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## Developing an IS/IT Strategy: Establishing Effective Processes

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Developing an IS/IT strategy is taken to mean thinking strategically and planning for the effective long-term management and optimal impact of information in all its forms: information systems (IS) and information technology (IT) incorporating manual and computer systems, computer technology and telecommunications. It also includes organizational aspects of the management of IS/IT.

A concise but somewhat narrower definition offered by Lederer and Sethi<sup>1</sup> is ‘the process of deciding the objectives for organizational computing and identifying potential computer applications which the organization should implement.’ A further perspective, underpinning the close relationship between business and IS strategies is: ‘An IS strategy brings together the business aims of the company, an understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. It is a plan for the development of systems towards some future vision of the role of IS in the organization.’<sup>2</sup> A more recent definition, which fits with the approach of this book, is ‘the process of identifying a portfolio of computer-based applications to be implemented, which is both highly aligned with corporate strategy and has the ability to create an advantage over competitors.’<sup>3</sup>

The most common aims for organizations adopting an IS/IT strategy process are:

- alignment of IS/IT with the business to identify where IS/IT contributes most, and the determination of priorities for investment;
- gaining competitive advantage from business opportunities created by using IS/IT;

- building a cost-effective, yet flexible technology infrastructure for the future;
- developing the appropriate resources and competencies to deploy IS/IT successfully across the organization.

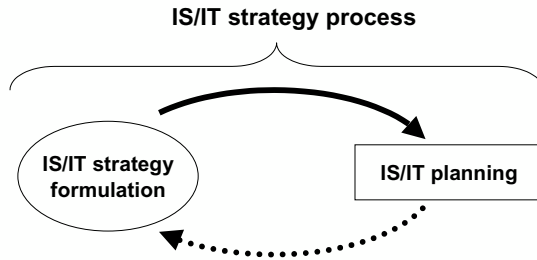
This chapter is concerned with establishing a framework and process for developing IS/IT strategies. It assumes that it must be closely integrated with business strategy, and that, to be effective, it must be a continuous process, with a flow of deliverables that dovetail with the outcomes of business strategic thinking and planning.

Where an IS/IT strategy-formulation process has not become established, it may be necessary to undertake initiatives in one or more areas of the business, to foster awareness of the importance of delivering real benefits to the business through the deliberate application of IS/IT in support of its critical business needs, and to achieve the transition in an acceptable timescale. This will also offer the opportunity to ensure that old, inappropriate planning methods are stopped, and better, more comprehensive approaches are adopted. The process should introduce the required disciplines, controls and new techniques, establish good relationships, and identify tasks and responsibilities and thus define planning resource requirements. However, as soon as possible, the IS/IT strategy process needs to become an integral part of the development of business strategy, business plans and their subsequent implementation.

One of the most compelling arguments for integrating business and IS strategy formulation and planning is so that the finite resources of the business can be allocated in a coherent manner to achievable strategies and plans that collectively will deliver benefits to the business.

### **The IS/IT Strategy Process: Some Definitional Clarity**

The writings in the area of IS/IT strategy can be a little confusing, not least because of the variety of terms encountered and the inconsistent usage of language for seemingly similar concepts. In the research literature, 'strategic information systems planning' (SISP), 'information systems planning' (ISP), 'information systems strategy planning' (ISSP) and 'business systems planning' are just some of the terms frequently encountered. Examining the meanings of these concepts as they are used reveals that they are essentially similar. Indeed, the emphasis on 'planning' probably originates as a consequence of portraying IS/IT as part of the implementation of the business strategy—IS/IT investments were planned once the business strategy had been formulated. With IS/IT increasingly shaping the strategy of a business, the strategizing aspect must be emphasized.



**Figure 3.1** *IS/IT strategy process*

In this book, a distinction is made between IS/IT strategy formulation and IS/IT planning—this difference between ‘strategy’ and ‘planning’ was addressed in Chapter 2. Formulation is concerned with developing the IS/IT strategy and is addressed in this book through a process of alignment and competitive impact. Once that strategy has been formulated, an implementation plan can then be constructed—IS/IT planning. The IS/IT strategy process refers to *both* formulation and planning (see Figure 3.1). While the IS/IT strategy drives IS/IT planning, constructing the IS/IT plan may reveal aspects that cause the IS/IT strategy to be reconsidered.

### **THE EVOLUTION OF THE IS/IT STRATEGY PROCESS: FROM TECHNOLOGY FOCUS TO STRATEGIC FOCUS**

Research has highlighted that, in many organizations, approaches to IS strategy formulation have tended to follow an evolutionary process. In Stage 1, the focus is on planning to deliver technology. At Stage 5, the organization has reached a stage of maturity where the emphasis is on assessing the competitive impact of IS/IT and in ensuring the alignment between business strategies and IS/IT investments. This evolution can be explained as follows:

- *Stage 1*—typical early data processing (DP) planning—the IT department need to plan the interfaces between applications developed separately, project by project, in order to make them work effectively and efficiently, both in business operations and the utilization of technology. Obtaining management understanding of the increasing dependence of the business on its systems is the key objective, to enable a more coherent, less piecemeal, approach to be adopted. Essentially, support applications are being built and management

perceives IS/IT in that limited role, but the dependence is steadily increasing.

