds for the bottom-up emergent strategy component.
3. Ensuring effective communication and information transparency	<ul style="list-style-type: none"> • Information transparency, both vertical transparency across organizational levels and horizontal transparency across projects and organizational boundaries, and open communication help with building linkages. • Effective communication and information transparency enhances creativity and appearance of new strategic ideas. • Effective communication and information transparency enhances quality and optimality of decisions. • Communication enables learning. • Open sharing of information and information transparency results in better commitment and involvement among individuals and groups in organization.
4. Linking projects and strategy process	<ul style="list-style-type: none"> • Linking projects and the strategy process enables top management to acquire a holistic picture of ongoing project activities and new innovative ideas emerging from different organizational levels. This holistic picture of project activities and new ideas increase top management's ability to manage organization in a concrete manner toward desired direction. • Linking projects and the strategy process ensures that projects positioned at lower levels become aware of their status in the whole picture of implementing business strategy. This means that project managers are aware of why each of their projects exists and what should be accomplished in the end. A prerequisite for this is that the project manager understands clearly the intended strategy and the ways the project manager is capable of adjusting his or her project's direction. • Linking projects and the strategy process ensures that strategic initiatives are introduced both top-down and bottom-up. • Linking projects and the strategy process ensures that resources are allocated to "strategically right activities." • Linking projects and the strategy process ensures that those activities as a whole contribute in an optimal manner to the whole business.

TABLE 1.1. (Continued)

Focal Area	Existing Artifacts
5. Establishing an organizational design to support strategic management in the multiple-project environment	<ul style="list-style-type: none"> • Because organizational design and related structures partly determine the strategy and strategic capabilities (e.g., controllability and innovativeness) of the organization, it is essential to establish an organizational design that supports successful management schemes. • Hierarchy and boundaries of portfolios in the organization determine: which project activities must be viewed as a whole, how different kinds of portfolios contribute the strategic aims of the organization, and what is the relationship between different portfolios in the organization. • Power structures in the organization determine the organizational decision-making practices. • Management culture and project culture in the organization are important issues. The managerial practices must match the culture, and on the other hand, the culture can be changed by introducing new managerial practices. • An important enabler for the emergent strategic component is that there is a fluent interaction between different organizational levels, that projects are put into strategic perspective by being viewed as whole entities throughout the organization, and that there is communication about how these entities contribute to new strategic dimensions.
6. Setting and measuring goals for different time spans in the future	<ul style="list-style-type: none"> • Long-term strategic objectives of any organization differ from how short-term objectives are set. Further, different projects may be established simultaneously for different time spans. Accordingly, these objectives and their associated projects must be managed simultaneously by taking both the long term and the short term into account. • Especially in the long perspective, the future is uncertain, and the basic aim is to take advantage for different possible futures. This occurs through managing options toward the uncertain future. • In the case of different planning horizons, concepts such as risk, uncertainty, imperfect knowledge, and ambiguity become important parameters for how projects are managed successfully. • Organizational levels may relate to the length of projects, at least in that top management must have a long-term view of the future. Thus, at higher organizational levels, many projects may be established to pave the way for the long-term mission of the organization.
7. Evaluating strategic contents, distinguishing between effectiveness and efficiency	<ul style="list-style-type: none"> • For the successful management of multiple projects, it is important to distinguish whether the projects are established for effectiveness or for efficiency. Effectiveness refers to doing the right thing, and efficiency refers to doing the thing right. Effectiveness often means creating something new; efficiency means perfecting something that is already known.

information. Second, concerning support for structured and flexible decision making, flexible practices are needed to allow freedom to adjust the project management approach to fit the project type or its strategic importance. For example, creativity and the emergence of new strategic directions should be allowed in innovative project schemes. This could be achieved by avoiding too centralized and/or too formal management schemes in such projects.

Finally, the following sections of this chapter discuss empirical examples, and the conclusion section at the end of this chapter introduces a framework for strategic business management with suggestions for managerial practices as derived from theoretical and empirical reasoning.

