Translating Corporate Strategy into Project Strategy

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Contents

Executive Summary

This book reports on a yearlong research project sponsored by Project Management Institute (PMI), industry and academia, which looked at how corporate strategy moves to project strategy. Practice in four international companies was examined and data collected from a survey of PMI members.

Project and program management is widely used as a means of implementing corporate strategy. Generally, strategies cascade from the corporate level through portfolios, programs, and projects in a systematic and hierarchical manner that provides cohesion, visibility, and an effective means of communication. Within this framework, project strategy is managed dynamically as it builds and progresses while the project is developed.

Enterprise-wide business models play an important part in effecting this transformation. Many organizations have project management as a core process in the overall business enterprise model.

Programs and projects are important vehicles for implementing corporate strategy and for effecting change. Most companies consider that program management implies the management of business benefits (as well as the ideas of product, brand, or resource management). Portfolio management often plays a key role in project and program prioritization, as well as resource allocation.

Project strategy management is widely recognized as a significant project management practice for ensuring that project definition and development are comprehensively considered and that they properly relate to corporate goals and strategies. Project strategy typically covers the entire project lifecycle, with review and optimization occurring at specific points as the strategy is progressively developed. Value management is used in optimizing the strategy, often in combination with risk management.

Having project management staff capable of creating, deploying, and maintaining enterprise, portfolio, program, and project strategies is critical. The project management roles, responsibilities, and accountabilities required for this are generally well-defined. A high percentage of surveyed organizations define the personal project management competencies required to develop project strategy.

Overall, project strategy management is an under-explored and insufficiently described subject in the business and project literature, but is, in fact, a relatively well-trodden area and deserves more recognition.

Introduction

This book is, essentially, the final report of a research project largely funded by PMI on *how companies move corporate strategy into project strategy*, undertaken by University College London in 2002 and 2003.

In discussing this proposed work with PMI staff, we suggested that there is considerable ambiguity in our understanding of the way business strategy is translated into—and implemented by—projects.

We also noted that there seems to be little literature on how project strategy should be formulated or what it should comprise; in fact, as Artto has pointed out, there is less on the strategy of managing a project than on the development of the project itself (Artto, Lehtonen, and Saranen 2001).

We further pointed out there was virtually no literature on how project strategy should be developed during the early stages of a project, for example, during the *pre-feasibility*, *concept*, or *initial definition* phases. And there has been little mention of project strategy in Project Management Institute's (PMI) *A Guide to the Project Management Body of Knowledge* (*PMBOK® Guide*)—2000 Edition, for example, though the topic is given more treatment in the *Association of Project Management Body of Knowledge (APM BOK)*—4th Edition (2000). While there are best practice guides available for such topics as project risk management and procurement management, there appear to be none for project strategy.

We felt this was a serious situation. There is much in the business literature on business strategy; surely someone ought to look at how it should be implemented at the project and program level and at the linkage between project, program, and enterprise strategy. *Prima facie*, there seemed a clear case for better understanding the way a project is to be developed and managed. After all, we should not just plunge into project execution.

We argued, therefore, that if we could describe how business strategy can be translated into project strategy, then management of the project's front-end would be enhanced, along with project management's overall performance, and project management would have a higher profile in business management in general. A better

understanding of the way project strategy is formulated and developed should result in more successful projects.

This research project examines the processes and practices by which strategy moves in an enterprise from the corporate level into projects and the *people factors* involved in doing so.

To this end, the research comprises:

- A literature review;
- Four case studies of the way major organizations move strategy;
- A survey of project management professionals' practice in this area.

Formulating and implementing corporate strategy is one of the most actively researched, taught, and talked about subjects in business today. Projects and project management are often quoted as important means of implementing strategy, but the way this happens in practice is rarely the subject of detailed review. This book addresses such a relationship head-on.

CHAPTER 1

Moving Strategy From Corporate to Projects—What the Literature Has to Say

As strategy flows through an organization, it crosses a number of functional boundaries (disciplines), such as business management, strategy management, and project management.

The focus of our research is on the processes, practices, and *people factors* involved in moving from corporate strategy to project strategy. The literature rarely does this in separate steps, but considers them collectively within the context of the movement of strategy at corporate, business, portfolio, program, and project levels.

Developing Corporate Strategy

Corporate strategy is created as a means of considering and articulating how an organization's corporate goals and objectives will be pursued and achieved. This strategy typically cascades through *strategic* business units (SBUs), then ends up being represented as collections—or portfolios—of programs or projects. These become the vehicles for implementing the approved strategic initiatives. (This will become more evident in the case studies; more precise definitions of *portfolio* and *program* will also be given.)

Various processes are employed for effecting this translation. Highly structured business management models are used by some organizations; these models identify the major *value delivery* processes and/or key business processes that enable the organization to operate effectively.

Much of traditional management writing tends only to cover the strategic management processes that formulate and implement strategy at the corporate level; there is a real dearth of writing about how corporate strategy gets translated into comprehensive program or project management strategies. Yet, in practice, the two sets of activities are well—interconnected, and the associated processes are the main means by which strategy is moved and aligned through the corporate, business unit, and project/program levels. The processes often work less well, however, in terms of feedback and adjustment as events unfold and as the program or project definition must be realigned (or vice versa, as the project or program definition creates new situations that, in turn, impact on the enterprise's strategic intent, thereby requiring the process to iterate!).

Positioning Project Management Within a Business Management Context

To understand the way corporate strategy is translated into project strategy, it is important to consider the business management context and the position of project management within it, as well as how the business management functions perceive project management. While project management practitioners may think their function is central to the success of a company, it may have little meaning within the enterprise unless it is clearly established and embedded within the enterprise's structure and business management processes. An indication of the position, and the relative prominence given to project management, can be gauged from the business management models used by organizations.

Watson (1994) gives McKinsey credit for developing the generic business enterprise model shown in Figure 1.1. This model shows the structure of an organization in terms of processes—rather than in the traditional structural form, such as a functional, project, or matrix structure—and serves as a process framework for an organization.

This model also identifies what are considered to be the major processes of the value delivery system of a company and the key business processes that enable them; this model also implies a high level of connectivity between the two. As a result of the findings of this research project, we believe that the management of projects is a key business process, and have modified Figure 1.1 accordingly.

Creating Corporate and Business Strategies

The strategy management process has been extensively dealt with by numerous authors. Most include the concepts and processes associated with strategy analysis, strategy creation (formulation), strat-

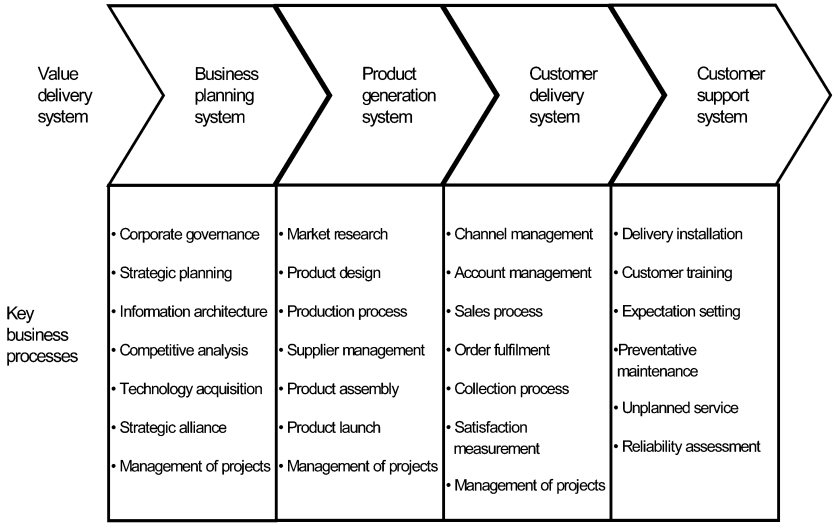

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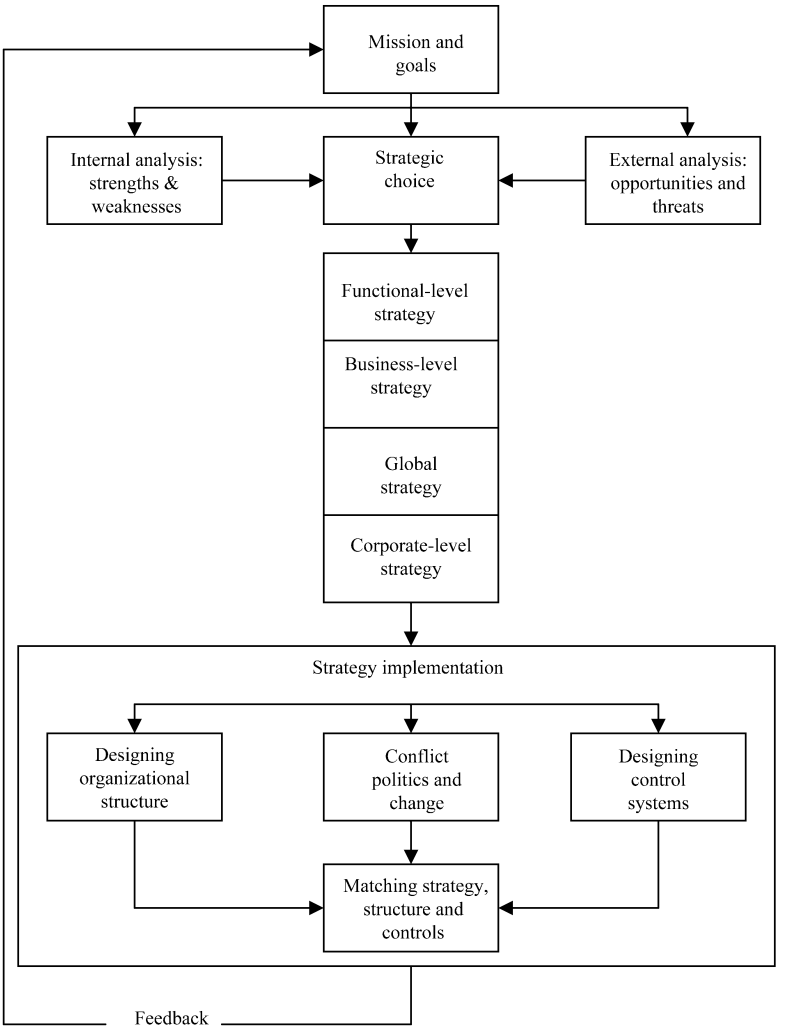
Figure 1.1 Generic business enterprise model

egy evaluation, and strategy implementation. Few, however, explicitly connect corporate and business unit strategy with project strategy. Few suggest that it should be taken into account during the internal and external analysis processes at the strategy formation stage, or when determining the capability of the organization at the strategy implementation stage. (Why this should be so is an interesting question. Although we don't have firm research data to explain it, we suspect it is largely because of the *operations management* profile that project management has in most business schools and the consequent failure to perceive the strategic dimension of project formulation—the misperception, in other words, that project management is merely a form of operational execution.)

Strategy management is a dynamic process: Mintzberg and Quinn (1996) show that *emergent* strategy is a key factor—namely, strategy that becomes evident as it, and events, emerge with time—in influencing the way strategy is realized in practice. Strategy is rarely realized in as rigid and *deliberate* a manner as many planners have assumed.

Hill and Jones (2001) demonstrate how emergent strategy can influence intended strategy through components of the strategic management process, as, for example, those shown in Figure 1.2. This figure indicates that strategy formulation flows from an organization's mission and goals through its functional, business, and corporate levels. But as described in much of the strategic management literature (e.g., Mintzberg, Ahlstrand, and Lampel's 1998 publication,



Source: Charles W. L. Hill & Gareth R. Jones, *Strategic Management: An Integrated Approach* (Fifth Edition). Copyright © (2001) by Houghton Mifflin Company. Reprinted with permission.

Figure 1.2 Components of the strategic management process

which notes that there are hundreds of different strategic planning models), Hill and Jones (2001) do not explicitly take account of the influence or impact of projects or project management activities on the creation and implementation of strategy, although this is clearly implied.

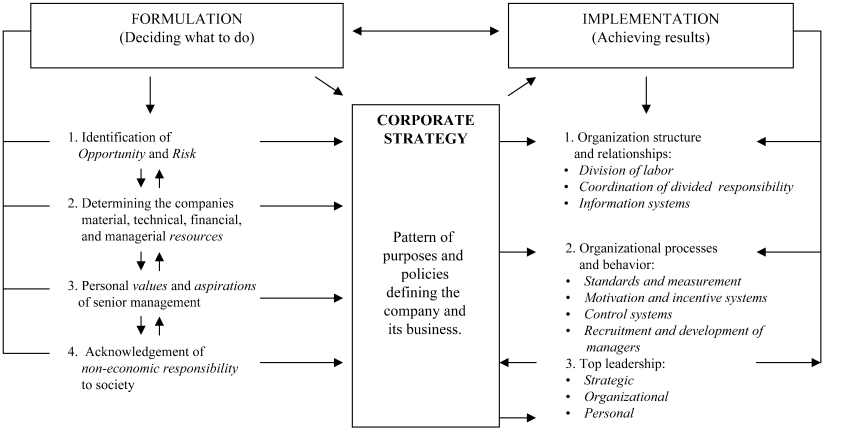
The findings presented in this research, however, show that most of the components of the strategic planning process—such as inter-

nal analysis, strategic choice, organizational structures, and control systems—have strong links to project management processes and activities; these factors, therefore, strongly influence intended corporate and business strategies.

Partington (2000)—in distinguishing the three levels of strategy as corporate, business, and operational—suggests that operational-level strategies tend to focus on programs and projects. We are suggesting that the linkage starts, or can start, even higher.

The availability of resources is a major factor in deciding the strategy of an organization. Figure 1.3 shows a schematic used by Andrews (1999) to analyze strategy as a complex pattern of interrelated decisions and serves to indicate some of the key activities involved in the formulation and implementation of strategy. One of the key activities undertaken during the strategy formulation stage is determining the material, technical, financial, and managerial resources of the organization. For organizations involved in managing significant projects, project management resources are an integral element of managerial resources; these can and do strongly influence corporate and business strategies. The main activities that determine the implementation of strategy, identified in Figure 1.3, are organizational structure and relationships, organizational processes and behavior, and leadership, all of which contain major elements of the project management function and similarly influence strategy.

Corporate resources are made up of distinctive competencies, which form the enterprise's unique strength (Hamel and Prahalad 1994). These, together with the enterprise's financial, managerial, functional, and organizational capabilities, allow it to achieve supe-



Source: K. R. Andrews, *The Concept of Corporate Strategy* (Custom ed.) © 1999, Reprinted by permission of the McGraw-Hill Companies, Inc.

Figure 1.3 Strategy as a pattern of interrelated decisions

rior efficiency, quality, innovation, or customer responsiveness, thereby creating superior value. Capabilities refer to a company's skills at coordinating its resources and putting them to productive use. (We shall distinguish between competencies and capabilities later.) These skills reside, among other things, in the enterprise's internal processes, but are more generally a product of its organizational structure and control systems (see Figure 1.2).

A fundamental responsibility of project management is to manage the resources needed to define and deliver projects effectively. A company's skill at managing projects, and therefore its project management capability, is an essential managerial resource that can and does strongly influence corporate and business strategies. This is especially the case in companies that see themselves in dynamic change situations where agility is important or that are driven by major projects (as in aerospace, construction, new product development, etc.).

Hierarchy of Objectives and Strategies

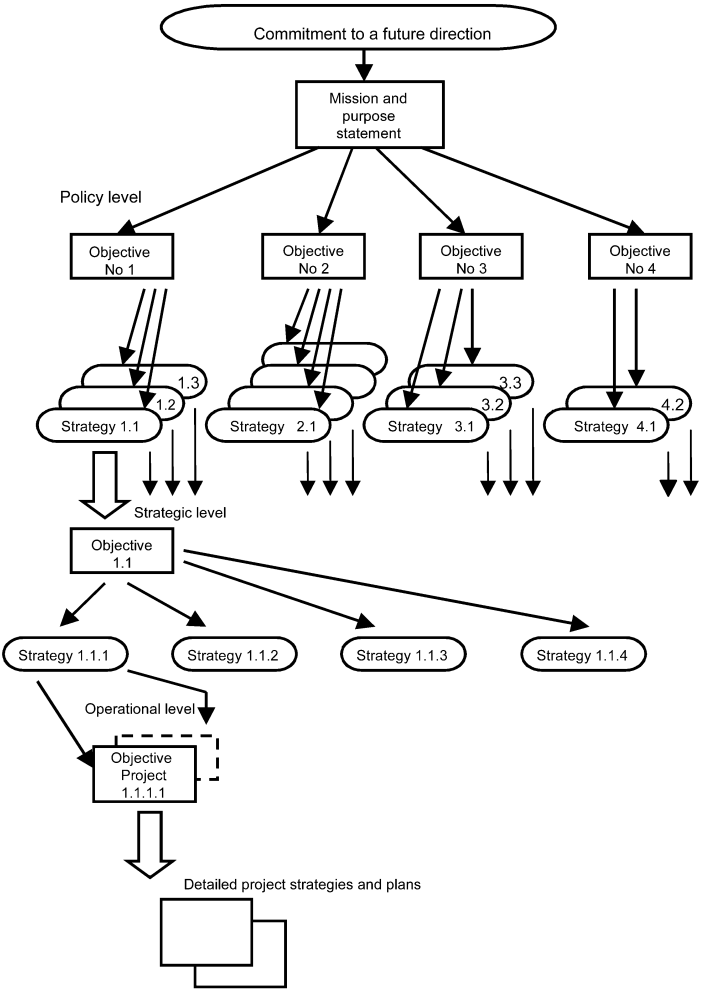
A hierarchy of objectives and strategies can be formed as a result of using a strategy planning process; this can be a very effective means of structuring and managing strategy and communicating it to the organization. One such model, used by Cleland (1990), is Archibald's hierarchy of objectives, strategies, and projects, shown in Figure 1.4 (Archibald 2003). This model maps out in detail the structure and relationship of objectives and strategies at the policy, strategic, operational, and project levels. Specific objectives and strategies are developed at each level from higher level ones and cascaded down, thereby ensuring alignment and continuity of strategy. Projects and their objectives, strategies, and project plans are shown at the operational level.

Hierarchy of Strategy Plans

The corporate and business strategies created by organizations using a strategic planning process are incorporated into a hierarchy of strategy plans. Kerzner (2000) provides an example of a typical hierarchy as shown in Figure 1.5.

This model shows typical strategic plans cascading corporate strategy to SBU level from a single corporate strategic plan, and it shows supporting plans cascading business strategy from each SBU. Another example of a hierarchy of strategic plans is the Stanford Research Institute's (SRI's) *system of plans* shown in Mintzberg, Ahlstrand, and Lampel (1998).

If this roughly is how corporate strategy is created from an organization's mission, goals, and objectives—and how this strategy is used to create business unit objectives and strategies—the next stage



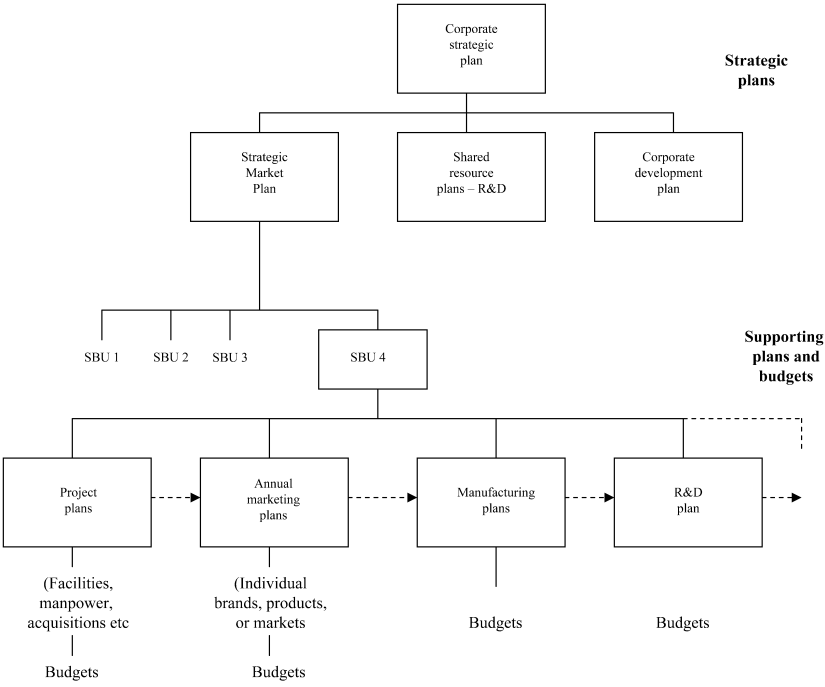
Source: D. I. Cleland, *Project Management*. © 1990 Reprinted by permission of The McGraw-Hill Companies.

Figure 1.4 Hierarchy of objectives, strategies, and projects

is to consider how business unit strategy is moved through portfolios and programs into projects.

Moving Business Strategy Through Portfolios, Programs, and Projects

Turner and Simister (2000) points out that the majority of projects take place as part of a portfolio of several projects. Program manage-



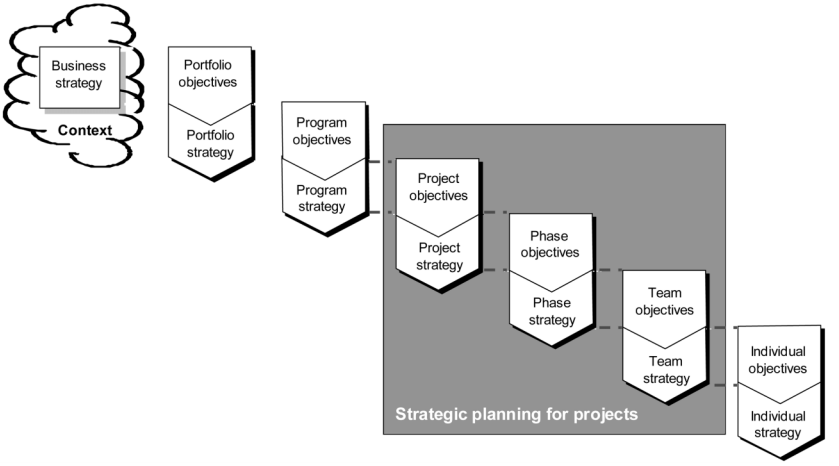
Source: H. Kerzner, *Applied Project Management*. Copyright © 2000 by John Wiley & Sons, Inc. This material is used by permission of John Wiley & Sons, Inc.

Figure 1.5 Hierarchy of strategic plans

ment is the way of coordinating projects that have a shared business aim (Thiry 2004). Both portfolio management and program management focus on prioritizing resources and optimizing the business benefit (Kerzner 2000). Portfolio management tends to be about the selection and prioritization of projects or programs (Archer and Ghasemzadeh 1999). Program management is about the day-to-day management of programs (variously defined for example as products, platforms, brands, or multiple projects) to deliver business value (Office of Government Commerce 1999; Wheelwright and Clark 1992).

Turner (1999) illustrates how organizations undertake programs and projects to achieve their development objectives. As a result of this research, we have adapted this model to include business strategy and portfolios, as shown in Figure 1.6, and to indicate that a portfolio may comprise groups of programs and/or groups of projects.

Developing effective strategy for programs or projects from corporate and business strategies can be a complex activity. Artto and Dietrich (2004) discuss it extensively in their book *The Wiley Guide to Managing Project*. It involves key project management activities



Source: J. R. Turner (Ed.), *The Handbook of Project-Based Management* (2nd ed.) © 1999. Reproduced by kind permission of the Open University Press/McGraw-Hill Publishing Company. Adapted by Morris and Jamieson.

Figure 1.6 Linking corporate and project strategy

such as project definition and includes strategic elements from a wide range of project management practices, such as risk management, value management, and supply chain management. And although it obviously occurs at the front end of a project, it often encompasses the entire project lifecycle. Integrated Logistics Support, Operations, and Maintenance, and Whole-Life Costs, for example, may well figure importantly in the strategy. Grundy (1998) has proposed a number of techniques that enterprises can use to move corporate strategy into portfolios, programs, and projects, such as scenario planning, force-field analysis, stakeholder analysis, and *attractiveness/implementation difficulty* analysis.

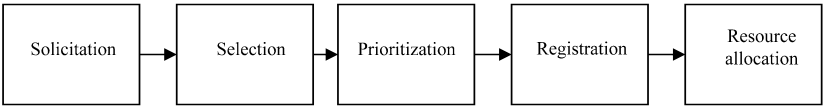
Portfolios

Project portfolio management is not to be confused with more general portfolio management (which is primarily concerned with managing diversification and acquisitions) or product portfolio management. Jobber (2001) refers to portfolio planning as the process of managing groups of brands or products; however, in our experience, this is often subsumed within the more general subject of portfolio management. Project portfolio management has been described as the activity of aligning resource demand with resource availability to achieve a set of strategic goals (Archer and Ghasemzadeh 2004).

Project portfolio management is predominantly about *choosing the right project*, whereas project management is about *doing the*

project right. Crawford (2001) believes that making the conceptual leap from the tools-and-techniques-focused variety of project management to portfolio management (and, indeed, program management), with its broader focus on business strategy and enterprise-wide integration, is a special challenge and one that many now face with little in the way of standards, best practices, or other generally accepted knowledge to guide them.

Knutson (2001) points out that the project portfolio management process provides a means of consistently and objectively evaluating each proposed project that is vying for a limited pool of resources, thereby aiding the process of making the most effective use of the resources. She presents a generic portfolio management process model, as schematized by us in Figure 1.7. This model is suitable for small and large organizations dealing with internal and/or external project clients and as an implementation plan for establishing a portfolio management system within an organization.



