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Strategic Management of IS/IT: Organizing and Resourcing

So far, the book has demonstrated how the potential that IS/IT offers a business or organization can be assessed in relation to its environment, objectives and strategy. The focus so far has been on the inputs to the strategy development process and the tools and techniques of analysis and formulation. Chapter 7 used the application portfolio matrix to show how the approaches taken to managing IS/IT in an organization are inextricably linked in a cause-and-effect relationship with the portfolio. High-level (generic) management strategies were reviewed, from which organizations can derive a mix that is appropriate to their needs, leading to a set of management approaches to achieving success in managing applications across the portfolio. In order to develop an overall organizational capability to exploit IS/IT effectively over an extended period, further aspects of IS/IT require coherent and consistent strategic management. These key strategy areas are:

- for managing *investments* in IS/IT, to deliver the maximum value in terms of benefits to the business;
- for managing the data, *information* and knowledge resources of the organization to ensure that its business value is fully exploited and protected;
- for managing the acquisition, deployment and utilization of information *technologies*, through IS/IT services, to the benefit of the organization and relationships with technology and service suppliers;
- for organizational management of the range of IS/IT-related *resources*, the activities they perform and the governance and administration of IS/IT, both in its unique features and in relationships with other parts of the business.

This chapter deals with the last of these in order to establish an organizational context for the more specific strategies for the management of investments, information and infrastructure and the associated IT services. Earl¹ notes that it is the 'organisational issues in the strategic management of IT that matter most', and research highlights that what distinguishes organizations that are successful with IT is not technical sophistication, but how they manage IS/IT.² This chapter presents models and frameworks for guiding management action to address the organization dimensions of the IS/IT strategy. The 'organizational' strategy for IS/IT resources cannot be prescriptive. It must evolve over time as the organization becomes more dependent upon, and demands more from, IS/IT. More freedom of action in terms of greater discretion or tighter control of resource use will be appropriate at different stages of that evolution. With the increased use of outsourcing, the selection of different sourcing options for services and resources will depend both on the economics of IT supply and the evolving mix of business applications over time. The organizational context also exerts both enabling and constraining influences that shape the ultimate strategy.

THE STRATEGIC MANAGEMENT REQUIREMENT

The formulation of strategy is only the first step on the road to successful IS/IT management. The strategy must be implemented, and delivering the results and updating the strategy to reflect changing business and IS/IT environments are obviously critical to eventual success. Failure to achieve the intended strategy is often the result of organizational, political and cultural issues being inadequately addressed.

The basic IS/IT strategy development model (reproduced in Figure 8.1) ignores explicit reference to the inevitable 'refinement' of strategy during planning and implementation, and its continuing adaptation as achievements (or otherwise) occur or any environmental input changes. As noted in Chapter 2, strategic management is a combination of formal planning, creativity, innovation, informal thinking and opportunism, all of which must be effectively exploited and integrated. From establishing the strategic direction, through defining specific strategies to eventual achievement of results, the balance moves from formality to relative informality and opportunism. This set of activities also requires some feedback or control mechanism to ensure that plans and their implementation are appropriate for the strategic direction or to enable changes of direction should achievement prove impossible. Sometimes, the strategy as originally formulated has to be revisited as a new strategic context emerges; at other times, the implementation processes have to be

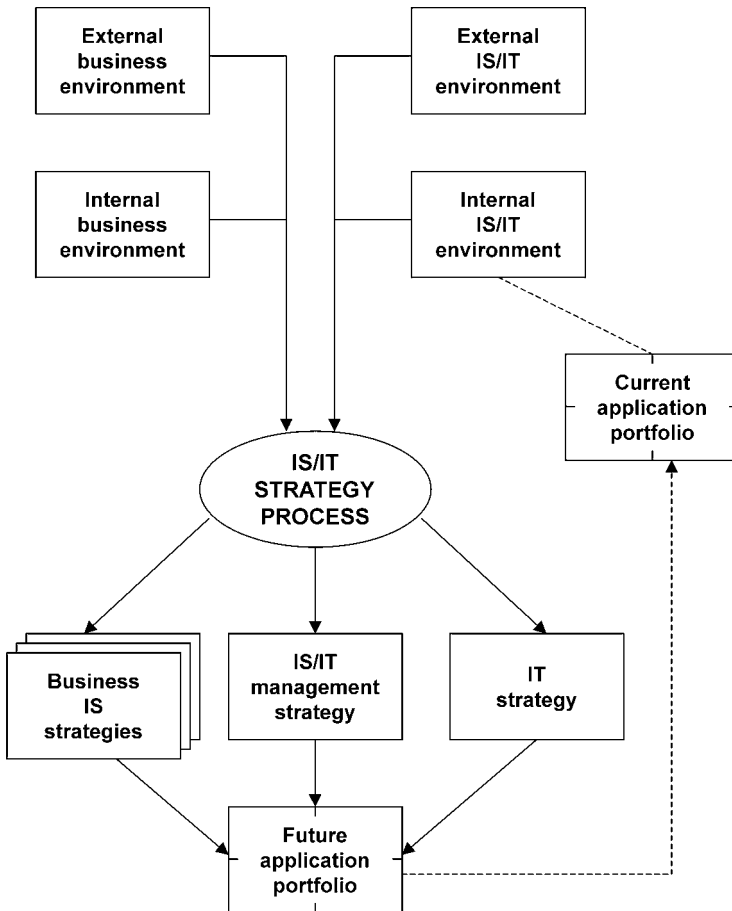


Figure 8.1 The IS/IT strategic model

reconsidered in the light of the strategy itself. Figure 8.2 depicts these relationships.

In order that the formal strategy process does not inhibit the realization of each step in the implementation of strategy and changes to the strategy, policies and practices must be established to avoid slowing up business progress. At the same time, many organizations have suffered the consequences of lack of coordination in IS/IT management, which can cause the existing (and potential) application portfolios effectively to disintegrate. Figure 8.3 considers how this might happen: the strategic direction is disregarded as localized opportunistic developments and/or

FORMAL STRATEGIC PLANNING

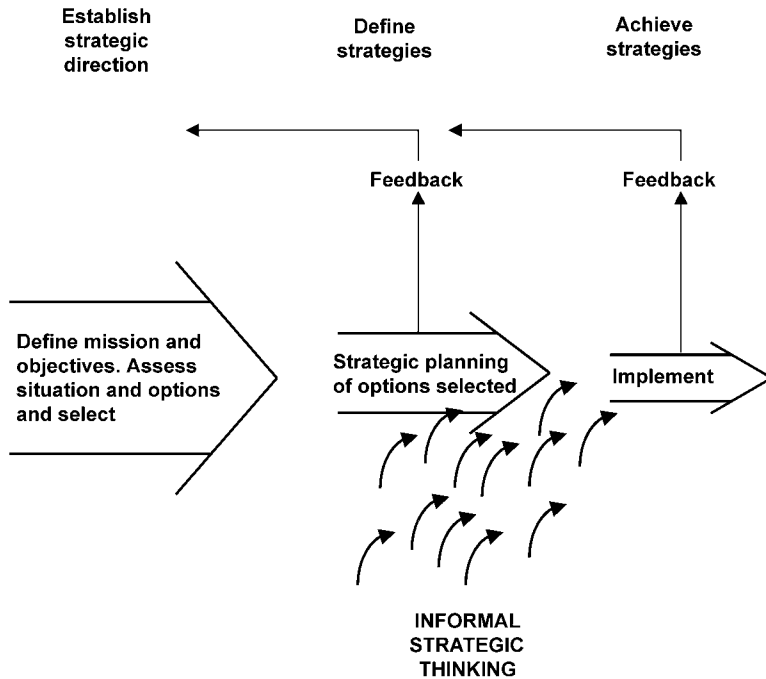


Figure 8.2 *Strategic management processes*

uncoordinated business initiatives effectively disable the overall IS/IT strategy.

In the longer term, this failure can have three major effects:

1. the systems that are developed and implemented do not meet overall business needs;
2. resources are misused;
3. strategy formulation is essentially a retrofitting process, producing enormous rework.

Any or all three can occur. The cause can usually be attributed to three main reasons:

1. lack of alignment between the business and IS strategies;
2. uncoordinated management of IS demand and IT supply;
3. over-centralization or decentralization of responsibility regarding

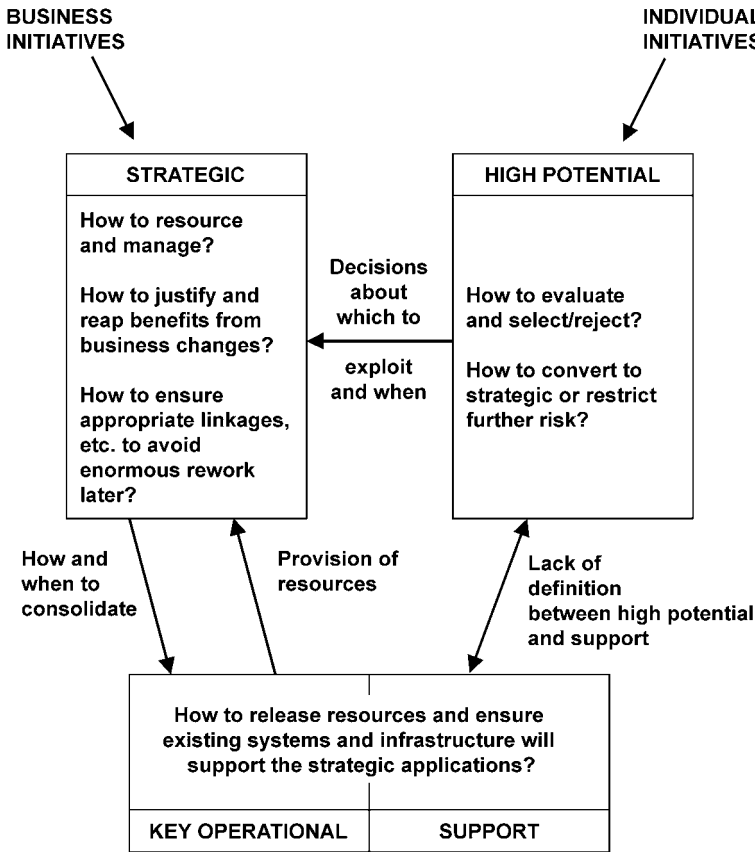


Figure 8.3 Avoiding the disintegration of the applications portfolio

IS/IT investments with lack of mechanisms to ensure coherence across centralized and devolved IS/IT decisions and activities.

It is the effectiveness of the overall IS/IT management strategy and resulting policies and practices that determines whether all other aspects of strategy development and implementation succeed. This IS/IT management strategy must not only deal with the 'rational' aspects of strategy like investment appraisal but also with behavioural and cultural considerations. While defining such strategies is predominantly an intellectual process, implementing them requires appropriate behaviours throughout the organization.

The central objectives of the IS/IT management strategy are listed in Table 8.1. These are requirements that senior management must ensure

Table 8.1 *Requirements of strategic management*

<ul style="list-style-type: none">● To ensure IS/IT strategies, policies and plans reflect business objectives and strategies.● To ensure potential business advantages from IS/IT are identified and exploited.● To ensure strategies, etc. are viable in terms of business risks.● To establish appropriate resource levels and reconcile contention/set priorities.● To create a ‘culture’ for the management of IS/IT that reflects the corporate culture.● To monitor the progress of business-critical IS/IT activities.● To achieve the best balance between centralization and devolvement of IS/IT decision making.
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are dealt with by clear delegation of responsibility and/or appropriate organizational processes. The rest of this chapter will consider how these can be addressed, in practical terms and in conjunction with the need to manage the development of the application portfolio and supporting technologies and resources.

It might be tempting to include ‘corporate information systems’—the set of applications required by the corporate body—in this overall management strategy, but they are essentially an IS strategy to satisfy corporate requirements, not issues of management policy. Equally, potential synergy between systems or benefits from rationalization of systems across the business are obviously of interest to corporate management, but, again, they are application or technology strategy issues. A ‘management edict’ to use common systems or software from a particular vendor (such as SAP, Baan, PeopleSoft or JD Edwards for ERP applications) across a number of business units will only work if the businesses concerned can see the benefits in their applications. The investment and organizational policies should encourage these approaches, but, in many cases, the policies, like accounting practices, can mitigate against the intended strategy.

Hayward,³ in an article on developing IS strategies, argues for a similar structure for the IS/IT strategy in terms of the model in Figure 8.1. He identifies a ‘management strategy’, an ‘applications strategy’ and a ‘technology strategy’ as the components, as in the model used in this book. Earl⁴ made a similar distinction, using the terms ‘information management strategy’, ‘information systems strategy’ and ‘information technology strategy’, respectively. He considers the information management strategy as ‘putting the management into IT’ or outlining the way IT is to be managed in the organization.⁵ He portrays it as addressing

questions such as the mission and organization of the IS function, control and accounting for IT, and the design of the management processes required across all the IT activities of an organization.

ORGANIZING STRATEGIES FOR IS/IT MANAGEMENT

This section will consider not only aspects of overall organizational alternatives and the position of IS functions in the organization but also organizing options (structure and resource configuration), allocation of decision rights (centralization versus devolution) and resourcing strategies (both insourcing and outsourcing). While these depend on the approaches adopted for information, application and technology management, it is most critical that the IS function is organized to satisfy its 'customers' requirements as well as to manage itself effectively. And customers today are not necessarily located in the business, but can be actual customers (e.g. as with e-banking) and suppliers (e.g. as with e-supply chains).

In addition to defining organizational responsibilities concerning IS/IT management, corporate management also has to decide *if* and *how* that structure should be overlaid by other 'governing' processes such as committees or steering groups for coordination and control. Most large private sector and public bodies have realized that no one organizational alternative can achieve appropriate management of all aspects of IS/IT. To overcome this, upward of 80% of major US and UK organizations have constituted some form of IS/IT management steering group.

However, in many of these organizations, the 'steering group' is seen as a failure, or at best an irrelevance, by both line management and IS managers, and even by some senior executives. Others, however, are very effective as mechanisms for developing a more concerted approach to the strategic management of IS/IT. The reasons for these differing realities will also be explored and an overall 'ideal' model for effective governance will be outlined.

Beyond Centralization versus Decentralization

The positioning of the main IT resource of the organization in the organizational structure has been problematic since 'computing' began, but the problems have become compounded as IS/IT has pervaded and affected many parts of business. Over the years, a 'tug of war' has often developed between centralized and decentralized control of IS/IT resources. Much has been written about the positioning, structuring and organization of the IS function, or indeed whether or not one should even exist, and the

findings from these studies will be drawn upon in this section.⁶ Getting it wrong can be very costly, but how can an organization know when it is right?

For example, in a decentralized engineering group, a very centralized monopolistic IS function was failing to provide a satisfactory service. Rather than evaluate why, the management bowed to political pressure from the operating company managers and rapidly devolved IS/IT resources to the business units. Systems development virtually ceased and support for existing systems was adversely affected. Many of the best people left, and at no site was there sufficient resource to achieve major developments, while local management had no experience of running an IS group. Gradually, it was realized that some aspects of IS/IT should be recentralized to avoid duplicated expertise, avail of synergies, etc. and that some aspects, reinforced by user resource investments, should remain in the units. There are many similar instances of swings between extreme centralization and decentralization, neither of which proves successful, for the rather obvious reason that—as seen in Chapter 7—some things are best centralized and others devolved!

Undoubtedly, much application expertise is devolving into the user organization, although, in the process, the quality of many systems and the integrity of data can decline. At the same time, the need to develop technical infrastructures and information architectures is forcing more centralization of certain responsibilities. Discussion regarding the organization of IS/IT and the role of the IS function often re-emerged as a consequence of the proliferation of 'e'-related activities, which have often resulted in even more disparate systems that are not integrated—a situation referred to as 'islands of automation' in the 1970s and 1980s! Also of significance is the fact that these activities have often failed to make any real contribution to the overall business. For example, Citigroup, parent company of Citibank, Soloman Smith Barney and Travelers Insurance, launched e-Citi in 1997 as an incubator for Web-businesses. The task of e-Citi was to keep the rest of the group on its toes and was free to cannibalize business from other group companies. However, the only thing it managed to do was gobble up money—between 1998 and 2000 it lost over US\$1 billion. From being seen as separate from the business, the Internet is now seen as an integral part of corporate strategy and a Corporate Internet Operating Group has been established to oversee the complete Net strategy across all businesses.⁷

It is not easy to produce a general statement of the ideal organizational arrangement for IS/IT resources. A number of factors will always have to be weighed for any organization:

- the organization's dependence on IT;

- its stage of maturity in terms of its application portfolio;
- the geography of the enterprise, especially for organizations with a global presence;
- its business diversity and rate of change of the types of business and competitive pressures in each business;
- the potential benefits of synergy between businesses in both trading goods and services and information exchange;
- the economics of resourcing, obtaining and deploying skills.

Nearly 20 years ago, *EDP Analyser*,⁸ in an edition entitled ‘Organising for the 1990s’, focused on how the role of IS/IT was changing at that time. It observed the trend away from ‘production’ to ‘service’ orientation, and to providing the architectural support for the applications, and concluded that the data or information architecture will become a critical component of strategy, which ‘someone’ in the organization must tackle. However, despite the passage of time, this aspect still remains so.

‘Whither the IT organization?’ was the question posed by La Belle and Nyce,⁹ who discussed how the IS/IT resource was reorganized in Manufacturers Trust Co.¹⁰ to respond to a major company reorganization. The company considered many alternatives before arriving at the need to ‘recentralize’ (as they put it) some aspects of IS/IT in order to support a decentralization of the business into five units to match the customers each served. Previously, IS/IT had been steadily decentralizing, but in support of a different business structure. They concluded that, while the business units should be responsible for applications—architecture, development and operation—certain areas should be centralized. These included: telecommunications, hardware and software architecture, information architecture, risk management and security, shared services and utilities, and human resources.

In each of these areas, the central IT group would be able to assist, advise and, if necessary, control the activities of the business units where they could provide improved economies or supply-related options and/or demonstrate added value from corporate synergy. To do this, the activities of the units had to be coordinated with the central architectural development via a ‘steering group’ structure, which is similar to that described later in this chapter. This brief description does scant justice to the detail of the restructuring involved and the careful planning and implementation required to change not only the organization but also the culture to accept the implied changes in responsibility. Table 8.2 summarizes the divisions of responsibility for one aspect—‘IT architectural management’.