- *Stage 2*—management, now aware (often because of some crisis or key system failure), initiate a top-down review of IS/IT applications in the light of business dependence—priorities are agreed based on the relative importance of business needs. For example, should the order processing redevelopment take precedence over the new sales analysis system? The approaches used are very methodological, normally based on derivatives of IBM's 'Business Systems Planning'<sup>4</sup> or similar methodologies, and involve gaining a management consensus of criticalities and priorities. An extended, prioritized 'shopping list' of key operational type applications for both operational and management information requirements will generally result.
- *Stage 3*—the next stage is centred around detailed IS/IT planning, to determine the best way of implementing the applications and supporting technologies or, in some cases, reimplementing existing systems in more appropriate, integrated and perhaps less costly ways. The portfolio needs to be better balanced—greater attention is paid to the now (perceived to be critical) key operational systems and less resource is dedicated to support applications, each having been 'prioritized' in Stage 2. An 'Application Support Centre' or 'Help desk'<sup>5</sup> concept may be implemented for support-type systems, and application packages will probably be introduced to rationalize and replace internally-developed systems. Stage 3 can take considerable time to implement effectively and, while this is going on, nothing else can really happen, since all IT resources are budgeted against a known detailed 2–3-year plan.

Through Stages 1 to 3, the evolution from isolated 'efficiency'-driven applications to integrated 'effectiveness' systems has been occurring—but the objective has not yet been overt use of IS/IT for competitive advantage; the main purpose is to stop IS/IT being problematic and to ensure that it is causing no disadvantages.

- *Stage 4*—the users take the reins, not necessarily encouraged by senior management, but not discouraged either, because they do not wish to prevent business-led, entrepreneurial use of IS/IT by users seeing new opportunities, using information in new ways to provide business leverage/competitive advantage. This may start during Stage 3 as frustration builds up in the 'jam tomorrow' stage of detailed planning and implementation. It is important that users, unfettered in any way by IS/IT procedure or control, exercise this

freedom to innovate, even if 90% of the ideas are of little strategic potential. It is the source of tested ideas that, with later IS/IT support, can be turned to advantage—literally, high potential opportunities driven by the business. Many strategic applications originate this way.<sup>6</sup>

- *Stage 5*—this is the difficult stage to reach, particularly if Stage 3 is delayed and Stage 4 is more user-rebellion than business stimulated innovation. It requires bringing it all back together—not just IS/IT-based strategy formulation as in Stage 2, but also the formulation of business strategy. In essence, the innovation ideas of Stage 4 require evaluation in the business context along with the opportunities now made available from the key operational infrastructure (i.e. the knowledge of what to do and the ability to deliver it effectively). Linking IS/IT potential to the business strategy is the main task, and this requires the simultaneous attention of senior executives, line management and IT specialists—the first time in this process that they have all acted as a coalition together. There is no ‘methodology’ available—multiple methods implies business strategizing and planning methods plus IS/IT top-down and bottom-up approaches. Strategic applications can be identified and agreed upon in the context of the business strategy.

The ‘process’ does not always occur sequentially in an organization, and there will always be overlap across the stages. In large organizations, different businesses or functions may be at different stages in their evolution. What is surprising, in some ways, is how often the stages are followed quite sequentially as an organization gets more sophisticated in its application and deployment of IS/IT. All these variations on the IS/IT strategy process will be discussed in more detail later in the book, with special focus on the latter stages, which most organizations now have to address successfully.

## **APPROACHES TO IS/IT STRATEGY DEVELOPMENT**

There is a difference between having an IS/IT strategy and having an IS/IT strategy that is closely aligned and integrated with the business strategy. Over the years, organizations have adopted a variety of approaches in planning IS/IT investments; unfortunately, these have not always resulted in the organization deploying IS/IT strategically. Earl<sup>7</sup> has studied the changing focus and increasing maturity of the IS/IT strategy process in a number of organizations and has identified five main types of approach. The chief characteristics of these five types are

summarized in Table 3.1, adapted from Earl's more detailed assessment. The analysis considers the main task that is carried out, the main objectives, who drives the planning forward and the approaches adopted. By looking at each of these aspects, the effectiveness of the linkage between IS/IT strategy and business strategy can be determined, and consequently how likely the organization is to gain competitive advantage from IS/IT. This implies that, although an organization should develop more 'mature' approaches to IS/IT strategy formulation and planning in order to achieve a full and relevant portfolio, some earlier approaches need to be maintained in order to manage the total matrix of applications. Not every application of IT needs all the complexity implied in Stage 5. However, one thing is certain, if the organization is poor at formulating business strategy, it will have considerable difficulty developing an IS/IT strategy.

An organization can identify from the types of planning approaches in place (i) where it is in relation to the eventual need for integration of IS/IT and business planning, and (ii) which approaches it needs to adopt in the short term to move it toward that eventual goal.