Source: J. Knutson, *Succeeding in Project-Driven Organizations*. Copyright © 2001 by John Wiley & Sons, Inc. Schematized by Morris and Jamieson. This material is used by permission of John Wiley & Sons, Inc.

Figure 1.7 A generic portfolio management process

- The solicitation stage of the process ensures that the potential program or project being evaluated has a credible strategy that it is aligned with the organization's objectives and strategy. A business case for the project, containing these details, is produced as an output of the solicitation phase. The relative value of the project and its overall synergy with the organization's strategy is evaluated during the selection process. If a project is selected, the next step is its prioritization.
- During the prioritization stage, a scoring system is used to determine the priority of the project with respect to other projects (see also Archer and Ghasemzadeh 2004).
- Subsequently, depending upon availability, resources are allocated to the project to allow it to proceed.

Archer and Ghasemzadeh (1999) also provide a general framework for project portfolio selection that demonstrates the need for strategy to be set at a corporate level and then filtered down to a project level. Archer and Ghasemzadeh (2004) focus, in addition, on the special problems at the portfolio level of risk management and resourcing, including outsourcing. Other examples of portfolio management practice employed by a diversity of major companies are given in Cooper, Edgett, and Klienschmidt (1998).

Programs

Murray-Webster and Thiry (2000) suggest that the discipline of program management is emerging as a fundamental method of ensuring that an organization gains the maximum benefit from the integration of project management activities. They suggest that program management can be characterized as more iterative than *single shot* project management and that it involves more strategic reflection. Thiry (2004) emphasizes the importance of learning, namely that program strategy is shaped as the organization learns from the projects it delivers.

There is quite a degree of confusion in the literature—and in practice—over just what is involved in program management. Some define it primarily as a collection of interrelated projects and several perspectives exist on the optimal ways to configure programs to achieve strategic objectives and deal with change (Murray-Webster and Thiry 2000). Some emphasize the technology base, as in platform projects (Wheelwright and Clark 1992). Others, particularly those coming from Information Technology, also emphasize the importance of business benefit. Pellegrinelli (1997) has proposed the generic portfolio and program typologies of *Strategic* and *Incremental.* Pellegrinelli, Partington, and Young (2003) emphasize that programs and program management are frequently used in large organizations to implement strategic initiatives. In such cases, program management transcends the management of related projects and involves managing the ambiguities of strategies.

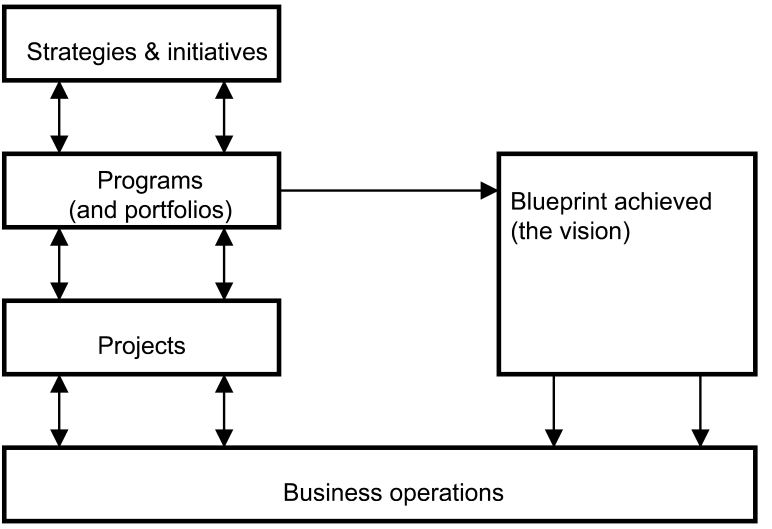
The United Kingdom (UK) Office of Government Commerce (1999) considers the alignment between strategy and projects to be one of the main benefits of program management. The program management process they propose comprises the following stages:

- Identifying, defining, and establishing a program;
- Managing the portfolio;
- Delivering benefits;
- Closing the program[1]

OGC perceives the environment of program management to be that shown in Figure 1.8, which indicates programs emanating from business strategies and initiatives, with an iterative hierarchy of programs, projects, and business operations cascading from them.

The objectives and strategies for the programs are created and aligned with the objectives and strategies of the enterprise, and the objectives and strategies for individual projects are created and

[1] Office of Government Commerce, *Managing Successful Programmes* (Norwich, UK: The Stationary Office, 1999), p. 11. © Crown copyright material is reproduced with the permission of the Controller of HMSO and Queen's Printer for Scotland.



Source: *Managing Successful Programmes* (1999). Produced by Office of Government Commerce. © Crown copyright material is reproduced with the permission of the Controller of HMSO and Queen's Printer for Scotland. Adapted by Morris and Jamieson.

Figure 1.8 The program management environment

aligned with their respective programs. We will next consider how project strategy is created within projects.

Projects

To translate business strategy into project strategy most effectively, whether a project interfaces directly with business units or indirectly through portfolios and programs, there needs to be a coherent set of processes that integrate the two areas.

We examined what was proposed by the project management *bodies of knowledge* to see what was said about how this should be done. The result is the schematic shown in Figure 1.9, which draws on sections of PMI's *PMBOK® Guide* (2000) and the *APM BOK* (2000). Figure 1.9 is, frankly, very project-centric (i.e., it focuses on the inputs to the project and what has to happen in the project management process). There is little of the iteration that we have seen in program and portfolio management, little of the balance between *emergent* corporate strategy and resultant project activities. Although it may not be perfect, and it utilizes a degree of simplification, the model shown in Figure 1.9 is useful in showing *the state of play*, as readily available to the profession.

The model consists of two stages, with a number of key project management activities or processes within each stage.

1. *Translating business strategy* stage:
    - Strategic framework;
    - Requirements management;
    - Project scope management;
    - Project definition.
2. *Creating project strategy* stage:
    - Project management planning and integration processes;
    - Project plans development process;
    - Generic project management knowledge and competencies;
    - Elements of project strategy.

We will now look at each of these two stages in turn.

Translating Business Strategy in Projects

Strategic framework

What sort of topics will the project strategy cover? It includes project control elements such as work, scope management, and resource management, but more importantly, it includes elements from all the project management control, technical, commercial, organizational, and people topics, some of which are shown in the ''Creating project strategy'' box in Figure 1.9. Thus, most of the activities of a project will be reflected in the project strategy.

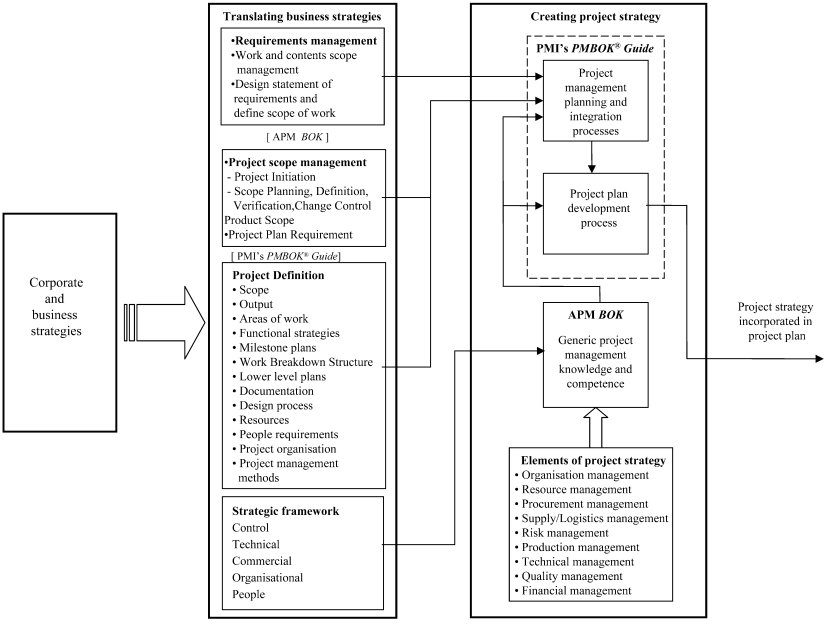


Figure 1.9 Creating project strategy from corporate and business strategies

Requirements management

Requirements management covers the process of defining the user/customer business and technical requirements in a solution-free way. The requirements should be specified in a manner allowing the solutions that are subsequently proposed to be traced back to the requirements in a structured manner and to be tested against the requirements. The technical requirements of a project frequently affect project strategy significantly, and for this reason it is identified as a key project management process (Davis, Hickey, and Zweig 2004; Stevens, Brook, Jackson, and Arnold 1997; Young 2001). *Briefing*—the term used more in construction—would be covered by this section too.

Project scope management

PMI's *PMBOK® Guide* (2000) recognizes the strong links between project scope management processes and corporate and business strategies. In its initiation process, the project is linked to the ongoing work in the performing organization with authorization following demand/business need. The inputs to the initiation process include the strategic plan of the performing organization, which is also used in project selection decisions and is seen as providing the link through which the project strategy is aligned to the organization's strategy. The output of the initiation process reflects the organization's strategy and is fed as an input to the second process of project scope management: scope planning.

The output of scope planning is the project scope statement. This contains the project justification, product, deliverables, and objectives. All of these are seen as key elements of project strategy and are inputs to the scope definition process. Thus, the scope of the project is driven by the key elements of project strategy that are directly linked to business strategy.

Project definition

The project definition process is an essential part of developing project strategy from corporate and business strategies. Turner (1999) builds on a model for the strategic management of projects developed by Morris and Hough (1987). This model indicates that projects are subjected to seven forces as follows:

- Definition
- Attitudes
- People
- Organization
- Systems
- Sponsorship
- Context.

The two forces that most relate to project strategy are identified as *attitudes* and *definition*.

Turner (1999) advocates developing a comprehensive definition of a project at the start of the project. This is achieved by:

- Setting the project objectives;
- Defining the scope through a strategic or milestone plan;
- Setting the functional strategies for assessing technical risk;
- Carefully managing the design process;
- Managing resources and the context.

Through the project definition process:

- The vision of the project is created;
- The purpose of the project is defined;
- Project plans are aligned with the business plans;
- The basis of cooperation for the project is agreed-upon[2]

Simister (2000) provides a flowchart for the early definition of a project, which concentrates on the proposal, initiation, and feasibility stages of a project. This shows the development of business cases, strategic briefs, and feasibility reports as part of the project definition process and demonstrates how complex and expensive the process of producing a comprehensive project definition can be.

Creating Project Strategy in Projects

Figure 1.9 shows project requirements, scope, and definition inputting to the *PMBOK® Guide's* (Project Management Institute 2000) ''Project management planning and integration processes'' box in the ''Creating project strategy'' stage. Outputs from this box are supplemented by the strategic framework processes and the more detailed and specific ''Elements of project strategy'' boxes to develop the project plan. Doing this is likely to enhance the quality of the inputs to the processes from which project strategy is created and ultimately, the quality of the project strategy.

The project plan development process also takes the outputs from the planning processes from other project management knowledge areas not shown in Figure 1.9 (such as resource plans, risk plans, and procurement plans, to name a few) and subsidiary plans (such as scope management and schedule management plans), and incorporates them in a consistent, coherent project plan document or set of documents. A summary of the contents of these key documents

[2]J. R. Turner, *The Handbook of Project-Based Management: Improving the Process for Achieving Strategic Objectives*. 2nd ed. (Maidenhead, UK: McGraw-Hill, 1999), pp. 70 and 82. © 1999. Reproduced by permission of the Open University Press/ McGraw-Hill Publishing Company.

and management plans is incorporated into the project plan. (Such is the best practice we are hypothesizing and which we will test in the case studies and survey questionnaires that we will report on later.)

A Structured Approach to Creating and Moving Strategy Within Projects

Figure 1.9 shows the large number of factors involved in creating project strategy at the front end of a project. This highlights the need for organizations to have an effective way to manage the whole process of project strategy creation, covering not only the front end of a project but also the entire project lifecycle. Our research will show that companies have indeed developed structured approaches for creating and managing project strategy which do cover the entire project lifecycle and which are integrated with business strategy development processes. Figure 1.10 is an example of an actual structured approach of a major manufacturing company. It comprises:

- A business process model;
- The managing major projects process;
- The project management process.

The project management process in this company comprises five stages covering the entire project lifecycle. The key tasks undertaken during each of the process phases are stipulated in the supporting documentation and reflect many of the front-end elements shown in Figure 1.9. Defining project strategy is one of the key tasks undertaken in all of the phases and is done in accordance with a list of topics by those working on the project. This approach enables the evolving project strategy to be managed throughout the lifecycle of the project—by all those involved—in a manner that is rigorous, comprehensive, dynamic, and highly visible.

Competencies, Roles, Responsibilities, and Accountabilities for Moving Strategy

Moving strategy by means of rigorous, sophisticated processes, such as those shown in Figure 1.10, requires an extensive range of competencies, a highly skilled staff, and a clear definition of their roles, responsibilities, and accountabilities. Following Boyatzis (1982), several definitions of competency (and capability) have been offered. For us, competency is role-specific and covers the knowledge, skills, and behaviors needed to perform the role.

Armstrong (1999) points out that competency frameworks define the competency requirements that cover all the key jobs in the organization or all the jobs in a job family. Marchington and Wilkinson (2002) have observed that a competency framework provides a

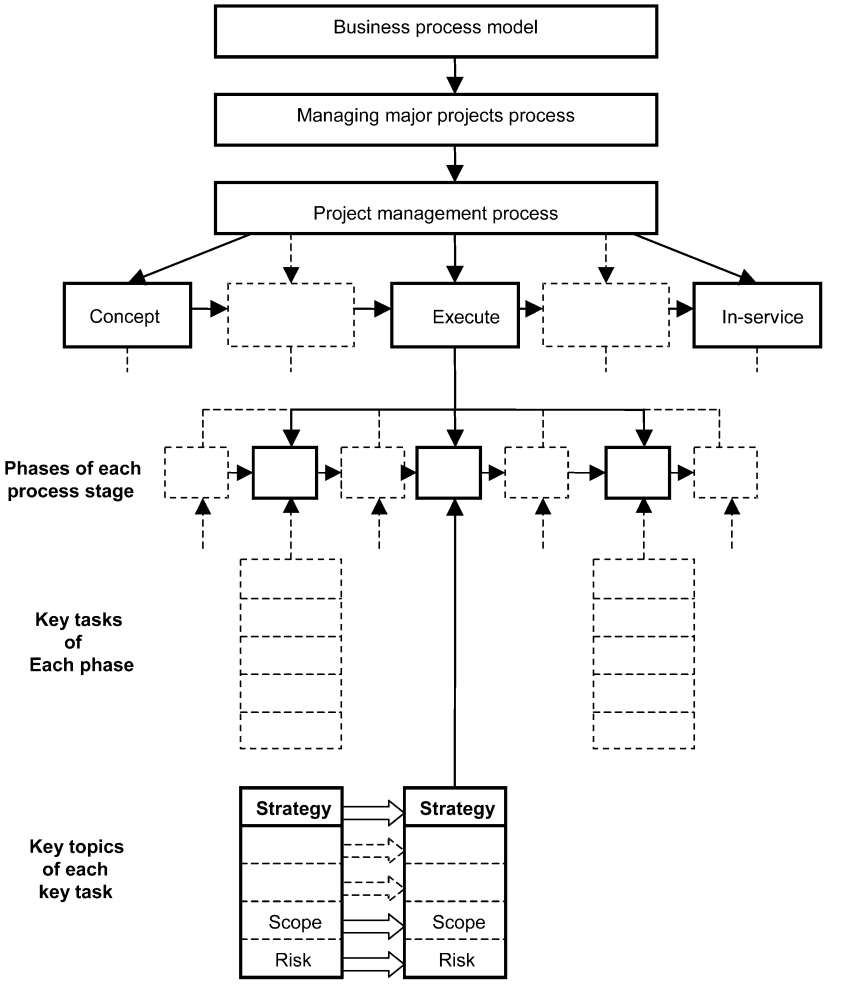


Figure 1.10 A structured approach to creating and moving project strategy

set of performance criteria at organizational and individual levels and that such a framework identifies the expected outcomes of achieving those criteria.

While competency frameworks are generally company- and, indeed, role-specific, consider the UK Institution of Civil Engineers' competency framework structure (Maxwell-Hart & Marsh, 2001) as an example of a generic approach in a project/technical area. This framework comprises twelve key management roles and approximately 140 associated competencies. The key roles are:

- Corporate management
- Business management
- Financial and management systems
- Promotion and business development
- Communications and presentations
- The client and relationships
- Respect for people
- Project management
- Professional, commercial, and contractual practice
- Information and communication technology
- Health, safety and welfare, quality, and environment
- Construction profession in society[3].

Elements of strategy management are covered in both the corporate and business management roles. The key purpose of the project management role is described as "the multi-faceted responsibilities necessary to programme [*sic*] (i.e., organize and schedule), monitor and control all aspects of the project from conception to successful handover in line with clients' requirements, one's own organizational objectives and the implementation of best practice," (Maxwell-Hart & Marsh, 2001, p. 3) and implies responsibility for project strategy.

Armstrong (1999) reports that a survey of 126 companies shows the most common behaviors sought by the organizations, one of which is strategic capability. Crawford (2000) reveals some of the knowledge, skills, and personal attributes of project managers, including that of strategic direction. Examples of core competencies related to project strategy are provided in the case studies section below.

Roles and accountabilities are slightly different from competencies: they are more prescriptive, describing the duties and tasks to be performed and what the incumbent will be held accountable for. In project-oriented organizations, processes and the documentation identifying roles, responsibilities, and accountabilities are formatted in different ways, are often extensive, and all too often are not very user-friendly. It is essential, therefore, that roles and responsibilities are identified and formatted in user-friendly ways and are *bought into* by those affected. Examples of roles and responsibilities—as well as formats—are given in the case studies section below.

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[3]G. Maxwell-Hart and G. Marsh, *Management Development in the Construction Industry*, 2nd ed. London: Thomas Telford 2001, 3-4. © 2001. The Institution of Civil Engineers.

We can now look at the findings of the case studies of four major organizations in the following chapters to see how they, in practice, move corporate strategy into project strategy. The companies include:

- A global aerospace manufacturing company
- A group within a global financial services company
- A division of a global pharmaceutical company
- An international transportation facility owner/operator.

CHAPTER 2

Case Study: How a Global Aerospace Company Moves Strategy into Projects

Introduction

The principal aim of all the case studies was to obtain evidence and to document the processes, practices, and people factors that each company uses to translate corporate strategy into project strategy. The UCL research team (the authors) carried out a number of semi-structured interviews with senior managers from the business and project management areas of each of the participating companies, using sets of questions given in advance of the interviews. Detailed notes of the interviews and information extracted from each company's documentation were analyzed and used to compile case study reports. Confidential copies of each report were sent separately to each company to verify the accuracy, validity, and analysis of the data and information, before being formally disseminated within each organization. The findings of each of the case studies are extracts from these reports and are published with the full consent of the companies involved.

Business Management, Integrated Program Management, and Project Management

The *business process model* (BPM), used throughout the company, is an equivalent model to the generic enterprise model identified in the literature, although it doesn't explicitly show the company's value delivery system. It comprises a number of major processes, as

shown in Figure 2.1, and is an integral part of the company's Quality Management System. Each of the major processes has well-defined interconnecting sub-processes. The *plan the business* process defines the stages and business gates for all projects undertaken by the company and has integrated within it an *integrated program management* (IPM) process. The processes for developing business strategy and business plan deployment are also part of the *plan the business* process.

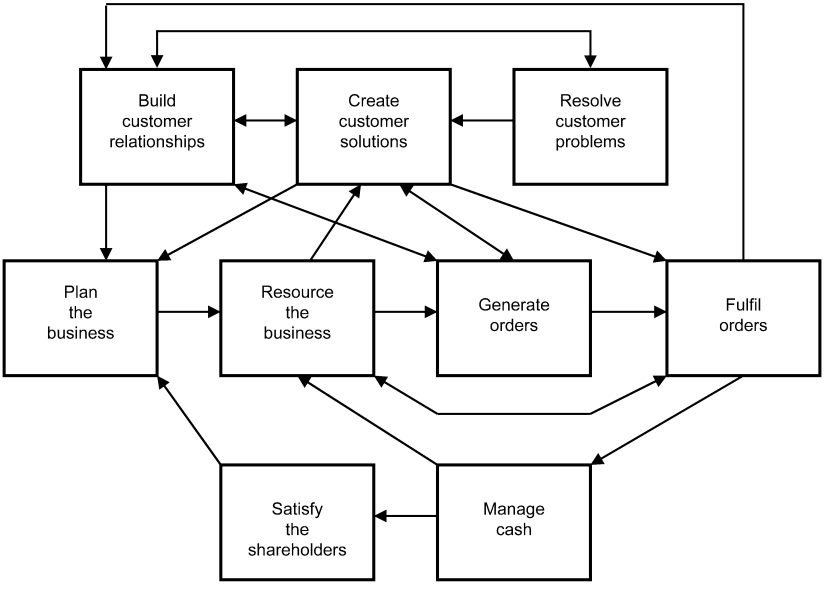


Figure 2.1 Business model

The IPM process is a process for managing the whole business and is equally applicable to the management of projects. The process comprises four phases as follows:

- Pre-program evaluation
- Planning
- Execution
- Closeout.

The company describes a program within the context of the IPM as *simply a related series of activities, stretching out over time, intended to achieve defined objectives*. It also uses the word *program* to make clear that the IPM concept is not limited to projects or products and takes the view that *every action within the company must belong to a program and every program must have a customer, objectives, and a budget*. The company defines a project as having a *life cycle that includes project opportunity, commitment, execution,*

in-service support, serial production, and disposal. The terms *project* and *program* are also used interchangeably in certain documents within the company.

The seven principles of IPM, constituting best practice, are as follows:

- All activity is defined by programs
- Programs determine resource group size
- Commitment-acceptance
- Managing the resource
- Financial control
- Conflict resolution
- Change control.

Creating and Translating Corporate and Business Strategy into Project Strategy

The company creates and translates its strategy from the corporate to project level by means of a hierarchy of processes: these are contained within the overall *plan the business* process and are outlined in Figure 2.2. Corporate strategy, within the company, is a portfolio of integrated business strategies that will deliver corporate intent and are consistent with the financial constraints facing the company. The process by which this is achieved is *create corporate strategy*, one of eight top-level processes of the *plan the business* process. The process operates at two levels: the development and agreement of a *corporate strategy plan* (CSP) by the Board and engaging the business sectors to arrive at a committed set of business strategies that fully support the CSP.

The corporate strategic requirements are analyzed, taking into account the relevant internal and external influences and particularly the competitive environment. The process owners, business sectors, and business units provide most of the information necessary to carry out the analysis. A portfolio of strategies is developed—including commitments and opportunities submitted by the businesses—to form the CSP for the Board to discuss, approve, and commit to. Once this has been completed, the CSP becomes the baseline against which corporate strategy is monitored. The CSP also contains the *corporate financial plan* (CFP), which summarizes the financial element of corporate strategy. Corporate strategy is then communicated to the business sectors and business units in order for them to formulate their own strategies, plans, and commitments, as indicated in Figure 2.2.

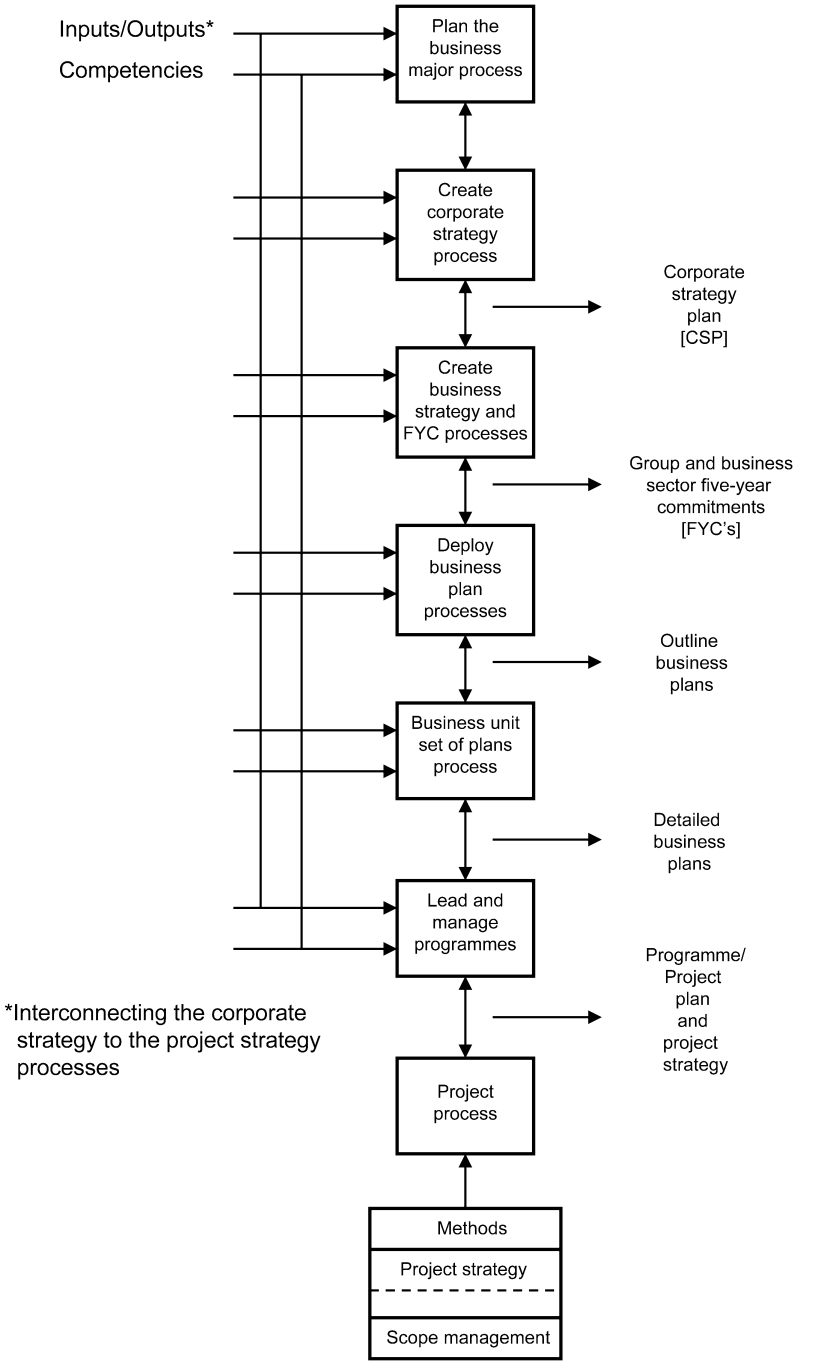


Figure 2.2 Corporate strategy to project strategy process map

Business Strategy

The company's business sectors and business units utilize the *create business strategy and five-year commitment* (FYC) process to manage their strategy, as shown in Figure 2.2. The corporate objectives, targets, and risks—communicated by corporate headquarters to the business sectors—are translated into business objectives, targets, and risks for the business units. In turn, they are used as inputs to continuously update corporate strategy. Each business sector strategy comprises the strategies of all the business units within its sector and must be in line with—and contribute to—corporate strategy. Similarly, the combined strategies, plans, and commitments of the business units have to meet the agreed business sector objectives and targets. Each business sector provides and maintains a fully documented FYC, which commits the business sector, through its set of outline business unit plans, to achieve its objectives and those of the company. The management of business strategy is a continuous process; the FYC and business plans are reviewed and updated at least once a year.