If the overall application strategy is to fit the business strategy, the business unit management must be accountable and responsible for

Table 8.2 *Division of responsibility: IT architecture management (source: after La Belle and Nyce)*

<i>Function</i>	<i>Central IT group</i>	<i>Business unit operations</i>
<i>Develop and maintain information architecture</i>	<ul style="list-style-type: none"> ● Monitor process; provide assistance if requested 	<ul style="list-style-type: none"> ● Complete business architectures defining business (within sectors) by location ● Complete translation of strategy into technology requirements ● Define information architecture
<i>Develop and maintain application architecture</i>	<ul style="list-style-type: none"> ● Set standards, monitor process ● Review architectures and report on adequacy to Technology Committee ● Ensure appropriate commonality 	<ul style="list-style-type: none"> ● Define requirements and develop architecture ● Coordinate between units for common businesses
<i>Develop and maintain data architectures</i>	<ul style="list-style-type: none"> ● Coordinate development/establishment of common database management process ● Create/maintain corporate databases 	<ul style="list-style-type: none"> ● Define requirements ● Develop in accordance with standards
<i>Develop and maintain hardware/operating system architectures</i>	<ul style="list-style-type: none"> ● Monitor development/implementation within sectors ● Develop and maintain architecture for corporate users-support operations 	<ul style="list-style-type: none"> ● Develop in accordance with corporate standards and business requirements ● Request variances as appropriate; make change recommendations
<i>Develop and maintain telecommunications architectures</i>	<ul style="list-style-type: none"> ● Develop in accordance with standards and business requirements 	<ul style="list-style-type: none"> ● Define requirements ● Report performance/responsiveness problems

the deployment of the unit's resources in developing and maintaining the applications. This applies whether they are employed as part of the business unit or contracted from a central IS function or third-party vendors for the duration of a project, or the life of the application.

This responsibility includes the application architecture for the unit, even if some applications are also part of the corporate portfolio and/or shared with other units. Where there are significant potential gains from synergy, sharing experience or resources, or from economic optimization, an additional corporately-sponsored 'central planning and control' of the application architecture and delivery will be beneficial. The more geographically dispersed the organization, the less attractive the concept of coordinated planning becomes in the short term, but perhaps the more attractive are the long-term benefits of not resourcing very similar applications separately in multiple places.¹¹

The degree to which information is a shared business resource will determine how centralized the information architecture and data control processes will become. Similarly, how closely technologies need to be coordinated will depend on the relationships among applications and data utilization as much as on the economies of supply or technical simplicity or flexibility achieved.

Undoubtedly, in every major organization other than the most diversified conglomerate, there are potential gains from the centralization of some resources. But, as described in all the models, these centralized functions are primarily required to service the various needs of the business units—their *raison d'être* is that, if the resource were distributed, it would be less effective. In addition, where there are potential benefits to the organization as a whole that are greater than the sum of the parts (of the business units), then some planning and coordination at the centre can add value to ensure that these additional benefits are achieved.

Balancing IS Demand and IT Supply

The management of 'demand' and 'supply' and achieving balance between both is complex. The previous section illustrated that the debate is generally portrayed as alternating between centralization and decentralization. However, the 'middle ground' has become an appealing alternative.¹² Von Simson,¹³ for example, subscribes to an IS functional design with IS/IT roles played by both a central IS function and the business units and prescribes a 'centrally decentralized' IS function with strong dotted-line reporting relationships. He argues that clear structures and distinct roles and responsibilities must be defined with a mix of centralized and decentralized resources. Otherwise, confusion, conflict, duplication of effort and/or inadequate systems integrity will occur. In a similar vein, the *federal structure* is often seen as capturing the benefits of both centralization and decentralization.¹⁴ With such a structure, business units receive a responsive service from decentralized IS

functions, while at the same time a corporate IS function provides group-wide IT services and exerts some degree of central leadership and control of IT activities (see Figure 8.4). While intellectually appealing, little guidance can be found as to what these decision areas are and how to make it work.

The key questions are what aspects of IS/IT are best managed centrally and which are best devolved—degree of diffusion in Sullivan's¹⁵ terms—and whether IS/IT activities are managed by a specialist IS function at all or should they be managed by business management themselves. Table 8.3 summarizes the dominant structural arrangements for IS activities, highlighting the advantages of each type and identifies the critical management issues.

Imperatives for the Management of IS/IT

Rockart *et al.*¹⁶ have suggested a number of imperatives for the 'new' IS function to take account of the changing business and technical environments. They are:

1. achieve two-way alignment between the business and IS/IT strategy;
2. develop effective relationships with line management;
3. deliver and implement new systems;
4. build and manage IT infrastructure;
5. reskill the IS function with new competencies and knowledge;
6. manage vendor partnerships;
7. redesign and manage the federal IS organization.

Venkatraman¹⁷ argued the need for a different approach to managing IT resources that considers the sources of value to be derived from IT resources and proposed that resources should be managed as a *value centre*. The value centre is an organizing concept that recognizes four interdependent sources of value from IT resources: cost centre, service centre, investment and profit centre. He argues that the very act of adopting these perspectives permits companies to differentiate the management approaches needed to realize these distinct sources of value. The relative mix among the four components reflects the strategic role for IT within a particular business and will undoubtedly change over time:

- The *cost centre* has an operational focus that minimizes risks with an emphasis on operational efficiency. Cost-centre activities are good candidates for outsourcing.
- The *service centre*, although still minimizing risk, aims to create an IT-enabled business capability to support current strategies.

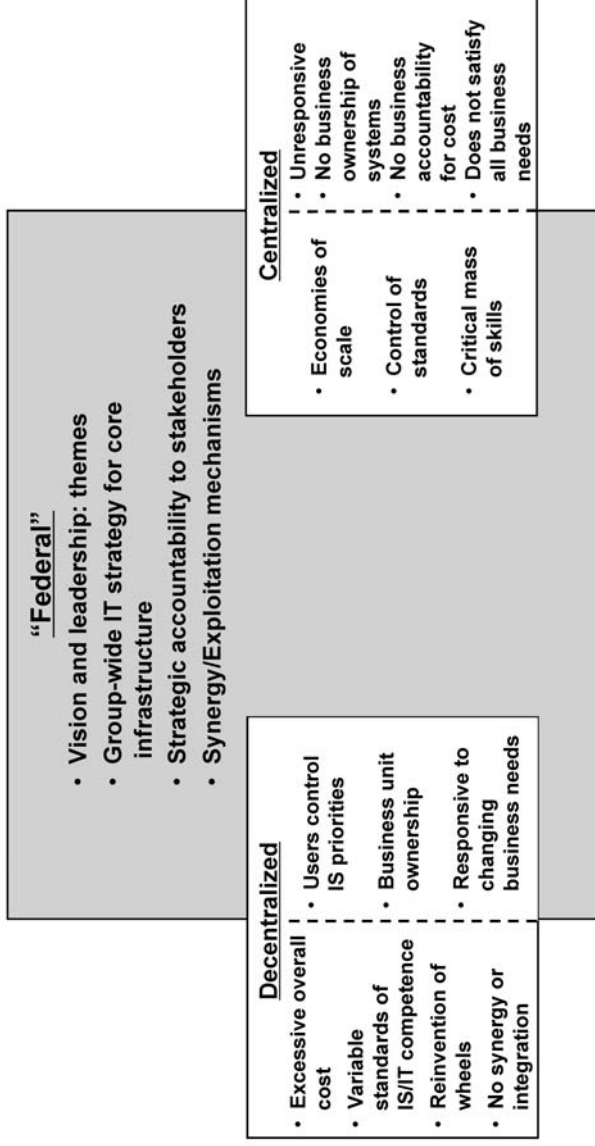


Figure 8.4 The ‘Federal IT Organisation’ (source: after Hodgkinson)

Table 8.3 Summary of structural arrangements for IS function in multiple business units

Structural arrangements for managing the IS Function	IS/IT activities	Advantages	Critical management issues
<i>Independent IS/IT activities in business units</i>	<ul style="list-style-type: none"> Business units pursue independent system initiatives 	<ul style="list-style-type: none"> Business units have ownership Users control IS/IT priorities Responsive to business unit's needs 	<ul style="list-style-type: none"> Integration Lack of quality control of data Variable standards of IS/IT competency 'Reinvention of wheels' and duplication of effort Little synergy across business units Managing cost
<i>Centrally-driven IS/IT activities</i>	<ul style="list-style-type: none"> Corporate wide IS/IT solutions imposed on business units 	<ul style="list-style-type: none"> Scale economies Control of standards Critical mass of skill 	<ul style="list-style-type: none"> Politics Unresponsive Does not meet every business unit's needs Effect on customer
<i>Informal cooperation in IS/IT activities across business units</i>	<ul style="list-style-type: none"> Informal social networking between the centre and business units Usually brought about by movement of key IS/IT personnel across business units 	<ul style="list-style-type: none"> Awareness of IS/IT issues across the enterprise 	<ul style="list-style-type: none"> Coordination and direction setting Leaving too much to chance
<i>'Federalism' (integrated IS/IT)</i>	<ul style="list-style-type: none"> Balancing central control and business unit autonomy without losing the advantage of global coordination and integration 	<ul style="list-style-type: none"> Group-wide IS/IT strategy and architecture with devolution where appropriate 	<ul style="list-style-type: none"> Complexity Execution Timing Defining 'where appropriate'

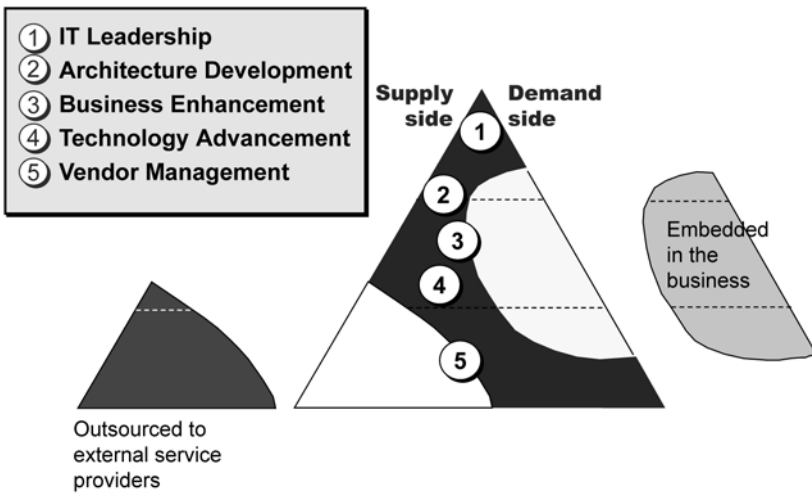


Figure 8.5 *IS Lite* (source: *IS Lite: The Future, Research Report, GartnerGroup, Egham, UK, 1999, also Stamford, Connecticut*)

- The *investment centre* has a long-term focus and aims to create new IT-based business capabilities. It seeks to maximize business opportunity from IT resources.
- The *profit centre* is designed to deliver IT services to the external marketplace for incremental revenue and for gaining valuable experience in becoming a world-class IS function.

The clear message is that the organization and management of IS/IT resources are going to get more complex. GartnerGroup¹⁸ contends that sharper demarcation between centralized and decentralized IS activities, specialization in centres of excellence, process-based work and outsourcing will lead to what they refer to as *IS Lite* (see Figure 8.5). With this structure for the management of IS/IT, much conventional IS/IT work is either outsourced or embedded in the business, with the IS function remaining as an intermediary to perform an important value-adding service between suppliers, on the one hand, and users, on the other. In addition, the IS function concentrates on driving IS/IT-based innovation in the business. Similarly, Earl and Khan¹⁹ note that the key change in the role of the IS function in the so-called 'digital economy' is that it has become a key contributor and builder of the business, particularly as business processes become even more dependent on IT, distribution channels become electronic and products become digital.

Gartner have identified the five key competencies of this cut-down IS function, IS Lite, as:²⁰

1. *IT leadership*, which includes IT envisioning, fusing IT strategy with business strategy, and managing IS resources.
2. *Architecture development*, which is concerned with developing a blueprint for the overall IT technical design.
3. *Business enhancement*, which includes business process analysis and design, project management and managing relationships with users.
4. *Technology advancement*, which is application design and development.
5. *Vendor management*, which includes managing and developing relationships with vendors and suppliers, negotiating and monitoring contracts and purchasing.

This changing role of the IS function not only involves developing new organizational alternatives to meet new demands but also to reduce the resource commitment to old demands. The emotive picture of the disintegrating portfolio, as illustrated in Figure 8.3, is as much the result of the organization failing to manage its legacy from the past, as the development of new demands. It is often this legacy that prevents organizations moving away from old structures, based on IT supply issues, to newer ones, based on balancing demand and supply issues. Swanson and Beath²¹ consider the conflicts in the IS function between the demand for new developments and the need to ‘maintain’ the legacy. They suggest that most IS functions are designed for development because the importance of the repair and enhancement of existing systems is ‘undervalued’. While they recognize the need for ‘service-driven’ organizations, they argue that a key part of that service should deal efficiently with maintenance and minor enhancement—a service that has particular attributes and requires different skills (especially operational application knowledge) from development or other services.

A FRAMEWORK GUIDING ACTION

What Needs to Be Managed?

Before presenting a framework guiding action, it is first useful to consider the nature and content of IS/IT activities. The activities that are traditionally seen as necessary for ‘IT’, and consequently considered as taking place within the IS function, can be portrayed as delivering a range of services to the business. They range from the planning of the investment

Table 8.4 *Examples of IS activities**Strategy and planning services*

- IS strategy development
- IT strategy development
- IT planning and resource development
- New technology options 'evaluation' (technology road map)
- 'Account' management
- Consultancy/business analysis
- Contingency planning
- Capacity planning
- New service development

Application development services

- Systems analysis
- Systems design
- Package evaluation
- Systems implementation
- Programming and software development
- Software acquisition
- Project management
- Information management

Application and technical services

- Training
- Application maintenance and change control
- First line user-support/problem resolution
- Advice centre
- Security/Access control
- Information 'procurement' (from external sources, etc.)

Technology delivery and maintenance services

- Installing, PC, servers, cables
- Keeping network running
- Maintenance of hardware
- Upgrading software/version control
- Supplier and contracts management

in IT to building applications, to installing and maintaining servers, software and networks, to providing end-user support. These services can be categorized under four headings: strategy and planning, application development, application and technical services, and technology delivery and maintenance. Examples within each of these service categories are outlined in Table 8.4.

In deciding on the organization of IS/IT resources, two key issues must be considered. First, the *location of IS/IT decision rights* regarding IS/IT

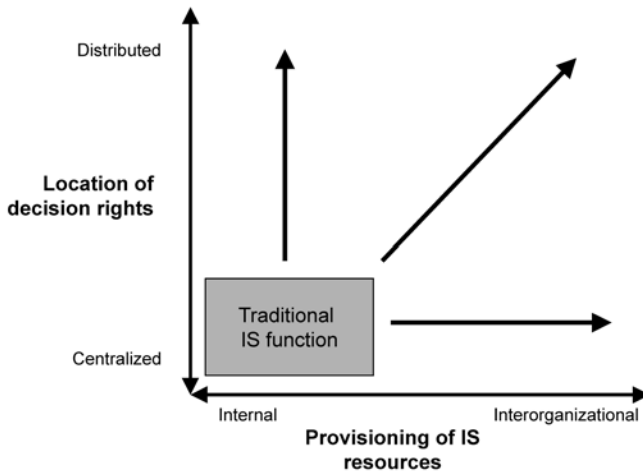


Figure 8.6 Trade-offs in the organization and resourcing of IS/IT (source: based on an idea from N. Venkatraman and L. Loh, 'The shifting logic of the IS organization: From technical portfolio to relationship portfolio', *Information Strategy: The Executive's Journal*, Winter 1994, 5–11)

activity in the organization. What decisions, for example, should be centralized and what aspects of IS/IT management should be devolved into the business and out of the IS function? In addressing this question, the organization needs to define authority, responsibilities, policies, coordinating mechanisms and control procedures. The second aspect to consider is concerned with the *sourcing of IS/IT resources*. Traditionally, most IS/IT resources were provided from an in-house function under its direct control. However, today, there are a range of sourcing options open to the organization, and it is not necessary to provide all IS/IT resources from within the IS function. Even if an IT activity is deemed business critical, it does not mean that all its elements have to be kept in-house. This interorganizational arrangement places new stresses in the management of IS/IT resources, demanding additional coordination and vendor relationship management.

Figure 8.6 depicts a framework that maps 'location of decision rights' against 'sourcing' options. Most organizations operate in all areas of this framework, with decision-making responsibility spread throughout the organization and making greater use of the external market for the supply of IS/IT resources. Organizations engaging in outsourcing at some stage identify the need to realign, change and/or develop different parts of their IS/IT structures, competencies and skills to enable them to maintain the link between IS/IT and business prerequisites. This only serves to increase the complexity in managing IS/IT.

Location of IS/IT Decision Making

It has already been noted that some IS/IT decisions can be centralized while others are better devolved out into the business. IT does raise certain questions concerning scale, infrastructure planning and risk.²² Most people can quickly recognize the need for technology components to interoperate easily and hence accept the need for certain technical standards to be adhered to throughout the organization. The problems that technical incompatibility pose for integrating systems becomes all too apparent when attempts are made to link disparate technologies. Yet, for IS/IT services and IS demand decisions, there is generally less awareness of the need for coherence. For example, who decides project priorities and how? Should applications be common across all operating units? If business units can develop their own applications, how much freedom should they have? In implementing an ERP system across a number of business units, will a certain amount of leeway be given to these units in customizing the application or is it a case of 'one size fits all'? Should a common methodology be used for systems development or project management? We often find that responsibility for technology supply may well be more centralized than responsibility for managing and coordinating IS demand.

Devolving IS/IT decision making into the business requires outlining authority and responsibilities, defining the set of rules guiding information, systems and technology decision-making areas, and managing the interdependencies across the range of decisions. In short, the organization must put in place guidelines for decision making and define mechanisms to achieve coherence across the range of decision areas. These aspects require defining:

- *Content*—the decision areas that are being managed. Included here are decision areas about the whole realm of IS demand and IT supply—areas outlined in Table 8.4. Examples include resource allocation, systems development and maintenance, personnel, establishing project priorities, project management methods, disaster recovery, documentation, privacy and purchasing.
- *Authority*—the individuals or groups that have the power actually to make decisions in the various areas. They are ultimately answerable for the outcomes of the decision made. For example, some decisions may be made directly by the IT director, others by business managers; there may be other decisions that require ratification by a 'committee' or forum of some sort.
- *Responsibilities*—the individuals or bodies responsible for day-to-day execution in decision areas. The definition of responsibility needs to

be integral to each person's job role and function, whether technical or non-technical. The degree of importance attached to any responsibility will be reflected in the seniority of the role and will vary across the organization. Roles that carry responsibility do not necessarily carry authority.