Empirical Examples from Four Case-Study Organizations

The empirical examples discussed in the following pages are based on a study carried out with four case organizations—two private and two public. The investigated project environments included organizational and operational development projects and product development projects. Depending on the case study corporation, our empirical study focused either on organization-unit-/business-unit-specific project portfolios, or on cross-functional project portfolios of a certain project type (e.g., projects with strong IT orientation) across the whole corporation. We call the four organizations C-service, D-engineering, E-maintenance, and M-service. C-service is a large public organization delivering services locally for society and individuals. D-engineering is a large public organization delivering services for society. E-maintenance is a medium-sized private organization with engineering services, systems, and equipment deliveries for industrial customers. M-service is a large private organization with mainly service product deliveries for individual and industrial customers. The empirical examples discussed in the following are partly derived from the extensive empirical analysis and documentation of company-specific data, produced by our colleagues in our research team. Lindblom (2002), Elonen (2002), Hongisto (2002), and Nurminen (2003) are examples of such material. The majority of the documents are proprietary. The object of the research was the broad area of the management of project portfolios in the case study organizations. The methodology was modified from the developmental workshop scheme suggested by Järvinen et al. (2000). The empirical data gathering occurred in 2001 to 2004. We and our colleagues acted in the role of university researchers representing external change agents and facilitators for workshops, piloting efforts, and other developmental schemes. This way, our empirical study represented an organizational and operational change project from the company representatives' viewpoint.

Decision-Related Processes

Figures 1.4 and 1.5 and the following discussion illustrate a multiproject management process as generalized from case organization-specific processes. In the processes with all the case study organizations, the role of making decisions both at the single-project level and at the level of multiple projects was central. In the organization-specific processes, however,

FIGURE 1.4. DECISION-MAKING FROM THE PERSPECTIVE OF ONE SINGLE PROJECT.

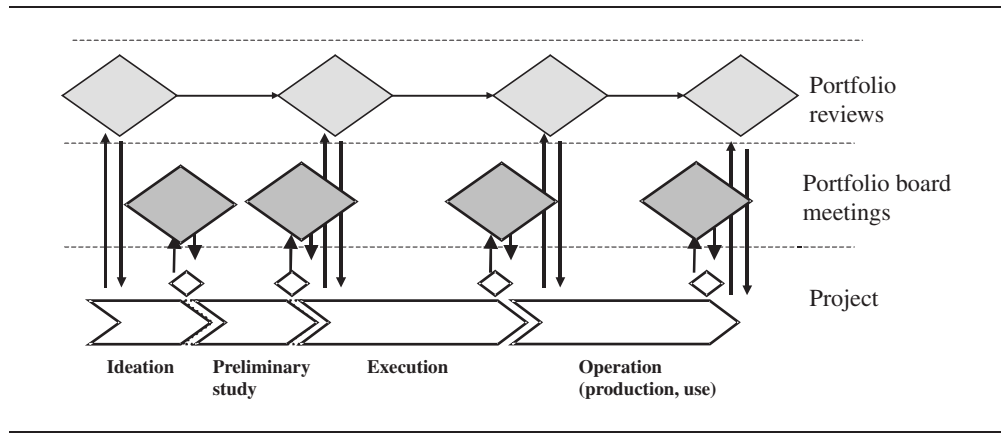
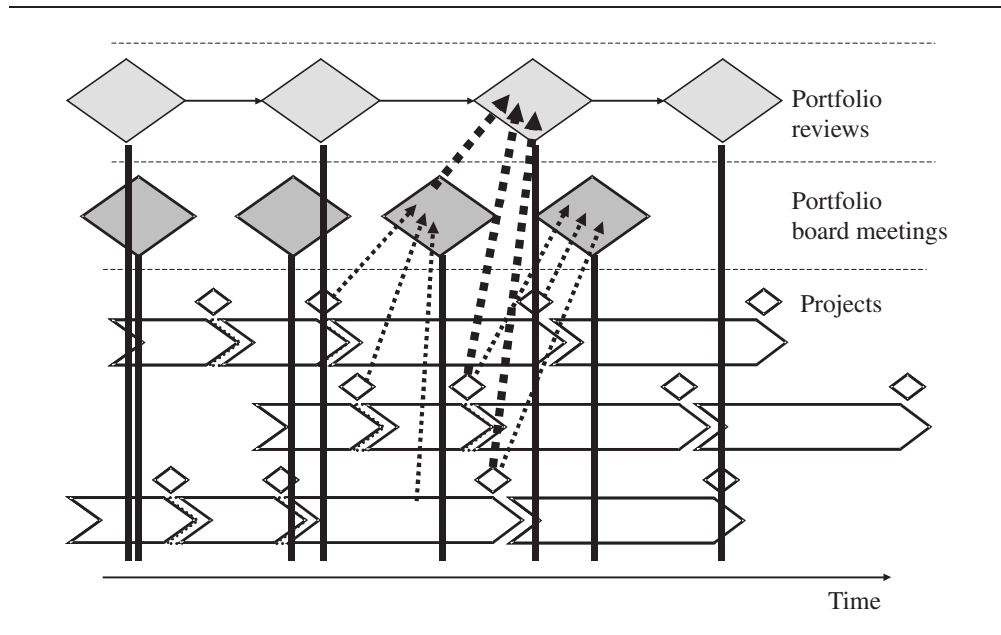