Business sector strategy is cascaded to the business units through the *deploy business plans* process, as indicated in Figure 2.2. The outlining of business plans resulting from the *create business strategy* process are developed by the business units to a level of detail sufficient to achieve the agreed objectives and targets for the business unit and to agree on budgets for the activities. They are also used to deploy business unit objectives and targets in a meaningful way and to provide the means for reviewing performance against the plan. Business units then develop detailed business plans that include plans of all the types of resources required to support the strategy and the timescales of their acquisition. This process, in effect, transforms the commitments of each business area into meaningful objectives for the program or project teams and every individual. When the budget for a business plan has been agreed-upon, the business plan is transformed into a program of work.

The *lead-and-manage programs* process, shown in Figure 2.2, is another of the eight top-level processes of the *plan the business* process. This process transforms business plans into programs of work and comprises the four phases of Integrated Program Management, as follows:

- Pre-program evaluation
- Planning
- Execution
- Closeout.

During the planning phase, an integrated program or project team develops a program or project plan using a twelve-stage program

planning process. The process starts by capturing the requirements of the program or project and finishes with the assembly of, and commitment to, the plan and the delivery of a program master schedule. The plan includes, among other things:

- Program deliverables and milestones;
- Roles to manage Work Breakdown Structure (WBS) deliverables;
- Management and reporting requirements for each package of work;
- Formal control gates to ensure that all work done meets the defined customer requirements, deliverables, specifications, cost, and schedule;
- Assignment of budget and resource to each activity.

The project management process and practices are also incorporated within the *lead and manage programs* process, as highlighted in Figure 2.2. These are shown in more detail in Figures 2.3 and 2.4 and in Table 2.1.

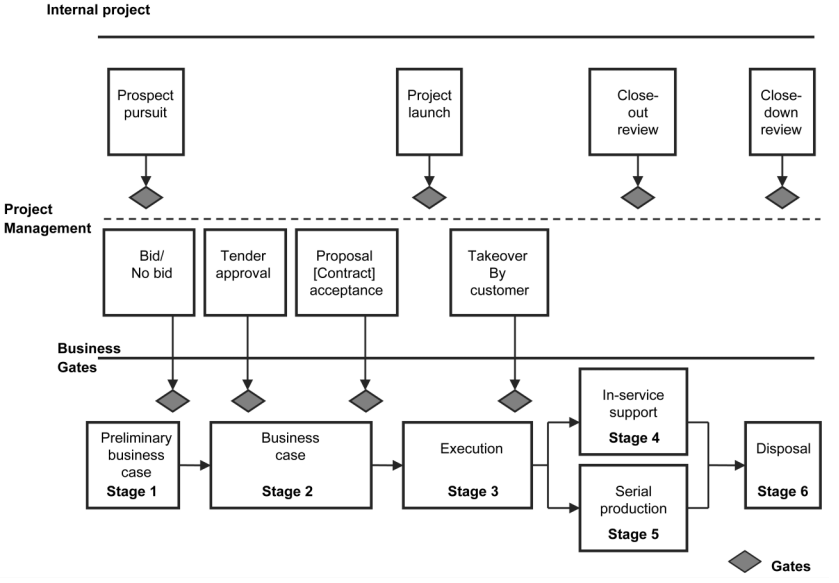


Figure 2.3 Project management project gates

The stages of the project process cover all the activities associated with the project lifecycle, as demonstrated in Figure 2.3. There are management gates between the stages. Each of these stages has a number of phases; for example, Stage 1 has eight phases, as shown in Figure 2.4. (The stages are also referred to at the project management process.) A number of key topics, shown in Table 2.1, are addressed

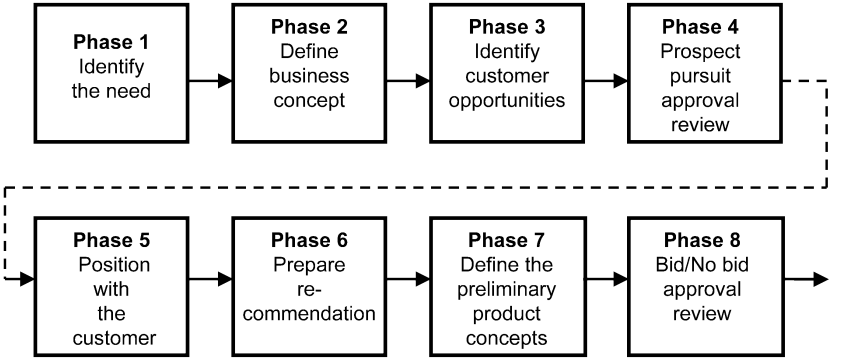


Figure 2.4 Stage 1 - Preliminary business case phases

No.	Key topic
1	Customer management
2	Project strategy
3	Scope and change management (Requirements definition)
4	Procurement management
5	Product/Service development
6	Risk and opportunity management
7	Claims management
8	Planning and resource management
9	Cost management
10	Organization
11	Business evaluation

Table 2.1 Key topics (disciplines/practices) for the stages of the project management process

during each of the phases, one of which is project strategy. *Project strategy is managed, in considerable detail, by project teams throughout all the stages and all the associated phases of the project management process.*

At first glance, the list in Table 2.1 appears to omit a number of key topics (practices) identified in Figure 1.9 (Chapter 1), such as production and technical management. However, on closer examination of the company's project management process, these and other

practices are embedded within the process and are frequently referred to under the general heading of *capability acquisition*.

In addition to identifying the key project strategy activities for each of the stages and phases of the project lifecycle, the company also provides the methods and techniques that enable the key activities, including project strategy, to be undertaken consistently across the organization; the structure of these is shown in Figure 2.5.

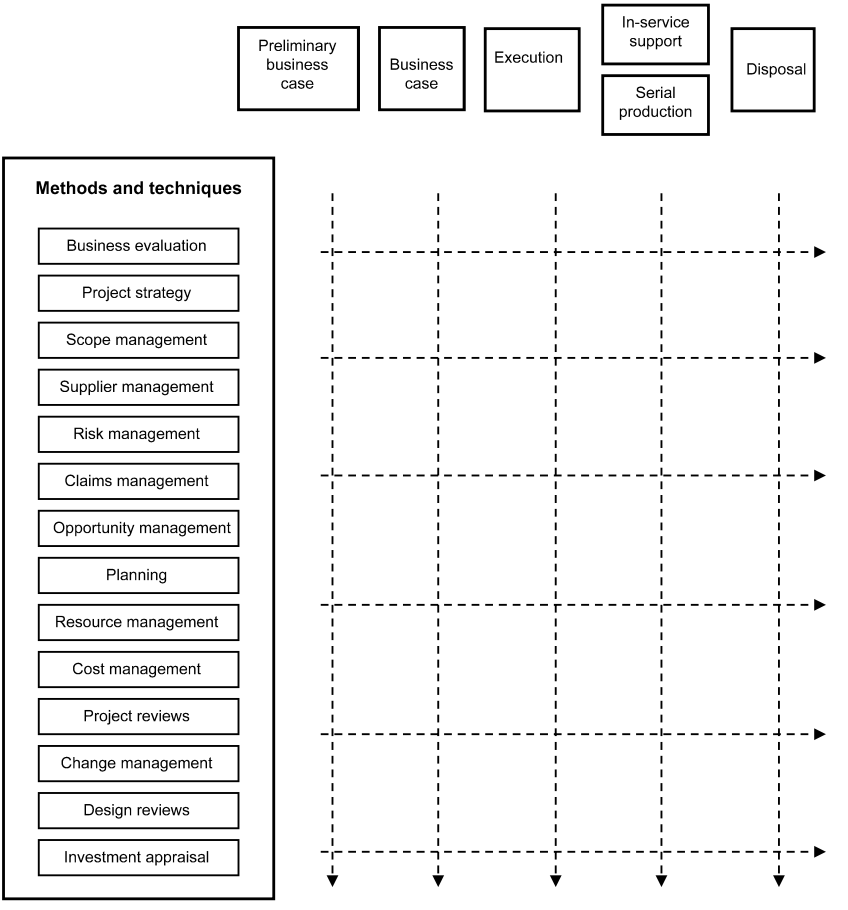


Figure 2.5 Methods and techniques (practices)

Structured Approach to Project Strategy Management

A hierarchical schematic of the way the company creates and moves strategy from the corporate level through to the close of a project can be developed by combining the figures and tables above, as

demonstrated in Figure 2.6. This figure shows the end-to-end structured approach used by the company to manage strategy.

The company also has a specific process: *Manage strategic change*, for managing a rapid response to changes that may demand a review of strategy and if required, for identifying the need for—and the creation of—action plans to maintain the currency of the strategy. Each business also has a process for rapid reaction to unexpected changes that might impact their strategy. These include a review of the impact and necessary actions to accommodate and

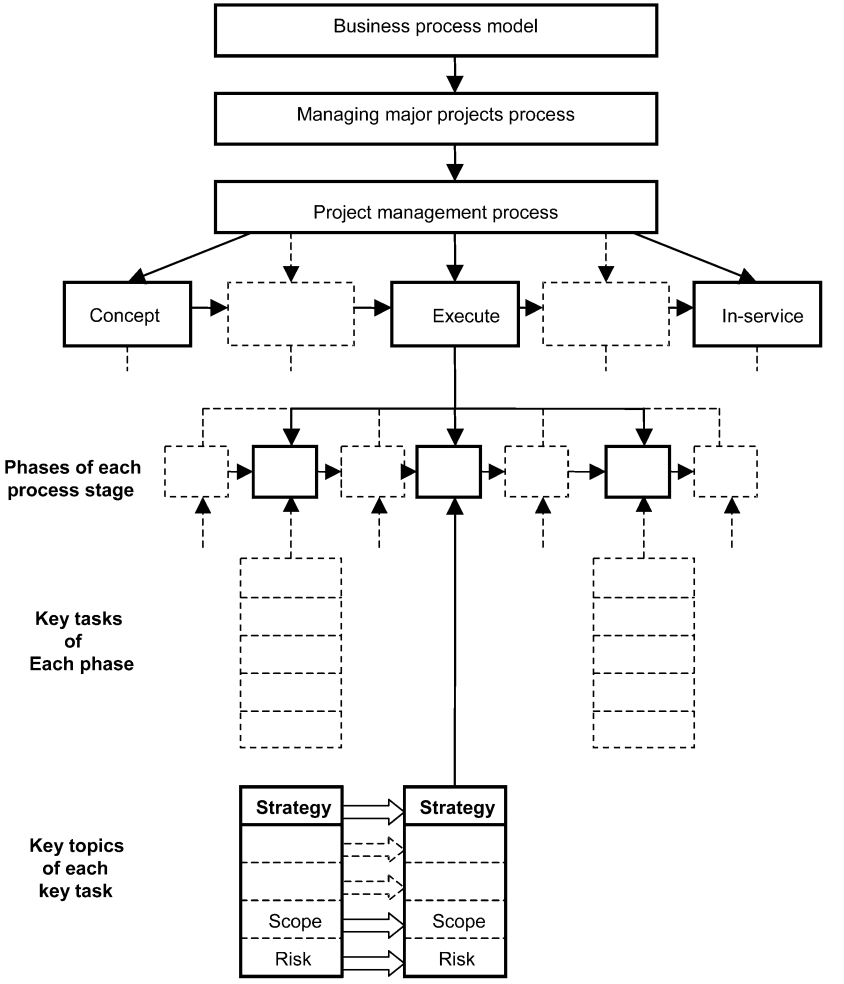


Figure 2.6 A structured approach to creating and moving project strategy

take advantage of the changes. The corporate development group and business sectors maintain visibility and communication links back to corporate strategy planning to ensure that any changes that impact the corporate strategy—and hence their own strategy—are rapidly identified.

Competencies, Roles, Responsibilities, and Accountabilities for Moving Strategy

Emphasis is placed upon the competency and relevant training of those operating the processes shown in Figure 2.2. In the case of the *lead-and-manage programs* process, for example, people will have competency in program management gained from:

- Experience of working on programs and projects;
- IPM training courses;
- Project management training courses predicated on the project management process, as shown in Figures 2.3 and 2.4;
- Courses designed to develop program management behavioral competencies, knowledge, and skills.

The roles and principal responsibilities for program management within the l*ead-and-manage programs* process are as follows:

- To act as the primary point of contact for the customer and be accountable for customer satisfaction for the program;
- To deliver the committed business case and provide the organization with the necessary information for managing the business;
- To establish, develop, and maintain the WBS, and therefore all the packages of work (control accounts) necessary to deliver the program;
- To develop the plan for the program (including risk mitigation) and instruct release of the program budget to authorize the starting and stopping of all programs of work;
- To review progress against plans, to identify when corrective action is required, and to agree and initiate the necessary program changes, including re-allocation of resources;
- Program management has the necessary authority (including budget control), accountability, and responsibility for completing a given program and ensuring it meets the schedule, specification, and business case requirements.

As mentioned previously, the *lead-and-manage programs* process also includes the project process which identifies, among other things, the purpose, objectives, key activities, and key outputs for each stage and phase of the project management process, as well as those with the lead responsibility and accountability for successfully carrying them out. Those identified include such people as the man-

aging director, bid manager, and project manager. The core behavioral competencies for project directors and project managers are shown in Figure 2.7.

Core competencies	Project director	Project manager
Managing vision and purpose	X	
Business acumen	X	
Customer focus	X	X
Priority setting	X	X
Directing others	X	X
Leading from the front	X	X
Drive for results	X	
Dealing with ambiguity	X	
Composure	X	
Comfort around higher management	X	X
Negotiating	X	X
Building effective teams	X	X
Conflict management		X
Timely decision making		X
Motivating others		X
Organizing		X

Figure 2.7 Core behavioral competencies for project directors and project managers

In addition to the core behavioral competencies, the company has also defined project management functional competencies (i.e., knowledge and skills). These competencies, grouped into several categories, are used to develop the elements of the strategic framework (as outlined in the *APM BOK*) and subsequently, to create project strategy. The categories of strategic management competencies, and the processes to which they are applicable, are as follows:

- Strategic—including strategy/project management plan and value management;
- Control—including work content and scope management;
- Technical—including requirements management;
- Commercial—including business case, financial management, and procurement;

- Organizational—including lifecycle design and management as well as organizational structure and roles.

These competencies are also related to the job requirements for project directors, project managers, and other professional project management staff. For the elements mentioned above, the levels of competency for project directors and project managers are the same in most instances. However, in one or two areas, such as requirements management, the project manager is required to have a higher level of competency.

Conclusions

This case study revealed that strategy moves from corporate to projects through extensively integrated company-wide processes and practices, deployed by highly skilled professional people. One big advantage of this approach is that it forms part of the company's Quality Management System and is, therefore, mandatory. The processes and practices are widely used, although—as in any system—there are opportunities for improvement. By virtue of the level of integration, strategy is likely to be developed consistently and coherently throughout the businesses, programs, and projects of the company. Should any event arise that threatens the intended strategy, there are mechanisms for managing the situation and maintaining the currency of the strategy.

The company's business model is consistent with the widely accepted generic model identified in the literature. The processes for creating and continuously updating corporate, business sector, and business unit strategies—and deploying them—emanate from the business model; its outputs are used to develop and manage project strategy. The activities associated with these processes reflect those identified for strategic management in the literature. The level of integration, the degree of interfacing, and the close involvement of corporate and business strategists and project management staff developing strategy provides an example of how to formulate strategy and start the process of implementation. The highly integrated and structured approach used by the company to translate corporate and business strategies into project strategy, and then to manage it through the entire project management process and project lifecycle, demonstrates the importance of project strategy and its management, as well as the level of priority which it should be given. It provides a very good model of how this can be done.

The project process is an integral element of the business model and is established as a key business process. This is in contrast to the generic business model that fails to recognize and identify the project management process as a key business process. One of the

main objectives of the research project was to gather and present evidence that would confirm to the wider academic and business community that the project management process is a key business process. The prominence and degree of importance that the company gives to integrated program management, as well as the management of programs and projects, substantially strengthens the case for a change in perception and a recognition by the wider academic and business community that the project management process is a key business process.

The project management process is used to manage portfolios of programs and projects in addition to separate projects, but there was some criticism that the program/project management tools and techniques were refined to such a level that they were not flexible enough to be used on short-term or non-standard projects and that the project management processes were ignored because they were too much of a burden on small projects. However, others said that they could tailor the requirements of the processes and they took a more flexible approach on how they used them. It was also indicated that some operational processes were being used to manage certain production projects, in preference to the project process. However, despite these criticisms, it was clear that the gated review process was widely used.

The importance of effective documentation to enable project teams to manage projects is evident from the findings of the case study. The sets of documents supporting the processes used by the company encapsulate very effectively the way the company performs its business. These include comprehensive flowcharts of the processes that identify the associated inputs and outputs, and the competencies, authorities, and training required to undertake the tasks. These are widely available on the company's Intranet.

A comprehensive range of key project management topics (activities) and the methods and techniques defining how they are carried out are used in all the stages and all the associated phases of the project management process. Elements of these activities, otherwise described as *practices*, influence project strategy and are identified or embedded in the process documentation. Embedding some of these, however, tends to make them less visible. The company's range of practices largely reflects the practices shown in the model that are synthesized by the research team from literature review sources.

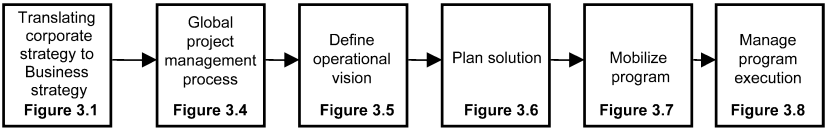
The professionalism of project management staff is evident from the approach the company uses to train and develop its staff. The recognition, prominence, and commitment given to developmental and ongoing professional training by the company—in addition to

defining the roles, responsibilities, and competencies—are perceived to be best practice. The project management core behavioral competencies for project directors and project managers are comprehensive but succinctly defined. The project management functional competencies, which senior practitioners believe program and project managers should possess, are clearly identified. There is, however, little reference to strategy in the core competencies, although it is implied. This is in contrast to the functional competencies that include categories of strategic management competencies required to manage project strategy. These competencies are related to the job requirements for project directors, project managers, and other professional project management staff. Furthermore, the job requirements and competencies are linked to the generic project management processes and key practices. This example serves as a model of how to integrate competencies with project management processes and practices.

CHAPTER 3

Case Study: How a Business Group in a Global Financial Services Company Moves Strategy into Projects

The group is part of a large, complex company with operations in a number of countries and continents. The process of moving strategy from the corporate to program and project level within it is very involved. A business enterprise model or an equivalent does not appear to be used and the way the group's business management processes interconnect with the global project management processes is not visible to the same level of detail as that used in the global project management process. The stages and processes used by the group to translate corporate strategy into project strategy for major (strategic) programs and projects and to manage this through the project lifecycle are outlined in Figure 3.1.



Figures references shown in boxes refer to diagram numbers in this chapter

Figure 3.1 Moving corporate strategy to programs and project strategy

Moving Corporate Strategy and Business Strategy

Business units within the group develop business plans annually, as indicated in Figure 3.2. Business strategy is derived from corporate strategy and the group investment plan using a strategy development process. Business units also develop strategy plans and align business strategy to the corporate vision, mission, strategies, and objectives

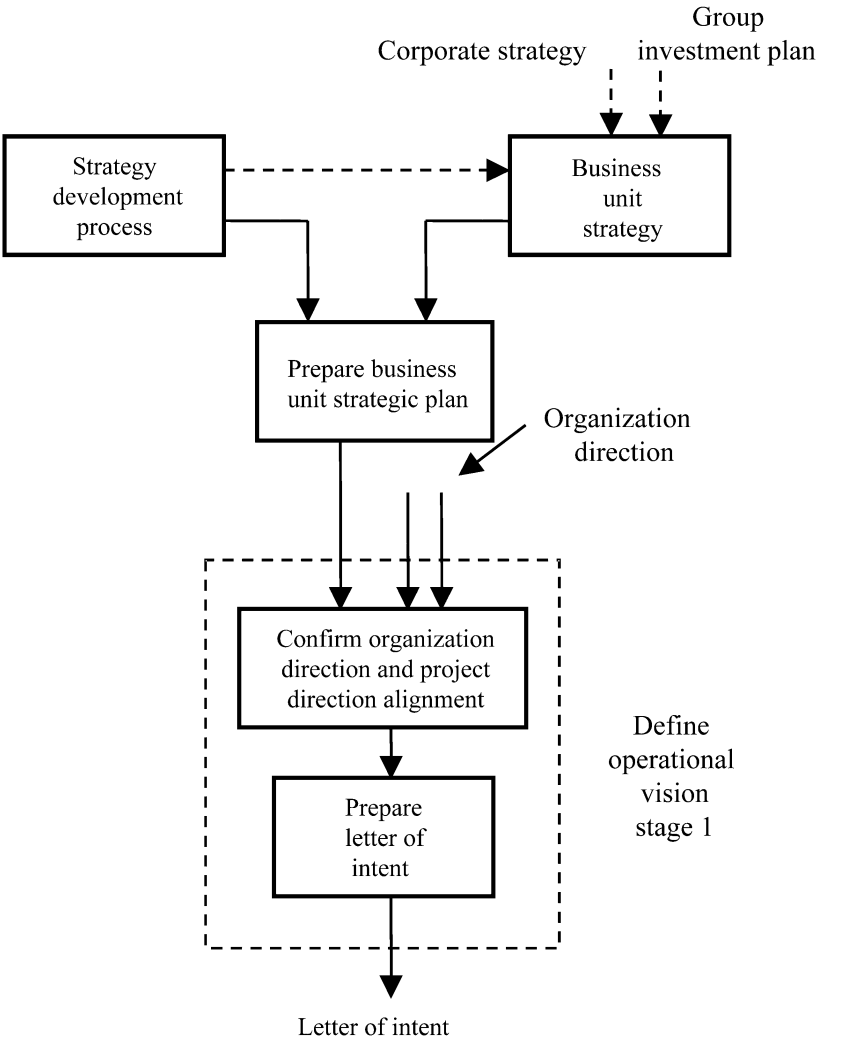


Figure 3.2 Translating corporate strategy into business strategy programs and projects

using the same process, and identify the strategic programs and projects to be pursued to achieve the objectives of the business unit.

The company defines a program simply as a natural grouping of projects and uses the basic structure as shown in Figure 3.3.

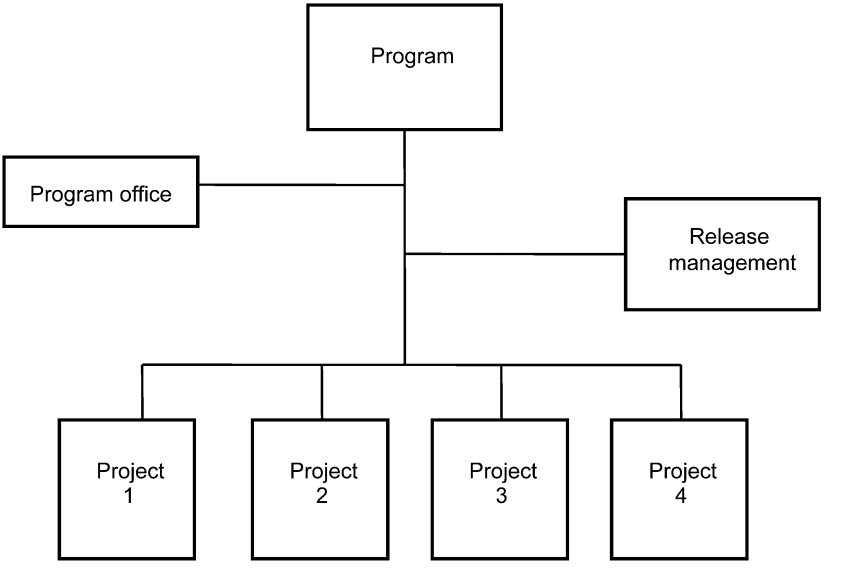


Figure 3.3 Typical structure of a large program

The global project management process, used to manage programs and projects, is outlined in Figure 3.4 and comprises the following stages:

- Define operational vision
- Plan solution
- Mobilize program
- Manage program execution
- Close out program.