- *Coordination*—essentially, the mechanisms and processes for ensuring coherence across all decision areas. It is concerned with defining the mechanisms (steering committees, management groups, etc.) for ensuring a coordinated approach to IS/IT decision making, including the roles to be played by both individuals and groupings. This aspect will be addressed toward the end of this chapter.
- *Policies*—statements of principles or actions defining acceptable behaviour. They provide a basis for consistent decision making and resource allocation. Policies may exist for security, development methodologies and the approach to IS/IT strategy development. Policies may define the extent to which common systems will be used across all business units; they may even specify that software be purchased from a particular vendor.
- *Control*—outlining the approaches to policing decisions, ensuring conformance across the organization. This might include the implications and procedures for non-conformance to policies or decisions. Also included are financial control and charge-out mechanisms.

Some decisions are one-off; for example, deciding on a project management method to use across the whole organization. Indeed, such a decision may be enshrined in a policy statement. Other decisions are more ongoing like dealing with changing business priorities, and a key task is defining how these situations are to be dealt with.

IS/IT Policies

In a devolved environment, there is a need for defining policies that frame the decision-making rules and options. Policies determine the amount of discretion that IS and business managers have in decisions regarding IS/IT. For example, charge-out policies were once seen as one way of introducing more accountability into a centralized mainframe environment, promoting particular behaviours regarding usage of computing resources.

The key to defining a workable set of policies is to recognize that there are two categories of policy: *restraining* policies and *enabling* policies.²³ Restraining policies are seen as describing the rules of federation. They define the parameters within which decisions are made. Enabling policies

Table 8.5 *Enabling and restraining policies*

<i>Restraining policies</i>	<i>Enabling policies</i>
1 Technical compatibility standards	1 Making group-resourced services available to divisions
2 Standards for buying equipment and services	2 Negotiating volume discounts
3 Common systems mandate, if any	3 Managing supplier relationships
4 Disaster recovery, security and quality policies	4 Influencing behaviour through charge-out rules
5 Group systems standards (are purchasable and integratable components preferred over custom built or extensively modified products?)	5 Setting criteria for selecting common systems
6 Group job specifications	6 Funding shared assets
7 Any conformance to industry standards	7 Establishing tendering procedures
8 Outside revenue-earning ability of IS function	8 Developing common systems
9 Charge-out mechanisms and benefit reclaim	9 Using consultants
10 Ergonomic standards	10 Carrying out post-audit reviews
11 Staffing levels	11 Negotiating groupwide technology agreement
	12 Vendor selection procedures

essentially relate to the dissemination of best practice. Table 8.5 presents examples of each.

Information management, especially concerning its quality, confidentiality and security, also require corporate policies to be established. This area of strategy is considered in Chapter 10, not because it does not deserve management attention, but information management strategies²⁴ need to be seen as an integrated set of approaches in user, senior management and IS/IT terms.

PROVISIONING OF IS/IT RESOURCES

Deciding from where IS/IT resources should be sourced has become a critical issue for organizations. While most IS/IT resources have traditionally been provided in-house by a central IS function (commonly referred to today as *insourcing*), a wide range of sourcing options are now available. For a variety of reasons, many organizations have looked to the market to provide them with the IS/IT resources that the business requires, a practice generally referred to as *outsourcing*. Clark *et*

*al.*²⁵ define outsourcing as ‘the delegation, through a contractual arrangement, of all or part of the technical resources, the human resources and the management responsibilities associated with providing IT services, to an external vendor.’

The outsourcing of IT is not new and can be traced back to the 1960s when computers were expensive and physically large. During that period, computers required considerable space and controlled environmental conditions so as to operate them successfully. This situation demanded that companies had to make substantial capital investments in order to have their own computing facilities. In order to avoid such expenditure, many organizations contracted out their routine data processing, particularly payroll and accounting, to large data-processing service bureaux. This arrangement was referred to at that time as facilities management. While a major problem in the 1960s was the cost of hardware, the 1970s saw a huge increase in software development costs. Due to rapidly increasing demand for IT applications and the inadequate supply of IT personnel, managers sought a solution through contract programming, a form of outsourcing.

Outsourcing during this period was important, but largely peripheral to the main IT activities that took place in medium and large organizations. Loh and Venkatraman²⁶ suggest that the Eastman Kodak–IBM outsourcing deal of 1989 marks the beginning of the current outsourcing revolution. This deal saw Kodak outsource the bulk of its IT operations. Never before had such a well-known organization, where IT was considered to be a strategic asset, contracted out for IS services.

The arrival of the Internet and the rush to e-commerce has seen many companies look to outside vendors to supply necessary skills and competencies, as these are often not available in-house. Developing e-commerce applications can place great demands on companies, and managers often conclude that the only way to meet short deadlines for new technology projects is to contract for specialist services. In addition, engaging in e-commerce means that external parties will inevitably be involved, including telecommunication operators and providers, Internet service providers (ISPs), etc.

Outsourcing Rationales

The decision to outsource IT is not an easy one to make. Experience highlights that it demands considerable managerial attention and should not be made without rigorous analysis and discussion. The outsourcing decision is further complicated by the fact that some variables in the decision can be viewed as an advantage by the proponents of outsourcing and a disadvantage by others.

Financial and Economic Reasons

The difficult economic conditions in which many national economies found themselves during the early 1990s, combined with intense competition in turbulent global markets, exerted a lot of new pressures on companies and the public sector leading many to assess outsourcing as a way of cutting costs. Surveys during this time confirmed this, and, as IT spend accounted for an increasing percentage of budgets, it was an obvious candidate for outsourcing.

Cost savings were generally assumed to occur from vendor economies of scale. When an organization contracts with professional IS service providers, reduced costs can also be realized in the area of technology acquisition. The outsourcing vendor is able to distribute fixed costs of computer hardware over a broad base of customers. In addition, the vendor is seen as having the relevant technology and experience and many hardware vendors offer products with decreasing incremental costs per unit of power.

Outsourcing can provide an opportunity to liquefy the client organization's capital assets, thus strengthening its balance sheet and avoiding capital investment in the future. One viewpoint is that outsourcing shifts expenditure from the capital budget to operating budget, which can provide some flexibility. However, this shift may have an adverse effect on the tax liability of the organization. For instance, if there are any purchased computers in the client organization, their value will be depreciated. In addition, outsourcing the total IT operation is reported to increase an organization's return on equity. Complete outsourcing reduces equity because computer hardware is transferred to the vendor. Therefore, the return on equity is expected to increase. A number of outsourcing arrangements involve upfront payments from the vendor to a client organization. In effect, this is the selling of the IT assets of the client to the vendor, which in turn generates cash.

Technical Reasons

We have seen that IT is increasingly becoming an integral part of many businesses. The marketplace offers a wide range of choices regarding specialist information technology products and services. Technical reasons why organizations choose to outsource include: improving technical expertise, gaining access to technical talent and technical expertise not available in-house, gaining access to new technologies. Third-party contractors may also deliver applications more quickly because the existence of a contract puts pressure on the supplier, compared with internal development, to deliver a quality product on time and within budget.

Business Reasons

There are a number of business reasons why an organization may decide to outsource some or all of its IT activities. Occasionally, it may be to eliminate an ineffective and ‘burdensome’ IS function or as a catalyst to restructure the IS function and how it is organized and resourced (the topic of this chapter). It can also be used to reduce the applications backlog, particularly when strategic applications are slow ‘going live’. Fluctuating demands for IS services can place a significant burden on the IS function, and through outsourcing some of this demand can often be met more economically and efficiently.

A number of companies have used outsourcing to facilitate mergers and acquisitions (M&A). The rationale being that outsourcing should solve the technical incompatibilities, absorb the excessive IS assets like data centres and assimilate the additional IS employees generated by M&A activity.

Classifying Sourcing Options

There are a number of sourcing options available to the firm, and Figure 8.7 illustrates a framework that can be useful in classifying them.²⁷ This framework maps purchasing style and purchasing focus. A *Transaction* style refers to one-time or short-term contracts with enough detail to be the original reference document. A *Relationship* style refers to less detailed, often incentive-based contracts, centred

Purchasing focus	Resource	BUY IN	PREFERRED SUPPLIER
	Result	CONTRACT OUT	PREFERRED CONTRACTOR
		Transaction	Relationship
		Purchasing style	

Figure 8.7 Clarify sourcing options (sources: adapted from M.C. Lacity, L.P. Willcocks and D.F. Feeny, ‘The value of selective IT sourcing’, *Sloan Management Review*, Spring, 1996, 13–25; and M.C. Lacity, L.P. Willcocks and D.F. Feeny, ‘IT outsourcing: Maximizing flexibility and control’, *Harvard Business Review*, May–June 1995, 84–93)

around the expectation that the customer and vendor will do business for many years. With a *Resource* option, organizations buy vendor resources such as hardware, software or expertise, but manage the use of the resources in-house. With a *Result* option, vendors manage the delivery of the IT activity, using whatever resources are necessary, to provide the customer with specified results. This analysis leads to four distinct contract types or sourcing strategy. Only two of them—contract out and preferred contractor—are strictly outsourcing contracts:

- *Contract out strategy*—with this strategy the vendor is responsible for delivering the results of IT activity.
- *Buy-in strategy*—this strategy sees the organization buying in resources from the external market, often to meet a temporary requirement. Contracts often specify the skills required and cost, with the resources then managed in-house.
- *Preferred contractor strategy*—with this approach, organizations contract long term with a vendor to reduce risk, with the vendor responsible for the management and delivery of an IT activity or service. To ensure vendor performance, an incentive-based contract is generally constructed.
- *Preferred supplier strategy*—this strategy takes the buy-in approach further, with an organization seeking to develop a long-term close relationship with a vendor in order to access its resources for ongoing IT activities. The organization, not the vendor, takes responsibility for managing these resources.

Even with ‘complete outsourcing’, there are vital competencies that need to be maintained in-house in order to mitigate risks inherent in IS outsourcing. These have been identified by Willcocks and Lacity²⁸ as:

- the ability to track, assess and interpret changing IS/IT capability and relate them to organizational needs;
- the ability to work with business management to define the IT requirements over time;
- the ability to identify appropriate ways to use the market, specify and manage IS/IT sourcing;
- the ability to monitor and manage contractual relations.

These are similar to the five key roles of ‘IS Lite’, highlighted earlier in the chapter.

IS demand decision areas are never outsourced and should always be retained in the organization. The challenge is to decide where in the organization these decisions are best made—in a central IS function or

devolved into the business and made by a local IS group or perhaps business management themselves. Approaches to outsourcing and the key management issues to be addressed are considered in more detail in Chapter 11.

WHO SHOULD MANAGE IS/IT AND WHERE SHOULD IT REPORT?

While aspects of IS/IT will be managed by the IS function and aspects devolved into the business, there is generally someone in the organization who has overall authority for IS/IT. Ultimately, someone at board level (represented at the highest executive level of the company, not necessarily with director status as defined by legislation), even the chief executive officer (CEO) by default, is accountable for IS and/or IT. In practice, many board members are actually responsible for IS, given the diffusion of systems throughout the whole organization. Even then, someone will probably be primarily responsible for IT, although often that will not be his or her main responsibility at board level. But, should that be the case? Should not someone be charged at board level with responsibility for all (or most, or some?) aspects of IS/IT management within the organization, and have that status primarily based on the IS/IT management tasks? This question has no doubt been discussed in the boardrooms of most major organizations. A variety of answers have resulted.

Griffiths²⁹ considered the implications of locating responsibility for IT with the IT director (or chief information officer [CIO]), finance director, business unit heads and the board. She identified the plusses and minuses of each, and this assessment is summarized in Table 8.6.

At some level in the organization, an individual (or in a devolved business, several individuals) will be responsible solely for IS/IT activities and services and for a significant resource and budget. For simplicity, he or she will be referred to as the IT Director or chief information officer (CIO), although in reality other labels are encountered. In a multi-business unit company, there are likely to be 'IS (biased) managers' in each unit with an 'IT (biased) manager' at the centre, and this seems sensible given the earlier organizational arguments. The split of responsibilities discussed earlier would give application responsibility to the units, leaving some areas of IS/IT at the centre for economic and strategic reasons. The IT manager at the centre is the more problematic because his or her reporting position will affect his or her ability to do the job. Given any autonomy in the units, they will easily be able to overrule or ignore the central role, if it is too junior. The IS managers in the units will be considered below.

The 'IT director' or 'chief information officer' (CIO) faces a continu-

Table 8.6 Consequences of locating overall authority for IS/IT

	<i>Plusses</i>	<i>Minuses</i>
<i>IT directors</i>	Technical expertise Accurate systems Sound technology Systems integration	IT not aligned Education omitted Information overload Technical solutions
<i>Finance directors</i>	Tight cost control Department coordination Training costs integrated Strict authorization	Not always best value for money Insufficient time to devote to IT Opportunities missed Short-term approach
<i>Business-unit head</i>	IT investments linked to the business direction Locally-focused systems Continuous development Shorter reporting structure	Systems not coordinated Incompatibility across business units Duplication of data Unnecessary costs incurred
<i>Board of directors</i>	Strategic direction Appreciation of broader impact of decisions Major problems tackled Funding allocated	Logistical details omitted IS/IT underexploited Infrastructure weak Slow to exploit technology

ally-changing job role. As applications development and operations are passed to the business areas to manage: (i) corporate IS functions will shift to a staff orientation, including coordinating strategy and planning for IS/IT across the whole business. Any line responsibilities will be either to serve the corporate body's IS needs or to manage 'interconnection issues', among systems, data and networks, and hence (ii) the CIO (in charge of such functions) will increasingly concentrate on setting strategy and policy in a similar way that the 'chief financial officer' (CFO) executes financial management responsibilities.³⁰

Regarding the changing role and position of the CIO for the 21st century, *Harvard Business Review* invited a number of experts to comment on the question: *Are CIOs obsolete?*³¹ The rationale that lies behind this question being that as IS/IT and business strategy are now so much an integral part of each other that all senior managers are—or should be—'information officers'. The central message from responses was that the role of the CIO will change in line with business development and that CIOs must assume a more central role in business strategy formulation (see Box 8.1).

Box 8.1 Are CIOs obsolete? Summary of responses from *Harvard Business Review*, March–April, 2000

Dawn Lepore, *CIO Charles Schwab*, argues that the CIO position has long been misaligned as most people don't understand its true potential. At Schwab, she is a peer to the various business heads and has a great deal of influence on the company's strategic direction, organizational structure and culture. She recommends that the CIO position should be broadly defined, well understood throughout the organization and that the incumbent be a strong contributor to strategy discussions as well as marketing and financial decisions. Critically, she argues that the position should report to the CEO. In identifying a potential CIO, she would advise companies to look for someone who has a background in technology, but who can also take a general management perspective.

Jack Rockart, *director of the Centre for Information Systems Research, Massachusetts Institute of Technology*, believes that it is a fundamental mistake to predict a CIO-less future. As in the past, the functions of the CIO will evolve as changes in the business environment dictate major changes in IS/IT roles, structure and processes. He believes that, while today's CIO should be a technology executive who provides direction and counsel to other senior managers, they are business executives first and technologists second. However, one of the shifts he is seeing is their role in ensuring an effective IT infrastructure.

Michael Earl, *London Business School*, similarly sees a change in the scope and depth of the CIO role, with both expanding. He cautions that, despite these changes, CIOs retain visible operational responsibilities, 'If the operational performance of IT is below standard, the CIO is dead.' He poses two questions: What competencies are required of a new CIO? Can one person do it all? Required competencies include technical competency, management know-how to lead specialists and integrate the function with the rest of the business, business acumen and leadership skills. He suggests that in the future this role may split into two with a CIO who is responsible for strategy, change and information resources working alongside a chief technology officer who is responsible for technology policy, IT infrastructure planning and operations (essentially someone responsible for *demand* management and someone responsible for the management of *supply*).

Tom Thomas, *chairman and CEO at Vantive*, sees the CIO position as inextricably linked to technology and the way in which different businesses use it. He argues that the positions of CEO and CIO are the only places in the company where there must be an integrated view of the business, and the two jobs should be considered as a partnership. In addition, the CIO should be knowledgeable about all the major functions of the business and understand the information drivers in the company.

Peter McAteer and **Jeffrey Elton**, *consultants at Giga Information Group and Integral*, respectively, note that today in many organizations the CIO position has devolved into a sort of heavyweight project manager, coordinating large IT projects and ERP deployments, with minimal input to corporate strategy. They define the position as ‘manager or leader’ first and ‘technical specialist’ second. In addition, they see the CEO as being at the centre of operations for strategy pertaining to technology and its implementation, noting that, if the role is going to be successful, it will usually require a change in the mindset of the company’s top executives.

The role of the CIO in the organization has changed over the years, their titles often changing to reflect new focuses and emphases. Table 8.7 traces the evolution of the role of the CIO across the main technology shifts from mainframe to distributed (including advent of PCs) to the web-based and Internet era.

Part of the problem is not perhaps the need of the job, but the origins of the person filling it. Merely promoting, via a change in job title, a career IS/IT specialist seems to be unsuccessful since they generally remain ‘outsiders’ in the executive team. Some individuals may overcome the problem of background, but more success is likely if a high-flying non-IS/IT executive takes the role. This also upgrades the perceived importance of the task and should provide a business focus to its activities. However, research in the early 1990s by Earl and Feeny³² tends to contradict this, in that successful CIOs, as judged by chief executives, are more likely to have a sound IT background.

There are five roles critical for the success of today’s CIO.³³ They are:

- leadership;
- visionary;
- relationship builder;
- politician;
- deliverer.