FIGURE 1.5. DECISION-MAKING WITH MULTIPLE PROJECTS.



the extent and role of top-down and bottom-up components of the strategy varied depending on the organization. Our process model divides decision-making power at three different levels and emphasizes the communication and information sharing between those levels (see Figure 1.4).

The portfolio board consists of managers from different organizational units or responsibility areas. The cross-organizational composition of the board increases the variety of perspectives on organization within the board and enhances communication and discussion between different organizational areas. This develops a holistic view not only for selecting and prioritizing the right projects, but also for appropriate decisions on resource allocation and timing issues. Thus, the portfolio board is responsible for go/no-go decisions and decisions on major project-specific modifications. The strategic considerations at this decision level concentrate on ensuring that the set of projects under execution and new project ideas provide the best possible basis to achieve organizational objectives and goals. The portfolio board decision meetings strongly support the implementation of intended strategies through projects. The decision flow must be structured in a way that the meeting enhances the possibility of new ideas being introduced effectively, and in that sense also enforces the emergence of new strategies.

While the portfolio board meetings are strongly focused on making project-specific decisions project by project, whole project portfolios are considered in portfolio review meetings (see Figure 1.5). Portfolio reviews adopt a view on whole portfolios rather than single projects as strategic vehicles of action to link current reality and intended positions. Portfolio review meetings are held by boards/bodies consisting of managers representing a higher organizational level than the members of portfolio boards. The objective of the portfolio review meeting is to create a strategic snapshot of the portfolio of projects under execution and new project ideas, and to use this whole entity as a roadmap in planning guidelines for future objectives. The aim of the strategic decisions at this level is to create a feasible match between the organization's capabilities and the resources and opportunities and risks of today and the future.

The vertical arrows up from the level of single projects and down from upper-level decision-making points in Figure 1.4 indicate information and communication flows that are essential for the whole decision-oriented process for the strategic management of multiple projects. The arrows describe information and communication flows that are essential inputs and outputs for respective decision points. Figure 1.5 develops this scheme further by illustrating how decisions made at the level of single projects, and information derived from lower levels, serve as important triggers for decision making at upper levels and simultaneously for strategy implementation and emergence. Figure 1.5 illustrates also how portfolio board meetings and portfolio reviews occur at discrete points in time. Projects and project ideas enter into those upper-level meetings and reviews. The strategic management of multiple projects toward the achievement of business benefits/advantage requires the dynamic comparison of portfolios of project ideas, ongoing projects, and already completed projects. New project ideas, ongoing projects, and completed projects (e.g., internal IT systems, or existing offering of products) potentially affect decision making on any portfolio or any project. Thus, they should all be considered as belonging to the same pool of interlinked activities and opportunities.