Define Operational Vision: Moving Business Strategy to Project Strategy

A strategic program or project that is contained in the business unit strategy plan—and authorized to proceed—is managed in accordance with the global project management process. Figure 3.2 shows that the business unit's (organization's) direction (i.e., its vision, mission, strategies, and objectives) are confirmed, endorsed, and authorized by management. During this process, the program or project's vision, strategies, objective, and critical success factors are defined and

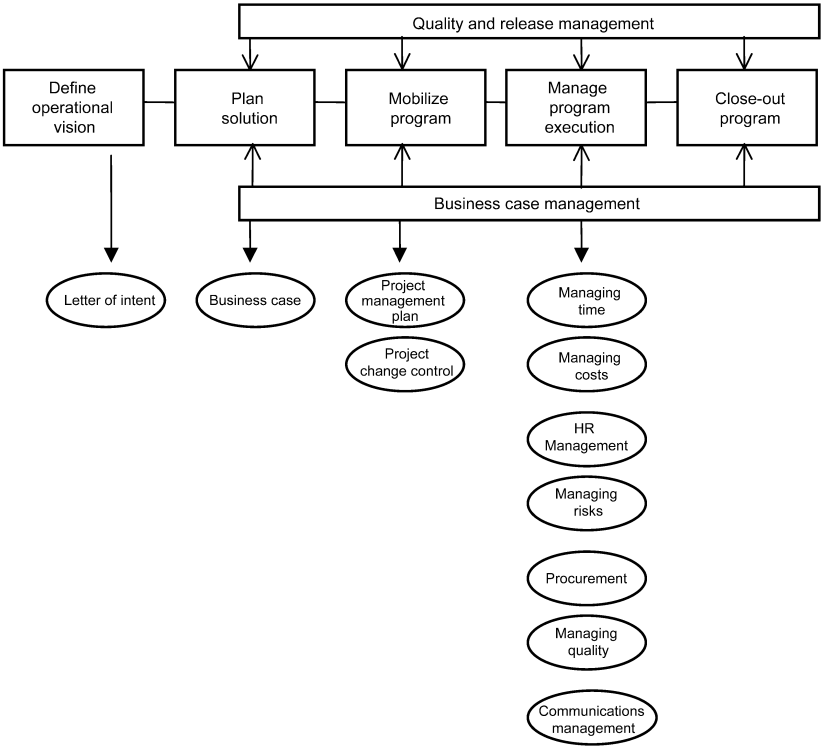


Figure 3.4 Global project management process

aligned with the organization's direction; a letter-of-intent is developed to document these.

Figure 3.5 shows the process in more detail. It indicates how business strategy is translated into program or project strategy and when the two strategies are aligned. The objectives and timetable for the project are determined during the project engagement process, as are the project's benefits and indicative costs. The direction of the business unit is confirmed and documented as a hierarchy of directions and includes vision, strategies, and objectives. These are used to drive the program's operational direction, which defines the vision, strategies, and objectives of the program or project. The alignment of the business direction with the program's operational direction is then checked and confirmed. If it is not confirmed, then the program vision may need to be changed. The output of this process is a program operational direction that is consistent with the business direction. The availability of resources determines if and when the program can proceed; the program is prioritized accordingly. The approach for delivering the vision and the letter-of-intent

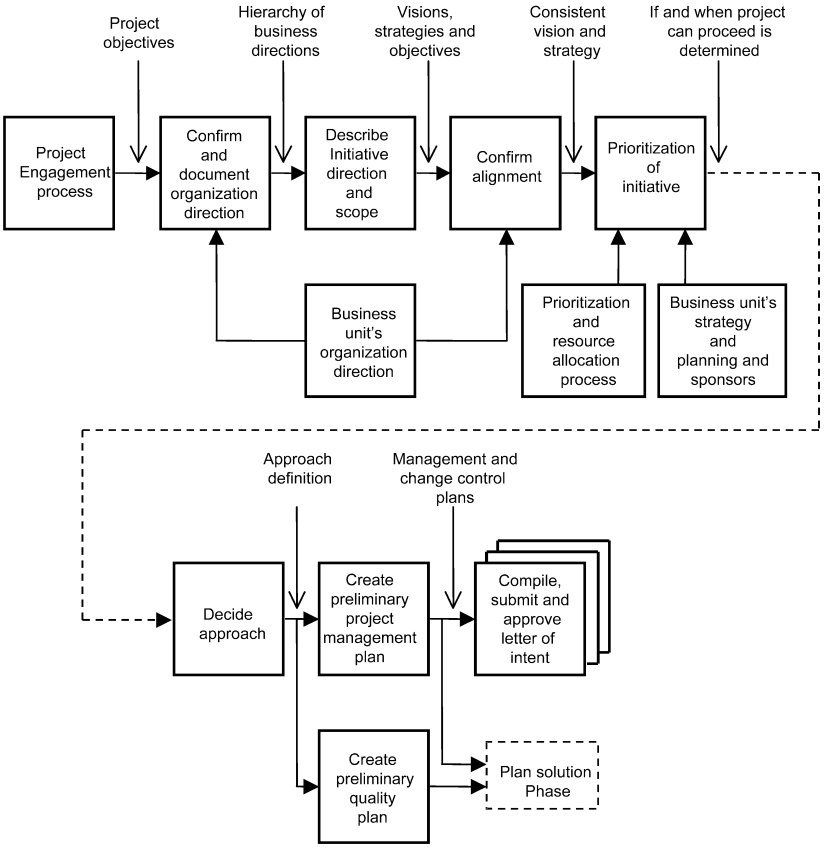


Figure 3.5 Define operational vision process

is decided, and a project management plan is created for undertaking the *plan solution* stage of the program. The letter-of-intent (reflecting the program operational direction) is compiled and is effectively a proposal for funding the *plan solution* stage of the program and the development of a business case for it.

Plan solution: Moving business strategy into programs and projects

Once a letter-of-intent is approved (which reflects the strategy for the program or project), a business case for the project is developed using the *plan solution* stage of the project management process, as outlined in Figure 3.6. The business case is the key deliverable of the stage. Developing a business case, in many companies, is one of the most critical activities leading to the approval of a project. How well a potential project fits with the strategy of the business is a

critical factor in determining its selection. How the business case is assembled, and the degree to which it reflects business strategy, usually influences the outcome of the approval process.

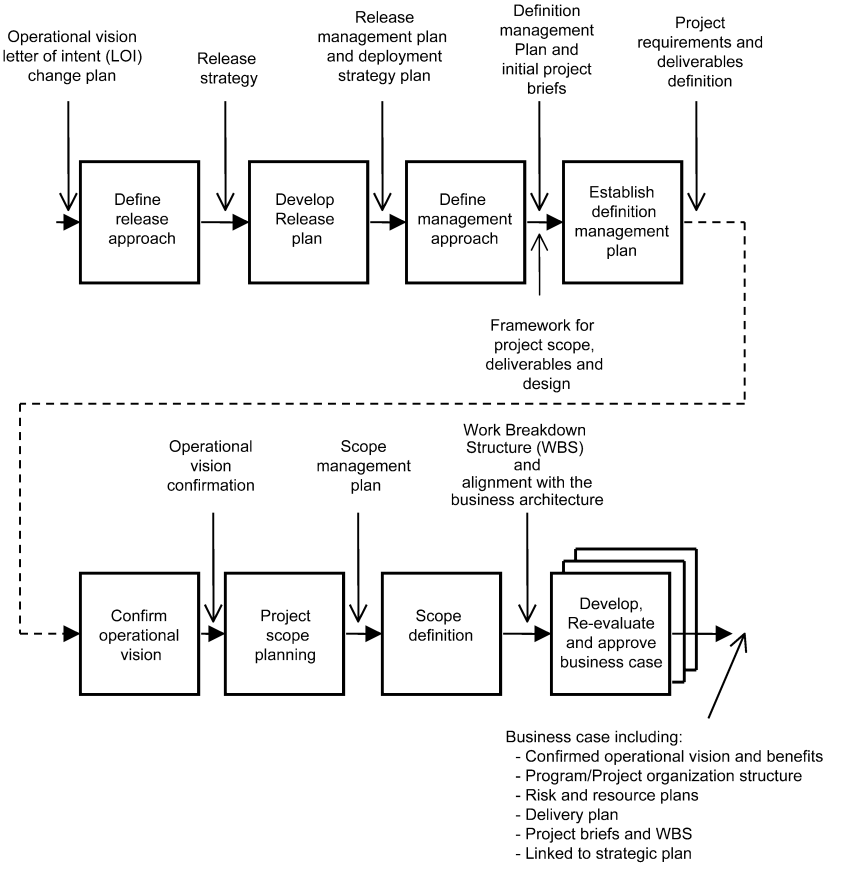


Figure 3.6 Plan solution processes

Figure 3.6 shows that the business case process involves some of the key activities associated with project strategy management identified in the literature review, such as project requirements, scope management and scope definition, and the development of associated plans and documents, including the following:

- Definition management plan;
- Initial project briefs;
- Project scope management plan;
- Project requirements and deliverables;
- Project WBS.

The process also confirms the program or project's operational vision, including strategy, and uses it to drive the scope planning and definition, and develop a WBS for the project.

The business case document contains, among other things:

- The program operational vision;
- The relationship with the business strategy plan;
- Program/project organization structure;
- Risk and resource plans;
- Delivery plan;
- Project briefs;
- WBS.

In summary, the *plan solution* stage develops the program or project operational vision into an integrated and complete program or project and presents it as a business case. The business case is then subject to an approval process.

Mobilize Program: Moving Strategy Within Programs and Projects

Upon approval of the business case, the project is prepared for execution using the *mobilize program* process outlined in Figure 3.7. This process takes the results of the previous planning processes, particularly the confirmed operational vision and business case—containing the business strategy and project strategy—and incorporates them into the project management plan. This practice is similar to that described in the *PMBOK® Guide* (Project Management Institute 2000), but differs from the latter in that there does not appear to be a requirement to provide a description of the project management approach or strategy in the form of a summary of the individual management plans.

Project strategy as a term and activity is not mentioned in the project management process from this point onward. However, the way in which the project is to be managed—in other words, the project strategy—is covered in detail in the following sections of the project management plan:

- Project objectives
- Project schedule
- Project budget
- Resource plan
- Risk management plan
- A complete set of project briefs.

The program or project business case is also maintained during the *mobilize program* process to ensure that it is accurate and up-to-date and that a process is in place to ensure that changes are properly controlled. For example, changes to the project scope that

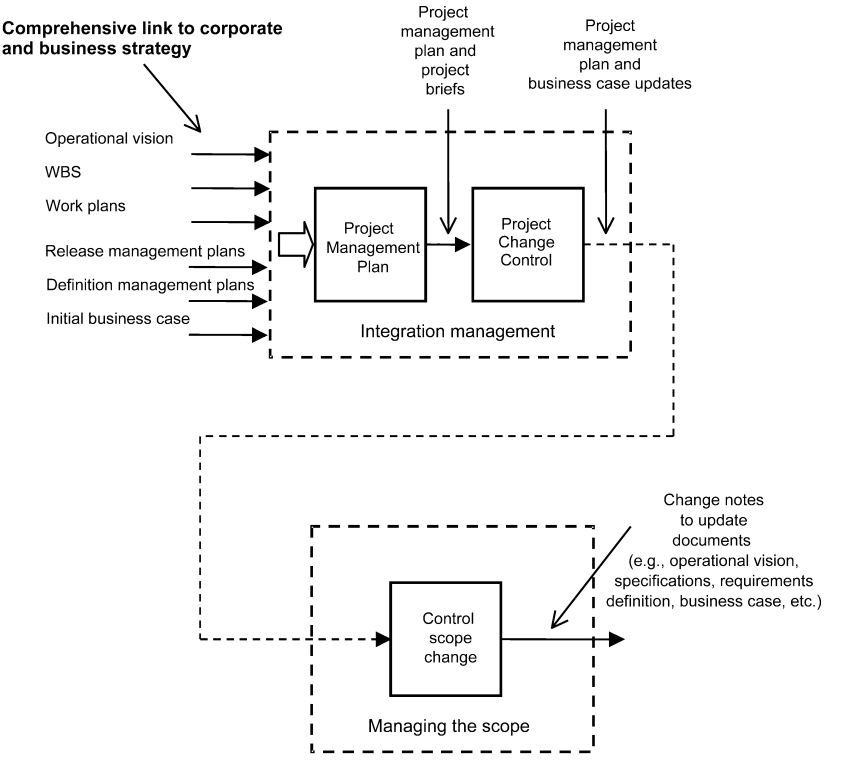


Figure 3.7 Mobilize program processes

arise while developing or updating the project management plan could impact the business strategy and the project strategy—as defined in the operational vision—during the *define operational vision* and *plan solution* stages. Managing project strategy through the business case in this way is effectively a closed-loop process and extends to the close of the project (see Figure 3.4).

One example of how strategy may change during this stage is when unforeseen problems arise, threatening the operational deployment (release) of the new capability being delivered, and consequently necessitating a change in release strategy. Figure 3.8 shows that the project management process provides this capability; changes affecting or involving release strategy are incorporated in an update to the project management plan and then in an update to the release management plan. Changes affecting the project scope and the business case during the *manage program execution* stage are controlled using the same process shown in Figure 3.7.

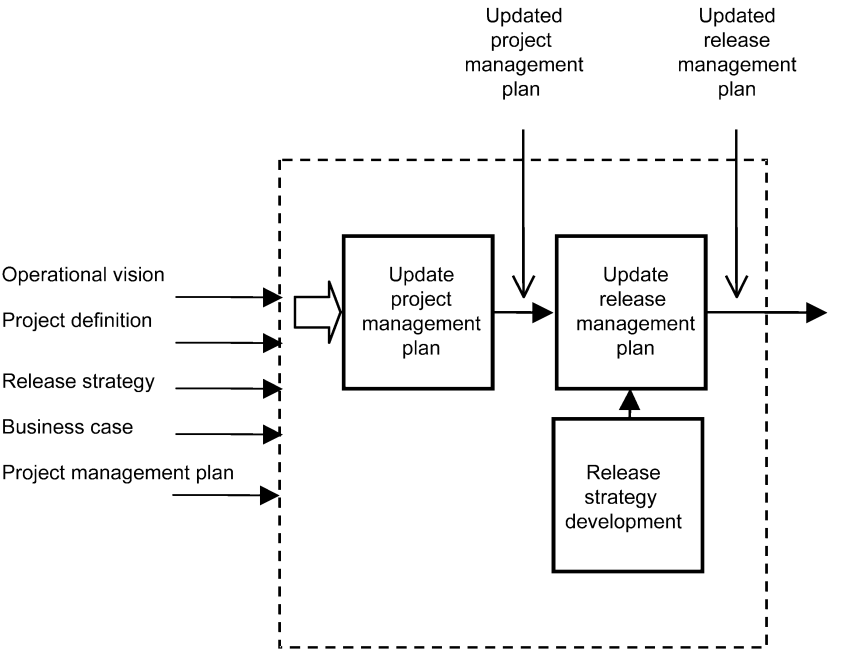


Figure 3.8 Manage program execution

A number of key project management activities or practices are used in managing the execution of a program or project. These are as follows (and as shown in Figure 3.2):

- Managing time;
- Managing costs;
- Human resource management;
- Managing risks;
- Managing procurement;
- Managing quality;
- Communications management.

Adding to this list Project Scope Management (undertaken during the *plan solution* stage) and Project Integration Management (carried out during the *mobilize program* stage) shows that the global project management practices reflect all nine of the project management Knowledge Areas (Project Management Institute 2000); however, none of these practices explicitly deal with project strategy.

Close Out Program

At the close of a program or project, a review of the baseline and most recent versions of the operational vision, management plans, and business case is undertaken and the findings are documented

in a *lessons learned* report of the program or project. The effectiveness of the program or project strategy to achieve the objectives of the program is an important element of the review. A *program close* report is also put together, in which the business case is validated to confirm the extent to which the expected benefits are being delivered and is likely to cover strategy.

Roles, Responsibilities, Accountabilities, and Competencies for Moving Strategy

The roles, responsibilities, and accountabilities for the tasks and deliverables identified in the project management process are described extensively throughout the process documentation. Those required for the activities involved—moving business strategy into programs and projects and managing project strategy (as summarized in the preceding figures)—are also clearly specified. A family of job descriptions is also used to define the roles, responsibilities, knowledge, skills, experience, and competencies for project management staff within the group.

The role and purpose of a global program director are expressed in terms of leading and coordinating the resources required to implement a strategic change program for the organization. This involves, among other things, using project management disciplines, ensuring that initiatives are aligned to organizational strategy and values and that the operational vision is delivered on behalf of the sponsor. A program normally involves multiple projects and working across lines of business and function. The emphasis on leading and coordinating resources to implement strategic change in the job description endorses the point made in the literature review, namely that it is a fundamental responsibility of project management to effectively manage and/or coordinate whatever company resources are at its disposal, using well-structured project management processes, practices, and methods, as well as professional project management staff.

A global program director's responsibilities include the following strategy-related areas:

- Global strategic direction of the program and its alignment with the business unit's vision, direction, and priorities;
- Business case management;
- Release management of change program operational implementation;
- Definition management - aligning the solution to the business unit vision and ensuring the solution remains aligned;
- Management of the implementation of the solution and its scope, resource, and schedule requirements;

- Development of program plans to reflect all progress, change, and problematic issues.

To effectively discharge these responsibilities, a global program director typically possesses the following knowledge, skills, and experience:

- Business and commercial management
- Task management
- Planning and organization
- Project management
- Time management
- People/relationship management, including leadership.

The behavioral competencies for the role-holder, relevant to program and project strategy, are as follows:

- Strategic thinking
- Conceptual thinking
- Innovativeness
- Analytical thinking.

The knowledge, skills, behavioral competencies, and experience required for project managers in the company fall into similar categories as those for a global program director, but the levels of each are within the context of a project and not a program; accordingly, they are at a commensurately lower level.

Conclusions

Programs are important vehicles for implementing corporate strategy and for implementing change within the group; programs are also seen as delivering business benefits. There is a clear process path to move corporate strategy through business unit strategy and into program and project strategy. But the management of program and project strategy is through an unexpected route. The front end of the project management process translates business strategy into program and/or project strategy and confirms the alignment of the two. From that point, however, when the scope of the project is planned and defined, project strategy is no longer mentioned in the project management plan, even though the business case for the project—which contains the operational vision and strategy for the project—could be included in it. Integrating project strategy management throughout the project management process, and not just at the front end or in the business case, and making it a core project management practice, would in all probability improve the performance of the project team and the outcome of the project.

The strategy for the project is managed and maintained through the operational vision within the business case and is in force until the close of the project. But the business case approach and process

is sometimes perceived within the group as too bureaucratic and cumbersome; it is, therefore, not liked. This may adversely affect the management of project strategy and hinder the take-up of some projects. The global project management process is extensive and very detailed, and it is available on the company's Intranet. But for some, it may be too complicated and difficult to understand and use; it may, therefore, not be widely accepted within the group.

The range of practices used in the project management process does not include more recent (and relevant) practices such as portfolio management, value management, or knowledge management.

The roles, responsibilities, and competencies for managing program and project strategy are prominent within the project management process and within the family of job descriptions; there is a high degree of correlation between the two. Expressing the role and purpose of a global program director and project manager (in terms of leading and coordinating the resources required to implement a strategic change program for the organization) is an excellent way of describing the role of program management staff and powerfully demonstrates the role of project management within the group—and to the world at large.

Chapter 4

Case Study: How a Division of a Global Pharmaceutical Company Moves Strategy into Projects

Business Management and Corporate Strategy

Developing pharmaceuticals is a complex activity. It can take well over 10 years and over US$800 million to develop a product from the laboratory to its delivery in the market. Towards the latter stages of development, the organization of the development teams is especially large and complex, with people working in a virtual and matrix environment.

Hence, it is no surprise that the structure of a division of the company studied here is very complex, as illustrated in Figure 4.1. *Pharmaceuticals product development* is one of a number of business sectors within the company (albeit the principal one) and has two major divisions: research and development (R&D) and marketing. The division upon which this case study was carried out—R&D—comprises two global zones: *Discovery* and *Development*. These zones are organized primarily along global functional lines (e.g., clinical, pharmaceutical sciences, etc.) and product (therapeutic) areas (e.g., oncology, pain, etc.) from which portfolios of programs and projects are set up and governed by senior management and executed by project teams consisting of staff from the functional lines, including project management.

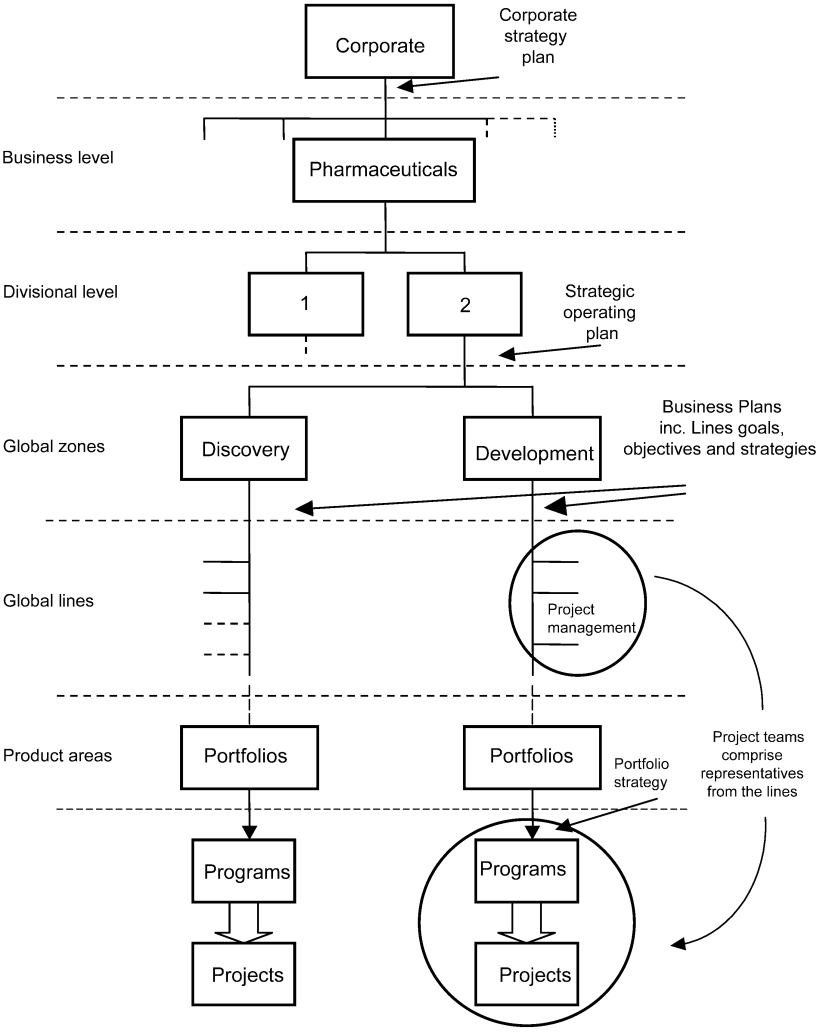


Figure 4.1 Company hierarchies for structure, goals, objectives, and strategies

The CEO of the company sets out corporate strategy in a high-level corporate strategy plan. Goals are set for the division, zones, and product development portfolios of programs and projects, which, in turn, communicate them as goals to the project teams and individuals. The division produces an annual business plan and strategic operating plan, in which the division's strategy is defined and aligned with corporate strategy. A strategic management group has responsibility for assembling the strategic operating plan, which it does in

consultation with the numerous functions and departments of the division, located at several sites in a number of countries. Strategies are developed in both a *top-down* and *bottom-up* way, and the intended strategy is flowed down the organization by means of a goal-setting process. In developing strategy, the division is flexible and responsive and its intended strategy includes elements of product development, strategic initiatives, and strategic drivers, such as productivity improvements and putting people first.

It is recognized, however, that *to the nature of the business* means that a large element of strategy realization will be emergent as the company responds to—and exploits—discoveries emerging from existing product development projects and new scientific and technical information.

Indeed, this emergent nature of pharmaceutical projects is quite critical. Pharmaceutical projects are often seen more as unraveling unknown intrinsic properties rather than engineering a solution to meet a design. Though there is arguably an element of this during the initial drug discovery phase when specific molecules may be engineered to interact with physiologic receptors, in the development stages the chemical entity has already been discovered and is being put through a series of tests (preclinical and clinical) to determine its safety and efficacy in human beings. Many compounds do not pass the testing phase because they do not demonstrate safety and efficacy. These compounds are terminated or *attritted*.

Although there is compound failure in most new product development type projects, the limited ability to accurately predict how a pharmaceutical or biotech compound will react in tests creates considerable uncertainty in forecasting future work and in shaping the emerging portfolio, program, and project strategy.

The emerging nature of information from test results—and the implications of this to the strategic profile of the compound drug data—creates a high degree of interaction between planning at the portfolio, program (brand), and project level. The emerging perception of therapeutic efficacy, along with the implications in business terms, has a direct impact on project and portfolio strategy, not the least as regards appropriate resource usage. Though this interaction is by no means unique to pharmaceutical projects, its extent is notably greater.