Table 8.7 *The changing role of the CIO (sources: based in part on D.F. Feeny and J.W. Ross, 'The evolving role of the CIO', in Research and Discussion Paper, Oxford Institute of Information Management, Templeton College, Oxford, 2000; and presentation by O. Le Gendre, Vice-President of Gartner at IT Governance Forum, Paris, 11 June 2001)*

	Mainframe era	Distributed era	Web-based and Internet era
<i>Applications portfolio</i>	<ul style="list-style-type: none"> Transaction processing—automation for efficiency 	<ul style="list-style-type: none"> Knowledge-worker support, interorganizational systems, ERP systems 	<ul style="list-style-type: none"> Electronic commerce, knowledge management, virtual organizations, supply chain re-engineering
<i>Senior business executive attitudes to IS/IT</i>	<ul style="list-style-type: none"> IT for cost displacement and automation 	<ul style="list-style-type: none"> Increased involvement in IT issues and governance Polarization of attitudes: IT as strategic asset or cost to be minimized 	<ul style="list-style-type: none"> IT, particularly the Internet, viewed as transformational IT investments now more attractive in terms of costs and timescales IS/IT now part of ongoing business conversation
<i>Input to business</i>	<ul style="list-style-type: none"> Advisor on 'How to do', not 'What to do' 	<ul style="list-style-type: none"> Access to senior executives Invited 'seat at table' 	<ul style="list-style-type: none"> Member of executive team having a 'seat at the table' Helps define 'what to do'
<i>Major tasks</i>	<ul style="list-style-type: none"> On-time delivery Reliable IT operations 	<ul style="list-style-type: none"> Manage IS function Provide infrastructure Manage vendors 	<ul style="list-style-type: none"> Jointly develop business/IT model Introduce management processes that leverage technologies, particularly the Internet
<i>Role</i>	<ul style="list-style-type: none"> Functional head Operational manager Deliver on promises 	<ul style="list-style-type: none"> Strategic partner Relationship builder Technology advisor Align IS/IT with business 	<ul style="list-style-type: none"> Visionary Relationship builder Technology opportunist Drive and shape strategy

Table 8.8 Profile of the CIO who adds value (source: after Earl and Feeny)

1.	<i>Behaviour</i>
	<ul style="list-style-type: none"> ● Is loyal to the organization ● Is open in management style ● Is perceived to have integrity
2.	<i>Motivation</i>
	<ul style="list-style-type: none"> ● Is goal oriented ● Comfortable as a change agent ● Creative and encourages ideas
3.	<i>Competencies</i>
	<ul style="list-style-type: none"> ● Is a consultant/facilitator ● Good communicator ● Has IT knowledge ● Able to achieve results through others
4.	<i>Experience</i>
	<ul style="list-style-type: none"> ● Sound experience in an IS development role (especially in systems analysis)

The leadership exhibited by the CIO is a key aspect in achieving success with IS. Two components of leadership of critical importance for the CIO are:³⁴

- Ability to create a set of value expectations shared across all areas of the business—one sensitive to the realities of competency, competition and culture.
- Ability to deliver on those expectations measurably. CIOs must understand and express IT's value in a way that's meaningful to all executives.

Appointing a CIO alone is not a solution to all the management issues! Earl and Feeny define the attributes that a CIO must possess to ensure the appointment is, at least to some degree, successful (i.e. improves the value to the organization of IS/IT). They are shown in Table 8.8. The obvious conclusion is that people with all these attributes will be in short supply, which may explain the rapid turnover of people in such jobs.

In a bank or similar information-intense organization, having an IT director or CIO is the equivalent of an engineering director in a manufacturing company. IT is the technology of banking. However, he or she will not have jurisdiction over all applications. Equally, in less IT-dependent organizations, IT may well report via another executive,

preferably one with a primarily commercial or business development role rather than a service role such as finance. IT will inevitably, for better or worse, be tarred with the brush of the department within which it sits. Within business units, 'IS manager' positioning faces similar problems and should depend on the criticality of the systems to the business: the more critical, the more senior and central should the role be to the running of the business. Again, indirect reporting should be through commercial rather than service activities to ensure that 'primary' activities (in value chain terms) obtain the appropriate emphasis relative to support activities.

One conclusion in all this vagueness is quite certain: that, as IS/IT becomes more critical to organizations, the more senior will become the executives with specific IS or IT responsibility, both in corporate and business unit terms. Equally certain is that the success of such a senior role in ensuring that strategies are developed and achieved will depend as much on the individual as his or her position on the organization chart. Both issues should be on the management agenda for regular review.

No doubt some companies will succeed without a coherent strategy for organizing, positioning and developing IS/IT resources, but most will need to address this aspect of strategy with considerable thought and insight. Whatever conclusion is reached, it will not be entirely satisfactory from every viewpoint and will need to be changed over time and probably supplemented or overlaid with some other IS/IT strategic management processes in the meantime.

COORDINATING MECHANISMS FOR THE STRATEGIC MANAGEMENT OF IS/IT

As mentioned earlier in the chapter, the majority of organizations in both public and private sectors have established some form of 'steering group' and other coordinating mechanisms for IS/IT. They are called many things, but usually have the words 'policy', 'strategy' or 'planning' in the title. According to Earl,³⁵ 'steering committees appear to be an obvious necessity in managing IT.'

Most writers agree that the reasons for establishing such committees are (one or more of):

- ensuring top management involvement in IS planning;
- ensuring the fit between IS and business strategy;
- improving communication with top and middle management;
- changing user attitudes to IT.

A study by Drury³⁶ showed that successful steering committees not only addressed each of them but also introduced a process of reaching decisions by consensus—something which can otherwise prove difficult with respect to IS and IT. Gupta and Raghunathan,³⁷ based on a large survey in US companies, concluded that steering committees were one of the most effective ways of improving organizations' IS planning, by assisting the integration of the IS function with the business and by coordinating planning activities.

From discussions earlier in the book, some other reasons for the establishment of such a grouping of senior managers focused on the management of IS/IT can be identified:

1. In Chapter 4, Kotter's organizational model was used to differentiate between formal and informal organizational arrangements. The formal organization structure reflects the way in which the business operates, whereas the 'dominant coalition' or informal structure essentially determines the future strategy of the organization. This implies that members of that coalition are scattered through the upper layers of the organizational structure, but are not necessarily the most senior and/or all from the senior management team. Using the jargon of Chapter 7, some senior executives may be 'caretakers' or 'controllers' by nature rather than the 'developers' and 'entrepreneurs' who drive things forward. It is important that the members of the 'dominant coalition' overtly include IS/IT on their agenda since:
 - they are, in practice, establishing business strategy and therefore will miss opportunities, etc. if they ignore IS/IT. They are in the best position to identify and evaluate the impact of IS/IT on the strategy;
 - they, by their attitude and behaviour towards IS/IT, are determining the role it plays in the business.

It means that the dominant coalition, by intent or default, is setting IS/IT strategy and needs to be aware of that and the consequences of its interest or neglect! Any steering group, therefore, must include the main members of that coalition or power group.

2. In Chapter 3, the model of the evolving nature of IS/IT strategy showed how, in the most mature stage when the objective is to link IS/IT to business strategy, a coalition approach of users, senior management and IS/IT staff needed to be established. This sounds very similar to the argument above but extends the potential franchise to users and IS/IT staff as well as the strategy formulators. In essence, this may imply that a steering or policy group is not enough

to involve all necessary parties to the strategy process. This will be considered below.

3. A number of issues in portfolio management point to the need for strong coordination and a means of making decisions across the range of types of investment proposed and required. In particular, strategic applications, which are normally cross-functional, need executive management agreement and endorsement of the business benefits and commitment to the normally extensive change program needed to realize them.
4. Perhaps the most compelling reason is that the formal organization structures for IS/IT activities are never seen to be satisfactory by all the parties involved, and additional 'governing' processes become necessary, whether IT resources are centralized or decentralized. If IT resources are centralized, there is a need to assess and prioritize demand and set an appropriate resource level. If IT resources are decentralized there is a need to coordinate applications planning to ensure that incompatible, even disadvantageous, developments are not undertaken and that IT resources are employed where the greatest business benefit can be obtained.

These arguments perhaps explain the spread of steering groups during the past decade. Equally, some of the points made above may also explain why many of those groups fail to steer IS/IT in a beneficial or even consistent direction. Criticism of steering groups is often the only thing that users and IT can agree on, especially if they introduce delays, increase bureaucracy, fail to make decisions, etc. The list of comments is almost endless:

- 'wrong people/too many people attend; the right people don't attend';
- 'wrong terms of reference';
- 'discuss the wrong things';
- 'meet too infrequently/too often';
- 'make too many/not enough decisions';
- 'do not understand the real issues';
- 'are too remote from reality'.

The causes of these problems can probably be summarized into three major areas:

1. The wrong people are involved: the group does not include enough (if any) of the 'dominant coalition' to be willing or able to establish strategy. If the right people are involved, many of the other

problems disappear—the ‘agenda’ will contain items of strategic value only and the less important will be dropped. Decisions can and will be made. Obviously, the credibility of the steering group depends on the respect others have for its members, the evident importance of the matters they address and the results of decisions made. One important point is that executive managers, asked to ‘serve’ in such a group, must not be made to feel ‘incompetent’ by being asked to discuss and decide on subjects beyond their area of knowledge. This generally occurs if the agenda is dominated by technology as opposed to business matters.

2. The activities of the steering group and the decisions taken have to be integrated with the overall strategy processes in the business. This implies both interpretation of business objectives and key initiatives into IS/IT priorities and providing IS/IT input to the development of the strategy. Even in organizations with steering groups, many strategic initiatives are taken without thought for the implications on the existing IS/IT strategy, causing at least disruption and delay in delivering critical systems. Even worse, the initiatives may be counter to the current strategy and, in many cases, the initiative itself may need rethinking due to the detrimental effect it has on longer-term strategic development. ‘Initiative overload’ is a phrase commonly heard in recent years, and there appears to be real conflict between coherent strategic management and the plethora of initiatives, many of which—like bubbles—often ‘fade and die’!
3. The group has no infrastructure to support it and carry out its actions, which, as agreed, become the strategy. The steering group needs to address two basic areas:
 - ensuring that the applications that are strategic in business terms are identified, developed and implemented successfully;
 - ensuring that policies for managing IS/IT as a key business resource are defined and adhered to.

This implies effective communication to and from the steering group among everyone who is involved in devising and implementing the strategy.

Using the strategic management model mentioned earlier in this chapter (see Figure 8.2), the role of the steering group becomes a key part of the formal strategy process: to establish the strategic direction, aligned to the business strategy. Two further stages exist, which no grouping of senior managers can expect to carry out personally:

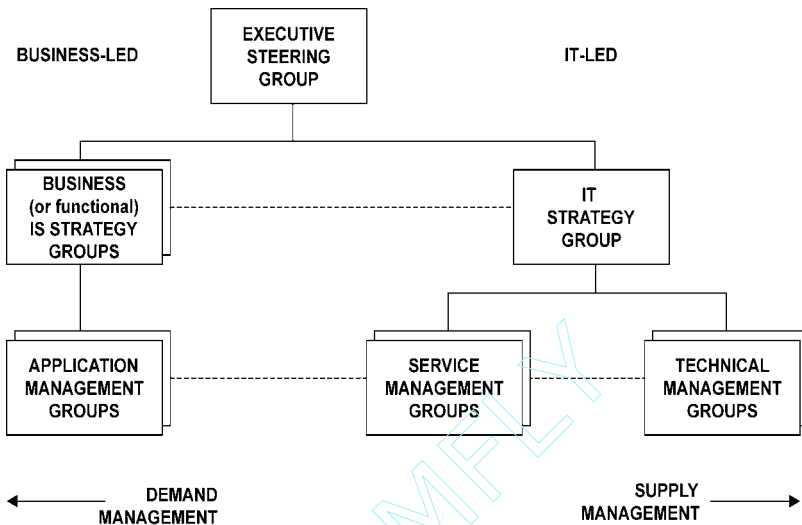


Figure 8.8 *Steering organization for IS/IT strategic management*

1. converting the strategy into viable plans for delivery of the applications and the allocation/procurement of the required resources;
2. implementing the plans by delivering the applications, through the actual deployment of the required resources.

Others will undertake these activities, but obviously there have to be strong links to and from the steering group, which cannot achieve much in a vacuum. It must both obtain relevant inputs from somewhere and have the means to ensure that its decisions are actioned. Most good ideas will originate lower down the organization. The steering group role is to evaluate opportunities resulting from those ideas in the context of the business, judge their worth, initiate appropriate action and then monitor whether success is achieved. Interpreting this in terms of the IS/IT strategic model defined earlier and shown in Figure 8.1, and considering the need to balance supply and demand effectively, a structure for a steering organization for IS/IT strategy is proposed in Figure 8.8. It reflects the need for continuity, overlap even, and feedback between developing and implementing the strategy, which should as far as possible be done by the same organizational groupings. It is very difficult in terms of knowledge and motivation to implement someone else's strategy. The main roles and responsibilities are outlined below and summarized in Table 8.9.

Table 8.9 Responsibilities within the IS/IT coordination governance structure

Executive steering group

- Interpreting business strategy and agreeing overall IS/IT policies
- Establishing priorities, agreeing resource and expense levels, authorizing major investments
- Ensuring that strategic applications (especially those that cross business areas) achieve their objectives
- Establishing the appropriate organizational responsibilities and relationships

Business (IS) strategy groups

- Identifying business needs, interpreting CSFs, assessing opportunities and threats and IS implications in that business area
- Prioritizing, planning and coordinating IS activities and expenditure in the area and ensuring planned benefits are delivered
- Ensuring appropriate user resources are allocated to projects and appoint application managers

IT strategy group

- Interpreting IT trends and developments in the context of the organization's business
- Ensuring resources are deployed to meet business priorities
- Developing IT resources and services in line with business IS plans and monitoring the performance of those resources
- Managing the supply of technology and specialist bought-in services
- Ensuring technical risks are minimized

Application management groups

- Identifying and specifying the needs, benefits, business resources and costs of applications to enable management to evaluate investments and set priorities
- Managing developments and ongoing use of systems to ensure benefits are maximized
- Ensuring business changes necessary to get the benefits carried out
- Ensuring that user resources are made available as needed and used effectively on projects

Service management groups

- Translating business needs into technical requirements and resource implications
- Selecting the optimum means of meeting the business needs
- Monitoring performance against budgets/service levels agreed with the business
- Ensuring technical solutions are tested and quality assured to avoid application failure
- Planning the development of services and resources to meet evolving demands

continued

Table 8.9 (continued)*Technology management groups*

-
- Understanding technology development, formulating options and communicating the implications
 - Assessing the capabilities of the technologies against known and potential needs
 - Planning and managing infrastructure developments and migrations to minimize the risk to business applications
 - Resolving technical issues/problems with suppliers and ensuring service groups are effectively supported
-

The Executive Steering Group

This group is as critical to the whole structure as the keystone is to an arch. Its membership should reflect the dominant coalition, which implies they are:

- able to recognize the potential of IS/IT in terms of the business strategy;
- keen to exploit IS/IT as a business weapon;
- able to influence the management of systems in the area of the business they represent;
- have the confidence of the executive to whom they report.

The steering group is a collection of people, not a collection of job roles. The individuals are what matter, not the role they currently fulfil, but it is important that all areas of the business are represented. That includes the IT group, although it is critical that an IT person does not chair the group. Leadership must come from the business, preferably from the chief executive or a highly respected nominee.

The group should meet regularly, if not frequently—probably four to six times per year. The lower levels in the structure should get together more frequently—maybe even weekly when a critical application is being developed. The main purposes of the steering group are:

- To ensure that the overall objectives of strategic management of IS/IT, listed in Table 8.2, are addressed effectively. Most of those objectives are impossible to measure, require careful judgement and consensus agreement among senior management as to whether any particular decision made is appropriate to the situation and capable of implementation.
- To direct the activities of the strategy groups and require responses in

due time, and to consider ideas and issues put forward by other groups.

- To address any issues that affect strategic applications and ensure their success is not jeopardized by organizational or resourcing problems. Equally, they need to ensure that the applications in the strategic segment (and related activity in the high potential and key operational segments) are all still relevant to the business as the business environment and strategy evolves. They must be willing to stop activity as well as initiate it.
- To act as the final judges to reconcile or settle the short-term contention for resources. Such urgent decisions must be made with an understanding of the long-term implications for the business and its IS/IT capability.
- To justify to the executives of the company that expenditures associated with strategic applications and on related R&D or infrastructure improvements are worthwhile and will be managed effectively.
- To ensure that experience is transferred across the organization, and that potential benefits of integration are not sacrificed merely for expediency in meeting local requirements.

It is not just what the steering group does that is important but also the way that it does it. Its process should be open, not secretive; its decisions should be communicated quickly and widely; it should demonstrate its willingness to consider ideas from the strategy groups that require such attention and it should be quick to redelegate trivial matters. They are all aspects of the IS/IT 'business culture' that must be established. Finally, it should ensure that successes are recognized as well as failures!

Business Unit (or Functional) IS Strategy Groups

Depending on the organization's structure, they may be established for each business unit or major function (or both if the organization consists of units and service functions). In a one-unit business, this role and the management steering group will clearly overlap.

Ideally, the representative of the business area on the executive steering group should chair the strategy process, although, equally ideally, business IS strategy should be part of the agenda for whatever business strategy process exists. Either way, the senior line managers involved in the business should be directly involved with the planning group.

While the obvious responsibilities include ensuring that business priorities and requirements are reflected in the planned application portfolio for the area, it is also this group's responsibility to ensure that the plans interrelate with plans in other areas and are understood by the IT

strategy group. Where mismatches occur, problems should be resolved among the strategy groups, if at all possible, rather than be escalated to the executive steering group before alternatives can also be provided from which the best course of action can be chosen.

Having ensured that the application portfolio, priorities and plans reflect the business requirements, a number of other aspects must be addressed at this level:

- That appropriate approaches to development are adopted, given the classification of the application and the availability of central, local or external resources. Where the free market philosophy is appropriate, the business IS strategy group may make the decision without consulting the IT specialists.
- The group must ensure that project justifications include all relevant costs and benefits, and can be adequately resourced by the user areas concerned. Lack of availability of key user resources is often as much the cause of project delays as the availability of IT resources.
- The group must determine whether the portfolio is being developed to take maximum advantage of experience gained and investments already made in the area, and that the information resource is being managed effectively both locally and as part of the corporate resource.
- Implementation of systems will undoubtedly cause organizational change. Most major systems investments will need related organizational adjustments and even significant changes if benefits are to be realized, both within the business area impacted and at the boundaries with other functions. Understanding and suitable, coordinated and consistent, action needs to be established at this level as part of business planning. The group has the responsibility for ensuring that the expected benefits from the application plans are delivered.
- The group should establish appropriate application management groups for their own critical systems and developments, and ensure they are appropriately represented on such other groups on applications that affect the area. Those activities should be initiated, directed, responded to and in time even disbanded, by decisions at this level, unless the application is 'strategic' and cross-functional, when the decision belongs higher up!

It is clearly this group's responsibility to produce an IS strategy that converts business requirements into demand for applications, which are then managed to achieve the objectives identified. Establishing a coherent plan and associated resource and financial budgets are a key part of that process. Box 8.2 gives the terms of reference for such a group, established in one division of a global telecommunications provider.