The names given by Earl to the dominant rationale at each stage (see the summary description in Table 3.1) imply the following:

1. *Business led*—carried out mainly by IT specialists who define an IS/IT investment plan based on the current business strategy. While acknowledging IS as a strategic resource, with this approach the organization is taking the view that business strategy should lead IS/IT strategy and not the other way around. The business strategy is not challenged and the approach does not explore competitive opportunities through IS/IT unless incorporated in the business strategy.
2. *Method driven*—the use of techniques (often a consultant's methodology) to identify IS needs by analysing business processes—an 'engineering' philosophy based on top-down analysis of information needs and relationships.
3. *Technological*—IS/IT planning is seen as an exercise in process and information modelling. Here, IS professionals use analytical modelling and tools (e.g. Computer Aided Software Engineering [CASE]) to produce IS plans in the form of blueprints—perhaps one each for applications, data, communications and computing. Earl noted that the word 'architecture' may replace 'plans' or 'strategies'.<sup>8</sup>
4. *Administrative*—the main objective is to establish IT capital and expense budgets and resource plans to achieve approved IS applications, usually based on a prioritized wish list from users. Business

**Table 3.1** Increasing organizational maturity with respect to IS planning (source: M.J. Earl, 'Experiences in strategic information systems planning', MIS Quarterly, Vol. 17, No. 1, 1993, 1–24)

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<i>Main task</i>	IS/IT application mapping	Defining business needs	Detailed IS planning	Strategic/Competitive advantage	Linkage to business strategy
<i>Key objective</i>	Management understanding	Agreeing priorities	Balancing the portfolio	Pursuing opportunities	Integrating IS and business strategies
<i>Direction from</i>	IT led	Senior management initiative	User and IT together	Executives/Senior management and users	Coalition of users/management and IT
<i>Main approach</i>	Bottom-up development	Top-down analysis	Balanced top-down and bottom-up	Entrepreneurial (user innovation)	Multiple method at same time
<i>Summary</i>	'Technology led'	'Method driven'	'Administrative'	'Business led'	'Organization led'

plans, usually at a functional level, are analysed to identify where IS/IT is most critical in meeting short to medium-term needs.

5. *Organizational*—the development of key themes for IS/IT investment derived from a business consensus view of how IS/IT can help meet overall business objectives, agreed by the senior management team.

It is not too difficult to align these approaches to the characteristics of the planning environments described by Sullivan (see Figure 1.9). The fit is not exact but the Technology led, Method driven and Administrative approaches are more appropriate and practical where diffusion is low (i.e. low decentralization of IS/IT control) and fit the needs of the traditional and backbone environments best. Business led and Organizational appear more relevant to high degrees of diffusion, the former being most appropriate for creating new opportunities and the latter for providing the eclectic type of planning for the 'complex' part of the matrix.

In an empirical study using Earl's descriptions, Doherty *et al.*<sup>9</sup> found that the Organizational, Business-led and Administrative approaches could be identified and clearly distinguished in the sample of 267 companies. The study also showed that the organizations believed they were more successful in IS planning if they followed the Organizational approach; of the three, Business-led came second and Administrative was third. They argued that the Organizational approach had, based on the survey evidence, very similar characteristics to the 'rational adaptation' mode of planning that Segars *et al.*<sup>10</sup> had observed as the most successful approach in their study.

Doherty and colleagues, however, could not clearly distinguish between Method led and Technology led, even in their large sample, and suggested that the two, together, formed an intrinsically IT-led approach they called 'systematic'. This is a reasonable conclusion, given that, over the last decade, many large application and utility software packages have effectively become part of the infrastructure. Application software and technology plans cannot always be separated, but require highly integrated, detailed planning (i.e. *systematic*). In the survey, the *systematic* approach had a similar level of perceived success as Business led.

## PROBLEMS AND BARRIERS

Despite an understanding of the importance of strategic planning for IS, in the past decade many organizations have developed perfectly sensible IS strategies that have been left to gather dust, or have been implemented



in a half-hearted manner, because they did not have enough management commitment invested in them. These were not merely uplifted user 'wish lists' that had been renamed 'strategies', nor IT-inspired total systems—information and technology architectures—that never deserved to gain business backing. Rather, they were derived from a thorough investigation of business needs and priorities, driven from business strategy and objectives, and constructed by business teams. They may have even obtained the sought-after sign-off from the board, but were then left with the IS function to implement them, while management got on with its 'real' job of running the business.

A number of surveys have attempted to identify criteria for successful IS/IT strategy development. Lederer and Mendelow<sup>11</sup> surveyed 20 US companies to determine the senior management problems preventing effective development of IS/IT strategic plans. An earlier survey had shown that obtaining top-management commitment was a prerequisite for success, but that it was often difficult to obtain. Their research identified the following reasons for this, in order of frequency of occurrence:

1. Top management lacked awareness of the impact IS/IT is having generally and did not understand how IS/IT offered strategic advantages. They tended to see 'computers' in purely an operational context—still essentially a DP era view.
2. They perceived a credibility gap between the 'hype' of the IT industry as to what IT can actually do and how easy it is to do it, given the difficulties their organization had had in delivering the claimed benefits.
3. Top managers did not view information as a business resource to be managed for long-term benefit. They only appreciated its criticality when they could not get what they needed.
4. Despite the difficulty in expressing all IS benefits in economic terms, top management still demand to see a financial justification for investments.
5. Finally, and an increasingly apparent problem today, is that top managers have become action orientated with a short-term focus that militates against putting much effort into long-term planning, especially of IS/IT, given the other issues above.

In a similar UK survey, Wilson<sup>12</sup> identified a number of barriers that prevented an effective IS/IT strategy being developed and then implemented. Organizations claiming to have an IS/IT strategy (73 of the total of 186 surveyed) were asked to identify barriers inhibiting, first, the development of the strategy and, second, implementing it. In this survey, top-management commitment was less critical than the ability to measure

benefits from the overall plan, to deal with major business issues such as diversification or growth and to provide appropriately-skilled user and IT resources. The factors cited seem to reflect views based on the past evolution of IS/IT, rather than its future implications. The survey also highlights one or two of the 'softer' issues—politics and middle management's insecurity in the face of change. Ninety per cent of respondents claimed that the IS/IT strategy was either a formal, documented part of the business strategy, or that the strategy was aligned to strategic aims.