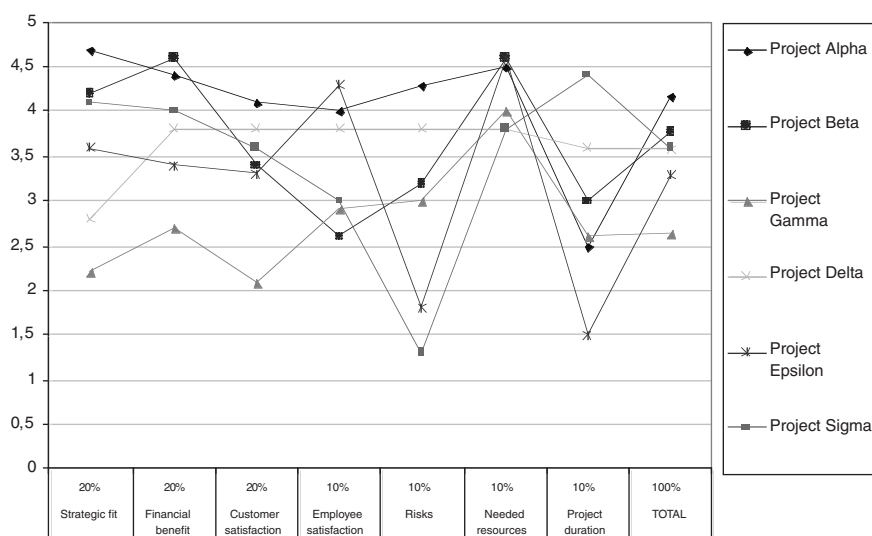
Decision-Making Flows in Board Meetings

The following examples of board meetings in M-service and C-service describe the content of decision-making practices at the multiple-projects level. In M-service, the two management boards (i.e., portfolio board for gate decisions, and top management board for reviews) are preexisting boards, but the portfolio focus and related systematic managerial practices introduced new responsibilities and tasks for these managerial bodies. The portfolio review meetings take place two or three times a year and serve as a forum for top management members to discuss and determine the strategic guidelines and objectives for the portfolio. Our discussion here concerns the monthly portfolio board meetings that provide a vital basis for strategy implementation and the emergence of new ideas. The decision flow of the portfolio board meeting in M-service starts by reviewing the information of project reports (including project reports for new project ideas) provided by responsible project managers or owners of the projects/ideas. There must be adequate information that is considered as sufficiently valid and reliable to proceed to a scoring discussion aimed at achieving consensus against a variety of decision criteria. The meeting proceeds by comparing the project's score with the average score of all projects in the portfolio. This prepares the next step of accepting or rejecting projects, and for allocating priorities and resources among projects. The aim of the balancing is to compare ongoing projects to new project ideas by taking into account at least the most important parameters related to strategic importance, benefits, risk, and resources. The actual balancing considerations may use visual graphs as inputs for discussion (for an example of such graph, see Figure 1.6). Decisions on resources are the most important outputs of the discussion. The final step of the meeting includes deriving feedback to be delivered to projects. The feedback includes both written information and information to be explained orally to responsible project individuals. The information comprises the most relevant decision issues related to progress of the project and an explanation on reasons for the decision.

As the focus in C-service's application is on IT project portfolios, the portfolio board consists of managers responsible for IT projects from different functional areas. New project ideas and ongoing projects are evaluated and prioritized in the meeting, and decisions on resource allocations are made. The meeting agenda is not as structured/formal as in the case of M-service, but the discussions are stimulated by using visual Web-based IT tool as an catalyst to capture different views of the current situation of the portfolio of projects. The chair of the portfolio board facilitates the decision-making situation in the meeting. The Web-based application includes important parameters of projects recorded by the responsible project managers or project owners prior to the meetings. The IT tool provides semistructured project-related information as an input for the decision making. This information enforces discussion, and with the help of the facilitator, consensus is achieved and decisions made. An important advantage of structuring decision meetings around the Web-based IT tool is that it provides a shared communication channel to enhance two-way information sharing between projects and the management levels above them. This channel is used to integrate the organizational vision, strategies, and the actual project work.

Information Contents and Decision Criteria

The important information content for the information flows between the project and portfolio board levels was investigated separately for each decision point through the project

FIGURE 1.6. VISUAL GRAPH ON SCORE PROFILES OF MULTIPLE PROJECTS.

process. The strategic information contents in decision points change during the project process. In the early ideation phase, the information is strongly focused on result-related issues of the project from the business perspective. In the execution phase, the information relates more to monitoring pre-estimated strategic issues and updating estimates. Furthermore, in the post-project phase, the information relates more to the start of the application (going operational or production start) and to gathering feedback information from the operation phase for the purpose of learning for future projects.

The practical applications in organizations with explicit information displays are simplified schemes from contents of strategic information. For example, M-service applies a condensed set of simple criteria for project selection, covering the following categories of criteria: strategic importance, benefits, risk, and resources. As the major current challenge in M-service is to deal with the problems of organizing and resourcing its multiproject efforts vis-à-vis its extensive number of ongoing projects and scarce resources, the criteria set in M-service includes also many issues that relate to the project execution phase. This orientation is reflected by criteria with a major aim of monitoring issues that relate to execution and the successful implementation of the project work.