Box 8.2: Terms of reference for the Systems Strategy Control Board in a division of a global telecommunications provider

1. Purpose

The primary purpose of the Systems Strategy Control Board (SSCB) is to ensure that the Division's business objectives are effectively supported by systems and processes. It also reviews the proposals and business cases of all projects requiring computing and systems development expenditure over €60,000, as defined in the Division's Business Case process. Project Managers and Financial Controllers are jointly responsible for ensuring that all business cases of projects requiring information systems-related expenditure over €60,000 have received SSCB concurrence. In addition the SSCB:

- sets the overall Systems Policy, where there needs to be a subset of the corporate Systems Policy as set by the Group Information Board* (of which the SSCB Chairperson is a member);
- determines the criteria for the prioritization of the Division's Systems Budgets, including recommending and allocating the budgets across the Divisional units in conjunction with the Finance Division;
- ensures that the computing operations and systems development requirements are fed into the five-year business planning process; and
- reviews internal trading agreements with our Group IS and systems suppliers and evaluates their performance.

2. Scope

- The SSCB has a Division-wide remit to address all aspects of information systems owned by or on behalf of the Division. This covers all computing systems charged to the Division by the central IS Group via Computing Operations Revenue Apportionment (CORA) and information systems development. The SSCB is complemented by the Service Development Forum, which should identify the impact on systems of the product and service portfolio and of marketing campaigns.

3. Responsibilities

The main responsibilities of the Board are as follows:

- to determine the strategic direction for systems and business processes;
- to ensure that the strategic direction is reflected in individual projects/initiatives;

- to ensure information is owned and managed as a corporate resource, to defined standards;
- to agree and implement corporate systems policy;
- to ensure that the Balanced Scorecard elements are assessed (particularly Information Assets);
- to help determine, in conjunction with Business Planning, the priorities for computing operations and development budget allocation;
- to validate major system project proposals, including the business cases;
- to identify links and dependences between projects and, so, recommend programme structures;
- to review continually the validity of the systems investments made (start, stop or amend); and
- to monitor and report on the performance of Group IS and [name of outsourcing vendor] computing systems and development suppliers on behalf of the Division.

Representation

The SSCB is chaired by the Division's Head of Systems, with representation from those within the Divisional units responsible for systems delivery and/or systems expenditure, including Business Planning. The individual responsibilities include:

- representing their specific unit;
- ensuring that Board decisions are implemented in the unit;
- representing the Board within the client units;
- participation in design approval;
- participation in priority setting and budget allocation; and
- supporting the Supplier Evaluation process.

5. Meetings

Frequency and Duration

- The SSCB meets every two months, unless otherwise agreed. The schedule of dates is published in advance for the calendar year.

Attendance

It is anticipated that attendance by the specified representatives will be given a high priority and that, wherever possible, the requirement to attend should be embodied within the representatives job descriptions. Where absence is unavoidable, a representative will send their nominated deputy, fully briefed, including the status of any action

points outstanding. The deputy will be fully empowered to represent their Control Board member.

Decisions taken at the Board will be fully binding where absence results in no representation. The Control Board members will invite appropriate Project Managers to attend meetings to assist in decision making or to obtain a full progress report.

* Another coordinating mechanism, at Group level.

In most organizations, business plans have often been developed in a way that satisfies external requirements and suits the business culture or style of management. That process may have excluded or ignored IS planning. That cannot continue if the link is to be forged between the corporate steering and policy setting of IS/IT and the management of each application. In general, business planning itself is rarely a weak link in this overall structure, but the inclusion of IS in that planning is often done with reluctance and without great effect, if the earlier-mentioned surveys are to be believed.³⁸

Application Management Groups

Every major project, group of related systems or major operational systems will demand significant user management and staff time to ensure that it 'works'. During development, it is critical that it is 'business project managed' and not seen only as an 'IT project'. The users will have to live with the application's consequences. One of the commonest reasons why systems fail in a business sense is that the project manager was not a heavily committed, knowledgeable and able user. Every organization has learned this lesson, the hard way, over the past 30 years! The key objective of application management is to deliver the required business benefits from the application. A process for ensuring that this can happen is described in Chapter 9.

Establishing system and service requirements and monitoring achievement is a critical aspect of application management. Most such problems should be able to be resolved at this 'implementation' level unless they affect overall plans or resourcing. Then, the strategy group must become involved.

Major existing systems, on which the area depends, and interrelated groups of systems, whether developed centrally or locally, require the same ongoing application management attention to ensure that they continue to fulfil requirements. Less time and effort should be devoted

to support than to key operational or strategic applications unless the value of investment is significant.

It is becoming increasingly frequent for many applications to cross organizational and/or planning group boundaries, and some, such as enterprise systems, may involve most parts of the organization. 'Application management' is required irrespective of planning structures, and applications that cross organizational boundaries and/or have multiple users are notoriously difficult to manage coherently. There is not a strict hierarchical relationship; an application management group may report to many masters and, should conflict be unresolved, the 'application' may have to become an issue on the executive steering group agenda.

IT Strategy Group (and Service Management and Technical Management Groups)

The IT limb of the structure consists of three parts, all of which have been discussed earlier in the chapter. Overall resource and technology planning and development is the responsibility of the IT management team, but must also include or allow for resources not directly under its control. The head of the IS function should be a member of the management steering group, but in that role he or she is, first, a senior manager and, second, an IT professional.

An infrastructure is required to support the management team's planning and production of the 'IT strategy'. The IT strategy group should consist of the IT senior management team and, if appropriate, senior user managers who control significant resources or technologies. This split of responsibility is common in 'high-tech' companies, where technological use of IT is separated from commercial application. This group will bring together the resource implications of application plans as well as determine the main aspects of technology development and capacity. Its primary purpose is to produce the 'supply-side' strategy that best satisfies the demand resulting from the IS strategy process. It should direct the activities of the service and technical groups, which are probably departments rather than 'committees', and should be responsible for determining the appropriate sources of supply for technology and other resources. One responsibility it must undertake is to interpret the implications of IS/IT developments and trends for the executive steering committee in relation to the business. Some advantage will accrue by being technically advanced, provided it can be exploited in business terms.

The role of the subsidiary groups is summarized in Table 8.9. Other issues to be managed under these headings are considered in later chapters. What is important is to appreciate that close coordination

along the implementation level, from business needs through service provision to technology acquisition, is just as vital to success as the effectiveness of the executive steering group. The quality of the relationship between user-biased application management and IT-biased service management groups will determine not only how well applications are managed during development but also whether the best application development approach is adopted in the first place. The ability of service and technical management groups to work together will determine whether technology is employed on the basis of what it does for the business, rather than just what it does! At the same time, the choice of the best technology within strategic and financial constraints will depend on the mutual understanding of these two groups. Technical specialists have a very important role in the organization, but they and business-orientated users often fail to communicate. The service groups are the interpreters in both directions, capable of understanding the languages of both business and technology. People working in such service groups will often have a split loyalty to the business and technology.

Summary

This structure or model brings together a number of facets of IS/IT strategic management:

- top management involvement where it is most useful (i.e. adds most value);
- business and IT balance in determining strategy;
- demand and supply management;
- strategy, planning and implementation requirements;
- exploitation of ideas generated from anywhere;
- command and control in effecting policy decisions;
- an organization-led approach to developing strategies and portfolio management;
- consistency over time in developing and implementing strategies;
- an ability to learn from and transfer experience.

From using the model in evaluating the management of IS/IT in many organizations, it is clear that, if one or more of the functions is missing, or is ineffective, or not linked properly to related functions, then either strategies are not being developed or they are not being implemented. Many organizations need variations of this model, depending on size, diversity or otherwise of the business, degree of corporate control exercised, the stage of IS/IT development and the variety and sophistication of technologies deployed.

Figure 8.9 represents the governance structure at a large European automobile manufacturer. It illustrates the activities that are both co-ordinated and managed by the central IS function (IS/IT strategy and planning, program control, program delivery and IT standards and policies) and the related governance bodies. It also highlights the major outputs of these coordinating mechanisms.

For example, the IT Policy Group is chaired by a board member and its membership is composed of senior business managers from the main business areas and the CIO. It focuses on:

- setting the level of company-wide and local IT spend;
- ensuring IS/IT investments support business priorities;
- approving proposed IT investments;
- agreeing balances between types of IT spend:
 - investment versus operational
 - application versus infrastructure
 - tactical versus strategic
- validating IS/IT direction and policies (e.g. outsourcing, IS function);
- monitoring performance against plans.

MANAGING THE IS FUNCTION AS A BUNDLE OF RESOURCES

In Chapter 2, the resource-based view of the firm was introduced. It was noted that this perspective has been gaining increasing prominence in the strategic management discipline over the last decade and, essentially, it takes the view that an organization is a ‘bundle’ of resources. With this perspective, the task for management is to integrate and coordinate these resources to create organization-specific competencies. Competitive advantage is seen as emerging from how this resulting set of competencies are deployed to achieve superior performance. Strategy formulation becomes a process of building and leveraging the necessary competencies—often referred to as core competencies—rather than merely identifying profitable positions in an industry. Competencies emerge out of the integration and coordination of resources. Resources can be both tangible and intangible. Tangible resources include land, buildings, computers and networks. Intangible resources include skills, knowledge, processes, customer relationships, brands, reputation and culture.

It is not unexpected that the logic and thinking behind the resource-based view has been applied to the management of IS, with the IS function portrayed as a bundle of resources. In the context of IS/IT

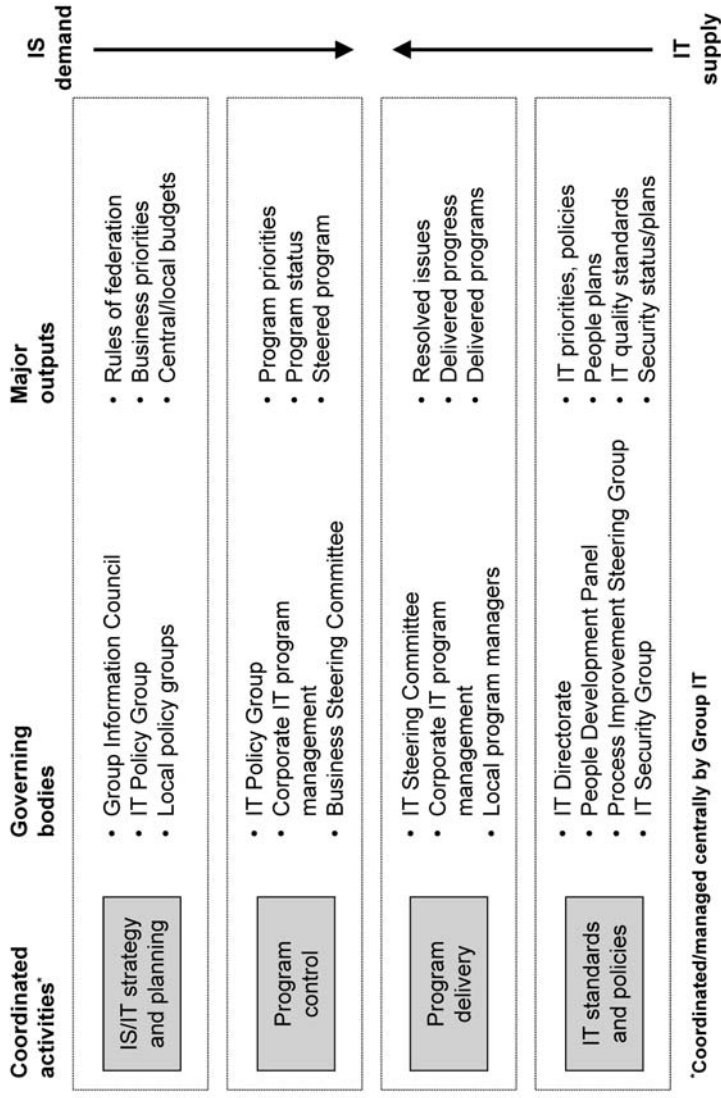


Figure 8.9 IS/IT governance at a large European Automobile manufacturer

Table 8.10 *Feeny and Willcock's IS competencies*

<i>IS/IT leadership</i>	Integrating IS/IT effort with business purpose and activity
<i>Business systems thinking</i>	Envisioning the business processes that technology makes possible
<i>Relationship building</i>	Getting the business constructively engaged in IS/IT issues
<i>Architecture planning</i>	Creating a coherent blueprint for a technical platform that responds to current and future business
<i>Making technology work</i>	Rapidly achieving technical progress by one means or another
<i>Informed buying</i>	Managing the IS/IT sourcing strategy that meets the interests of the business
<i>Contract facilitation</i>	Ensuring the success of existing contracts for IS/IT services
<i>Contract monitoring</i>	Protecting the business's contractual position, current and future
<i>Vendor development</i>	Identifying the potential added value of IS/IT service suppliers

management, the primary resources are intangible—the skills and knowledge of staff as well as processes, structure and culture of the IS function. Tangible resources are less important, as these are available to all organizations in the open market—their purchase, configuration and management the result of the application of intangible resources. Feeny and Willcocks³⁹ have explored the competencies necessary to manage the IS function. In order to identify them, they highlighted three enduring challenges in the exploitation of IT that a company must successfully address over time:

- the challenge of business and IS/IT vision is to address the need for two-way alignment between business and technology;
- the challenge of delivery of IS services at low cost and high quality is being transformed by the evolving, vibrant service market;
- the challenge of IT design architecture—the choice of technical platform on which to mount IS services.

In order to address these challenges, they define what they refer to as nine 'core IS competences'⁴⁰: IS/IT leadership, business system thinking, relationship building, architecture planning, making technology work, informed buying, contract facilitation, contract monitoring and vendor development. These competencies are briefly described in Table 8.10.

They assert that these competencies are required both to underpin the pursuit of high-value-added applications of IT and to capitalize on the



Figure 8.10 A framework for IS competencies

external market's ability to deliver cost-effective IS services. The challenge for the organization is to design, resource and structure an IS function to deliver these competencies.

An assumption underpinning this use of the resource-based view is that success with IS/IT depends on improving the management of the IS function and establishing the necessary competencies in this function to enable this to happen. This is not the complete story. Success with IS/IT must consider the actual exploitation and deployment of the technology, and the organization must also develop appropriate competencies for this to occur. No matter how good the IS strategy is and how successful the organization is in supplying IS services, if the technology does not support business changes and is not effectively used, benefits will not be realized. Marchand *et al.*⁴¹ note that, to improve how businesses use information, managers must do more than excel at investing in and deploying IT. Organizations must combine those competencies with excellence in 'collecting, organising and maintaining information, and with getting their people to embrace the right behaviours and values for working with information.' These aspects lie outside the IS function, but are critical for success.

Building on these different views of IS competencies, a more comprehensive framework was developed during an extended research project undertaken with several major corporations.⁴² Figure 8.10 illustrates a model that links strategy (both business, IS and IT) with IT supply and business exploitation. This is an extension of the model illustrating the business strategy–IS/IT strategy linkage introduced in Chapter 1.

Using this framework, the research identified six domains of IS competency: strategy, defining the IS contribution, defining the IT capability, exploitation, delivering solutions and supply. They provide a more complete picture and are defined as follows:

1. *Strategy*: the ability to identify and evaluate the implications of IT-based opportunities as an integral part of business strategy formulation and define the role of IS/IT in the organization.
2. *Define the IS contribution*: the ability to translate the business strategy into processes, information and systems investments and change plans that match the business priorities (i.e. the IS strategy).
3. *Define the IT capability*: the ability to translate the business strategy into long-term information architectures, technology infrastructure and resourcing plans that enable the implementation of the strategy (i.e. the IT strategy).
4. *Exploitation*: the ability to maximize the benefits realized from the implementation of IS/IT investments through effective use of information, applications and IT services.
5. *Deliver solutions*: the ability to deploy resources to develop, implement and operate IS/IT business solutions that exploit the capabilities of the technology.
6. *Supply*: the ability to create and maintain an appropriate and adaptable information, technology and application supply chain and resource capacity.

Each of these competency areas has a number of specific IS competencies—26 in total. They are listed and defined in Table 8.11.

This application of the resourced-based view is premised on the crucial importance to view IS competencies from an organizational rather than from a narrow IS functional perspective. IS competencies transcend traditional functional boundaries; critically, they are not located solely in the IS function, but spread right across the organization. For some competencies, particularly IT supply competencies, resource elements are primarily located within the IS function, but, for exploitation competencies, resource elements are primarily located outside the IS function. Figure 8.11 illustrates the balance between resources located in ‘the business’ and resources located in the IS function in delivering the competencies.