In a more recent survey of senior IS executives, Teo and Ang<sup>13</sup> identified the major problems associated with the IS/IT strategy process. Dividing the process into three phases (the launch phase, the plan development phase and the implementation phase), they reported that, in all three phases, failing to secure top management support is the most serious problem. Not having free communication flow and not being able to obtain sufficiently-qualified personnel are the other two major problems in the first phase. In the second phase, respondents reported ignoring business goals and failing to translate these goals/strategies into action plans as major problems as well. Table 3.2 summarizes the top problems in the first two phases.

Earl's survey of 21 UK companies, referred to earlier, ranked the unsuccessful features of strategic IS planning as: resource constraints, the strategy not implemented fully, lack of top management acceptance, length of time involved, and poor user-IS relationships. In research exploring the enablers and inhibitors of alignment between IS and business strategies, Luftman and Brier<sup>14</sup> identified the six most important enablers and the six main inhibitors (see Table 3.3). What is striking about these is that the same topics (executive support, understand the business, IT-business relations and leadership) show up as both enablers and inhibitors. Our research supports these conclusions.<sup>15</sup>

All these surveys indicate that several of the prime requirements for the effective formulation of IS/IT strategy revolve around people. Undoubtedly, it is essential for knowledgeable, experienced, highly skilled and well-motivated staff to be involved and for them to be committed to the work. This was borne out by the findings of Lederer and Sethi<sup>16</sup> in their survey of 80 companies. The pitfalls in establishing an effective IS/IT strategy process relating to people, which were among the most frequently cited, are listed in Table 3.4.

While all the foregoing problems and barriers focus on IS strategy, a number of them originate in the business strategy, and many of the same problems could be cited for business strategy development and planning. This is partly because the strategic developments required for organizations to meet the challenges facing them are often poorly served by traditional, functionally orientated business plans. For example, many

**Table 3.2** *Problems encountered in the IS strategy process (source: adapted from T.S.H. Teo and J.S.K. Ang, 'An examination of major IS planning problems', International Journal of Information Management, Vol. 21, 2001, 461)*

<i>Problems in launching the IS strategy process</i>	<i>Problems with the IS strategy process</i>
1. Failing to get top management support	1. Failing to involve top management sufficiently
2. Not having free communication and commitment to change throughout the organization	2. Ignoring business objectives
3. Being unable to obtain sufficiently qualified personnel to do a proper job	3. Failing to translate business objectives and strategies into action plans
4. Delegating responsibility to an individual without sufficient experience, influence or time to do a thorough job	4. Failing to involve users sufficiently
5. Not investing sufficient 'front-end' time to ensure that all strategy and planning tasks and individual responsibilities are well understood	5. Relying exclusively on user 'wish lists' for application ideas
6. Not having a steering committee that is highly committed	6. Neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy
7. Not having a clear-cut business strategy to guide the IS strategy effort	7. Not performing a top-down analysis to identify critical functional areas that the IS strategy has to support
8. Failing to anticipate new developments in IT that might affect the strategy	8. Failure to consider and explicitly evaluate alternative IS strategies in order to give top management a meaningful choice.
9. Ignoring the people and politics side of strategy formulation and planning	9. Failing to review the IS strategy with all managers so as to obtain support and cooperation for its implementation.

organizations have an impressive array of mission statements, objectives, values, critical success factors and performance targets, but when the task of translating the strategy into effective and coordinated action plans has been left to the functional directorates, it has all too rarely been consolidated and managed as an integrated business-wide program. The functions have been, on the whole, too focused on current problems to be able to put a satisfactory strategic perspective into their plans.

**Table 3.3** *Enablers and inhibitors of strategic alignment (source: J. Luftman and T. Brier, 'Achieving and sustaining business-IT alignment', California Management Review, Fall, 1999, 109-122)*

<i>Enablers</i>	<i>Inhibitors</i>
<ul style="list-style-type: none"> <li>• Senior executive support for IT</li> <li>• IT involved in strategy development</li> <li>• IT understands the business</li> <li>• Business-IT partnership</li> <li>• Well-prioritized IT projects</li> <li>• IT demonstrates leadership</li> </ul>	<ul style="list-style-type: none"> <li>• IT/business lacks close relationships</li> <li>• IT does not prioritize well</li> <li>• IT fails to meet commitments</li> <li>• IT does not understand business</li> <li>• Senior executives do not support IT</li> <li>• IT management lacks leadership</li> </ul>

**Table 3.4** *Pitfalls to planning, in relation to people (source: adapted from A.L. Lederer and V. Sethi, 'The implementation of strategic information systems planning methodologies', MIS Quarterly, Vol. 12, No. 3, 1988, 445-461)*

<i>Problems, listed in order of severity</i>
<ol style="list-style-type: none"> <li>1. Difficulty in obtaining top management commitment for implementing the plan</li> <li>2. Success of the approach is greatly dependent on the planning team leader</li> <li>3. Difficulty in finding a team leader who meets the criteria specified for the role</li> <li>4. Difficulty in convincing top management to fund the planning exercise</li> <li>5. Difficulty in finding team members who meet the specified criteria</li> <li>6. The exorbitant number of hours demanded from top management</li> <li>7. Failure to establish a permanent planning group as a result of the planning exercise</li> <li>8. Time and expense involved in finding planning support staff</li> </ol>

## THE ENVIRONMENT OF THE IS/IT STRATEGY

The requirement to determine the information systems strategy over an extended period demands that a consolidated approach should retain the flexibility to respond to changing business and organizational needs and incorporate new IS/IT options. In order to do that, the processes used to analyse situations and assess opportunities must be capable of being revisited in part, at any time, to assess the implications without a major rethink of the whole strategy.