Governance and Strategy Decisions

The creation and approval of strategy within the division is managed by a number of governance bodies made up of senior company manag-

ers. The positions of these bodies are shown in Figure 4.2. A business strategy group makes decisions on portfolio strategy, portfolio priori-

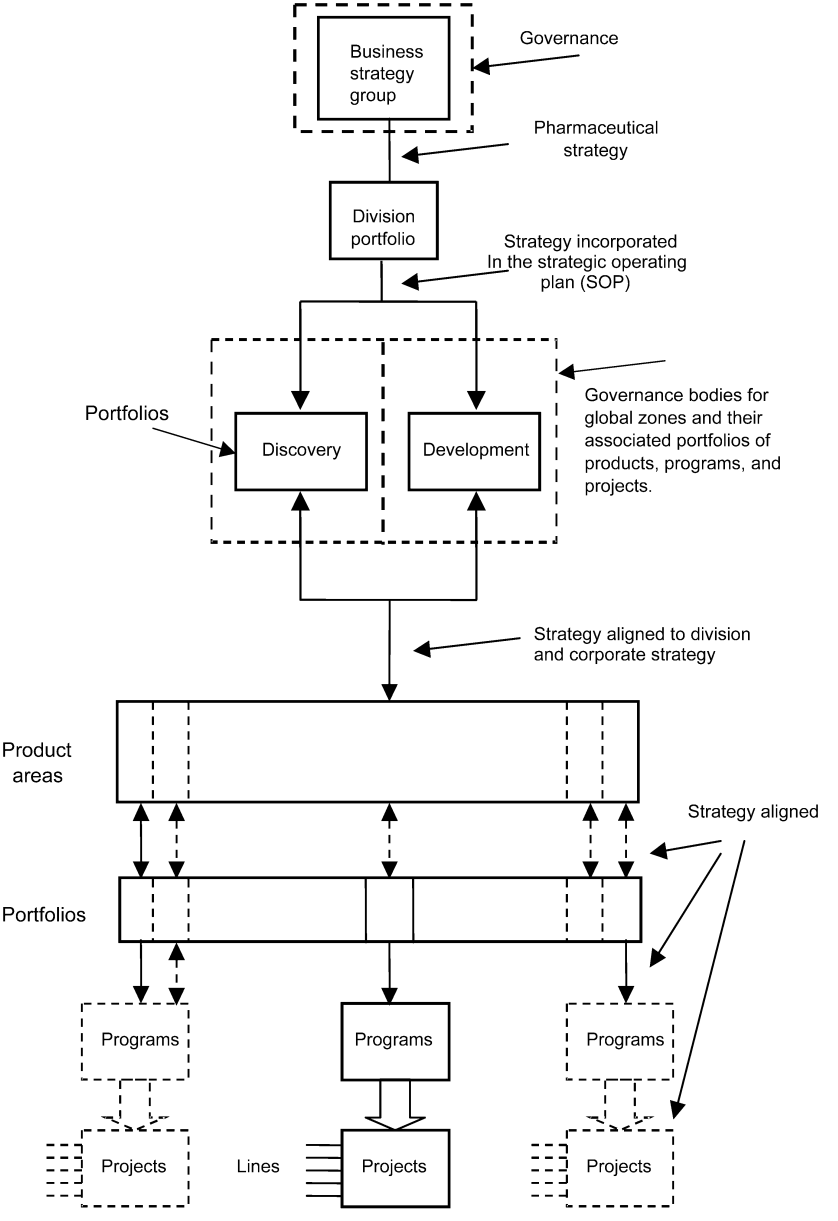


Figure 4.2 Governance, portfolio, program, and project strategy alignment

tization, and the overall direction of the pharmaceutical business. This group sets the framework in which project decisions are taken. There are also decision-making governance bodies for the two development areas that have the responsibility for the portfolios of products, programs, and projects of the division. Each decision-making body ensures that the zone, development areas, product, program, and project strategies are aligned with each other and with the portfolio strategy set by the business strategy group through a series of reviews. The project teams drive program strategy and involve the governance decision-making bodies to gain alignment and investment when they are required to or deem it appropriate.

Portfolios and Programs

We saw in the literature review section how strategies and objectives are cascaded through portfolios, programs, and projects. This enables an organization to ensure it maintains strategic coherence across the different levels of portfolios, programs, and projects and provides a mechanism for prioritizing and allocating resources and activities. Managing the portfolios relating to the division is undertaken at business, divisional, zone, and product area levels, as indicated in Figure 4.2. Different strategies can and do exist for each of these entities. However, these all align with corporate and business strategies and objectives.

Portfolios are very important in the company. They essentially form *the hand* from which the future of the company is being played. The term *programs* is less well embedded. Programs are seen as constituting a technical platform—a particular type of drug—of which there may be various versions (slightly different indications, dosages, or delivery mechanisms, for example). This product—or *chemical entity*—may also have a strong brand presence. Program management typically is important in strategy terms (a) as consideration is given to whether to invest in development early in the preclinical and Phase I stages of the development cycle (b) when line extensions are being considered.

Projects, in effect, have two meanings. One is the major project of developing *a compound* from discovery to regulatory approval and into the marketplace. The other is the activity of getting the compound to the next milestone review point of its development.

Portfolio Management Process

Portfolio management at the highest level within the division primarily consists of:

- Selecting a strategic areas of focus;
- Prioritizing projects within product areas based on potential value;

- Removing projects that no longer have sufficient potential value or strategic fit with the portfolio.

And at a more local level, it consists of:

- Prioritization of early projects;
- Analyzing resource load and capacity, and resolving resourcing issues.

A key aspect of portfolio management is the allocation of resources. There are never enough resources to meet all the opportunities that are potentially available. Therefore, resources have to be allocated clearly on the basis of perceived value and risk. Also, the dynamics of these decisions change on a relatively real-time basis as new technical, scientific, and commercial data becomes available.

Accomplishing this within a large, complex portfolio requires a clear decision-making hierarchy. These decisions are made through the governance bodies described above. In order to do this, each governance body considers information contributed by a wide range of experts on a large number of factors, such as:

- Therapeutic value and fit within the portfolio
- Likely commercial value
- Competition
- Risk
- Development time requirements.

Representatives from all of the lines within the division participate in project teams and are involved in providing and interpreting this information. In addition, other groups within the company are also critical to ensuring that portfolio management maintains close and effective relationships with these groups.

Portfolio management in the *Discovery* phase begins with the company's strategic market objectives and ensures that the area's work in identifying and developing new products is aligned with the business strategy and objectives. A portfolio management process is used to prioritize projects and support resource decisions based on information supplied by governance, teams, and market assessment, to name a few.

The scale and complexity of portfolio management within the division is demonstrated in Figure 4.2. To enable it to be carried out consistently, standardized analytical tools and methods are used that effectively integrate all the competing factors, issues, and risks. These tools and methods estimate the potential value of each product. The results are then used to adjust project priorities.

Portfolio Management Roles and Responsibilities

Most pharmaceutical project management organizations distinguish between a project leader (or director) role and the project manager.

Typically, the former has a strong feeling for the science of the development (and ought to have a good grasp of the commercial possibilities—but combining the two is often a challenge); the latter is more concerned with the operational management of the project. The reasons for this split are largely historic: the differences are similar to those between a movie director and producer, as discussed in Foulkes and Morris (2004). In practice, the precise sharing of responsibilities often follows the characteristics and wishes of the two individuals filling these roles on any one project. The important thing is that the overall *management of the project* space gets properly filled on the project.

Significantly, for us, the project leader/director typically assumes a much more prominent role in shaping project strategy, though this is not always the case. The split is reminiscent of Kotter's distinction between leadership and management (Kotter 1990).

In what follows, the distinction is blurred.

It is the responsibility of project management leadership to:

- Contribute to the portfolio management process by ensuring that project management develops and maintains project reporting systems and databases that meet the needs of project stakeholders in valuing and managing projects and the portfolio;
- Ensure that project management staff understand and are adequately trained to fulfill their roles, with regard to project valuation exercises and other portfolio management activities;
- Supervise and support project management staff in getting timely and accurate information to project stakeholders through appropriate reporting systems.

The project leader is accountable for and the project manager is responsible for:

- Ensuring that all information in project planning and reporting systems is up-to-date, accurate, and complete;
- Ensuring that appropriate team members participate in portfolio prioritization exercises;
- Partnering with team members to obtain requisite information that will enable prioritization exercises to be performed;
- Collating and collecting outputs of updates to governance;
- Communicating project priorities to the team;
- Leading the project team and managing their project and resources within the context of the portfolio and priority set by governance.

It is the responsibility of the relevant line representatives on a project team to:

- Provide line information relevant to monthly update requirements for all reporting systems;

- Participate in team meetings to provide estimates/data to prioritization exercises.

The key project management activities that need to be undertaken in relation to portfolio management are set out in the RASI table in Table 4.1. The definition of RASI is as follows:

R Responsible — *The doers.* The person(s) directly involved in performing the activity (per defined procedures) and having an impact on results. These people are responsible for performing tasks and are accountable for their actions.

A Accountable — *The buck stops here.* The person with the ultimate authority for ensuring that policies and procedures are adhered to, progress is measured, and results are achieved.

S Support — *The reference points.* The person(s) who must be consulted or whose opinion must be obtained before a decision is made.

I Inform — *The need to know.* The person(s) who should be actively informed of decisions or outcomes. (Passive information sharing through reports, system inquiry, data analysis, etc. is not listed here.)

Project managers in partnership with functional line leaders (see Figure 4.1 above) make the following contributions to portfolio management:

- Lead teams in developing strategic alternatives for consideration and endorsement by governance;
- Lead teams through participation in various prioritization analyses;
- Coordinate interfaces with other groups conducting project/portfolio analyses;
- Gather and compile project information;
- Ensure information is entered accurately into appropriate reports and databases (including entering planned and actual schedule dates);
- Ensure consistency between various schedules and reports and within sections of reports;
- Communicate the priority of assigned projects to teams;
- Assure allocation of resources is aligned with priorities;
- Raise warnings to governance when slippage of project targets occurs, line resource commitment is inadequate to meet plan requirements, or unexpected results occur;
- Represent teams at governance/review meetings.

TASK	LTL	ETL	PM	-	-	LR	Gov
Set overall priority for all projects in the portfolio.	S	S	I	I	I	I	A
Consider alternatives and make decisions regarding project strategy, prioritization, and attrition.	S	S	I	I	I	I	A
Lead team to consider alternatives and make recommendations regarding project strategy (including termination, if appropriate).	A	A	R	S	S	S	I
Proactively manage the project to address any issues relating to value, timing, or resource needs.	A	A	R	S	S	S	
Communicate any issues to team/governance.	A	A	R	S	S	S	
Ensure information is entered accurately into appropriate reports and databases.			A	R	R	R	I
Ensure consistency between various schedules and reports and within sections of reports.			A	R	R	R	
Prepare project team for project/portfolio analyses.	A	A	R	I	I	I	
Lead teams in project/portfolio analyses pertinent to stage in lifecycle.	A	A	R	S	S	S	
Coordinate interfaces between the team and other groups conducting project/ portfolio analyses.	A	A	R	S	S	S	
Communicate significant issues affecting progress or viability of project to governance (advising attrition as appropriate).	A	A	S	S	S	S	I
Understand relevance of project's position in portfolio and leverage this information to develop the project's strategy.	A	A	R	S	S	S	
Represent the team at governance/review meetings.	A	A	S	S	S	S	I
Determine implications on budget and resources should project change its position in the portfolio.	A	A	R	S	S	S	I
Communicate priority of project to team.	A	A	R	I	I	I	
Seek to improve project's position in portfolio by developing and proposing strategic alternatives identified through Value Management process.	A	A	R	S	S	S	I

LTL: Late team leader
ETL: Early team leader
PM: Project Management
LR: Line representative
Gov: Governance bodies

Table 4.1 Portfolio management RASI table

Projects

Figure 4.3 shows the development lifecycle for product development projects used by the division and identifies the following:

- Key strategy documents produced to manage a development project;
- Phases of the product development lifecycle;
- Stages 1-3 of the lifecycle, which are undertaken by teams from *Development Areas 1-3*, respectively, as shown in Figure 4.2.

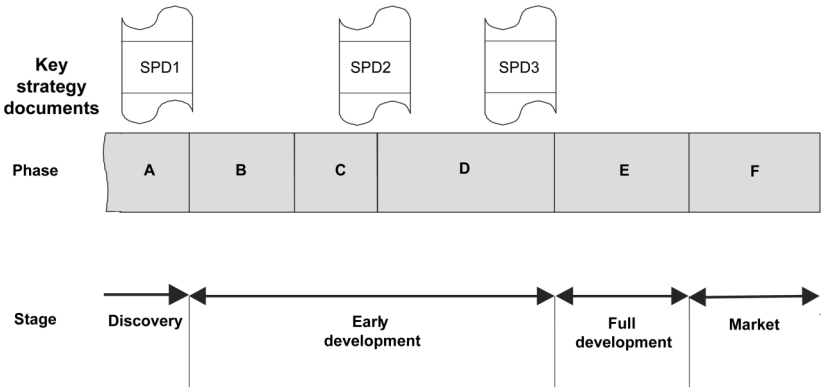


Figure 4.3 Product development lifecycle

The research team did not investigate the market stage of the lifecycle, as it is in another division of the company.

The division uses a very structured project management process to manage projects. The process is geared to each of the phases of the lifecycle and utilizes a *plan, form team, monitor, and re-plan* structure. It is also linked to a series of project management methodologies, which identify the actions to be taken by the project team at any point in the project or phase of the development lifecycle. An example of this can be seen in Figure 4.4, which shows the project management process in schematic and a chart of the project methodologies for the Phase A (see Figure 4.3). The example indicates, among other things, that the project strategy methodology (practice) needs to be implemented by the project team (highlighted in gray), during the *plan* element of Phase A. The processes and methodologies are mapped in document form for the benefit of the user. These topics are also viewed as project management *practices*, within the context of this research, and include many of those practices identified in the literature review.

Figure 4.5 integrates the development lifecycle (Figure 4.3) and the project management process and methodologies (Figure 4.4) to provide a schematic of the structure of the division's project manage-

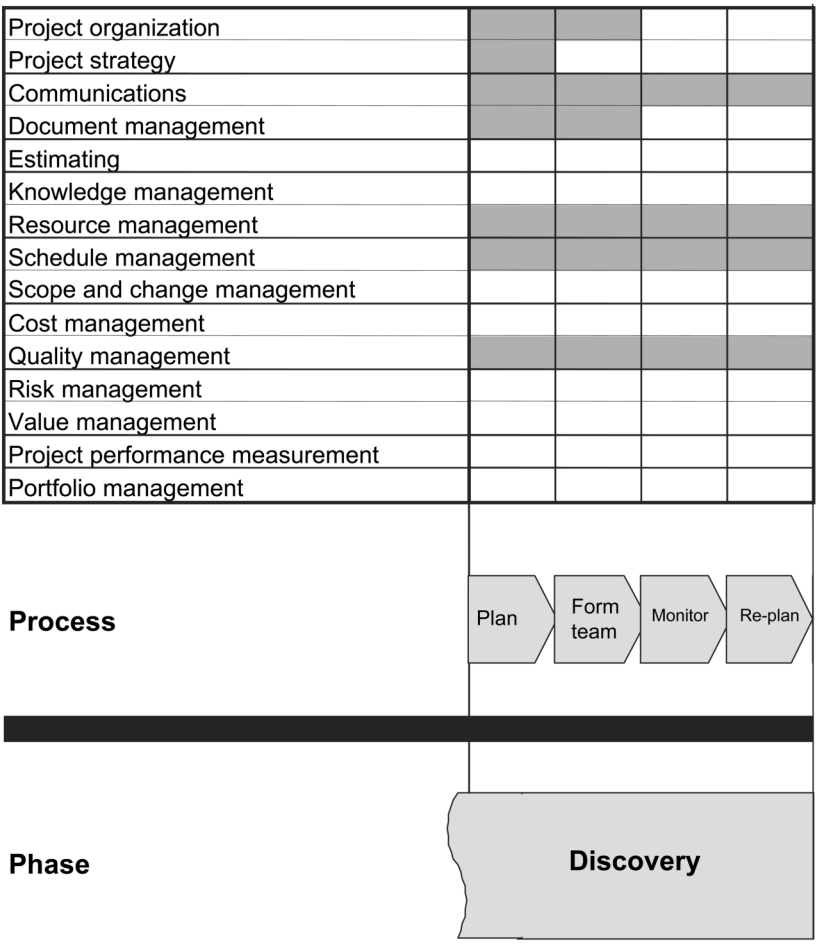


Figure 4.4 Generic project management process and methodologies chart

ment process and methodologies. Using this structure, the methodologies relating to each project management process stage and project lifecycle phase can be identified at a glance, which is a major benefit to managers, project teams, and individual team members.

Managing projects requires not only the identification and use of project management methodologies, but also interacting methodologies, sub-processes, and practices. A visual depiction of how these interrelate with each other is likely to benefit project teams. The division uses such a matrix, as shown in Figure 4.6.

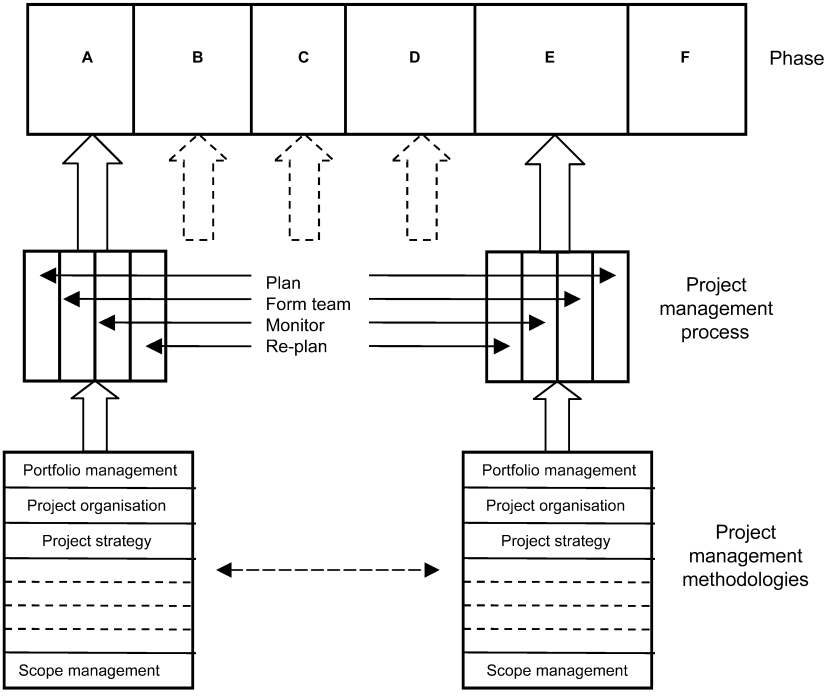


Figure 4.5 Project management process and methodologies structure

Developing and Managing Project Strategy

Though projects are important in drug development, there is such a high rate of attrition—particularly pre-Stage 3—that spending too much time detailing long-term project strategy is not considered to be useful in the division. However, it is still essential to develop and maintain a flexible strategy for the success of the project. This is aligned with the portfolio strategy and can be revised as a project progresses; indeed, exit strategy is an important element of total project strategy. The governance bodies and the program and project teams have the responsibility to ensure this happens.

Figure 4.7 outlines briefly the key steps taken by product development teams to develop, implement, and review project strategy. The steps are undertaken, in-depth, using the project management process and methodologies shown in Figure 4.5. It can be seen from Figure 4.5 that specific project strategy management activities are carried out during almost all the phases of the product development lifecycle and that it is a highly structured approach incorporating

This matrix shows the methodologies which should be read in conjunction with each other so as to gain the maximum insight into each topic	Portfolio management	Project organization	Project strategy	Value management	Communications	Cost management	Document management	Estimating	Knowledge management	Project performance measurement	Quality management	Resource management	Risk management
Portfolio management		X	X	X							X	X	X
Project organization	X				X								
Project strategy	X											X	
Value management	X												X
Communications		X					X		X		X		
Cost management								X		X		X	
Document management					X						X		
Estimating						X						X	
Knowledge management					X								
Project performance measurement						X							
Quality management	X				X		X						
Resource management	X		X			X		X					
Risk management	X			X									
Schedule management	X		X					X		X		X	X
Scope management	X		X	X				X		X		X	

Figure 4.6 Matrix example

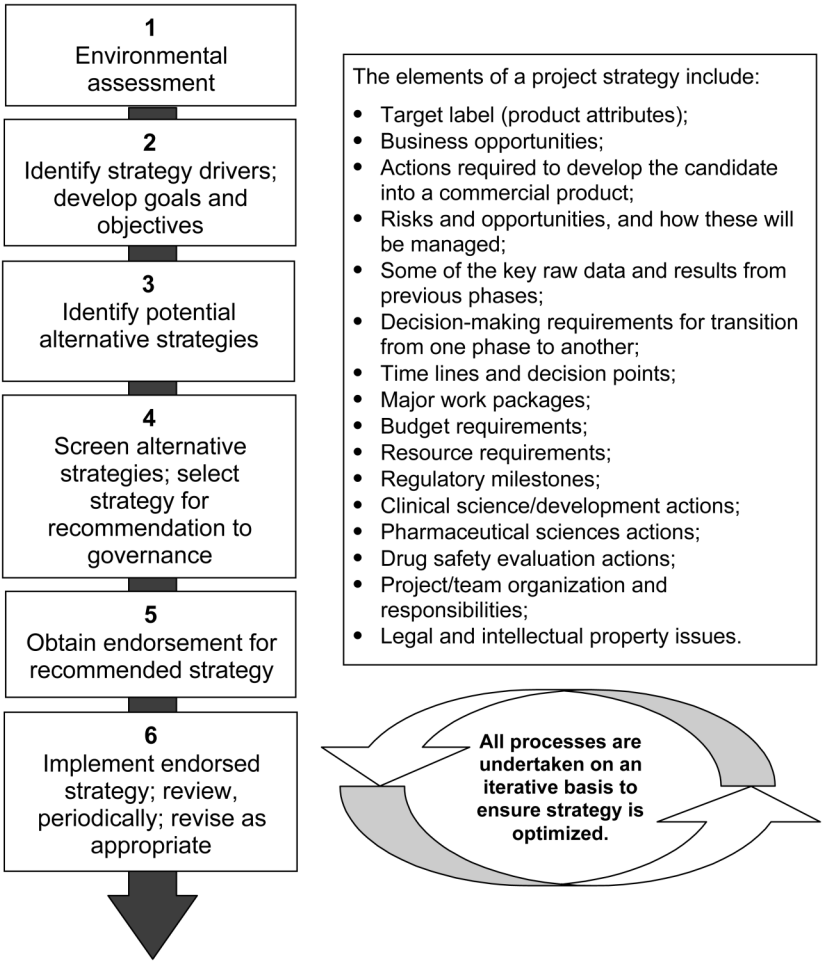


Figure 4.7 Project strategy development process map

key elements relating to strategy, such as scope management and resource management.

The project strategy development process is used primarily for programs and projects managed by *Development* (see Figure 4.2).

The following are the key steps in the strategy development process:

Step 1: Environmental assessment

The project team identifies the environment in which the product will be developed and launched. Product development projects are subject to both internal (company) and external influences, both

of which set the environment in which the project will operate. The project team needs to have an appreciation of this environment so that an appropriate strategy is developed. Since development projects are undertaken over a number of years, changes to the environment will occur. The team, therefore, should monitor the environment and make adjustments to the strategy as required. Items that are considered as part of an environmental assessment include:

- Company business strategy;
- Commercial factors;
- Competitor analysis;
- Medical needs;
- Mode of action;
- Demographics and population;
- Cost of development;
- Position in portfolio.

Step 2: Identify strategy drivers; Develop goals and objectives

The drivers that initially set and then maintain the project strategy need to be identified. Examples of drivers include: gap in market; high confidence in safety of the compound; and clear differential with a competitor's product. The drivers are used by the project teams to establish and set goals for their product. When setting objectives, consideration is given to:

- Establishing a clearly defined vision, purpose, and objectives for the project;
- Ensuring objectives are measurable, in order to deliver the right products at the right time;
- Describing alternative approaches for how objectives can be achieved;
- Identifying processes for tracking progress and verifying final delivery of the objectives.

In addition, the goals and objectives are designed to:

- Achieve optimal labeling to maximize the product's commercial opportunity;
- Minimize time to market;
- Assure effective utilization of resources;
- Achieve a balance between cost, benefits, and levels of risk;
- Maximize the product's opportunities through commercialization and ever-greening strategies (throughout the product's lifecycle).

Initial goal-setting for the product takes place and is then revised on an annual basis. The team progressively develops the overall approach to achieve the goals and objectives. Each element of the

project strategy is normally assigned to line representatives. At stage 2 (see Figure 4.3), the project director is accountable and project manager is responsible for working with team members to develop the overall project strategy. The project leader for stage 3 of the project is accountable for managing project strategy in conjunction with the business governance body.

Step 3: Identify potential alternative strategies

Teams identify a range of strategies that will meet the drivers, goals, and objectives they have set for the project. In this step teams identify as many different alternatives as possible. Discussing the alternatives gives the team greater insight into the issues surrounding the project and assists in determining the most appropriate strategy. The amount of work that is done by the team in developing alternative strategies is limited to the identification and initial understanding of the issues involved in taking an alternative forward. Spending time performing detailed evaluation of an excessive number of alternatives is not an effective use of resources.

Step 4: Screen alternative strategies; Select strategy for recommendation to governance

Alternative strategies are screened, since the team is only able to evaluate a relatively small number in detail. The selected strategies undergo detailed evaluation by the project team. This generally involves the line representatives working with colleagues in their own line to fully understand the implications of each strategy. The team also reviews the drivers, objectives, and goals set in ***Step 2*** to ensure that the recommended strategy meets them. A strategy document is developed that contains details of evaluated strategies, the reasons why alternatives have been rejected by the team, and the case for the recommended strategy. Project management ensures all the line-based strategies are combined in such a manner as to form an integrated and cohesive project strategy.

Step 5: Obtain endorsement for recommended strategy

As part of the preceding stages, the team has been working with governance to get initial feedback on the alternative strategies, including the selection of a recommended strategy. This makes the presentation of the recommended strategy at the governance meeting more effective. The formal presentation to governance is prepared from information contained in the key strategic documents (see Figure 4.3). The team has to be specific in its request for governance endorsement and may have to undertake further work to address items that governance raises. Governance should then endorse the

recommended project strategy. Strategy is developed for programs and projects managed by *Development* (see Figure 4.2).