This logic explains why some IS functions can be very good at defining the technical infrastructure and developing systems, but the organization is not delivering benefits from this investment. Perhaps the ‘wrong’ systems are being developed? It serves to emphasize the importance of a strong business/IS partnership and that organizations must instil

Table 8.11 *IS competency definitions*

<i>IS competency area</i>	<i>Competency</i>	<i>The ability to ...</i>
1. <i>Strategy</i>	1.1 Business strategy	Ensure that business strategy formulation identifies the most advantageous uses of information, systems and technology
	1.2 Technology innovation	Incorporate the potential of new and emerging technologies in long-term business development
	1.3 Investment criteria	Establish appropriate criteria for decision making on investments in information, systems and technology
	1.4 Information governance	Define information management policies for the organization and the roles and responsibilities of general management and the IS/IT function
2. <i>Define the IS contribution (IS strategy)</i>	2.1 Prioritization	Ensure that the portfolio of investments in applications and technology produce the maximum return from resources available
	2.2 IS strategy alignment	Ensure that IS development plans are integrated with organizational and functional strategic plans
	2.3 Business process design	Determine how IS can deliver 'best practice' in the operational processes of organizational activities
	2.4 Business performance improvement	Identify the knowledge and information needed to deliver strategic objectives through improved management processes
	2.5 Systems and process innovation	Carry out relevant R&D into how IS/IT can be used to create new ways of conducting business and new products and/or services
3. <i>Define the IT capability (IT strategy)</i>	3.1 Infrastructure development	Define and design information, application and technology architectures and organization structures and processes to manage the resources
	3.2 Technology analysis	Understand technology developments and make appropriate recommendations for organizational acquisition of technology and associated resources
	3.3 Sourcing strategies	Establish criteria and processes to evaluate supply options and contracts with suppliers

continued

Table 8.11 (continued)

<i>Macro-competency</i>	<i>Competency</i>	<i>The ability to ...</i>
4. <i>Exploitation</i>	4.1 Benefits planning	Explicitly identify and plan to realize the benefits from IS investments
	4.2 Benefits delivery	Monitor, measure and evaluate the (net) benefits derived from IS investment and use
	4.3 Managing change	Make the business and organizational changes required to maximize the benefits without detrimental impact on stakeholders
5. <i>Deliver solutions</i>	5.1 Applications development	Develop/acquire and implement information, systems and technology solutions that satisfy business needs
	5.2 Service management	Define service arrangements and performance criteria to match the business requirements (including project management)
	5.3 Information asset management	Establish and operate processes that ensure data, information and knowledge management activities meet organizational needs and satisfy corporate policies
	5.4 Implementation management	Ensure that new processes and ways of working are designed and implemented effectively in conjunction with new technology
	5.5 Apply technology	Deploy new/changed technology in the most cost-effective mode to deliver application benefits
	5.6 Business continuity and security	Provide effective recovery, contingency and security processes to prevent risk of business failure
6. <i>Supply</i>	6.1 Supplier relationships	Manage contracts and develop value-added relationships with suppliers
	6.2 Technology standards	Develop and maintain appropriate standards, methods, controls and procedures for the use of IT and associated resources
	6.3 Technology acquisition	Develop and apply procurement policies and procedures for the organizational acquisition of infrastructure components and specialist technologies/services
	6.4 Asset and cost management	Ensure technology, information and application assets are effectively maintained and costs of acquisition and ownership are understood and managed
	6.5 IS/IT staff development	Recruit, train and deploy appropriate staff and ensure technical, business and personal skills meet the needs of the organization

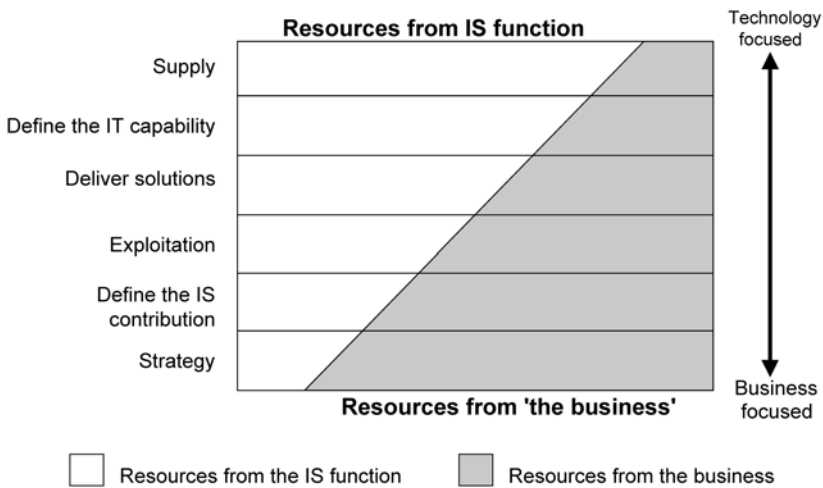


Figure 8.11 Mapping location of resources against IS components

appropriate behaviours and values regarding information and its use in the organization.⁴³

The concept of IS/IT competencies can be used in a diagnostic mode to assess both the existence and level of current performance of each of the competencies. The current performance of each competency is assessed *relative* to required performance. This assessment is usually conducted in a workshop setting with both business and IT managers. Such a forum can serve to identify areas of weakness and thus requiring development. A 'spider diagram' from a series of workshops conducted in a global telecommunications equipment manufacturer shows the size of the gaps—especially in 'business-side' competencies—between the required level and the disappointing actual performance (see Figure 8.12). Needless to say, the IS function had previously been criticized for poor delivery of applications and technology, etc., but the analysis showed that the underlying causes of the problems were the business managers' and users' lack of knowledge, skills and poor understanding of what information and systems they required to meet business objectives.

IS/IT COMPETENCY: THE CRITICALITY OF THE HUMAN RESOURCE

The message from the previous discussion is that when IS/IT fulfils a strategic role in a business, the enterprise must develop and maintain a high level of competency in how it manages and uses IS/IT. As noted,

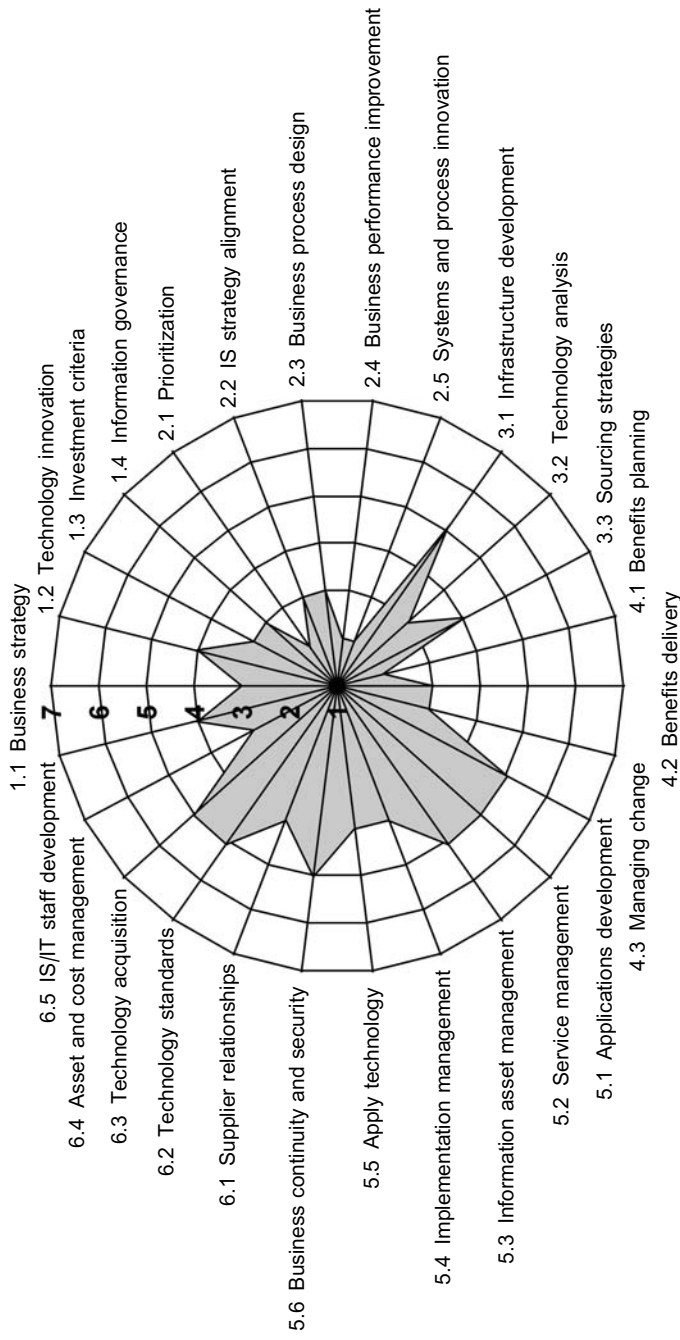


Figure 8.12 'Spider diagram' representation of performance of global telecommunications equipment manufacturer across 15 competencies

competency can be considered as a combination of knowledge, skills, expertise and behaviours that reside in the people it deploys, and organizational processes that determine how to develop and exploit that expertise. Most of this chapter has focused on the latter component. It is worth considering a number of strategic issues concerning the people who deliver the other key component.

One aspect of the Manufacturers Trust Co. strategy, mentioned earlier in the chapter, that deserves more comment is the need to manage human resources as a corporate resource. Undoubtedly, one of the critical factors for any organization in achieving the best results from IS/IT is the quality of people involved in terms of knowledge, skills and experience. The ability to obtain and deploy highly-skilled IS/IT resources in adequate numbers will determine, in the long term, how well the business and IS/IT strategies are brought together. Whether these staff are located centrally or decentralized does not matter—the issues are similar. However, given the increasing choices of ‘sourcing’ options for resources, decisions on whether the people themselves need be employed by the organization, over the long term, are becoming more complex.

There are essentially four solutions to the development of the requisite skills, other than ensuring that the turnover of key staff is kept to a minimum by good ‘hygiene factors’ as well as career and personal development options. The four ways are:

1. Training new recruits from school or university, which is expensive. Also, people early in their careers are more likely to move on within three to five years.
2. Recruiting experienced staff from other organizations, which can be risky.
3. Training existing non-IS people, especially in application skills in user areas, which may require the development of new job roles.
4. Using external resources, either on a short-term basis to overcome peak loads, etc. or longer term to provide the organization with particular skills.

Consider the following scenario, which has become increasingly common, as an example of how the problems of selecting the best options manifest themselves.

The existing IS/IT resource is ‘bogged down’ in key-operational and support systems, mainly maintenance and rewrites. A new major strategic development is conceived, but cannot be resourced internally in the time required. A decision is taken to bring in external contract-based resources to develop the strategic application. What are the potential long-term consequences?

- An open-ended contract to meet an ever-changing requirement for strategic development?
- No one in the IS function is capable of understanding and supporting it in due course?
- What will the 'supplier' do with the knowledge?
- Demoralized staff who have to do the 'boring stuff', while others get the 'good' jobs? They leave—often to join the outsourcing vendor—and the situation worsens.

It can become a vicious circle. By referring to the rationale of the applications portfolio, it should be clear that the one area that must not be handed over to outside parties is that which provides the future business advantage! Equally, the one area that can be handed over with purely economic consequences is the 'support' quadrant, or much of what it contains. Outsourcing this work should be considered to release resources to use elsewhere. If the organization is to develop its competency and provide an attractive environment to retain its most skilled and effective people, then its own resources, IT and user, must be deployed on the challenging strategic or high potential systems, or the skills will become frozen in the past. It can even be more appropriate to use outside resources to deliver or maintain key operational systems to a clear contractual specification rather than use scarce internal resources. Quality control could be maintained by a strong quality assurance process applied to the supplier, in conjunction with explicit service-level agreements. Such a discipline can also discourage 'nice to have' enhancements being requested, since their delivery will require real external expense.

It may, of course, be necessary to buy in some special skills that the organization does not have to help develop even a strategic application. This resource should be bought with the objective of extracting that special knowledge for the benefit of the organization, by using it not just to deliver results but also to develop internal expertise.

The long-term aim of any strategy is to move resources out of the support quadrant by substituting less resource-intensive means, and, while ensuring that key operational systems are adequately resourced, develop the ability to carry out strategic and high-potential developments. Any alternative strategy will reduce the long-term capability of the organization, and increase the development and operational costs of applications in all parts of the portfolio. While many aspects of implementation and ongoing operation can be entrusted to external specialists, it is risky, even foolhardy, to allow external organizations to decide the strategic IS/IT direction. These ideas, in terms of the portfolio, are summarized in Figure 8.13.

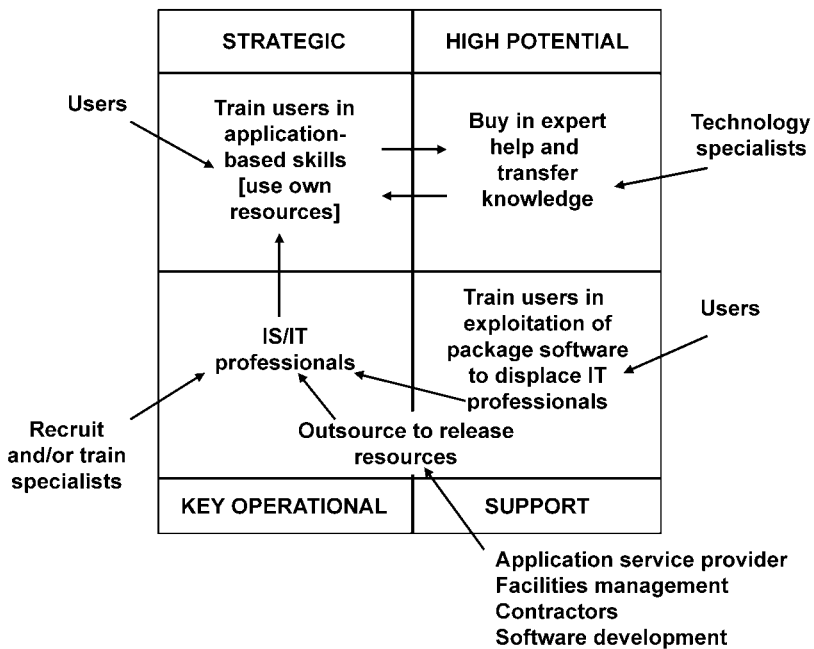


Figure 8.13 Use of resources

Peter Keen⁴⁴ discusses similar issues in more detail and considers not only the types of people required and their likely sources but also the job roles and skills, experience and career paths for each. He considers the spectrum of skills from business to specialist IT and defines four major role categories:

1. business services—requiring strong business, organizational and planning skills;
2. business support—business and organizational as well as some technical skills;
3. development support—strong technical and good business skills;
4. technical services—strong technical skills.

Many organizations are developing such new roles to link the traditional technical specialists via business-based dedicated people (e.g. business systems analysts) to the 'real' business management. These roles are required irrespective of where IS/IT reports in the organization. Many of these roles are critical to the determination of the applications and

resulting business benefits (the IS strategy) as well as to deciding how best to deliver those applications successfully (the IT strategy).

MANAGING RELATIONSHIPS

Relationships play a key part in the management of IS/IT. On the one hand, both business and IS/IT specialists must work in harmony not only in developing the IS/IT strategy but also in the implementation of that strategy and delivering business benefits. On the other hand, as organizations look toward outsourcing, the strength of relationships with vendors becomes paramount in ensuring continued success with IS/IT. This is a critical risk factor associated with outsourcing and requires continual management attention.

Venkatraman and Loh⁴⁵ have examined the changing role of the IS function in terms of its relationships rather than its activities, especially given the wide range of sourcing options now available. They suggest that the IS function needs to define its 'locus of competency' clearly in terms of its value-adding capability, and then focus on managing three key relationships:

1. *With outside IT suppliers*, who will inevitably do increasingly more of the work through outsourcing arrangements. They also argue that a simplistic approach to outsourcing IT supply will leave a 'competency gap' in the organization, which could disable its ability to ensure that IS/IT fulfils its strategic role. And, as already noted, even where IT supply is fully outsourced, there are certain competencies that should never be outsourced.
2. *With the business managers and system users*, to enable the business to identify and realize the benefits from the application investments and to obtain maximum value from the services provided.
3. *With IT specialists in other companies*, especially trading partners, as increasingly more systems become interorganizational through extended and critical use of e-commerce and the Internet and even shared systems, as described earlier in the book.

They contrast this new role with the skills and values of a traditional organization, particularly cultural aspects, which are examined later in this chapter.

Internal Organizational Relationships

From Table 8.2, one of the requirements of the strategic management of IS/IT is 'to create a culture for the management of IS/IT that reflects the

corporate culture.’ This implies taking action to overcome the frequently-observed ‘culture gap’ that can exist between the IT specialists and the rest of the organization. Organizations are not culturally holistic—they contain subcultures often associated with functional specialism or geographical location. These subcultures can be dysfunctional. Information Technology as a functional specialism has been introduced to most organizations during the past 30 years and, as such, has introduced a new subculture, and one that is often difficult to reconcile with the dominant culture in the organization.⁴⁶

The result—the so-called ‘culture gap’—implies that, as with business strategy, the viability of the IS strategy will depend on the extent to which it is derived from the ‘shared values’ of those who have to implement the strategy. Simply put, do they *believe* in it as well as *agree* to it? In a study conducted by Grindley,⁴⁷ he found that the existence of the culture gap had serious strategic implications:

- 47% of IT directors stated that their main problem was the culture gap between IT and business professionals;
- 56% believe that the culture gap is inhibiting their organizations from gaining competitive advantage from IS/IT.

His survey concluded that, ‘the culture gap is a deep-rooted problem, of a much more fundamental nature than the simple knowledge gap experienced when dealing with other specialists.’

The reasons why the IT specialism and its particular culture have proved difficult to integrate with the rest of the organization were described to an extent in Chapter 1. In particular, the work of Galliers and Sutherland⁴⁸ uses the well-known McKinsey ‘7S’ model (strategy, structure, style, systems, shared values, ...) to describe the evolving attributes of IT in relation to the increasingly strategic role of IS in organizations. Their analysis suggests a pattern of change in shared values and other attributes of the IS/business relationship as the organization increases in its dependence on IS/IT. But, they also have words of warning for those who would suggest radically-different approaches to IS/IT strategy and planning. They draw the following conclusions:

- each of the attributes needs to change as the organization becomes more dependent on its IT systems and the more mature in its planning of them;
- if any of the attributes is unsatisfactorily addressed in an early stage of the evolution, then the organization will be less able (or even unable) to achieve success in the latter, more demanding stages;

- positive attributes developed in the early stages should not be discarded later since the organization will have a legacy of products from the earlier stages to support;
- for an organization to succeed, without major hiatus or disruption of IT supply, it should address all of the 7S elements coherently at each stage before moving forward.

Table 8.12 summarizes the six stages as described by Galliers and Sutherland, focusing on the conclusions regarding the ‘shared values’ at each stage. In many organizations, it is the long-term effects of behaviour in Stages 2 and 3, as perceived by business managers, that make the relationship changes required in Stage 4 onward difficult to achieve. The table emphasizes perhaps the more negative aspect of the observed realities in Stages 4–6 in organizations than the desired, almost idyllic, relationships described by Galliers and Sutherland as prerequisites for success.

Crescenzi⁴⁹ used the same 7S view to describe why the majority of ‘strategic systems’ (25 out of 30 in a study) were unsuccessful. He concludes that the range of attributes and attitudes of IS functions and staff that are appropriate in a reactive, problem-solving, job-shop environment (i.e. ‘support’) are quite inappropriate when projects require a proactive, change-driven approach (i.e. ‘strategic’).

From a rational perspective, the approaches to organizational design and coordinating structures in this chapter are attempts to close or bridge the gap. Matching IT services to the different nature of IS requirements and use in the portfolio segments should reduce gaps at an operational level. The steering group structure attempts to allocate the decision making and planning processes to the most appropriate place and level in the organization, and provide the means for reconciling contention.