In Chapter 1, a simple model relating business, IS and IT strategies was described (see Figure 1.6). In Chapter 2, a view of the business strategic process that considered the realities of attempting to plan in

an ever-changing environment was also described (see Figure 2.3). Combining this view from Johnson and Scholes<sup>17</sup> with the earlier, simpler model, a more comprehensive and pragmatic model can be defined, which describes the environment within which IS/IT strategy formulation and planning takes place.

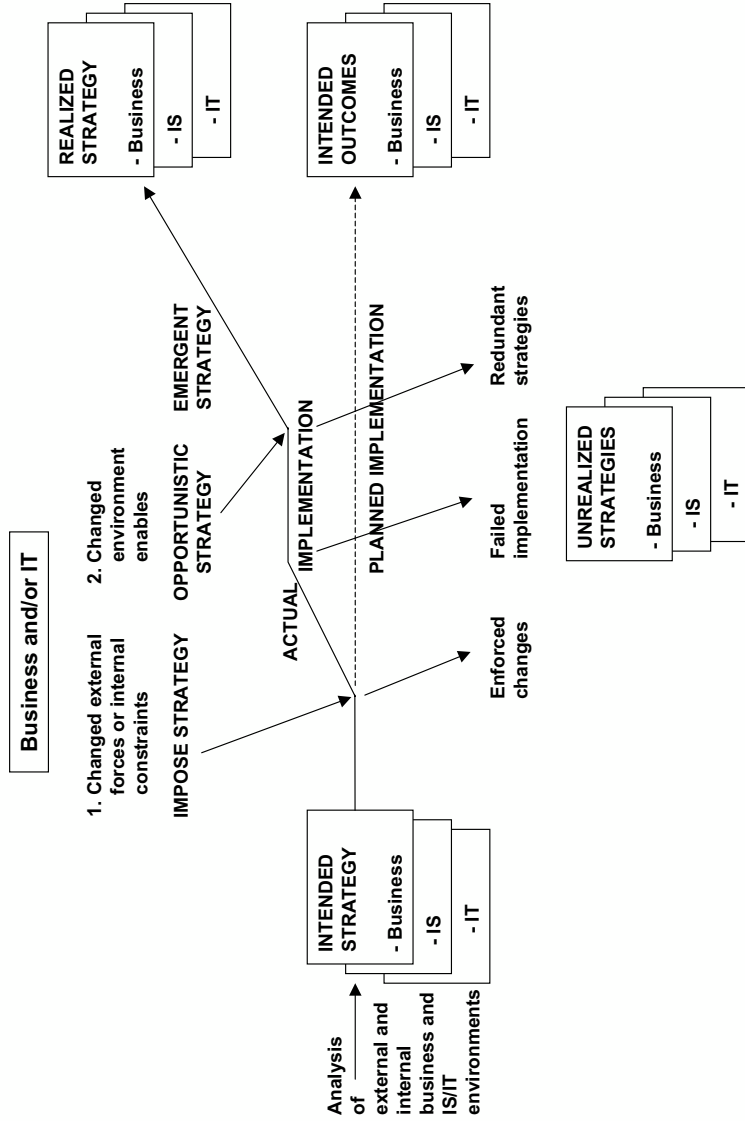
Figure 3.2 shows that, while, at any one time, a comprehensive analysis of the business and IS/IT internal and external environments can be carried out to define an intended set of strategies, it is unlikely that all aspects of these strategies will be realized. Changes will occur in both the business and IT environments, and these will cause changes to be made to the IS strategy. The 'intended' IS strategy may also fail to be implemented successfully and hence will have to be revised either in timescale or content.

In addition, changes in the business or IT environments may impose constraints on the IS strategy or open up new IS opportunities. These factors, which force changes from the intended strategies, will not always occur at convenient moments in the planning cycle! All three strategies, business, IS and IT, must be realigned whenever new opportunities or constraints emerge. Equally importantly (and this is often overlooked), these changes to the strategy will make parts of the old strategy redundant. In many organizations, considerable IS/IT effort and resource can be consumed pursuing effectively obsolete requirements because the plans, derived perhaps a year earlier, have been overtaken by events—events that have not been interpreted in terms of their effects on the IS/IT developments already under way. This problem can be compounded where large IS/IT projects are involved and the majority of the money has been spent—'we've started, so we'll finish' seems to be the rule, even if by finishing the system development no actual benefits will now occur! Even in such circumstances it is best to stop work and redirect the resources to the new emerging needs.

The need to be able to revisit and revise any aspect of the strategies implies that, as far as possible, all facets of the internal and external environments that can affect the strategies are included in the initial derivation. Then, if any of them change, the implications of the changes can more easily be identified and understood in order to revise the strategies appropriately.