Step 6: Implement endorsed strategy; Review periodically; Revise as appropriate

The endorsed strategy should be issued to all project team members and other project stakeholders for communication purposes. The project strategy is not thought of as static, but is reviewed at major milestones (e.g., stage-gates), as well as when any other major changes in the project take place. Periodic reviews of project strategy are conducted, including bi-annual reviews of all projects in the portfolio to adjust priorities.

Strategy Documents

A number of sources in the literature suggest a project plan should incorporate project strategy predicated on the project requirements, project definition, and project scope documents and plans. The view here within the division, however, is that so much relating to the way a project is to be conducted is already covered in the organization's *standard operating practices*, or is distributed throughout functional lines in different formats, that there is not the same need to pull everything together in a unique project strategy document. (Equally, it could be argued, that it is for precisely this reason and the complexity of the organization that project strategy needs to be more readily visible, documented, and accessible in a single document or set of documents.)

In fact, strategic planning documents are developed at three specific periods during the development project lifecycle (also see Figure 4.3). These documents are strongly technical in character, though they do contain information on timelines, costs, risks, and so on. They are, however, less purely *project management strategic* in nature than effective forms of business plans. Specific parts of the project's overall strategy are detailed in separate supporting documents (see below), and project management ensures that these are reflected in the key strategic planning documents.

Stage 1 strategic planning document (SPD1)

The first document, called, let us say, the strategic planning document (SPD1), is an operating plan that begins to be prepared in *Discovery*. The document evolves as the project proceeds; each successive build is published upon transition into a new phase, incorporating data gathered in previous stages.

SPD1:

- Defines a research opportunity by examining an unmet medical need;
- Gives a preliminary commercial assessment;
- Assesses freedom to operate (intellectual property issues);
- Describes desirable characteristics of new products and the rationale for investigating a new treatment;
- Assesses the probability of technical success;
- Specifies objectives, approaches to achieve them, and timeliness;
- Identifies known issues and key go/no-go decisions;
- Identifies organizational responsibilities, including resource estimates.

Stage 2 strategic planning document (SPD2)

Several months prior to the commencement of a compound being approved for development, a team prepares the second strategic planning document (SPD2), using information from SPD1 and substantial input from the lines. The aim is to have an endorsed SPD2 in place early in Stage 2 of a project. SPD2 covers the strategy to get the potential product to proof-of-concept and authorization-to-proceed to Full Development.

SPD2 includes:

- A summary of the opportunity and technical characteristics of the potential product;
- A discussion of the strategic approach for the project upon which the detailed plans are based;
- Development plans (including FTE and cost estimates) for individual lines;
- Commercial issues, including competitor analysis;
- Intellectual property rights;
- Development risks and opportunities (and how they will be managed);
- Timelines and decision points;
- Major work packages;
- Organization of the potential product project team, including;
  - Teams' membership
  - Team roles and responsibilities
- Development costs.

The project leadership ensures that the team continuously monitors and reviews the strategy in order to achieve the Stage 2 milestones and that any revision to the strategy is communicated to, and endorsed by, governance.

Stage 3 strategic planning document (SPD3)

SPD3 defines the implementation plan for development activities and includes a more detailed assessment of costs and resources for Stage 3. (Stage 3 will be much more expensive than all the previous stages put together.) SPD3 is produced at the end of Stage 2, at which point governance also endorses it. It contains the overall project strategy for Stage 3 and highlights the strategy for each of the key lines.

SPD3 includes:

- The potential product characteristics;
- Critical scientific and market impact terms;
- Commercial issues;
- A discussion of the strategic approach for the project upon which the detailed plans are based;
- A market development and launch plan;
- Intellectual property rights (IPR);
- Development strategy and operating plans, including procurement;
- Quality definitions for the potential product;
- Risks and how these are to be managed;
- Resource requirements;
- The project organization (team membership);
- Timelines;
- Development costs.

Project leadership leads the development and product teams to review SPD3 and ensure that it is updated and adjusted throughout Stage 3 until the product is approved, to reflect any changes in strategy that may be appropriate due to internal and external influences. Project management, through ongoing coordination with the lines, assembles SPD2 and SPD3.

It is extremely important to recognize that all governance decisions are taken within the program and portfolio context.

Detailed Plans Supporting the Strategy Documents

Detailed plans are put in place in order to realize the strategies presented in the three documents described above. These detailed plans form the core of the project management control process. It is against these plans that progress is measured, variance from the plans assessed, and corrective actions taken to bring the project back to plan. These detailed plans include:

- A schedule which includes:
  - A WBS that details the scope of work;
  - The sequence in which work will be done;
  - Estimates of company resource requirements.

- An estimate of project monetary requirements;
- How the work will be carried out (detailed process, procedure, and practice documents are maintained by separate lines);
- Detailed risk and opportunity management information developed by project teams.

Roles and Responsibilities for Developing and Managing Project Strategy

It is the responsibility of the division's project management leadership to:

- Participate as members of governance bodies in setting and clarifying strategy for *Development* portfolios (see Figure 4.2) and providing guidance to teams in creating and aligning project strategies within portfolios;
- Provide systems, procedures, and supporting staff to meet the company's needs to effectively manage projects;
- Establish the appropriate level and content of project planning documents;
- Establish and clarify with other line and senior managers the roles of project management staff on teams with regard to developing project strategies, leading teams through developing, analyzing, and choosing strategy alternatives, and other strategic value management processes.

The project leadership (late team leaders (LTLs) and early team leaders (ETLs) in Development) is accountable for and the project manager is responsible for:

- Identifying how the project relates to the wider portfolio and leading the team in preparing an appropriate project strategy in alignment with governance;
- Leading the team in proposing/recommending strategic alternative/options that reflect what may be best for the company's portfolio, not just the individual project;
- Recognizing the need to review the development strategy through the application of tools and procedures;
- Initiating, implementing, and managing the development of the project strategy documents;
- Revisiting the documentation on a regular basis in order to ensure that it remains current, that objectives are being met, and that the team is aware of the strategic issues;
- Ensuring that new team members can access the existing documentation and that strategic objectives are fully understood.

It is the responsibility of the relevant line representatives on the project team to:

- Provide input into the development of the project strategy;
- Communicate the project strategy to their line and ensure that line activities support the project strategy;
- Alert the project leadership of any change in line activities that could impact the project strategy;
- Alert the project leadership of any new information (internal or external) that could/should precipitate a review of the project strategy.

The key project management activities that need to be undertaken in relation to project strategy are set out in the RASI table in Table 4.2.

Value Management and Project Strategy

Applying value management practices to key elements of project strategy is a distinctive part of the way the division manages its programs and projects. Value management in product development projects consists of two sequential processes, value planning, and value improvement and maintenance (Thiry 2004). The value planning process aims to understand the drivers of a product development project and optimize the strategy to deliver the agreed objectives. It comprises the following stages:

1. Review project objectives;
2. Evaluate a range of strategic options;
3. Define the scientific/commercial case for the development project.

In *Discovery*, the project team carries out a fundamental review, either during or just before a phase gate review (see Figure 4.3). This is to ensure that the project objectives are correct, that these are completed by reviewing the project strategy that has been developed for the phase of the project and by critically assessing the project strategy to ensure the objectives can be achieved. At a milestone review point during the early part of *Development*, a specialist portfolio management group works with project management to identify and evaluate a range of strategic alternatives for the project. Options are appraised and selected largely on the basis of technical and commercial risk and opportunity. Based on this evaluation, the portfolio group recommends the best strategic option to governance for endorsement.

The value maintenance process is designed to maintain the value of the project that is set out in the *strategic planning documents*. Reviewing the project objectives and their achievement, as well as their impact on project strategy, are key activities undertaken by the project teams, governance, and lines during the value maintenance process. The important point, however, is that the value optimiza-

TASK	LTL	ETL	PM	-	-	LR	Gov
Stage 2 Development							
Initiate team formation and influence membership as appropriate.		A	R			S	I
Determine target profile/label.		A	R	S	S	S	
Determine compound's entry position in the portfolio.		A	R			R	A
Determine key drivers that will set project strategy for early development.		A	R	S	S	R	S
Request additional guidance from governance, if needed, during strategy development.		A	S				I
Consider a wide range of alternative strategy ideas for the project, develop appropriate ideas to where they can be analyzed and compared.		A	R	S	S	A	
Analyze alternatives and make recommendations based on both what is best for the project and the portfolio.		A	R	S	S	R	I
Determine key milestones for project and set dates.		A	R	S	S	S	
Ensure that line-specific and other supporting strategies are developed and that they support the overall project strategy.		S	S	S	S	A	
Prepare draft SPD2.		A	R	S	S	R	
Obtain governance approval of a strategy for the project and record it in the SPD2.		A	R				A
Monitor potential changes that may be required to SPD2 to keep it current.		S	R			R	
Obtain endorsement of any changes to the strategy contained in the SPD2.		A	R				A
Stage 3 Development							
Coordinate team formation and influence membership as appropriate.	A		R	A	S	S	
Determine compound's entry position in the Stage 3 portfolio.	A		I	S	S	S	A
Review line-specific strategies for Stage 3.	A		R	S	S	R	
Determine key drivers that will set project strategy for Stage 3 development.	A		R	A	A	A	
Determine key milestones for project and set dates.	A		R	S	S	S	
Prepare draft SPD3.	A		R	R	R	R	
Obtain endorsement of SPD3.	A		R	S	S	S	A
Monitor potential changes that may be required to SPD3.	A		R	R	R	R	
Obtain endorsement of any changes to strategy contained in the SPD3.	A		R	S	S	S	A
Develop strategy to deliver data needed for pricing and reimbursement.	A		S	S	S	S	A

LTL: Late team leader; ETL: Early team leader; PM: Project management; LR: Line representative; Gov: Governance bodies

Table 4.2 Project strategy RASI

tion process takes place around the strategic character of the project in relation to the portfolio, including the rest of the program where this is appropriate.

Conclusions

In this pharmaceutical division, strategy is cascaded from corporate and business levels down through portfolios, programs, and projects. There is a clearly defined hierarchy and process to facilitate this, through which alignment and coherency of strategy are achieved. The roles of governance bodies in setting and deciding strategy in this process are very prominent and clearly defined.

Strategy has a highly emergent character to it, due to the impact of compound attrition on the portfolio. This dramatically colors the way projects are planned and decisions are made on them, for example, with regard to resourcing.

Portfolio management is, thus, a key element in the way the division manages drug development projects. The management of portfolios of programs and projects at zone (*Discovery and Development*) and product area levels are critical activities in which strategy is aligned both upstream and downstream, strategic areas of focus are selected, and project selection and resource allocation are optimized. Project management's job is to get the project to the next timeline as efficiently as possible. Meanwhile, the division's governance-leadership nexus decides how the emerging results feed into the overall portfolio decision-making.

The structured approach used to develop and manage project strategy—in which best practice project management methodologies and practices are incorporated in a very thorough manner—is one which is likely to result in more effective project strategy and improve the performance of project teams as well as communication within the organization. The strategic planning documents developed and maintained during the project lifecycle, and the detailed plans that support them, cover typical project strategy elements comprehensively.

The clearly defined roles and responsibilities for portfolio management, project strategy management, and value management—and the use of RASI tables—ensures there is no ambiguity as to who is accountable and responsible for ensuring the effective management of strategy. The project team leader is more concerned with the strategy for the project than is the project manager, who is primarily focused on the implementation of the strategy and the execution of the project.

Embedding the assessment and maintenance of project strategy within a value management process that is applied at stage (phase)

gates throughout the product development lifecycle is a major strength, one that should improve the performance of project teams to manage projects within the overall portfolio more effectively. Note, however, how much of the traditional value management practice is being carried out at the portfolio level.

This case shows more than any other how project management and portfolio management can integrate around the management of risk and value.

CHAPTER 5

Case Study: How an International Transportation Company Moves Strategy into Projects

The company's operations comprise a number of strategic business units at various sites in the UK and the United States (US). This report covers operations in the UK.

An *Objectives, Goals, Strategy, and Measure* (OGSM) framework is used to cascade strategy down the organization and through it to set the strategic context for the whole company. A diagram, shown in Figure 5.1, was developed during the case study to indicate the preeminent position of the OGSM framework within the company and its relationship to business units and projects.

Corporate, Business Unit and Project Environments

Figure 5.1 shows that the strategic business units, capital investment plans (CIPs), business governance, project governance, and major and minor projects are all set within the *environment* of the corporate OGSMs and that each level determines—in descending order—that of the next.

Figure 5.2 demonstrates the cascade of OGSMs—through a number of business levels and projects and programs down to the individual level—via the asset management (AM) process (see below for a description of AM) and shows that the OGSMs are incorporated in the business plans at the various levels.

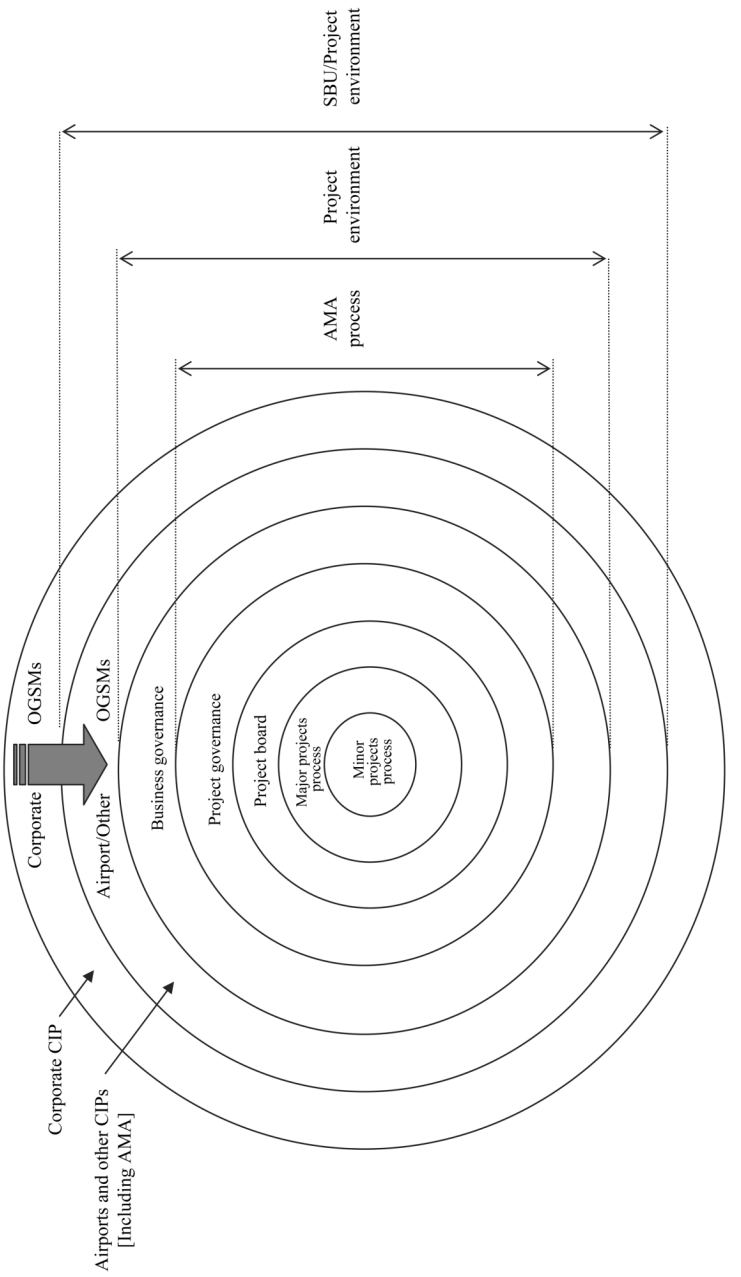


Figure 5.1 Corporate, business unit, and project environments

Figure 5.1 indicates that the OGSMs for business units flow directly from corporate OGSMs and long-term CIPs. The OGSMs also set the *environment* for business governance bodies to apply to

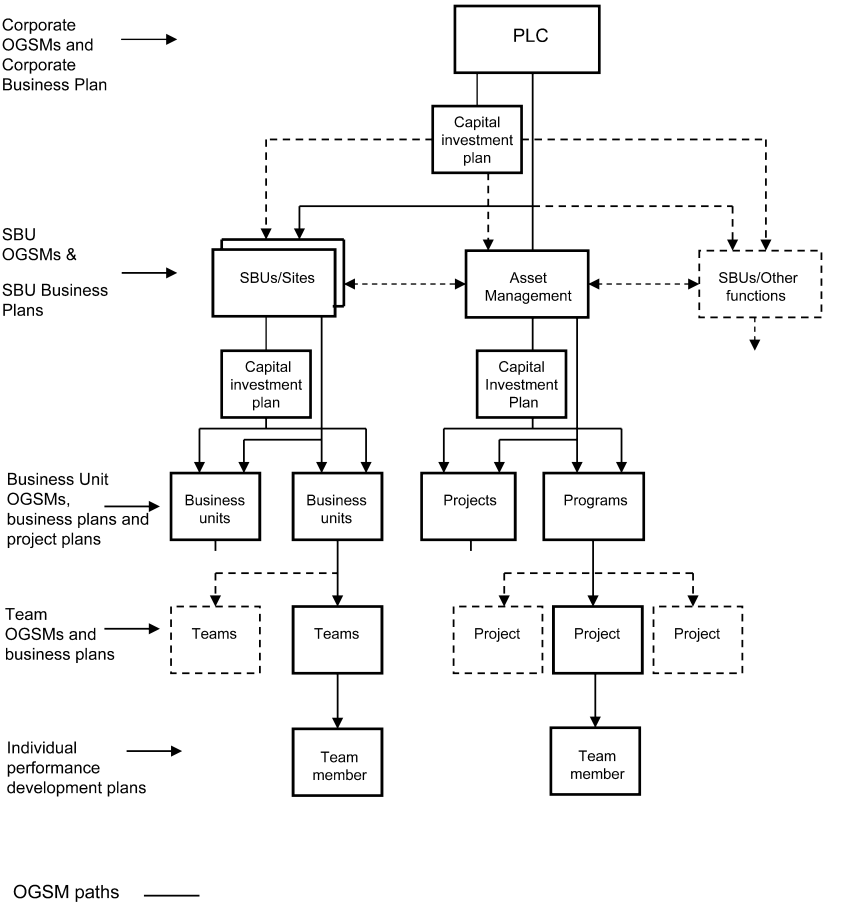


Figure 5.2 OGSMs, business plan, and project plan frameworks

the project governance bodies and projects. The business governance bodies are responsible for ensuring that the strategies and activities of their business unit, including projects, are aligned with their CIPs and the corporate OGSMs.

A project is governed by project governance bodies, which are the authority for the project and are responsible for ensuring that the project fits into the strategy for the business. The project board is responsible for ensuring that the project aligns with business strategy by means of the *Project Management Major Projects Process*. If the project is not considered to be major, it is classified as a minor project and is managed using a subset of the major projects process.

Business Model

The company's business model, shown in Figure 5.3, has three major generic processes: strategy, solutions, and operations. These processes are supported, in turn, by AM process and the Enterprise Support (ES) process.

The AM process is a key element of the project environment (see Figure 5.1). The AM SBU is responsible for the delivery of all the company's programs and projects, as shown in Figure 5.2. Its OGSMs are not only driven by the corporate OGSMs, these are also driven by the OGSMs of all other SBUs (see Figure 5.2).

The AM process, shown in detail in Figure 5.4, comprises five major stages:

- Development: Finding the right solution;
- Design and engineering: Setting the appropriate quality;
- Supply chain: Extracting maximum value from the supply chain;
- Project delivery: Delivering best value solutions;
- Maintenance: Maintaining assets at optimum cost.

The ES process (see Figure 5.3) includes the finance, human resources (HR), and supply processes and the *Plan and Develop* process. The processes at both levels are fully integrated, both vertically and horizontally and documented electronically and available online. They are mandatory across all the company's business units, but can be applied flexibly according to the size and complexity of the program or project.

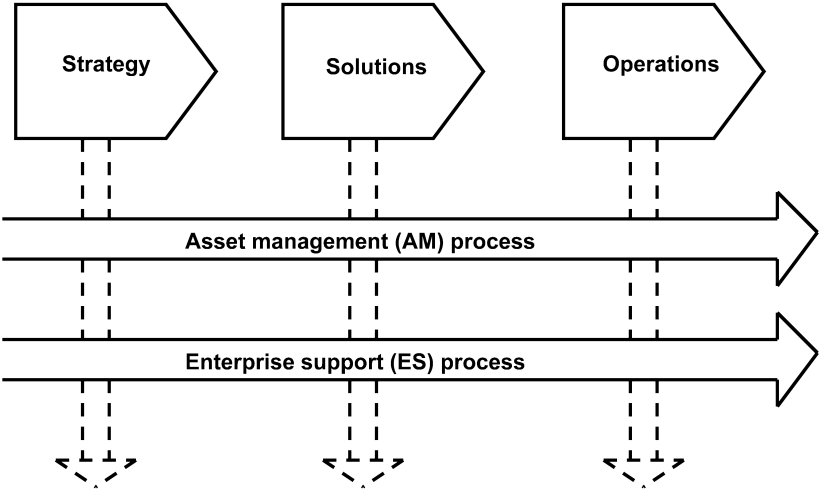


Figure 5.3 Business model

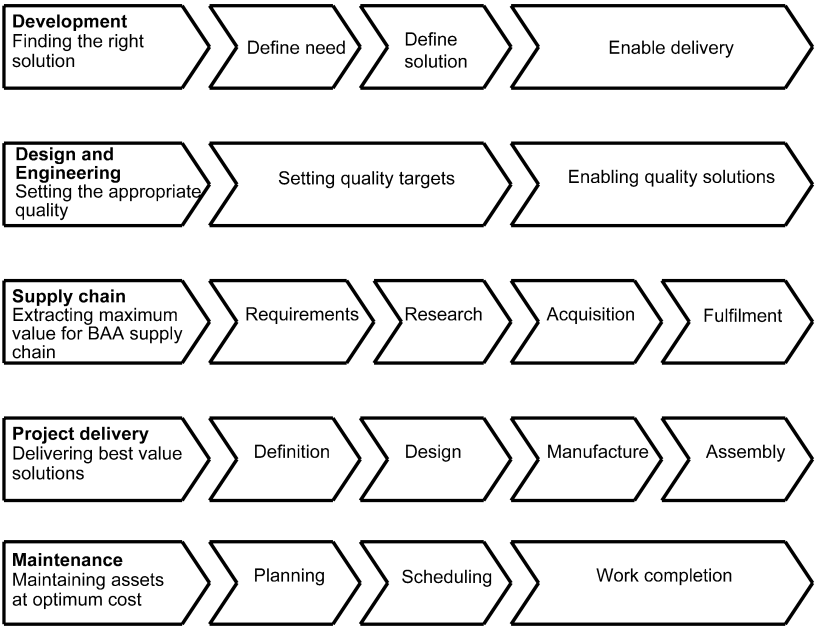


Figure 5.4 AM process

Moving Strategy Through Portfolios, Programs, and Projects

Portfolios

The company does not use the term *portfolio* within the context of managing a group of programs or projects. But it does use a process and set of assessment tools for measuring the strategic contribution, uncertainty/complexity, and value for money of its capital investments at the business unit and SBU levels. Such a process and set of assessment tools are also used for evaluating, selecting, and prioritizing the company's programs and projects.

Strategic contribution assessment is based on the individual elements defined in the OGSM that relate to corporate objectives and strategy and to the overall prioritization of projects required at the business unit, SBU, and corporate levels. An assessment of the complexity and uncertainty of developing and delivering a project is also undertaken. The results of this assessment are combined with the strategic contribution assessment to develop an overall *value vs. risk* picture for the capital investment portfolio at business unit, SBU, and corporate levels.

Accountabilities and responsibilities

The company identifies those accountable for undertaking and approving the strategic contribution, complexity/uncertainty, and *Value For Money* (VFM) assessments as well as the points in the process when these are to be done. These are summarized in Tables 5.1 and 5.2. (See also the **Project** section below for an explanation of *CPCs*, shown in Tables 5.1 and 5.2.)

Assessment	Pre-Assessment (Development of Capital Plan)	CPC-A	CPC-B	CPC-D
Strategic Contribution	Business Unit	Project Sponsor	Project Board Chairman	CPC Chairman
Uncertainty/ Complexity	Business Unit	Development Manager	Development Manager	Development Manager
VFM	N/A	Pre-CPC Review Group	Pre-CPC Review Group	Pre-CPC Review Group

Table 5.1 Accountability for undertaking capital investment assessments

Assessment	Pre-Assessment (Development of Capital Plan)	CPC-A	CPC-B	CPC-D
Strategic Contribution	Local Business Unit Board	CPC	CPC	CPC
Uncertainty/ Complexity	Local Business Unit Board	CPC	CPC	CPC
VFM	N/A	CPC	CPC	CPC

Table 5.2 Responsibility for approving capital investment assessments

Portfolio management process

Figure 5.5 outlines the process for evaluating, prioritizing, and approving projects, and the incorporation of these into capital investment plans at the business unit, SBU, and corporate levels.

Step 1: The individual business units carry out a strategic fit evaluation based on their OGSMs and provide a score for individual capital investment project proposals. Each busi-

ness unit ranks its proposals according to the strategic fit and submits a capital investment plan to the SBU.