But, cultural issues are as much about beliefs and perceptions as about intellectual consensus. Before full ‘congruence of shared values’ can be achieved, the reasons for lack of congruence need to be understood. How this can be done using a cultural mapping technique (‘the cultural web’) is described by Ward and Peppard.⁵⁰ The purpose of the approach is to enable business and IT people to describe their perceptions of the relationship as a starting point for reconciliation, through changing either the way business people work with IT specialists or (more commonly!) vice versa. In most situations, change is required on both sides: business people understanding better the need for structure and discipline in IS/IT to avoid expensive failure; IT specialists appreciating the importance of responsiveness to external pressures and accepting the degrees of uncertainty and the often ambiguous nature of business decisions. Box 8.3

Table 8.12 *Summary of the staged model of Galliers and Sutherland*

<i>Stage 1</i>	Adhocracy	Very few, if any, shared values since the focus of IT is internal and they are unable or unwilling to seek a coherent relationship with the business. They relate more closely to IT suppliers
<i>Stage 2</i>	'Starting the foundations'	The 'priesthood' of IT begins to develop and IT staff perhaps cultivate a unique culture based on technology worship—often seriously at odds with the business
<i>Stage 3</i>	'Centralized dictatorship'	When IT management often reacts to business managers' concern over 'excessive spending' on IT and views of poor delivery performance by becoming defensive and exerting control over what it does to redress the balance
<i>Stage 4</i>	'Democratic dialectic and cooperation'	IT specialists recognize the need to work in cooperation with business managers toward achieving business goals, but still expect the business to cooperate with IT's set of values
<i>Stage 5</i>	'Entrepreneurial opportunity'	Recognition in the business that IT can deliver new, potentially strategic, benefits through innovative use often leaves the IT department looking after the legacy and struggling to provide any value to the newly 'liberated' users
<i>Stage 6</i>	'Integrated harmonious relationship'	Rarely achieved, due to the difficulties in reconciling differing values, overcoming historical precedents and prejudice, and requiring a new openness in all aspects of IT activity

describes the dimensions of the cultural web and illustrates how it was used by one pharmaceutical company.

Often, even when the relationship between IT specialists and the rest of the business is problematic, little effort is made to understand the causes of the problems. The remedy has normally involved 'reorganization', either of IT resources or the means by which they are controlled, resulting

Box 8.3 The cultural web and its application to exploring the culture gap

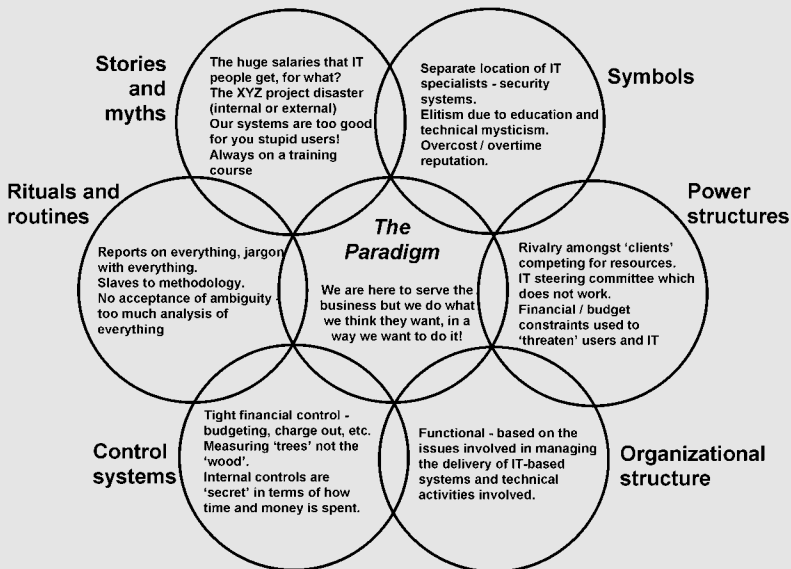
The culture web is a tool devised by Johnson* to assess the culture of an organization. While individuals may hold different sets of beliefs, there is at some level a core set of values, beliefs and assumptions commonly held throughout the organization. This has been referred to by Johnson as the *paradigm*. The paradigm governs and influences an organization's view of itself and its environment. Johnson argues that it is through this paradigm that an organization creates a relatively homogeneous approach to business. As it evolves through time and is reinforced by history, it sets out a repertoire of actions and responses that can be made in certain situations. The paradigm is protected by a 'web' of what Johnson refers to as *cultural artefacts*. They are described as follows:

- *Stories and myths*—In every organization, there are stories, some true, others either variations of the truth or simply myths. Examples are the big IT failures, the products that flopped, the legendary leaders and mavericks. In particular, new employees hear stories about those who broke the cultural norms and the consequences of their actions. Most have evolved over the years and have become part of the organization's folklore. What stories do is legitimize types of behaviour and are devices for telling people what's important in the organization. Like the fisherman's stories of ever larger fish, these stories can be rapidly distorted by the workings of the grapevine.
- *Symbols*—All organizations have their symbols, although they are often so ingrained that they may not be recognized. The dress code, the furniture, executive parking spaces are all symbols. At one particular insurance company, there were five different categories of restaurant and, as one progressed up the management hierarchy, the quality of both food and dining room décor improved considerably. Symbols also include company-specific language, which reinforces entrenched attitudes, like addressing managers as 'Mister'.
- *Rituals and routines*—Rituals are those aspects of organizational life that hold special significance and may include the monthly board meeting, the annual company barbecue and singing the company song. Routines refer to 'the way we do things here' and incorporate the core activities that the organization traditionally undertakes.

- *Control systems*—Organizations have particular control systems to monitor and encourage performance. Pay and reward systems, budgetary control systems and the management hierarchy are all examples of such systems. They serve to highlight what is valued by the organization.
- *Organizational structures*—Functions, departments, geographical-based business units, product-based business units, flat management hierarchies, large bureaucratic hierarchies are all examples of how the structure of an organization impact the paradigm.
- *Power structures*—Power lies with influence, particularly where such influence can reduce uncertainty. The power structures tend to reinforce the paradigm and, hence, they are often targets for change. This is particularly difficult given that those who may be required to change often hold the power.

In attempting to change their culture, many organizations manipulate the 'hard' elements of the web (i.e. the power structures, the control systems and the organizational structures), neglecting to address the more intangible elements. This is a mistake. All elements of the web must be examined and acted on if culture change is to take place and this change translated into tangible action and results.

The web, illustrated below, was derived from data collected from



a global pharmaceutical organization that had sought to bring both IS staff and business staff closer together.** From the analysis, it was evident that the organization had worked hard at restructuring its IS function, improving the control of activities and getting line managers involved in decision making about IS. However, the symbols, stories and rituals, the 'softer' elements as perceived from 'the business' viewpoint, had changed little over this time. Senior management were unaware of this and the impact that it had on the ability of IS, and in particular the IS function, to work effectively in the organization.

*G. Johnson, 'Managing strategic change—strategy, culture and action', *Long Range Planning*, Vol. 25, No. 1, 1992, 28–36.

** Detailed coverage of cultural web analysis can be found in G. Johnson, 'Mapping and remapping organisational culture', in V. Ambrosini, G. Johnson and K. Scholes, eds, *Exploring Techniques of Analysis and Evaluation in Strategic Management*, Prentice-Hall, Hemel Hempstead, UK, 1998.

in either greater centralization or decentralization of either or both. In many large companies, these dramatic, and, it seems, increasingly more frequent, swings of the pendulum disrupt and even destroy any medium-term strategies. The arguments throughout this book (and agreed by most researchers) are that some resources and some decisions are best devolved and others are best centralized. The balance will require adjustment over time as problems will occur in the IS function/business relationship. It is better to resolve these problems than swap them for another set by reorganization, and probably damage the effectiveness of the strategy process.

Outsourcing has introduced an additional set of issues. The relevance here is that one alternative solution to an unsatisfactory IT/business relationship is to outsource the IS function in significant part, or in total, to an outside supplier. While a complex set of options and issues are trivialized by simple generalizations, it can be observed that many IS functions that have been physically outsourced were effectively 'culturally outsourced' (i.e. were not considered as an integral, strategic component of the organization) long before a convenient event, offer or excuse caused the real severance. This observation is verified to some extent by research⁵¹ that shows that, although organizations quoted many reasons for outsourcing IT, a main reason for selecting a particular supplier was 'cultural fit'!

Beyond the Culture Gap

In research conducted in the late 1990s, an attempt was made to progress beyond merely using the label ‘culture gap’ as a variable in explaining the problems that can exist between the IS function and the rest of the business and explore in detail its nature and context. This research took the view that one of the problems with attaching the culture label is that it then becomes a *fait accompli*, and almost acceptance of the situation. The ‘culture gap’ becomes a convenient label to attach to a situation that is clearly causing a problem, but which organizations are either unable or unwilling to address. It was strongly suggested that the culture argument is often an excuse for, rather than the cause of, poor working relationships. In essence, culture is a symptom rather than a cause of an ineffective relationship between the IS function and the rest of the business and the consequential failure of organizations to exploit and leverage IS.

This research focused on identifying the organizational aspects to be managed in improving the relationship between the IS function and ‘the business’ and, consequently, the value derived from IS investments. Analysis of the empirical data from the three sites included in the study revealed five core dimensions. These dimensions are leadership, structures and processes, roles, relationships and behaviours (see Figure 8.14).

Research related to each of these dimensions can be found in the IS literature. However, the research reported in Peppard and Ward⁵² indicated that each dimension on its own is not sufficient to address the organizational aspects of the relationship and that a more holistic perspective is required. For example, hiring a new CIO will not

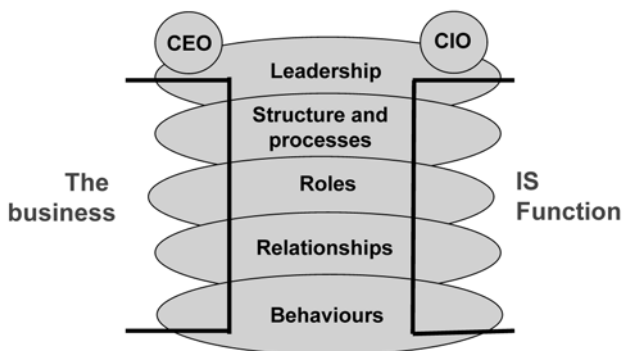


Figure 8.14 Bridging the gap

automatically solve problems regarding the inability of IS to deliver value; however, he or she may help in the creation of an environment for success. The other four dimensions must also be addressed. How the 'gap' can be bridged is addressed at the end of the chapter.

Managing Relationships with Vendors

It is a fact that outsourcing results in a dependence of the client organization on the vendor, yet there has been only limited research on building partnering relationships in outsourcing situations.⁵³ Outsourcing alliances are difficult, particularly as contracts are usually for between 3 and 10 years in an environment with rapid business and technological change. McFarlan and Nolan⁵⁴ note that customers who make an original decision based on efficiency will judge it differently if using effectiveness criteria later.

The importance of cultural fit in any outsourcing situation has already been noted, but, even then, a strong partnership is not guaranteed; building a strong partnership generally has to be worked on. Klepper used a sequential stage model of partnership development, developed by Dwyer *et al.*,⁵⁵ as a starting point for understanding the managerial interventions an organization might make to further the partnering process in outsourcing. This model consists of four stages: awareness, exploration, expansion and commitment. There are also subprocesses that work within the exploration, expansion and commitment phases that either move the parties closer to or further from the next stage. These are subprocesses of attraction, communication and bargaining, development and exercise of power, norm development and expectation development.

Awareness consists of recognition that the other party may be a suitable exchange partner, but with no exchange at this point. Exchange begins in the second stage of *exploration*. It is in the *exploration* phase, after experience with the vendor, that the two parties first appreciate that a deeper, longer-lasting relationship may be possible. In the *expansion* phase, benefits mount for both partners in the relationship and they become increasingly interdependent. In the *commitment* phase, the exchange partners receive such significant benefits from doing business together that they agree, explicitly or implicitly, to continue the relationship and partnership is cemented. Indicators of *commitment* are high levels of input to building and sustaining the relationship by both partners, consistency in the application of inputs and durability of a strong relationship over time.

BRIDGING THE GAP: IMPROVING THE CONTRIBUTION OF THE IS FUNCTION

In organizations where the relationship between the IS function and the rest of the business is poor, this severely impacts the ability of the IS function to make the sort of contribution that the business demands. Bridging this ‘relationship’ gap is not an easy task and can take many years to effect.

There has been some research that has explored how an organization can begin to improve the relationship between the IS function and the rest of the business. Earl and Sampler⁵⁶ have used the distinction between IS demand and IT supply in order to define a prescriptive model. They argue that supply and demand have to be managed, a process they refer to as ‘market management’ and have proposed a four-stage model that helps organizations balance supply and demand in managing IS/IT (see Box 8.4).

As a result of longitudinal research in three organizations, Peppard⁵⁷ constructed a model with six stages detailing the transformation process (see Box 8.5). Success in improving the contribution of IS/IT is initially premised on having strong IS leadership within the IS function and the importance of the IS Director/CIO having credibility within the business. As with the Earl and Sampler framework, the data from this research highlighted the importance of first getting the basics right—network uptime, availability and reliability of applications, help-desk response times, etc. It is fruitless engaging business management in dialogue if basic IT services are not being delivered. Key influencers within the organization then have to be enlisted before any realistic dialogue can be held with the business. A key element of transforming the value-added contribution of IS/IT is building the credibility of the IS function—it is important to remember that credibility must be earned and is derived from achievement and actual results. The overall conclusion from this research is that ‘bridging the gap’ between the IS function and the rest of the business is likely to take time and is primarily a people issue governed by the organizational legacy regarding IS/IT experiences. Box 8.5 describes the transforming stages and Box 8.6 illustrates the transformation program that a large UK bank put in place in order to improve the contribution of their IS function.

Box 8.4 Prescriptions for market management (*source*: M.J. Earl and J. Sampler, 'Market management to transform the IT organisation', *Sloan Management Review*, Summer, 1998, 9–17)

1. Recognize disequilibrium

At this opening stage, the organization first articulates, explores and analyses the crisis or loss of confidence in IT in general and the IS function in particular. Generally, there are both supply and demand issues causing problems. For example, IT may not be delivering or the business is not specifying and using the systems that it needs. Symptoms and prescriptions at this stage include:

- business needs not satisfied;
- technological problems;
- management assessment;
- start of new regime.

2. Emphasize supply management (supply first, demand second)

At this stage, the company seeks radical performance improvement of the supply side by setting delivery goals and beginning to rebuild the technology platform. The focus is on releasing and realizing value from the inherited IT situation. Prescriptions at this stage include:

- setting ambitious performance targets;
- beginning to rebuild technical platform;
- seeking early, visible results;
- setting application priorities.

3. Emphasizing demand management (demand first, supply second)

Stage 3 emphasizes demand management, shifting the focus from supply to demand, but not exclusively. The concern is with building IT capabilities and creating future value. Prescriptions at this stage include:

- work out the vision;
- define demand management processes;
- define value propositions;
- plan the infrastructure.

4. Maintain equilibrium

In this final stage, the company completes the transformation process by implementing final radical changes in both demand and supply sides. This stage is an ongoing state of equilibrium between

supply and demand. However, if business or technological discontinuities occur and the company does not deal with them, it can initiate a new transformation process by returning to Stage 1. Prescriptions include:

- recognizing that it is a continuous journey;
- rethinking governance;
- reskilling IT personnel;
- creating a partnership with business and vendors.

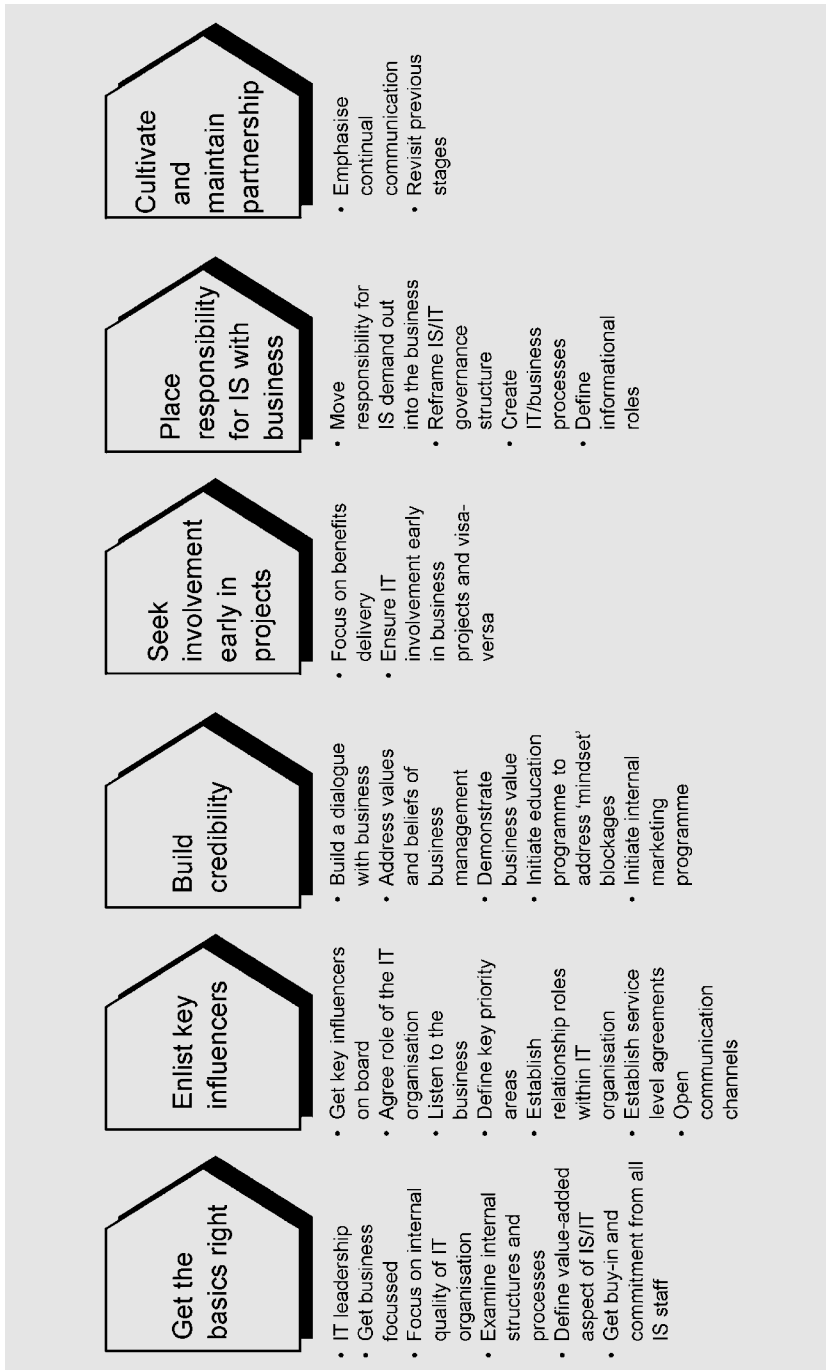
Box 8.5 A model for improving the value-added of the IS function (*source*: J.W. Peppard, 'Bridging the gap between the IS function and the rest of the business: Plotting a route', *Information Systems Journal*, Vol. 11, 2001, 249–270)

Stage 1: Get the basics right

The first stage involves focusing on the IS function itself, ensuring that it can deliver basic IT services. These are primarily technology focused and tactical, and include network uptime, availability and reliability of applications, and help-desk response times. This usually requires an examination of internal structures and processes, particularly in the areas of project management, quality of applications and quality of its customer service. The evidence from the research was clear in asserting that it is futile attempting to improve the relationship if the ability of the IS function to meet basic business expectations is either weak or non-existent. This usually entails establishing metrics to measure and assess performance. It is also important for the IS function to get business focused. However, obtaining the buy-in of all IS staff is crucial, if the IS capability is to develop further. A central ingredient is the leadership, credibility and vision of the IS director.