The portfolio board meetings in M-service are provided with additional structure by allowing the individuals to encode their opinions and beliefs with many criteria in terms of estimating quantitative scores for each criteria prior to the meetings. The scores and weights for criteria allow wide possibilities for preparatory calculations and visual illustrations that can be used as catalysts for communication and decision making that occurs in the actual portfolio board meeting.

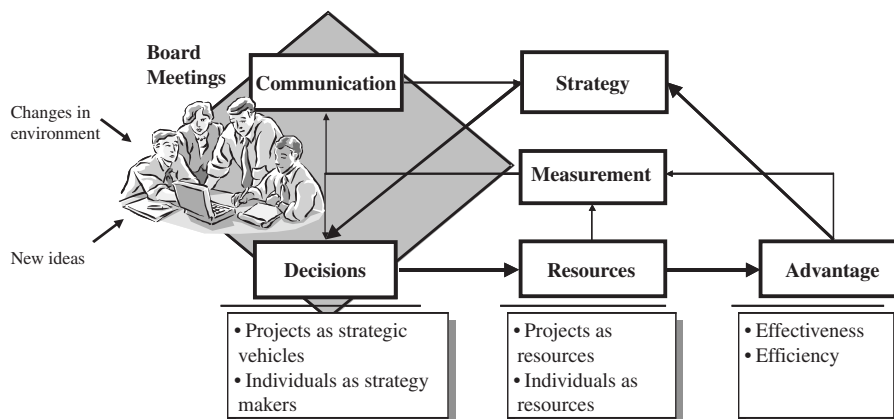
Figure 1.6 is a visual look-alike sample graph from M-service's application that illustrates how weighted scores can be used for creating a simultaneous view of many projects at one point of time. This kind of figure can also serve as a tool for evaluating whether intended projects as a whole are effective for fulfilling the strategic objectives. Scoring, quantitative data, and visual illustrations can be used to structure the discussion among meeting attendants on how each project and the project portfolios as a whole contribute to the overall achievement of business benefits, and how well they fulfill strategic business objectives. Such aggregate visual information is helpful especially in portfolio review meetings among top management representatives, where the focus should be more on the information that relates to portfolios as an entity, rather than just to project-specific information. Illustrations with aspects of timing and timely perspectives, for example, roadmap-like presentations, are effective in many decision situations. However, in addition to recording scores for each criteria in M-service, the explicit information recorded for each criterion also includes qualitative and other quantitative information (e.g., monetary figures from economic/financial calculations, resource usage/needs, timely units indicating the schedule). The importance of qualitative information (i.e., documentation, explanations) is emphasized in the M-service's decision process. Finally, we believe that the true content for decision making and related important communication and learning occurs in board meeting events themselves rather than in explicit information contents in practical applications.

The explicit information contents of the project-specific parameters in C-service's application do not represent in a straightforward manner decision criteria as such, but rather represent the relevant information contents to be communicated for decision making and other management purposes. Furthermore, as compared to M-service, C-service emphasizes even more the importance of recording explicit qualitative information for each parameter. Such qualitative information is recorded in the Web-based IT tool. However, for enhanced communication and for increased clarity in comparing projects in a portfolio, many qualitatively expressed parameters (e.g., status, or priority, benefit, and risk) are categorized into classes. Such subdivision into classes, marked with integer figures in C-service, has some analogies with the application of scores in M-service. The qualitative and quantitative information contents in C-service's www tool include, among others, the following important themes: priority, benefit, risk, interconnectedness and linkages to other projects, contact data of responsible project manager and project owner, start date and complete date, cost, resource usage (person-hours), percent complete, and status. Much of the information in C-service's current application reflects the need to organize effectively ongoing projects and manage project progress, resources, cost, and time in a multiproject scheme, where the constraint of scarce resources and the interrelatedness of projects play an important role.

Conclusion: A Framework for Strategic Business Management

Figure 1.7 summarizes the preceding analysis by presenting a framework for strategic business management in multiple-projects environment. For successful multiproject management, it is essential that the managers and decision makers understand the sphere of ultimate

FIGURE 1.7. FRAMEWORK FOR STRATEGIC BUSINESS MANAGEMENT THROUGH PROJECTS.



potential purposes of any project or idea. This occurs only if a mature understanding is in place that makes a clear distinction between effectiveness and efficiency.

Meetings, reviews, workshops, or other communication platforms where a group of individuals are collected together are central elements in strategy formation. Such occasions and situations are not only fostering grounds for communication and creative implicit or explicit decisions but also for new ideas. New ideas often arise simultaneously while a well-planned structure is applied for decision making in a group of individuals. However, such a structure should leave enough room for communication and/or expressing new and even radical ideas that fall outside the scope of the actual and concrete decision-making situation at hand.