## **THE CHALLENGES OF PLANNING STRATEGICALLY FOR IS/IT TODAY**

The necessity to improve return on investments, coupled with the high risk potential of investing very substantial sums unwisely, have long been



**Figure 3.2** A revised model for IS strategy (source: after Johnson and Scholes, 2002)

key objectives for developing a strategy for IS/IT. Prominent among them are the vast sums of money that organizations have spent on 'e-commerce' or 'Internet' strategies that have, on average, delivered little business value to date. In addition, an ever-increasing number of examples, cited as demonstrating improved competitive success resulting from implementing computer and telecommunications systems, has also boosted awareness and interest. American Airlines, Merrill Lynch, American Hospital Supplies, Thomson's Holidays and several others were reported so extensively, in the 1980s and 1990s, that they have been elevated almost to legend status. More recently, the exploits of some organizations on the Internet such as Amazon.com, Lastminute.com, eBay.com and Betdaq.com, coupled with the media hype, has also raised awareness. There are many other examples that have so far received less widespread coverage but are equally significant as sources of ideas for other organizations. Many of these are referred to throughout this book.

As the focus on delivering customer value and improving customer service becomes ever more critical for so many enterprises, and competitive, economic and regulatory pressures mount, there is a recognition by enlightened businesses that incremental and disconnected improvements will not be good enough. There is also the growing recognition that delivering satisfactory performance is dependent on robust business processes. This is the environment in which gaining control of key processes has become a popular focus of attention, and many major change programs revolve around improving the performance of core business processes. In this environment, business process redesign gained a strong foothold, which continues today. Hammer<sup>18</sup> cautioned against 'paving the cow paths' with IT, and called on managers to look for opportunities to redesign processes to take account of the opportunities provided by IT.

In this context, a fully-integrated business strategy framework is needed that can encompass the development and implementation of major change programs, a series of supporting strategies in response to key business drivers, and the management of a coordinated program of strategic and tactical projects (see Figure 3.3).

Developing an IS/IT strategy in today's competitive environment is not easy to achieve. By definition, it must be deeply embedded in business issues, since it promotes IS/IT as direct tools of competitive strategy. At the same time, it must continue to meet information processing and managerial information needs, but its primary orientation has turned from merely cost reduction to direct value adding; from mainly administrative efficiency and organizational fluency to delivering competitive impact, both to gain advantage or avoid being disadvantaged. A key point is that its objectives and priorities are derived from business

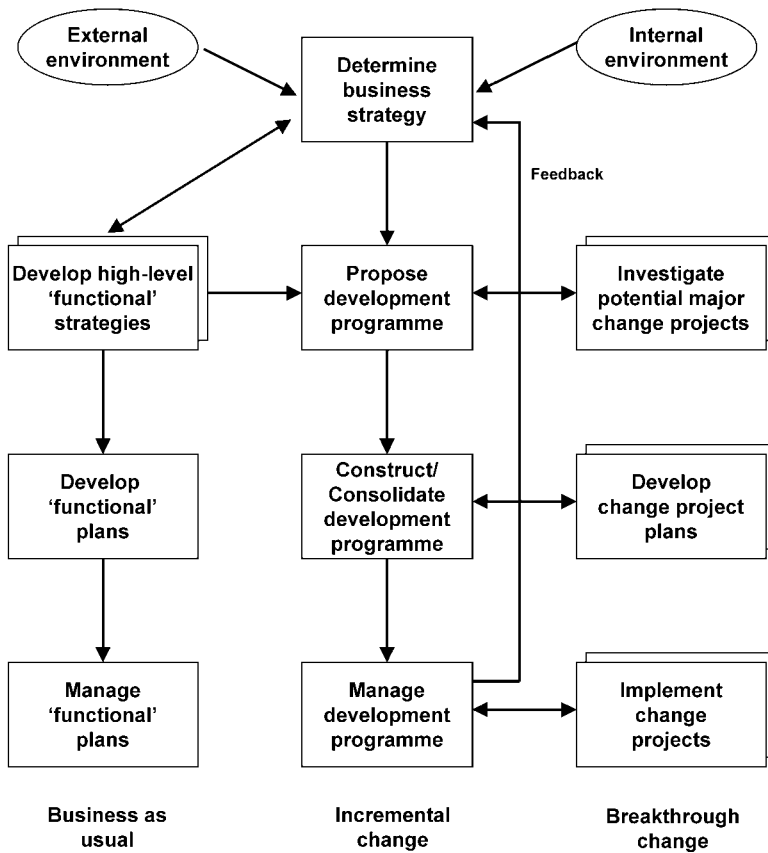


Figure 3.3 Integrated business strategy framework

imperatives. Long-term benefits are sought from the strategic exploitation of information and it has a formulative part to play in advancing business strategy.

The business environment and approaches to strategy formulation and planning were examined in Chapter 2, which laid out in some detail the elements that make up the wider business environment and the more specific aspects of strategy. If the contribution from IS/IT is to be maximized, it is necessary not only for IS specialists to understand business issues but also for business people to have an awareness of the potential offered by technology. Unfortunately, this close working relationship does not always exist in organizations. In Chapter 8, we explore how an organization can begin to improve this relationship: failure to do so will severely impact any attempt to develop a more strategic perspective of IS/IT.