Stage 2: Enlist key influencers

Within any organization, there are particular individuals who are pivotal to what happens in it, the so-called opinion leaders or key influencers. If the transformation of the IS function is to progress, the evidence from research suggested that it is important to get these influencers on board before proceeding to the later stages; the visibility that these individuals bring is not only to add impetus to the process but can also decide the fate of the initiative. Enlisting key



influencers generally requires that there is some agreement reached as to the role and function of the IS organization. This is seen as not only giving clarity to the role and establishing expectations but also identifying areas of potential conflict that may have implications at later stages (e.g. centralizing some aspects of IS spend previously distributed across the organization or the imposition of technology standards).

Stage 3: Build credibility

While the previous stages focused on the key influencers, this stage focuses on incumbents at all levels in the rest of the organization. In establishing credibility, it is important to bear in mind that credibility is not something that is taken, but rather something that is given; in essence, it must be earned by the IS function and is derived from achievements and actual results. The research data suggested that building trust and mutual respect is a central aspect of the route toward true partnership; distrust on both sides can emerge over the years and is a legacy that can be difficult to discard. It is equally important to manage the expectations of the business and ensure that the IS function does not over-promise. Education plays a key role in this stage to impress upon business managers the process of value creation through IT and the key role that they play in this process.

Stage 4: Seek involvement early in projects

Having credibility is not an end in itself; rather, it establishes the launch pad for passing through the final stages. Without a credible IS function, business managers are unlikely to risk being involved or will be cautious in getting involved in IS-related matters, not to mention assuming responsibility for activities and decisions traditionally made by the IS function. The research suggested that the IS function should actively seek out the involvement of the business in IS projects. Equally, the IS function should get involved in projects when invited to by the business.

Stage 5: Place responsibility for IS with the business

The case data highlighted the importance of business managers taking responsibility for aspects of IS that traditionally may have been delegated to the IS function. This requires reframing the IS governance structure, as many 'IS decisions' taken by the IS function should often be the concern of business managers. The

organization-wide nature of IS competencies and the distribution of component resources has already been noted, and resource elements from 'the business' are required for IS competencies to be enacted.

Stage 6: Cultivate and maintain partnership

Like any relationship, the relationship between the IS function and the rest of the business must be continuously worked on. Both technology and the business environments are continually changing requiring appropriate responses to be made. Yet, there is the danger of business management getting complacent and not recognizing their contribution to IS success—reiterating the fact that the resources underpinning IS competencies are enterprise-wide.

Box 8.6 Dulwich and Galway plc

The principal activity of Dulwich and Galway Financial Services Group (D&G)* and its subsidiaries is the provision of a comprehensive range of personal financial services. In addition, the Group's principal subsidiary, Postbank plc, provides a wide range of banking and financial services to business and local authority customers. The Group's objective is to provide for its personal and business customers a comprehensive range of mortgage, investment and personal banking facilities that are high in quality and competitive in price.

D&G recognises that the delivery of shareholder value depends upon our ability to create real value for our customers. This involves retaining and growing mutually beneficial relationships through the development of innovative products; speedy delivery through a wide range of accessible channels; excellent and flexible service; a strong brand; and anticipating and responding to changing customer needs (Annual Report, 1997)

The Group, which employs nearly 7,500 employees, is divided into three strategic business units each responsible for a specific business area. The Retail Financial Services unit provides mortgage, investments and personal banking services. Postbank provides asset finance, money transmission and merchant services. Group Treasury are responsible for investments and management of corporate assets. The business units are supported by the group functions, which

include Group Information Services (GIS) as well as Human Resources, Strategic Planning, Finance and Corporate Affairs.

GIS, employing approximately 650 staff at two sites, is responsible for the delivery and support of business initiatives by the exploitation of new and existing technology. Its immediate customers are all D&G business units. The ultimate customer is anyone who uses D&G Group services and products (e.g. High Street Customers, Corporate Customers, etc.). Core IT systems support over half a million mortgages and over 4 million investment accounts. These provide information for terminals operated by cashiers at over 350 branches and agents nationwide. Other systems provide support to over 1 million personal banking customers, and to a large number of blue-chip customers, as well as supporting the functions common to any financial services company (accounting, payroll, treasury, etc.).

GIS has traditionally had a rough time at D&G with a poor reputation; in the words of one senior IT executive, 'GIS was the whipping boy.' When projects did not go well, inevitably GIS got the lion's share of the blame. Given its weak position in the organization, it was also reactive to business needs resulting in the development of disparate systems and a real lack of systems integration, '... over the last five years we have been excluded from the business analysis side of things, we have been subservient to the business ...' To further reinforce its disillusionment, many of the business units simply bypassed GIS for IT services, going straight to third-party vendors.

The arrival of a new IT director in 1996 saw the beginnings of a programme to transform the performance of the function. Perhaps consolidating the need for change, the result of a mid-1997 GIS staff survey were quite a shock for the top team of GIS. This survey clearly indicated that morale was low, employees felt alienated, and turnover was on the rise. A survey of internal customer satisfaction, undertaken at the same time, highlighted that, at best, it was indifferent.

There had been pockets of activity to improve the performance of the IT function prior to the arrival of the new IT director. These included the service delivery transformation programme, improving the delivery of systems (time, cost, quality, etc.) and general productivity improvements. A balanced Business Scorecard was also introduced to track performance. However, the new IT director knew that a step change was required if any significant improvement in the value-added contribution of the IT function was to be made.

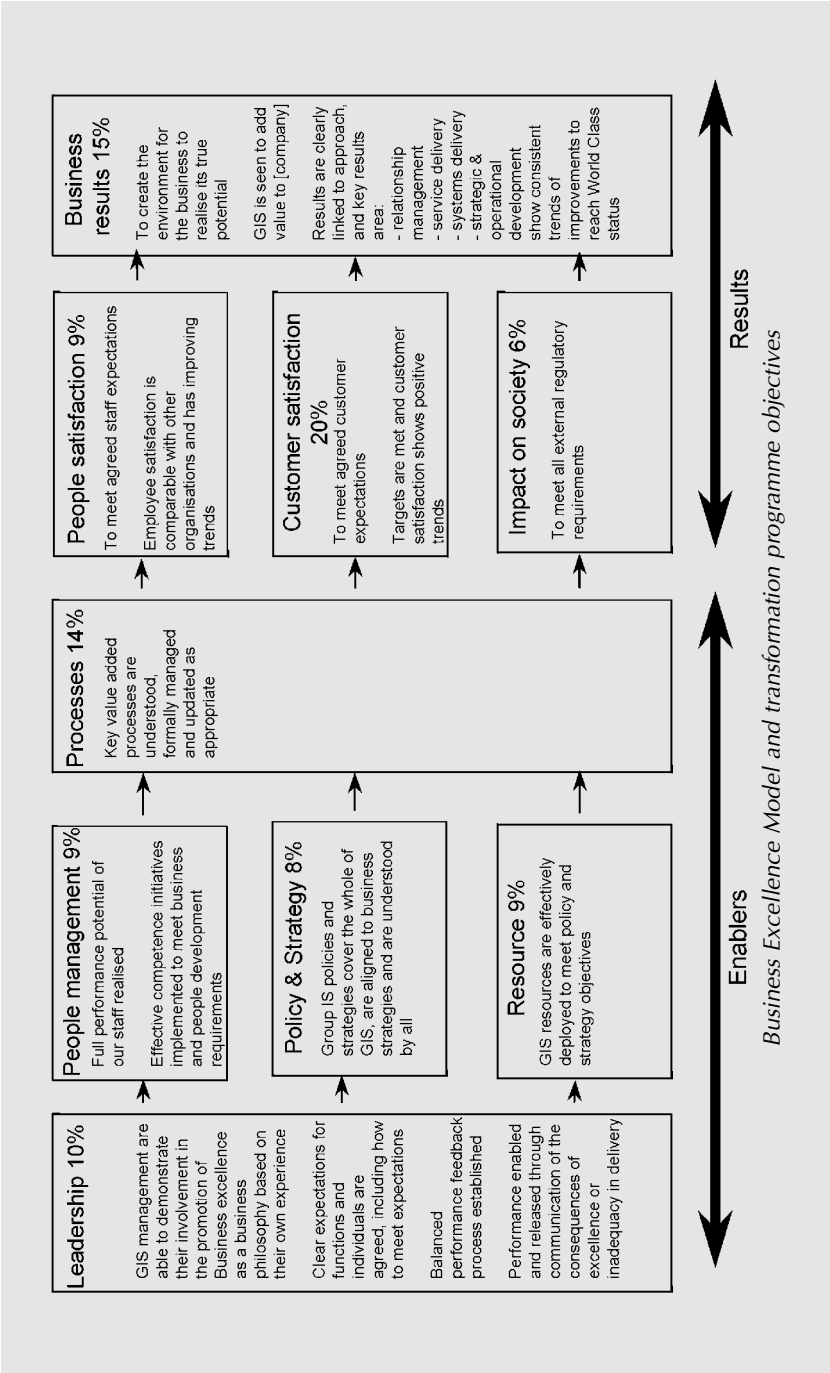
The World Class 2000 (WC2000) project was instigated during 1997. With this initiative, GIS set itself the task of becoming world class by the year 2000; that is, to achieve world-class performance in all elements of the Business Excellence Model (BEM). The BEM is based around a well-recognized framework originating for the European Foundation for Quality Management. The model's structure forces completeness of thought to not only understand the actions required to deliver objectives but also the actions required to support this delivery through considerations of all fundamental business drivers. The model is based around the following premise: Customer Satisfaction, People (employee) satisfaction and Impact on Society are achieved through Leadership driving Policy and Strategy, People Management, Resources and Processes, leading ultimately to excellence in Business Results.

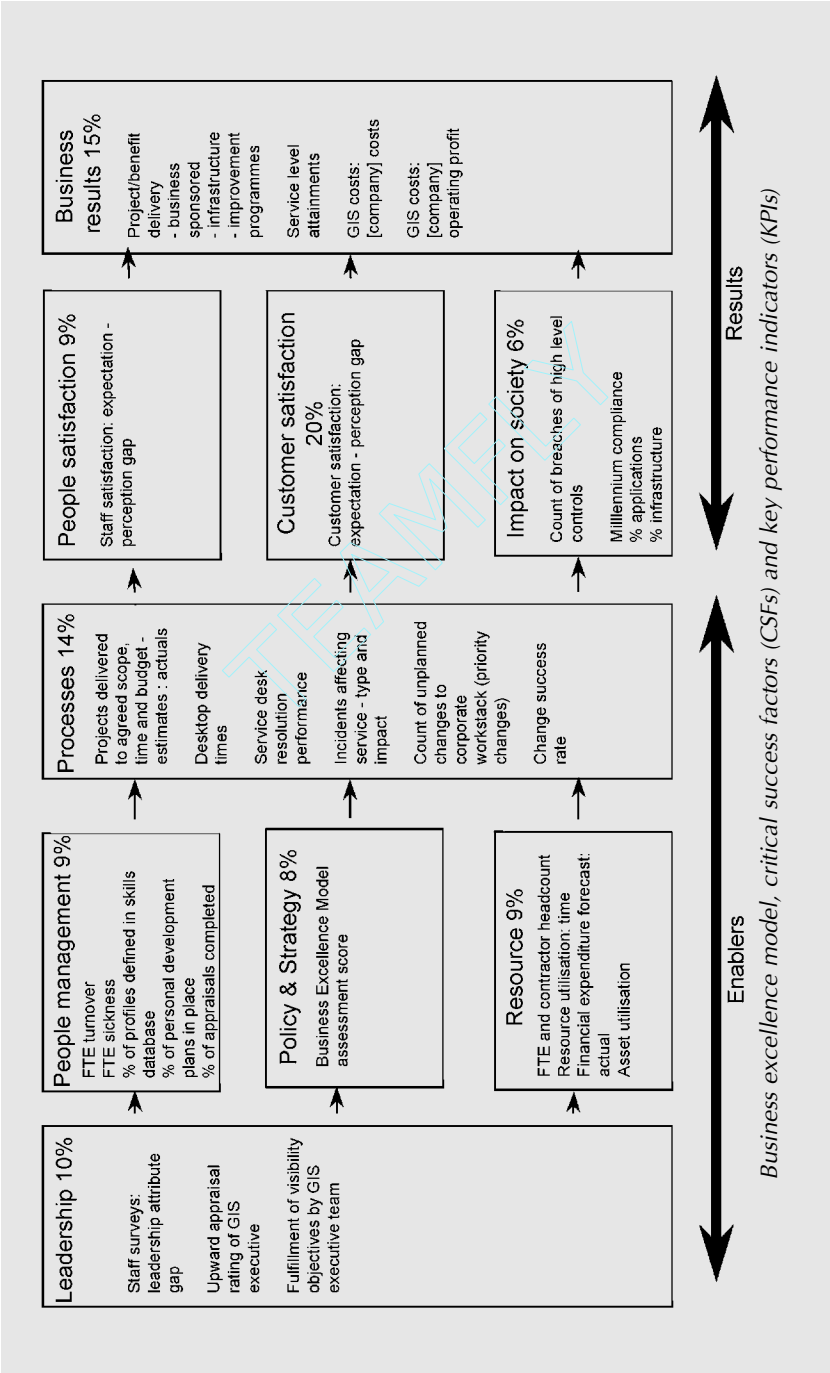
These nine criteria encompass all the aspects necessary for an organization to operate successfully, and provides the underlying framework for assessing the performance of all or part of an organization. The model divides into two principle sections—business results and enablers. Results are what the organization achieves, and the enablers are how the organization is run. Each criterion has a different score, reflecting its relative importance.

The IT director's stated objective during 1998 was to 'create the environment in which we can develop our organisation towards World Class status.' He further noted that, '[S]uperior information systems capability is central to the achievement of D&G business objectives and will be critical to survival in an increasingly competitive environment ... The primary objective of Group IS is to deliver a World Class Service and thereby support Shareholder Value through the successful implementation of "Business Projects".'

Through WC2000, GIS had two central objectives. First, to be the first-choice supplier to the business units. One senior IT manager noted that, '... we want the business to come to us first, you know, and always give us the chance first of all, and we do that by, you know, demonstrating that we are as good or better than external suppliers.' Second, to be the first-choice employer for IS professionals; good people would come looking to A&L for employment and career.

The BEM provided the framework for constructing the transformation programme. To populate the BEM with actions took six months, and this process included workshops, interviews, and one-on-one sessions. The bulk of this work was done by the GIS execu-





tive, with some support from its Organizational Development Unit. The performance of GIS in each of the nine elements of the BEM was assessed. This was done using the results of the customer and staff satisfaction surveys. Results for each element was analysed and an Organization Development process provided a diagnostic on the type and cause of the gaps between desired and actual performance of each element of the BEM.

Critical Success Factors were designed from these data by the top management team, which allowed subsequent development of Key Performance Indicators and the actions necessary to achieve them. These details were published in the 1998 GIS Operation Plan. According to a senior manager, 'the BEM gave us a complete framework rather than just focusing on a particular area . . . not just knee-jerk decisions to some of the problems that we may have.' This plan is now updated twice per annum. GIS staff are kept updated on progress via regular briefings, monthly communications sessions, a newsletter and supporting documentation.

At the beginning of the initiative, GIS undertook a self-assessment exercise and scored 291 out of 1000. 'World class' is generally regarded as a score in excess of 500. To further illustrate the enormity of the task they faced, the Customer Satisfaction index maximum score is 200. In August 1997 D&G scored 63/200; by April 1998 it had improved to 67, still substantially lower than required. Employee Satisfaction in 1998 was 16 out of a maximum score of 90. By 2000 the company had achieved world-class status.

* Name has been changed.

SUMMARY

The previous chapter provided a framework of the applications portfolio and high-level management strategies for IS/IT. Subsequent chapters deal with aspects of strategy that, in many ways, are particular to IS/IT in terms of information, systems and technology. This chapter has attempted to consider the rationale for strategic management at the interface between the particulars of IS/IT and the general management of the organization. These strategies essentially address the matching and integration of the IS function to and within the business organization, and as such have to be defined by general management.

If these issues are not addressed both at the corporate level and for each of the main business units and functions, it is likely that, throughout

the organization, behaviour will not be consistent with the strategy. The result will be failure to implement the strategy. It is obviously important to devise appropriate business-driven IS strategies and then appropriate IT-supply strategies. But, having a strategy is not going to lead to business success! Implementing and then updating that strategy as the business progresses is how success will occur. Mechanisms must be put in place to ensure that happens. A number of these mechanisms are considered in this chapter—primarily those concerning the organization of resources and their positioning in the business in relation to its other primary and support activities—and ways of ensuring that those resources are most appropriately deployed.

One conclusion, and hence an extension of the discussion into organizational overlays, is that, except perhaps in the simplest businesses, there is as yet no ideal organization structure for IS/IT within the business structure. This should perhaps not be surprising given the relatively recent arrival on the business scene of IS/IT and its rapidly-changing nature and importance. Many general managers perhaps wish the IS/IT management problem might ‘go away’ or become simple again—the ‘IT manager’ reports to Finance—but it will not, and will need to be addressed in every organization repeatedly over the coming decade.

Equally, other issues concerning IS/IT that management would perhaps prefer not to have to deal with are those resulting from the specialist people IS/IT involves. These people often have a career-versus-company conflict of loyalty and do not easily conform to the culture of the company. But, experienced, capable people with the requisite skills are becoming in even shorter supply, and without them business objectives may become unachievable. Strategies for ensuring that these critical resources are retained and developed are an essential part of the management strategy.

These organizational and resourcing issues of IS/IT strategy are those that become very critical during implementation and can lead to the failure to achieve what should have been a perfectly-feasible strategy, because they are ignored or dealt with ineffectively by the senior management of the enterprise.

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