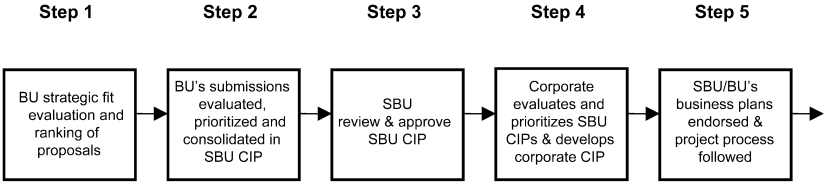


Figure 5.5 Project proposal evaluation, prioritization, and approval process

Step 2: The SBU carries out an evaluation and prioritization of all business unit submissions and forms a consolidated SBU capital investment plan. The business capital investment submissions of all the business units are prioritized against each other to give an SBU prioritization against the SBU target defined by its OGSMs.

Step 3: The executives of all the SBUs review, amend, and approve the submission of their capital investment plans to corporate.

Step 4: Corporate evaluates and prioritizes the capital investment plans from each of the SBUs and uses them to develop the corporate CIP. Corporate finalizes the CIP on the basis of prioritization against the targets set by the CEO and defined in the corporate OGSMs. The CIP is then submitted to the CEO for approval. The main board reviews the CIP; once it is approved, it is signed off.

Step 5: Upon endorsement of the corporate CIP, the SBU and individual business plans become *live*, and each capital investment project progresses as per the business unit prioritization and is executed following the project management process.

Programs

The company describes program management as the management of a group of projects with a similar—or the same—aim. For example, one major infrastructure program that was implemented at all the company's major sites comprised 146 projects. These programs are managed using the *major projects project management process,* described in the next section.

Projects

The project environment in Figure 5.1 includes the following functions and processes:

- Business governance
- AM process comprising:
  - Project governance
  - Project board
  - Major projects
  - Minor projects.

Governance and project boards

The roles and responsibilities of the business governance and project governance bodies have already been outlined. The project board is responsible to project governance for the day-to-day running of the project, which it executes through a project leader and project team. The project board uses processes embedded in the AM process (and the major projects process), as outlined in Figure 5.6.

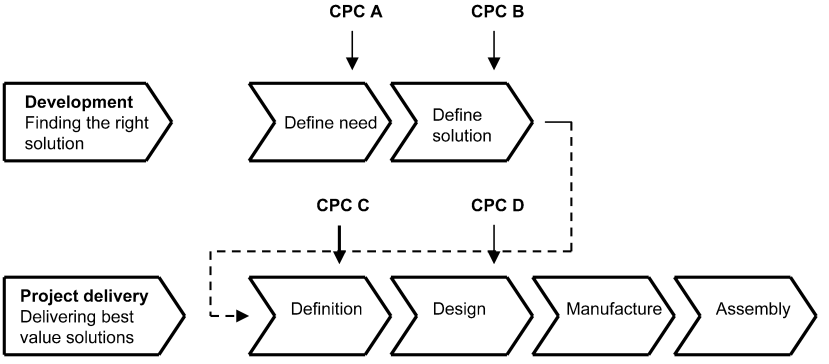


Figure 5.6 Project board process

All the work justifying the business need for a project is undertaken during the ''Define need'' stage. The development manager develops a statement of need for the project and sets the objectives for the project. The strategic and business risks are identified, which contextualize the strategy for the project. The development team determines the options to meet the stated need and the implications associated with the various options it then recommends a preferred solution, based on the optimum business case developed during this process. Project governance decides at the end of this stage, CPC-A (Capital Projects Committee Review Point A), whether the project can proceed to the ''Define solution'' stage.

Figure 5.6 also shows CPC points B through D, along the process (see also Table 5.1 above). These formal review-and-approval events—typically, project management stage-gate reviews for projects—are used, among other things, to ensure that the strategy for the project is aligned to business OGSMs throughout the life of the

project. The strategic contribution assessments are also undertaken by the CPCs (see Table 5.2 above).

If the CPC approves the project to move to the next stage, the project objectives defined in the previous stage are refined and the project performance success criteria agreed. A *development brief* defines the direction in which the possible solutions for the project are to be developed. This is a key document for preserving continuity in business and project strategy. Possible solutions are developed and evaluated, and a preferred solution is selected. These activities and the outputs of the process are reviewed at CPC-B (see Figure 5.6), along with a funding request for the next stage.

Subsequent to the approval of CPC-B, the *definition* process is carried out. This primarily entails developing the technical solution for the project and producing an integrated production plan for the design, manufacture, and assembly stages of the project. It also involves checking that the design of the solution complies with that specified in the development brief as well as managing stakeholders. The preferred technical solution and integrated production plan are reviewed at the end of the process at CPC-C. Upon approval of the technical solution, the *design* process is undertaken and the detailed design of the technical solution is developed. During this process, project performance is also managed against project targets and business strategy so that the alignment of business and project strategies is maintained; at this point, the final performance targets for the project and the business strategy are incorporated in a business case for the project. The technical solution (including the detailed design) and business case for project (including objectives and strategy) are reviewed at CPC-D.

CPC-D approval authorizes the project board to execute the manufacture and assembly phases of the project. The project board continues to manage project performance against project targets and business strategy during these phases and ensures that project and business strategies are continuously aligned.

Project board roles and responsibilities

Some of the roles and responsibilities associated with project strategy for the following members of the project board and project team are summarized below:

- Project board chairman
- Development manager
- Project leader

The project board chairman acts as primary sponsor and client for the project. This individual is responsible for ensuring that the project meets the needs of the business and maximizes shareholder value.

This individual also ensures that the strategic contribution, VFM, and uncertainty assessments are appropriately undertaken. This individual is also accountable for ensuring successful project delivery and the identification and reporting of risks and safety issues that may affect the project, including ones that may affect project strategy.

The development manager is responsible for reviewing the business need for the project with the business owner. This individual is also responsible for preparing:

- The statement of need for the project;
- A list of potential options the project can undertake to meet the business need;
- A business case together with a financial analysis to support the solution to the business need.

This individual also directs and implements the strategy approved by the project board and documents the strategic contribution, VFM, and complexity/uncertainty assessments.

The project leader (until recently called the project manager) provides leadership to the project team and is accountable to the project board for the implementation of the project and for meeting the approved project objectives and targets, as defined in the project execution plan. This individual is responsible for *red-flagging*—to the project board—issues that could potentially affect project strategy and the delivery of the project.

Major and minor projects

In addition to the project board activities, programs and projects are managed using the company's *project management major projects* process. This process is very comprehensive and fully integrated with the definition, design, manufacture, and assembly stages of the AM process (see Figure 5.4). It comprises a number of levels that are fully documented and available online. Projects that are deemed minor by project governance bodies tailor the major projects process accordingly.

An example of one of the major projects process—Level 1 elements, the *definition* stage—is shown in Figure 5.7. This process is undertaken by the project team between the review gates CPC-B and CPC-C. It indicates that strategy alignment is achieved between CPC-B and CPC-C through the project definition process and is reviewed accordingly against the business OGSMs. (One of the inputs to the *receive project information* process is the project's development brief; see the preceding section on governance and project boards.)

Table 5.3 below tabulates the flowchart shown in Figure 5.7; it is also another example of the visibility of the process and highlights the review process. It outlines the purpose, assurance, and activities

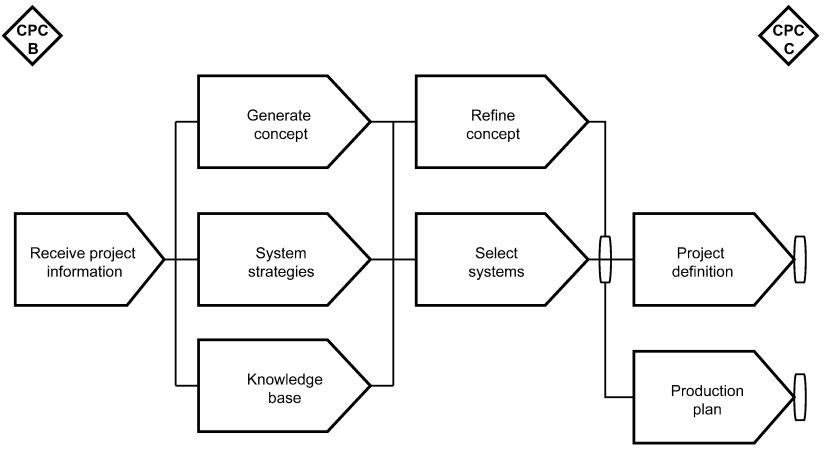


Figure 5.7 Major projects process—Level 1 definition stage

of the major projects process for the development stage of the AM process (not shown in detail), the definition stage, and the design, manufacture, and assembly stages of the project delivery process. The assurance activities for each of the stages are identified as the capital projects committee events and associated reviews.

The activities relating to project strategy in the definition stage include the following:

- System strategies: Developing the functional requirements of the facility to meet the operational and maintenance strategies.
- Project definition: Developing a set of jointly owned documents that clearly define the facility in terms of functional requirements and customer value.
- Production plan: A clear strategy that defines the process for production-identifying targets, benchmarks, and metrics.

The project definition sub-process incorporates many of the inputs and core tasks of the project definition process identified in Figure 1.9 (see Chapter 1).

The activities relating to project strategy in the *design* stage are as follows:

- Systems integration: Planning the development of the system design and interfaces to ensure integration across the whole project.
- Assembly plan: Developing a plan that determines the assembly requirements by showing how sub-assemblies are integrated and accepted into the customer's facilities.
- Manufacturing plan: Developing a plan that optimizes the manufacturing sub-assembly and logistics to best meet the assembly plan.

Activities	Development	Definition	Design	Manufacture	Assemble
Purpose	*Getting the right solution to the right problem*	*Turning the business case into a concept*	*Delivering predictable and dependable performance*	---------->	---------->
Assurance	CPC A Review CPC B	Review CPC C	Review CPC D	Review	Accept project
Activity		**Receive project information** The transfer of information on the project and the identification of required project data. **Generate concept** Develop and communicate the project solutions with the customer and stakeholders. **System strategies** Develop the functional requirements of the facility to meet the operational and maintenance strategies while allowing a DfMA approach in production. **Knowledge base** Develop the required knowledge base to allow optimum system selection. **Refine concept** Collaborative work to achieve a balanced approach to the selection of systems with a bias where the customer can realize additional information. **Select systems** Determine every system within the project, based upon a holistic, optimized solution that balances customer value with production value. **Project definition** Develop a set of jointly owned documents that clearly define the facility in terms of functional requirements and customer value. **Production plan** A clear strategy that defines the process for production, identifying targets, benchmarks and metrics.	**Systems integration** Planning the development of the system design and interfaces to ensure integration across the whole project. **Finalize layouts** Fixing the special layout of the project systems and ensuring performance fit. **DfMA** Designing the best fit of components that optimize manufacture, assembly, and logistics plans. **Select components** Select components and suppliers that meet the best balance between optimum performance and optimum production. **Assembly plan** Develop a plan that determines the assembly requirements, showing how sub-assemblies are integrated and accepted into the customer's facilities. **Manufacturing plan** Develop a plan that optimizes the manufacturing sub-assembly and logistics to best meet the Assembly plan	**First run studies** **Select parts** **Manufacture** **Pre-commission** **Pre-assembly**	**Deliver** **Assemble** **Prove performance** **Accept systems** **Handover** **Learning file**

Table 5.3 Major project process (project management process)

A number of key management plans are developed during the *definition* and *design* stages, which in the *PMBOK® Guide's* (Project Management Institute 2000) schema constitute elements of the overall project strategy. However, this practice is not recognized in the process. In fact, no reference is made to project strategy per se in the *major projects* process.

The project boards and project teams perform most of the project management practices and the elements that relate to strategy, as shown in Figure 1.9 (Chapter 1). These boards and teams carry out the *major project* process Level 1 activities (Table 5.3) as well as those at the lower levels. The company's *best practice* resources, tools, and techniques supporting the *major project* process appear to be those typically used by companies managing major projects, such as budget and cost control, risk management models, and earned value management.

Roles, Responsibilities, and Competencies for Moving Strategy

The company uses a competency framework, which includes competencies to manage strategy. Project board chairmen, development managers, and project leaders all have defined accountabilities, roles, and responsibilities, some of which have been mentioned above (in relation to the project board process and business and project strategy). Moreover, the company uses matrices to specifically and comprehensively define the accountable (A), responsible (R), consult (C), and inform (I) roles for those involved in each stage of the *major project* process.

An example of a matrix for the "Receive project information" sub-process (see Figure 5.7) is shown in Table 5.3. This example, adapted by the authors of this book, shows only four of a possible sixteen positions (jobs) involved in the *major projects* process. When examining activity 3 in Table 5.4, "Define [project] success criteria," it can be seen that the project board, development manager, and operational stakeholder all have a consult role; the project leader is both accountable and responsible for defining the project success criteria.

This matrix is a quick and very effective technique for identifying *who* should do *what* and *when* at any point in the *major projects* process; it almost defines the *how*—or strategy—of a project.

Conclusions

The OGSM framework and the capital investment process ensure strategy is moved from the corporate levels through SBUs and business units into projects in a highly visible and structured way. Pro-

RACI: *Responsible—who completes the task* *Accountable—takes ultimate responsibility* *Consult—who must be consulted [2-way]* *Inform—who must be informed [1-way]*	**Project board**	**Development manager**	**Project leader**	-	-	-	-	**Operational stakeholder**
Understand and assess the brief								
Activity 3 (Total = 5) Define [project] success criteria	C	C	A/R					C
Review team composition								
Activity 6.	I	-	A/R					-
Develop base information								
Activities 7 to 11.	-	C	A					C
Finalize plan for definition								
12. Assess risks and opportunities	C	R	A/R	-	-			C
13. Complete plan for definition	I	C	A/R	-	-			-
14. Finalize procurement for definition	-	C	A/R	-	-			-

Table 5.4 Accountable, responsible, consult, and inform roles for projects

grams and projects are selected and prioritized using a portfolio management process that ensures alignment of project and business strategy throughout the company. The gated review process ensures that projects are aligned to business strategy (and corporate strategy) as they are set up, authorized, and executed. The *Project Management Major Project Process* is used to develop the project definition and many key project management plans, a summary of which is generally considered to encapsulate project strategy. However, *project strategy* as a term and practice is not used in the company, and the performance of the project team is not measured against the objectives of the project, as expressed in terms of project strategy, but is measured in terms of business strategy.

CHAPTER 6

Overall Conclusions From the Case Studies

A number of the key findings of the case studies are summarized below.

Business Models

Two of the companies used business models that are equivalent to the McKinsey model outlined in the literature (Chapter 1). These top-level frameworks were used to manage the activities of all the business units of the companies concerned and included strategy management, portfolio management, and program and project management processes.

The aerospace company had a very powerful business process model in which program management (and project strategy) played a prominent part. The international transportation company also had a strong business process model, though project management had a more diminished role. The pharmaceutical company had a process model that was dominated by the drug development process. (This is not the same as a business model *per se,* but was clearly the major business process.) Project and portfolio management (program management to a lesser extent) are important aspects of this process. The financial services company had a high-level business process, but this did not translate as smoothly into the project development level as did the other three case studies' business models.

Cascading corporate strategies into projects and strategy plans

The companies created corporate objectives, goals, and strategies using processes that are typically like those strategic management

processes described in the literature. Like Turner's (1999) model, objectives, goals, and strategies were cascaded to the strategic business units (SBUs) or equivalent organizational entities, which—in turn and in conjunction with corporate strategy planners—developed their own objectives, goals, and strategies. In some instances, these SBUs (or equivalent business entities) used additional processes that were fully integrated with the business strategy processes. The international transportation company, for example, had an extensive process of cascading strategy by way of its OGSM (Objectives-Goals-Strategies-Measures) technique.

The SBUs subsequently developed objectives, goals, and strategies with—and for—their respective program and project teams. In some instances, this meant again using fully interconnecting business and project management processes. In all four cases, the program and/or project teams developed strategies that aligned with the SBU and corporate strategy using project strategy or similar processes. The outputs of the processes containing the objectives, goals, and strategies included strategy plans, business plans, deployment plans, and project plans, the hierarchy of which—in most cases—was similar to Archibald's hierarchy of objectives, strategies, and projects (Cleland, 1990) (Figure 1.4, Chapter 1) and SRI's system of plans (Mintzberg, Ahlstrand, and Lampel, 1998). The most comprehensive case is shown in Figure 1.10 (Chapter 1).

Portfolio management

The importance of project portfolio management was recognized by all of the companies. The pharmaceutical company had a dedicated project portfolio management practice that played a very important part in project development. Within the companies, portfolio management was used primarily to select and prioritize programs and projects and not to manage programs or projects. Project and program management are ongoing management functions—quite active and dynamic. Portfolio management is more analytical and less *hands-on*.

As we see in the case studies, corporate and business units assemble a strategic portfolio of programs and projects and measure the strategic contribution of a program or project using strategic management and project management processes, tools, and techniques. Company management boards or committees of senior managers (*governance*) adopt or reject projects based on this information.

Program management

Program management was also practiced by the majority of companies, primarily within the context of managing a (large) group of

high value projects with a common aim or delivering regular benefits over a protracted period of time. In the aerospace company, program management was positioned primarily as the management of a number of interrelated projects. In the financial services company, there was much more emphasis in program management on managing multiple, interrelated projects for business benefit. In the pharmaceutical case, the emphasis was on *asset management*, in the sense that the program represented a basic chemical entity (a technology platform in Wheelwright and Clark's phrase (1992)), which can be promoted as a brand. Program management was hardly recognized in the transportation (construction) example; if anything, it was seen as a collection of interrelated projects.

Program management and project management activities were carried out using the same set of common processes, variously called integrated program management, program management, or even project management. Accordingly, the development of program strategy, and its alignment with corporate and business strategy, was achieved in a similar way to that for projects.

Business cases and project strategy

The creation of business cases was a key element of the business and project management interface within all the companies. This happened very early in the project development process. For example, the ''Bid/No bid'' stage in the aerospace company (see Figure 2.6) and ''Define operational vision'' and ''Plan solution'' stages in the financial services company (see Figure 3.4). In both cases, an outline strategy is developed for a project that aligns with corporate and business strategies. Subsequently, business strategy, in most of the companies, was translated into a comprehensive project strategy using project management processes similar to those used in Figure 1.9. *None of the cases documented project strategy in a single comprehensive document, but instead used a diversity of management plans and project plans.* Managers did not see the point (the benefit) of doing so and resisted another bureaucratic task.

Structured approach to create and manage project strategy

This said, two of the companies—the aerospace company and the pharmaceutical company—used a very structured approach to create and manage project strategy. The aerospace company had institutionalized a project strategy management practice that was equivalent to, for example, risk management or technical management. The pharmaceutical company had a process for identifying specific project strategy-related issues for each phase and stage of the project development process, in line with the sequence shown

in Figure 1.9. Both companies assigned roles and responsibilities for the execution of these processes. The other companies used a less structured approach, and although they developed management plans for their projects, they tended not to summarize the plans or develop a single project strategy statement from them. They also tended not to use the term *project strategy* in their project management processes.

There is a research issue left open here, namely whether it would be beneficial to manage project strategy as a more formal, single document and process. Mintzberg and Quinn (1996) describe strategy in terms of a pattern or plan that integrates an organization's major goals and policy.

It would seem that while companies may have such strategy documented (at the corporate, portfolio, program, and project levels), there is uncertainty as to how detailed such documentation need be.

The aerospace and pharmaceutical companies managed project strategy effectively for the entire project lifecycle, and not just at the front end of a project. (Both companies are clearly in the business of developing larger and more complex projects; and like the aerospace and pharmaceutical companies, the transportation company also developed large and complex projects.) At the time of our study, the financial services company was debating whether it should extend its formal project strategy review process further into the project development cycle.)

Processes and practices

Of the processes identified in the case studies, the ones that were most consistently used were those in which the structure and content were described at a practical level (e.g., flowcharts with inputs and outputs for key processes) and those where accountability and responsibility for carrying out the process activities were identified. Conversely, when the procedures for these processes were described in too much detail, staff tended not to use them.

The best examples of the deployment of the business models and associated processes were those that were fully documented and incorporated within a company's *quality management system*, and which were Web-based and available online throughout the organization (see Artto and Dietrich 2004). The companies that had not implemented such sophisticated systems or extensively integrated business and project management processes nevertheless linked the activities of their business units and projects to ensure alignment of strategy.

Strategy was consciously and systematically *value-managed* in the case of the pharmaceutical company. The transportation com-

pany had a strong *value for money* orientation, but did not use value management as a special practice.

All the companies integrated other key project development practices into their strategy development processes, such as risk management, safety management, and technical and commercial management.

Roles, responsibilities, and accountabilities

All of the companies specified the roles, responsibilities, and accountabilities of those involved in the business management and project management processes within the process documentation and used formats including sets of tables and matrices that were linked directly to the processes. In the cases of the aerospace, financial services, and transportation companies, these tables and matrices covered in detail all the phases and stages of the project management process and project lifecycle, including those for creating and maintaining project strategy (including the business case process) and identified *who* does *what* and *when* at any point along the process. In the financial services company, a family of project management job descriptions was used in conjunction with the tables and matrices. These identified the jobholder's roles, responsibilities, and accountabilities for specific project management process activities and outputs and provided an unusually high degree of integration between the process and the individual or team. The pharmaceutical company and transportation company had detailed RACI and RASI tables respectively.

In the pharmaceutical company, project leaders are distinguished from project managers. The former, in the Kotter mold (Kotter 1990), typically see their role as being more concerned with shaping project strategy, while the latter are more concerned with managing operational aspects of the project. (However, there is, in practice, an obvious overlap.) Interestingly, the international transportation company had also recently elevated its designation of project managers to project leaders, though there was less explicit emphasis on the role of creating project strategy.

Competencies and frameworks

The companies also employed a number of other methods to identify and specify the skills, knowledge, behaviors, and experience required to manage projects and project strategy. These included, for example, company-wide competency frameworks that defined: the competency requirements for all the key jobs and families of job descriptions, including those for project management staff; the core

behavioral competencies for senior project management staff, such as managing vision and strategy; and the project management functional competencies, which cover knowledge and experience of strategy-related areas, such as scope management.

Chapter 7

Survey and Findings: How Organizations Move Strategy From Corporate to Projects

The previous case studies provide a rich qualitative context in which to explore how companies do, in fact, move from corporate strategy to program and project strategy, and whether they do so as we hypothesized in Chapter 1. Since the data sample presented is obviously small, and to provide a bigger data sample, we carried out a survey of the way members in several PMI European chapters moved from corporate strategy to program and project strategy.

A series of thirty-two questions were developed and used to examine the processes, practices, and people issues involved in moving strategy from the corporate level to projects. This studied covered business management, strategic management, portfolio management, program management, and project management. The questionnaire was sent out to PMI Chapter members in Europe to obtain their views, based on their experience and knowledge. Seventy-five responses (about 50 percent from UK) were received from people, at various levels of seniority, in small, medium, and large enterprises in a diverse range of business sectors, such as aerospace, automotive, IT, telecommunications, pharmaceuticals, retail, transportation, publishing, academia, and consultancy. The response rate—about 2 percent—is too small for the results to be considered as statistically valid, but it can be taken as indicative.

A word of caution is advisable before looking at the survey findings. They are potentially quite revealing, for they suggest that many project managers typically work in strategy, program, and value man-

agement (or believe that they should)—much more than the *PMBOK® Guide* (Project Management Institute 2000) or the literature in general would suggest. The word of caution is to be aware that the respondents were presumably some of the most professionally conscientious members of PMI, so we do not necessarily get a balanced view of practice; also, to an extent, there may be some ambiguity in what the respondent means by some of the terms (e.g., Value Management). Nevertheless, we believe the findings are fascinating.

The findings of the survey, summarized in Boxes 1–5, cover the following areas:

1. Business management
2. Program management and portfolio management
3. Project management and project strategy
4. Value management
5. Project management competencies

Most items in each box have a *Population %* figure that indicates a percentage of the total number of organizations represented in the survey; for example, in Box 1 Item 1, 67 percent of the organizations in the survey indicated that they used a generic business model. Or in Box 2 Item 3, 85 percent of organizations surveyed use programs to implement change.

The first major area the survey explored, shown in Box 1, was the extent to which processes were used within organizations and to what degree was the continuity of strategy achieved through them.

The survey findings suggest that:

- Many organizations (most of which are process-oriented) use business enterprise models (or equivalent) that incorporate project management as a key business management process. This suggests that there is widespread recognition of the importance of project management within business.
- Almost all process-oriented organizations have business-planning processes for moving corporate goals and objectives to project strategy.
- A high level of interconnectedness between the business and project management processes ensures that there is a high degree of continuity of strategy as it is cascaded through the organization.
- A hierarchy of objectives and strategies, more often from the SBU level rather than the corporate level, is used widely for structuring strategy and provides a high level of visibility within an organization.

Box 2 shows how organizations perceive and use program management and portfolio management. The extent to which they moved

Box 1: Survey findings—Business management

1. The extent to which a business model was used

Model used	Generic*	Equivalent
Population %	67	23

*Including project management processes

2. 80 percent of the organizations indicated they were process-oriented organizations as follows:

Level of process-oriented	Extensively	Adequately	Inadequately
Population %	40	40	17

3. Those extensively or adequately process-oriented indicated they had processes for moving corporate goals and objectives to project strategy as follows:

Level of processes	Extensive	Adequate
Population %	50	33

4. The level of interconnection between the corporate, business, and project management processes for the organizations with extensive processes was as follows:

Level of Interconnection	Extensive	Adequate	Inadequate
Population %	40	50	10

5. Organizations having extensive processes/sub-processes for moving corporate goals and objectives to project strategy consider continuity of strategy to be achieved as follows:

Level of continuity achieved	Fully	Well	Inadequate or poor
Population %	20	55	25

6. Hierarchy of objectives and strategies developed and deployed for structuring strategy:

Hierarchy span	Corporate through to project	SBU to project
Population %	53	68

strategy through programs to projects was the second major area investigated.