There is no standard approach that can guarantee success, and this book is not attempting to put forward a prescriptive methodology for conducting IS/IT strategy formulation and planning. It would be foolhardy to attempt to do so, since each situation is unique, warranting careful consideration, and requiring its own tailored approach. Rather, a framework and 'tool box' of techniques for IS/IT strategy formulation and planning are proposed that can be adapted to fit a wide spectrum of environments from the most to the least sophisticated, and which responds to the many external and internal, business and technical drivers.

Similar views about the need for flexible and evolutionary approaches to the IS/IT strategy process were expressed almost two decades ago by Sullivan.<sup>19</sup> He proposed a number of key elements within effective planning approaches that were needed to enable the realization of the competitive potential of IS/IT. Even today, they are still valid, and are embedded in the approach advanced in this book. He proposed:

- The search for competitive advantage through the application of IS/IT.
- A broader scope for planning, which incorporates a wider spectrum of technologies, rather than just traditional uses of IT for processing data and information.
- The need to unite technologies, as they emerge, as well as with the installed base.
- The development of information, systems and technology architectures to guide the introduction and integration of new and existing systems and technologies.
- A shift away from traditional, formal structured plans toward much more flexible approaches, whose aims are to find and implement the most important initiatives for the benefit of the business, and epitomized by their:
  - responsiveness in being able to shift resources to where they are needed;
  - increasingly creative use of IT by users;
  - ability to evaluate options;
  - use of benchmarking to establish standards of performance of external and competitive organizations.

Similar conclusions have been reached by Earl, Segars, Lederer, Doherty and others.

The framework and outline of the process for developing IS/IT strategies are described in this chapter, and the techniques for assessing

the environment and identifying information needs and future opportunities are covered in Chapters 4 and 5.

## **ESTABLISHING AN IS/IT STRATEGY PROCESS**

### **A Continuous Process**

Once a strategic perspective on IS/IT is established and a strategy process is instituted, it should become a continuously evolving process, where the strategies and plans are refreshed regularly and even frequently, according to external forces, business needs and opportunities, the planning timetable, culture of the organization, and the benefits delivered by implementation of the strategy. Depending on the scope of the strategy process, the main deliverables, hard or soft, may be virtually unchanged or may be completely revised. For example:

- plans arising from the IS/IT strategy need to be updated as required, the frequency determined by the underlying pace of change;
- development or acquisition of applications takes place in response to prioritized demands, tightly linked to broader business initiatives;
- the supporting IT infrastructure, once defined to meet a business strategy, should have a relatively long lifespan;
- mechanisms for monitoring internal and external business and IS/IT perspectives are essential elements of the strategic management process and, once put into place, are likely to stay in place, although the parameters monitored will vary.

### **A Learning Process**

As well as being a continuous process, strategic IS planning is also a learning process. Both IS specialists and business people are becoming more aware of business and technology issues, and learning to identify and exploit opportunities within a cooperative environment. At best, the culture of partnership between the IS function and the rest of the organization reorientates itself to treat information, systems and technology as core resources in the day-to-day life of the business and its continuing development. This also takes place alongside a continuing evolution in the maturity of the IS function.

For the organization that does not have a strategic perspective on IS/IT and has not begun to develop an IS/IT strategy, there is an understandable problem in not knowing how to go about it. It is a far from

trivial change to go from the tactical planning used to develop information systems based on catalogued users' demands—usually referred to as 'wish lists'—or from IT technical infrastructure planning, to developing an IS/IT strategy closely aligned with the business strategy, especially since the outcome of such an approach is very likely to have far-reaching impacts on the future role of the IS/IT in the business and the role of the IS function.

When the move is from traditional developmental planning, focusing on technology delivery, to IS/IT strategy development, where the target applications portfolio is more balanced and where the emphasis is on future strategic importance, then several characteristics need to change. Typically, timescales for the planning horizon move out from one to two or more years, and development and provisioning plans are driven by current and future business needs rather than being incremental extensions from earlier developments or recorded backlog lists. Alternatively, the shift may not entail an extension of the planning horizon, but a radical change to achieve rapid strategic moves, where the focus is on flexibility, responsiveness and fast delivery.

### **Initiating the Strategy Cycle**

Before embarking on the development of an IS/IT strategy, whether for the first time or as part of a continuous strategic management process, there are many aspects to be considered, so that a clear brief and Terms of Reference (TOR) can be agreed for the planning activity. These will not be set in stone, but should give a sound foundation to build on.

It is crucial that an adequate amount of time and effort is spent in the process of planning for planning, since the effort spent here can determine whether 'success' is achievable. How to go forward depends on the maturity of the process, particularly experiences to date, the starting point, the purpose of planning and the targets being sought, if they can be defined. It is also markedly affected by the issues and stimuli prompting the activity. Box 3.1 contains a list of questions that require answering before embarking on an IS/IT strategy process. The key questions are examined in the following sections, although, clearly, the answers will vary widely within different organizational contexts.