Figure 1.7 illustrates the central role of a board meeting when managing strategies through multiple projects. When the issue concerning a set of multiple projects is brought to such a meeting through structured information and/or appropriate visual display of such information, and through a well-structured meeting agenda or well-facilitated meeting flow, both explicit and implicit decisions over multiple projects occur in an effective manner. Such information, visualization, agendas, and flows serve as structures that guarantee effective decisions and support for the realization of strategic intentions of the organization, produced in a creative manner, while simultaneously allowing the appearance of creative and innovative new ideas that reformulate strategies and strategic directions.

The corporate strategy (or business strategy) provides the individuals with guidelines, goals, and objectives for decision making. The dynamic nature of strategy implementation is supported by measuring both the achievement of advantages and the resources as the organization's internal capabilities, in relation to the requirements set by the project initia-

TABLE 1.2. MANAGERIAL PRACTICES FOR STRATEGIC BUSINESS MANAGEMENT THROUGH MULTIPLE PROJECTS BY FOCAL AREAS.

Focal Area	Managerial Practice
1. Categorizing projects by their type	<ul style="list-style-type: none"> • Form specific portfolios or buckets based on strategic guidelines. Consider strategic goals and responsibility areas while doing this. • Establish specific and tailored management models both at the project level and at levels above projects for each portfolio. Ensure that these models enable strategic management in an appropriate manner.
2. Supporting structured and flexible decision making	<ul style="list-style-type: none"> • Establish meetings, reviews, or workshops where a group of individuals are collected together, to serve as central elements for decision making. • Define specific levels where decision making is expected to occur. Distinguish the different roles of top management, middle management, and project management. • Differentiate operational single project decisions from the strategic ones. Authorize project managers or middle managers to make most operational project decisions. Furthermore, extend strategic considerations to include simultaneous consideration of multiple projects. • Distinguish between two types of portfolio-level decision making. Portfolio board meetings serve as a frequent forum for active monitoring and decision making to ensure that the structure of portfolio aligns with intended strategic guidelines. Portfolio reviews are typically organized few times in a year, and their focus is in strategic future-oriented planning and monitoring the overall situation of the portfolio. • Establish clear and limited roles and responsibilities for decision making. Assign a responsible individual (e.g., portfolio coordinator) for each portfolio, to take the overall responsibility of introducing the situation of the portfolio. • Avoid unnecessary rigidity while following the intended strategy. • Appropriate visual display of structured information, a well-structured meeting agenda, and well-facilitated meeting flows enhance not only effective explicit and implicit decisions but also the appearance of creative and innovative new ideas that reformulate strategies and strategic directions. • Establish criteria that enable comparison, selection, and prioritization of projects. Include strategic issues and project-success-related issues in those criteria. • Organize for measurement of projects, activities, and portfolios. Ensure that measurement is in line with established criteria and strategic guidelines. • Leave room for interactive discussion as principal element of decision making in meetings and boards.

TABLE 1.2. (Continued)

Focal Area	Managerial Practice
3. Ensuring effective communication and information transparency	<ul style="list-style-type: none"> • Support communication by establishing and using systematic structures such as: <ul style="list-style-type: none"> • Structured meeting agendas for board meetings • Systematic follow-up and measurement of portfolios of projects • Project type specific criteria and decision tools for project prioritization, and for stimulus for discussion • Top-down flow of feedback information down to projects • IT tools that enable the availability of project-related information vertically and horizontally in the organization. • Enhance learning, both directly by allowing experimental schemes or small probes that may fail and indirectly by exchanging experiences in meetings. • Use projects themselves as structured communication platforms, similar to meetings: Both meetings and projects as such bring individuals together to the same structured sphere of communication, decision making, and fostering of new ideas.
4. Linking projects and strategy process	<ul style="list-style-type: none"> • Make strategic portfolio review meetings timely (e.g., meetings related to the annual strategy process). Use effectively the advantage of knowing the situation of the current portfolio of projects when forming strategic guidelines for the organization. • Ensure a fluent interaction between different organizational levels, and make sure that projects are put into strategic perspective by looking at project entities as a whole (e.g., in portfolio review meetings) and by looking at how these entities contribute to new strategic dimensions. The interaction between organizational levels can be achieved through a cascade of meetings across lower and higher organizational levels. • Introduce top-management-originated intended strategies to lower-level boards and organizational bodies. Furthermore, emphasize the importance of feedback by providing the lower level bodies and boards with top management's decisions concerning projects or portfolios. • Use visualization methods in portfolio review meetings among top management representatives to reflect the project portfolios' role in the adaptation of new strategic directions through the set of projects and their strategic content as a whole. The visualization can, for example, be a time phased, roadmap-like view that paves the potential paths for the future.