The survey findings indicate that:

- Some form of portfolio management is implemented fairly widely, but it is perceived to be more about managing groups of projects than selecting and prioritizing them. (This is contrary to the views found in the literature.)
- Program management is generally defined as the management of a portfolio of projects sharing a business objective of strategic importance and (probably) utilizing shared resources.
- Programs are most often seen to comprise a combination of groups of projects or a number of separate projects.
- Most organizations implement program management to manage integrated sets of projects. Many use integrated project

Box 2: Survey findings—Program management and portfolio management

	Population %
1. Program management was defined as the management of a portfolio of projects sharing a business objective of strategic importance, probably utilizing shared resources	95
2. Programs were considered to comprise:	
Groups of projects	20
No. of separate projects	20
Combination of both	70
3. Programs were used to implement change:	85
4. Some form of portfolio management was implemented:	50
5. Portfolio management was considered as:	
Selecting the right project quantitatively	50
Maintaining a balanced portfolio	60
Managing projects grouped around a common theme	66
6. Hierarchy of objectives and strategies were developed and deployed at program and project level:	75
Of this group, the levels deployed were as follows:	
Program	90
Program and project	60
Program, project, and project team	45
Program, project, project team, and individual	28
7. Program management was implemented:	90
Of this group, program management included the following:	
A. [i] Managing an integrated set of projects to achieve a common theme, aim, or working off a common platform;	55
[ii] Integrated project teams	
[iii] Managing resources in an integrated manner	
B. [i] and [ii]	10
C. [i] and [iii]	15
8. Program management implied the management of business benefits	75
Of this group:	
It was normal practice to formally identify a benefits process within the overall program management process.	70
Those who do not incorporate a benefits process believed they should.	60
Non-financial measures were used to track benefits in programs.	70
9. Program management implied the aggregation of risks	75
Of this group:	
It is normal practice to formally identify risk aggregation as part of the overall risk management activity.	80
Those who do not identify risk aggregation believed it should be incorporated into program management.	60

teams to manage the resources in an integrated manner for the sets of projects.

- Program management usually implies the management of business benefits. A benefits process is generally formally identified within the overall program management process.
- Non-financial measures are frequently used to track benefits.
- Program management usually implies the aggregation of risk and it is normal practice to formally identify risk aggregation as part of the overall risk management activity.

The third area investigated—project management and project strategy (shown in Box 3)—followed naturally from program management. The survey focused on identifying the key strategy inputs and some of the project management activities, which were employed to create project strategy.

The survey findings imply that:

- Many organizations use integrated project management processes to manage project strategy; most contain processes for project strategy management and related areas, such as requirements management, project definition, and project scope management.
- Specific corporate, business, portfolio, and program strategy inputs were generally fed into integrated project management processes to develop project strategy.
- Most project management processes deliver program or project plans; many deliver project or program plans and strategy plans; many deliver project or program plans, strategy plans, and other project management plans; and most deliver other project management plans.
- Project strategy is managed dynamically by many organizations using project management processes.
- The roles and responsibilities for developing, implementing, and updating project strategy are frequently specified in project management procedures and slightly less in project plans.
- Project plans are, in general, formally reviewed at project gates in the project lifecycle.
- Peer groups formally review project plans in many organizations.
- In most organizations it is clear who approves and signs off project strategy.
- In most organizations strategy is expected to be upgraded and reviewed during the development of a project.

The survey also explored two other areas:

- Project value management and its link to project strategy (Box 4).

Box 3: Survey findings—Project management and project strategy

	Population %
1. Organizations had extensive or partially integrated project management processes to help manage project strategy, which contained:	Almost 100
Project strategy management	85
Requirements management, project strategy, project definition, and project scope management	75
Requirements management, project definition, and project scope management.	85
2. Organizations had specific strategy inputs to integrated project management processes, which included:	Most
Corporate strategy	75
Corporate strategy and business strategies	65
Corporate, business and portfolio strategies	50
Corporate, business, portfolio, and program strategies	45
Portfolio and program strategies only	55
Program strategy	75
3. The integrated project management processes delivered the following outputs:	
A project or program plan	Almost 100
A project or program plan and strategy plan	50
Other project management plans	75
A project or program plan, strategy plan, and other plans	45
4. Organizations with integrated project management processes managed project strategy dynamically	65
5. The roles and responsibilities for developing, implementing, and updating project strategy were specified in:	
Project management procedures	60
Project plans	55
6. Project plans were formally reviewed at project gates	85
Those who did not and thought they should	85
7. Peer groups formally reviewed project plans	75
Those who did not and thought it would be sensible to do	65
8. It was clear who approved and signed off project strategy	75
9. In broad terms, a project sponsor was the individual or group within the performing organization who provides the financial resources, in cash or in kind, for the project; as the owner of the business case, the sponsor represents the funder's interests.	90
The relationship between the project sponsor and the project management team was normally defined in project plans	70
10. Strategy was expected to be upgraded and reviewed:	
During the development of the project	65
Systematically, as projects develop from concept to execution	55
Of which, it was systematically undertaken at project review gates	85

Box 4: Survey findings—Value management

	Population %
1. A process was used for optimizing the value of a proposed project/program strategy	55
Of this group:	
Value was expressed as a benefit over resources used	80
The process was formalized as value management	55
Of this group, value management workshops were held at strategic stages in the life of the project	40
Those not using a process for optimizing the value of project/program strategy believed they should	55
2. Value engineering was practiced on programs and projects	25
Of this group:	
Value engineering (optimizing the value of the technical configuration) was distinguished from value management	80
Those not practicing value engineering on programs and projects thought they should	56
3. The value optimization process was integrated with risk management	75
Those that did not thought it should be done	40

- The extent to which companies define competencies to manage program and project strategy and incorporate these into competency frameworks and job descriptions (Box 5).

The survey findings suggest that:

- The value of proposed project/program strategy is frequently optimized during the evolution of the project.
- Value management workshops at strategic stages in the life of the project are less common.
- Value engineering on programs and projects is not practiced frequently, but it is distinguished from value management.

The survey findings imply that:

- The project management skills and knowledge competencies required to manage programs or projects and develop program and project strategy are generally formally defined.
- Competencies for managing project strategy are linked to personal appraisal and development systems in many organizations. But the linking of project objectives to personal objectives is less common.
- Organization-wide behavioral competency frameworks are frequently used.
- Competency-support programs for program and project managers are widely used.

Box 5: Survey findings—Project management competencies

	Population %	
1. Project management skills and knowledge competencies required to manage programs or projects were formally defined		80
This group included:		
Those required to develop program and project strategy	75	
Linking the competencies to personal appraisal and development systems	80	
Linking personal objectives to project objectives	65	
2. Those who did not formally define the project management skills and knowledge competencies incorporated the management of project strategy in job descriptions or job specifications	50	
3. Organization-wide behavioral competency frameworks were used		60
Those who did not use them, but thought they should	45	
4. Competency support programs for program and project managers were provided		70
Of this group, covered support for project strategy development	66	

Chapter 8

Summary of the Cross-Analysis of the Survey and Case Study Findings

A cross-analysis of the findings of the survey shown in Chapter 7 (boxes 1–5) and the four case studies (Chapters 2–6) was undertaken to identify the similarities and differences between the two sets of findings and to reflect on what this information indicates to the project management profession at large. Caution on interpreting and generalizing the findings has been exercised in light of the small sample population of the case studies and survey and the interpretation of questions and practices by those surveyed. What follows is a summary of the findings of the cross-analysis.

Business Management and Strategy

The survey showed that a substantial proportion of organizations use business models. Two case study companies used a business model, although one had nine major processes and the other three processes. But both incorporated project management processes as major management processes within their models. All the business units within both companies used their respective business models. This evidence indicates that *major organizations now recognize that project management processes are key business management processes*.

Most of the organizations in the survey indicated that they were process-oriented; the case study organizations were more process-oriented than those in the survey. In the survey, those extensively process-oriented were proportionally the same as those considering

themselves to be adequately process–oriented, but the ratio in the case studies was 3:1.

Moreover, in two of the case study companies, the same project management processes were used for managing programs and projects. The main emphasis of the other companies was on project management processes. These findings suggest that *major organizations currently use a single fully integrated process for managing programs and projects*.

Most of the process-oriented organizations in the survey with extensive or adequate processes have processes for moving corporate goals and objectives into project strategy. However, in two of the case study companies, the strategy for projects was maintained primarily through a business case management process and not the project management process. This implies that *some organizations still view and manage strategy within the domain and context of business management rather than broaden it to also include the project domain*. This may be the result of a misperception of what is meant by strategy or that strategy is the preserve of a few. Nevertheless, how these projects are to be managed (strategy) was decided and executed primarily by the project leadership team within the two companies.

Half of the organizations in the survey with extensive processes consider the level of interconnection between the corporate, business, and project management processes to be extensive and almost half to be adequate. This indicates *a high level of interconnectivity in which strategy is cascaded down to projects within organizations*. The findings of the case studies supported this. Two of the companies had developed very comprehensive sets of integrated processes, one of which was fully online. The level of interconnection of the processes of the other two companies was considered adequate; they were documented in less detail and at a higher level.

A substantial number of organizations in the survey having extensive processes for moving corporate goals and objectives to project strategy felt that they achieve continuity of strategy fully or well. All the case study companies had processes and structures in place to ensure that continuity of strategy was fully achieved.

Just over half the organizations in the surveyand all the case study companieshad a hierarchy of objectives and strategies spanning operating levels from the corporate level to projects. In almost three quarters of the organizations, a hierarchy from SBU level to projects was used. The findings indicate *widespread use of a hierarchical means of deploying strategy, but the starting point for most of the population surveyed was at SBU and not corporate level*. Though all the case study companies used a hierarchical structure, the imple-

mentation of the hierarchical structure of OGSM (Objectives, Goals, Strategies and Measures) in one company was particularly strong in that it effectively defined the environment in which the company operated.

Business models are used widely by organizations and the business units within many of these organizations apply them collectively. The models may differ in size and complexity, but most incorporate project management processes as key business management processes. Processes having a high interconnectivity between corporate, business, and project levels are an important means of cascading corporate goals, objectives, and strategy into projects and of ensuring that continuity of strategy is achieved in a systematic and structured way. The use of hierarchies of objectives and strategies further underscores the systematic way organizations cascade strategy.

Project strategy is developed and maintained by project leadership teams and governance through business case processes and not exclusively through the project management processes; accordingly, project strategy is managed within the context of business strategy.

Portfolio Management and Program Management

Half of the organizations in the survey—and all of the case study companies—implemented some form of portfolio management. One of the case study companies organized around portfolios in addition to program and project management and had a dedicated portfolio management process and practice. Portfolio management activities in the other companies were part of the business case process or the strategic planning processes. A key activity is ensuring that the portfolio strategy is always aligned with corporate and business strategies.

Three of the case study companies selected and prioritized projects quantitatively within business case/business management processes; these were well integrated with the program/project management processes. The pharmaceutical company used quantitative methods incorporated in a dedicated portfolio management process to select and prioritize projects. All of the companies looked to maintain a balanced portfolio consistent with their business and

operational objectives. Though there was a diversity of programs and projects in each of the companies, many had a common theme and were treated as portfolios.

The survey findings indicated that portfolio management is perceived by two-thirds of the organizations to be more about managing projects around a common theme than maintaining a balanced portfolio (60 percent) or selecting the right project (50 percent). This indicates a perception by those surveyed that portfolio management is more about managing groups of projects than selecting and prioritizing them. This is at odds with the literature—for example, Archer and Ghasemzadeh (1999)—and the case studies.

Almost all the organizations, including the case study companies, defined program management as the management of a portfolio of projects that shares a business objective of strategic importance and (probably) uses shared resources. One in five of the companies surveyed considered that programs comprised groups of projects or alternatively, a number of separate projects, but almost three-quarters considered programs to comprise a combination of both. This is similar to the views of the case study companies. Again, this is slightly different from the prevailing *theoretical* view where program management is seen as the management of a group of related projects, typically for business (organizational) benefit. (See PMI's *PMBOK® Guide (2000)* and *OPM3® (2003);* APM's *APM BOK* (2000); Thiry (2004); and Pellegrinelli, Partington, and Young (2003).) Almost all the companies surveyed—and all of the case study companies—used programs to implement change.

Though almost all of the organizations surveyed implemented program management, in just over half of them this included:

1. Managing an integrated set of projects to achieve a common theme, aim, or working off a common platform;
2. Integrating project teams;
3. Managing resources in an integrated manner.

All of the case study companies implemented all three practices. These findings indicate that *program management is widely implemented to manage sets of projects, and integrated project teams are used to manage the project's resources.*

A high proportion of organizations surveyed indicated that program management implied the management of business benefits. Many said it was normal practice to formally identify a benefits process within the overall program management process and to use non-financial measures to track benefits. Only one of the case study companies used a specific benefits management process, although business benefits from programs and projects was strongly emphasized in the other companies.

A significant proportion of organizations surveyed indicated that program management implied the aggregation risk; most said it was normal practice to formally identify risk aggregation as part of the overall risk management activity. All of the case study companies aggregated risk as part of the overall risk management activity. One company showed interest in improving this process.

Some form of portfolio management is implemented by many organizations, but most survey respondents perceive it to be about managing projects around a common theme rather than maintaining a balanced portfolio or selecting the right project (contrary to the literature). In contrast, three of the case study companies implemented portfolio management mainly as a process for selecting and prioritizing the right projects.

Most organizations implement program management and use programs to implement change. There is broad agreement that program management includes the management of a portfolio or groups of projects using integrated project teams, managing resources in an integrated manner, and the management of benefits and of aggregated risk. Many organizations use a single, fully integrated project management process for managing both programs and projects. These processes are very flexible and can be tailored to suit the needs of both programs and projects. They also enable projects and programs to be managed as a single integrated activity or managed separately or in groups or programs.

Project Management and Project Strategy

Almost of all the organizations in the survey said they had extensive or partially integrated project management processes to help manage project strategy. Most contained processes for project strategy management, requirements management, project definition, and project scope management. All of the case study companies had processes for managing the strategy for a project (project strategy). Such processes were highly structured and spanned the project lifecycle. However, two of them used a combination of business case processes and project control processes and did not explicitly use the term *project strategy*. These findings tend to indicate that *many organizations manage project strategy, but some of them consider strategy to be determined and managed at a strategic level within an organi-*

zation, and that the term (or practice) should not be, and is not used, at the project level.

Most of the organizations in the survey indicated that specific strategy inputs were fed into their integrated project management processes: three-quarters included corporate strategy; two-thirds included corporate strategy and business strategies; almost half included corporate, business, and portfolio strategies; and three-quarters included corporate, business, and program strategy. All of the case study companies provided inputs at corporate, business, portfolio, and program levels. These findings indicate that *many organizations feed strategy inputs directly into their project management processes from four levels to create and dynamically maintain project strategy*.

Almost all the organizations in the survey indicated that their project management processes delivered a program or project plan. Half of them said they produced both a program or project plan and strategy plan. But three-quarters said they delivered other project management plans. Slightly less than half indicated they delivered all three types of plans. All the case study companies produced project plans, but only one also developed a set of strategy plans. These findings suggest that *project strategy is generally not a formal, separate document.*

Two-thirds of the organizations in the survey said that the project management processes enabled project strategy to be managed dynamically. This finding does *not* imply that project strategy is not managed dynamically in the remaining organizations (see below). The processes in all of the case study companies enabled project strategy to be managed dynamically (including two companies through the business case management process). The overall findings imply that *organizations manage project strategy dynamically and have processes in place to ensure it is carried out*.

Over half the organizations in the survey indicated that the roles and responsibilities for developing, implementing, and updating project strategy were specified in their project management procedures; slightly less than half of the organizations specified these in their project plans. The procedures of all the case study companies included the roles and responsibilities for project strategy: one company used activity tables with specific tasks for project strategy for each stage of the project lifecycle; another used a RASI table for its project strategy management processes; a third used a comprehensive combination of activity tables and task lists linked to all the phases of Project Management process; and the fourth used a comprehensive set of RASI matrices coupled with roles and responsibility lists. The finding of the survey and the case studies implies that *the management of project strategy has become recognized and estab-*

lished as an important task in many organizations. Many, however, do not formally articulate the strategy in a separate document, but instead have it covered in several documents.

Most of the organizations in the survey—and all of the case study companies—indicated that project plans were formally reviewed at project gates in the project lifecycle. Three-quarters of the organizations in the survey said that peer groups formally reviewed project plans and that it was clear who approved and signed off project strategy within their organization. All the case study companies said that peer groups formally reviewed project plans and that it was clear who signed off project strategy within their organization. The findings suggest that *formal project reviews at stage-gates is now widely recognized as best practice.*

Two-thirds of the organizations in the survey expected strategy to be upgraded and reviewed during the development of the project. Slightly less than two-thirds of the companies surveyed expected this to be carried out systematically as projects develop from concept to execution, although most of them expected it to be undertaken at the project review gates. All the case studies expected strategy to be upgraded systematically at project review gates.

Integrated project management and business case processes, using specific strategy inputs from corporate and business levels, are widely deployed to dynamically manage project strategy. Project strategy is developed, implemented, and maintained for the life cycle of the project using a highly structured approach. Though the term "project strategy" is not universally recognized, the strategy to manage a project is usually developed and maintained to cover the life cycle of a project.

A combination of program or project plans and other management plans are most commonly used to manage programs and projects, parts of which describe how the project is to be undertaken—in other words, its strategy. These parts are often not summarized in a single project strategy document. Reviewing project plans, including project strategy, mostly by peers at project gates, is widely practiced.

The roles and responsibilities for developing, implementing, and updating project strategy are specified in project management procedures in many organizations and frequently, in project plans.

Value Management

Approximately half of the organizations in the survey indicated that they used a process for optimizing the value of proposed project/program strategy. (Most of these organizations expressed value as a benefit over resources used.) But only a few more than half of these companies held value management workshops at strategic stages in the life of the project. All of the case study companies optimized the value of proposed project/program strategy (including business cases) as part of their processes for managing projects, but only the pharmaceutical company held value management workshops.

A quarter of the organizations in the survey indicated that they practiced value engineering on programs and projects, most of which distinguished it from value management. All of the case study companies performed value engineering on programs and projects.

Most of the organizations in the survey indicated that the value optimization process was integrated with the risk management process.

The value of project/program strategy is optimized in a substantial number of organizations using a value management process integrated with the risk management process. There were fewer organizations using formal Value Management workshops, though the number is significant.

Project Management Competencies

Almost two-thirds of the organizations in the survey—and all of the case study companies—indicated that they formally defined the project management competencies required to manage programs or projects and to develop program and project strategy. Many of those in the survey linked the competencies to personal appraisal and development systems. But a little over half of the organizations surveyed linked the project objectives to personal objectives. In contrast, all of the case study companies linked them.

A significant number of the organizations in the survey, and three of the case study companies, used organization-wide competency frameworks. The financial services company used a family of job descriptions.

Many organizations in the survey indicated that they provided competency support programs for program and project managers. All of the case study companies provided support through development training programs.

In three of the case study companies, the more senior project leader (director) typically took on a strategy-shaping role. In such cases, the project manager was more focused on managing the execution of the project (timelines, resources, control information, actions, etc.)

Formally defined project management skills and knowledge competencies required to manage programs or projects and develop program and project strategy are used widely.

CHAPTER 9

Conclusions

So, what can we conclude from this research?

Projects and project management are often said to be important means of implementing strategy, but the way this happens in practice is rarely the subject of detailed review. We noted at the outset that there is little in the literature on how business strategy is translated into project terms.

Further, project strategy itself is not a well-researched or written-about topic. Surely, there should be a case for better understanding the way the project is to be developed and managed. After all, we should not just plunge into project execution.

If we could understand better how business strategy can be translated into project strategy, project management's overall performance would be improved significantly, and project management would have a higher profile in business management in general.

Let's recap then, beginning at the corporate level and moving down into projects.

Business Models and Creating Corporate and Business Strategies

Strategy management is dealt with by numerous authors, most of whom address the concepts and processes associated with strategy analysis, strategy creation (formulation), strategy evaluation, and strategy implementation. Few, however, explicitly connect corporate and business unit strategy with project strategy, although the linkage is clearly implied. Few acknowledge that project strategy should be taken into account during the strategy formation stage or when determining the capability of the organization at the strategy implementation stage. Yet, business models, used widely by many

organizations, often incorporate project management as a key business management process area.

All of the case study companies—and 70 percent of the survey respondents—had processes with high interconnectivity between corporate, business, and project levels, which acted as an important means of cascading corporate goals, objectives, and strategy into projects and of ensuring that continuity of strategy is achieved in a systematic and structured way through the organization.

Strategy management is a dynamic process; strategy is often not realized in a rigid, deliberate manner as planners often assume it may. We see examples of deliberate strategy formulation flowing from an organization's mission and goals, from its corporate levels into projects (e.g., the OGSM process in the transportation (construction) case). This process has a distinct hierarchy of objectives and strategies and of strategy/business plans. We also see examples of a more emergent link, for example, in the pharmaceutical case, where project strategy is heavily influenced by emerging trial data and the consequences of this on decisions taken at the portfolio level. The aerospace case is a good example of the management of deliberate and emergent strategies and the implementation of strategy using a highly integrated strategy-planning process.

Let's now turn to the way corporate strategy is moved into project strategy via portfolio and program management.

Moving Corporate Strategy through Portfolios, Programs, and Projects

Organizations undertake portfolios, programs, and projects to achieve the development objectives emanating from their corporate strategy. There is, however, some ambiguity in just what is meant by these terms—certainly in the case of program management.

Portfolio management and program management strategies can focus on prioritizing resources, managing a technology base, and optimizing business benefit. The majority of projects take place as part of a portfolio of several projects or programs.

Portfolio management tends to be about the selection and prioritization of projects or programs. It also includes aligning resource demand with resource availability to achieve a set of strategic goals; it is also primarily concerned with *choosing the right project*. It has a broader focus on business strategy and enterprise-wide integration than project management, which is more typically about *doing the project right*. The project portfolio management process provides a means of consistently and objectively evaluating each proposed project that is vying for a limited pool of resources, thereby helping make the most effective use of the resources.

While portfolio management is implemented in some form by many organizations, more of the organizations in the survey perceived portfolio management to be about managing projects around a common theme than maintaining a balanced portfolio or selecting the right project. In contrast, the case study companies implemented portfolio management mainly as a process for selecting and prioritizing the right projects (e.g., in the pharmaceutical case, where it is a primary activity in the overall portfolio management process). In regards to the financial services case, prior to planning the solution for a strategic initiative (i.e., program or project), the initiative is prioritized and the requisite resources are considered. Ensuring the strategy of the portfolio is always aligned with corporate and business strategy is a key activity of portfolio management.

Program management is a way of coordinating projects that have a shared aim; it is also about the day-to-day management of programs (variously defined, for example, as products, platforms, brands, or multiple projects) to deliver business value. It is emerging as a fundamental method of ensuring that an organization gains the maximum benefit from the integration of project management activities; it can be characterized as more iterative and involving more strategic reflection than *single-shot* project management. Achieving alignment between strategy and projects is considered to be one of the main benefits of program management.

Most organizations implement program management and use programs to implement change. The survey, for example, showed that 90 percent of organizations implement program management and 85 percent use programs to implement change. Many organizations use a single, fully integrated project management process for managing both programs and projects.

The need to translate business strategy into project strategy effectively is recognized as vitally important. Translating business strategy into project strategy effectively, whether a project interfaces directly with business units or indirectly through portfolios and programs, needs a coherent set of processes integrating the two areas. A project-centric model is recommended, comprising elements and practices from the *PMBOK® Guide* (Project Management Institute 2000) and the *APM BOK* (Association of Project Management 2000) to show how project strategy can be created from business strategy. Though not perfect, the model is useful in showing *the state of play* as readily available to the profession. A strategic framework is also proposed to enhance the processes for developing and creating project strategy.

Project Management and Project Strategy

A combination of program or project plans and other management plans, parts of which describe its strategy, is commonly used to help manage programs and projects. These, however, are often not summarized in a succinct single project strategy document.

Integrated project management and business case processes appear to be deployed widely to manage project strategy dynamically, but the term *project strategy* is not universally recognized. All of the case study companies had processes to develop, implement, and maintain the strategy for a project; these were highly structured and spanned the whole project lifecycle. Project plans, including project strategy, are widely reviewed by peers at project gates.

The *value* of the proposed project/program strategy is optimized in a substantial number of organizations. For example, 55 percent in the survey have processes for this activity. However, only 55 percent of these formalized the process as value management, 40 percent of which held value management workshops. In the case of the pharmaceutical company, the *value* of the proposed project/program strategy was also optimized at the portfolio level.

Competencies, Roles, Responsibilities, and Accountabilities for Moving Strategy Forward

Doing all of this requires a highly competent staff with a clear definition of their roles, responsibilities, and accountabilities. Among the many definitions, competency is seen to be role-specific and covers the knowledge, skills, and behaviors needed to perform the role. Competency frameworks define the competency requirements that cover all the key jobs in the organization or all the jobs in a job family. Roles and accountabilities are seen as slightly different from competencies; these are more prescriptive and describe the duties and tasks to be performed, as well as what the incumbent will be held responsible for. The financial services case is an example of the use of a family of job descriptions that define the role, responsibilities, knowledge, skills, and experience required (the competencies) for project management staff. At the same time, the company extensively specifies the roles and responsibilities for members of the project teams within the process documentation for the lifecycle of the project. In the aerospace case, the roles and responsibilities are incorporated within the business and program/project management processes, while the competencies for project management staff are linked to generic project management processes and key practices. The transportation (construction) and pharmaceutical cases provide examples of the extensive use of RACI and RASI matrices for the program or project lifecycle.

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