TABLE 1.2. (Continued)

Focal Area	Managerial Practice
5. Establishing an organizational design to support strategic management in the multiple-project environment	<ul style="list-style-type: none"> • Define the role of different bodies and individuals at different organizational levels, especially the responsibilities and authorization for decision making. • Use (preferably) existing board structures that are assigned new tasks and responsibilities. • Pay attention to appropriate level of openness, trust, and encouragement of individuals. Top management support is an important factor. • Create clear ownership for each functional activity, cross-organizational process activity, and portfolio of projects. Recognize the overlapping areas of responsibility, and deal with such complexity by organizing for effective communication and information sharing. • Establish project-office-like organizational bodies or responsibilities for such supportive activities that ensure effective support for the overall complex setting of managing multiple projects. • Plan carefully how centralized or how decentralized different decision-making-related activities are. Match the level of centralization/ decentralization to fit the organizational culture.
6. Setting and measuring goals for different time spans in the future	<ul style="list-style-type: none"> • Use roadmap-like presentations that put the projects and their mutual interrelations into timely perspective. • Use supportive illustrations that emphasize the life cycle perspectives (both product life cycle and project life cycle), in order to understand the relationship of new or existing projects to current products or systems and their life cycles. • Analyze stated assumptions carefully, and make different scenarios of the business environment in the uncertain future. This is especially important for understanding the potential outcomes in the long-term future. • Establish effective risk management or uncertainty management procedures for coping with the imperfect knowledge, ambiguity, and uncertainty. Manage options in an effective manner; sometimes one important strategy is to keep options open as long as possible.
7. Evaluating strategic contents, distinguishing between effectiveness and efficiency	<ul style="list-style-type: none"> • Make a clear distinction between those projects that are driven by improving effectiveness and those that are driven by improving efficiency. • Evaluate the strategic importance of each project for understanding the type of strategic impact produced by the project. Furthermore, estimate the managerial challenge and need for a specific management style that relates typically to newness and risk dimensions in the project.

tives and the external environment. In our framework, projects are used for strategy implementation and emergence. The framework also emphasizes the role of individuals as strategy makers. Individuals' commitment and motivation often guarantee that the intended strategies are in fact realized. Furthermore, the role of projects and their individuals are important strategy makers and remarkable introducers of new ideas. This occurs as projects serve as structured communication platforms with similar impacts to what was discussed previously regarding meetings and group sessions. Both meetings and projects as such bring individuals together to the same structured sphere of communication.

Although we emphasize the role of projects and individuals both at the project level and at levels above projects as *strategy makers*, our framework shows that projects and individuals also can be seen in another role: *resources*. It may be clear that projects in the execution phase can be interpreted as resources, but we emphasize here that even ideas at a very early pre-execution phase are important resources that carry important issues related to the future, often in terms of the potential or strategic business content embedded in the idea. When projects are thought of as resources, measuring resources can be seen as measuring current project-based activities and new projects ideas. Having a clear picture of the current situation of the organizational realities at the project level (capabilities), and comparing that with the desired state of the future, provides a frame for successful decision making in the multiple-projects environment.

Our framework emphasizes the role of face-to-face discussions and communications that takes place in certain specific contexts—for example, meetings or projects. An important managerial challenge is to avoid unnecessary rigidity and sometimes even too much discipline while following the intended strategy. Discussions characterized by various perspectives and stimulated by measures that support flexibility and creativity, are the necessary components for emerging of new strategies. Decisions—small and big—then determine future outcomes in terms of effectiveness and efficiency. The framework suggests that advantages and benefits result primarily from individuals' (company and business unit managers') decisions on projects and project ideas, and individuals' (project managers' and project team members') decisions made in single-project contexts. Finally, Table 1.2 concludes this chapter with what we perceive to be the most important managerial practices in the framework of strategic business management in a multiproject environment.

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