It should be re-emphasized that there is no one 'best' way to tackle strategy formulation and planning for IS/IT. It is essential to assess the situation and the needs carefully, and then to deploy the most appropriate people, methods and techniques to suit this context. Each organization merits a different approach, which will vary according to its current circumstances, and the stimuli prompting the need for strategy

**Box 3.1** Questions that need to be answered before embarking on IS/IT strategy formulation and planning

- What are the purpose and the main stimuli prompting the need for planning, and what are the key business drivers to be addressed?
- What aspects of the current business and technical environment, and what issues, constraints, underlying problems and risks are likely to affect the conduct and outcome of the process?
- What should be the scope of planning, and where should planning be focused—on the corporate organization as a whole, at strategic business unit level or on specific core business processes?
- How can the IS/IT strategy process be effectively integrated with business strategy?
- What are the expectations and objectives to be met, and what deliverables are required?
- How should the IS strategy be ‘marketed’ and consolidated with the other elements of the business strategy to ensure that optimal support and cooperation are obtained from the organization?
- Should the approach employed be totally prescriptive, tailored or a mixture of both, and how can the organization build on its previous experience of IS/IT strategy formulation and planning?
- What are the most effective approaches, and which techniques achieve the best results (e.g. determining the critical success factors associated with top-level business functions or employing business analysis down to a very detailed level)?
- What resources, from which areas of the business, fulfilling which roles and responsibilities, and with which skills, should ideally be involved in the process and are they available? What training will be required?
- What other resources are required (automated tools, administrative support, physical facilities)?
- How long will the strategy process take and what will it cost?
- How should the process be steered and managed?

development. Once the questions are answered, the TOR can be created and senior management’s role in the process established—their active involvement is essential from the start, as it signals that ‘strategy and planning’ is actually going to happen.

### **Establishing Success Criteria**

What is a good approach to IS/IT strategy development and how can success be ensured and measured? Assuredly, the impact of an IS/IT strategy is not instantaneous, and it may, in fact, take some time—often two or more years—between embarking on an IS/IT strategy formulation and planning process, for the first time, and demonstrating any significant impact on business practices and results.<sup>20</sup> The outcome of strategizing and planning varies widely with:

- the starting point (how comprehensive or how constraining is the current application portfolio and how appropriate are IT supply services);
- the opportunities (whether to search for some ‘early winners’—easily-achieved, high-impact applications—or to build or acquire a portfolio of applications that meet the current and future business requirements);
- the degree to which top management is involved in and committed to the process;
- the history of IT, particularly ‘IS/IT success’ in the organization.

These and other issues such as defining and implementing an appropriate relationship between the IS function and the business, and establishing objectives for IS/IT, have to be addressed.

At the outset, it is important to distinguish between IS/IT objectives and implementation issues. The objectives for an IS/IT strategy should not be concerned with object orientation, relational database technology, the Internet, HTML, hardware specification, or with end-user or central IT development. These are prominent implementation issues. Any objectives set for IS/IT must be similar to those for the business, focusing on, for example, improving customer service, enhancing productivity or providing the means for product differentiation.

At the same time as defining objectives for the strategy process, it is helpful to sharpen the perspective on these by establishing criteria for how success will be measured. Clearly, it is impossible to give a general set of success factors for any strategy process, as these will be dictated by a number of factors including objectives, stimuli and perception of the business community. Establishing success criteria is likely to reveal any ‘hidden agenda’ behind the stated TOR and objectives (e.g. understanding and meeting the expectations of executives, or ‘achieving and maintaining credibility of the IS function in the business environment’). They may also include one or two reminders to the strategy team (e.g. to avoid delving into too much detail at any point, or to keep the final product in

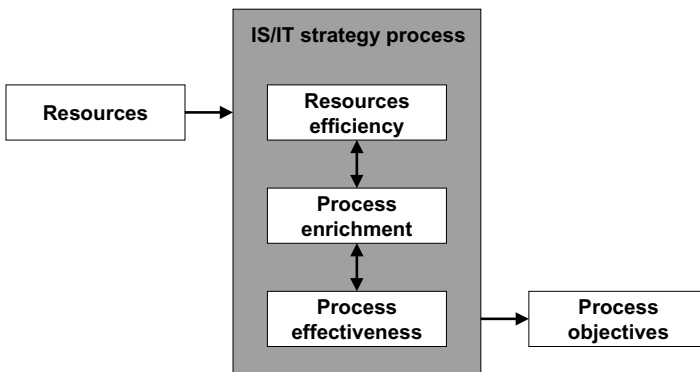
mind). Once success criteria and measures are agreed, they can be reviewed regularly; at least, at every progress meeting, to ensure that they are being satisfied.

The primary objective of developing an IS strategy is to identify a value-added portfolio of applications that will have a strategic impact on the organization and increase its performance. Yet, a key challenge is how to define and measure strategic impact and how to relate the approach to IS strategy formulation to organizational performance. There are a number of reasons that this is difficult, including the long lead time before benefits are realized, the intangible nature of certain benefits and different purposes for engaging in an IS/IT strategy process.

There are a number of ways in which IS strategy success can potentially be operationalized and measured.<sup>21</sup> In a conceptual treatise, King<sup>22</sup> suggested a framework to measure success, arguing that the measurement of success should be multidimensional, and based on both judgemental and objective assessments. Dimensions proposed by King include the effectiveness of the strategy approach, its relative worth, the role and impact of IS strategy, the performance of IS/IT plans, and the relative efficiency of the strategy process, the adequacy of resources made available and strategic congruence.

Ramanujam and Venkatraman<sup>23</sup> conducted an empirical study involving 207 organizations in the USA, aimed at examining the relationship between the IS strategy process and success dimensions. The IS strategy process dimensions include contextual dimensions (resources and resistance levels) and systems design dimensions (internal, external, functions and techniques). IS strategy effectiveness dimensions include system capability, objective fulfilment and relative competitive performance. The study found evidence of a strong relationship between the strategy process dimensions and strategy effectiveness dimensions. The findings also indicated that the most important influence on the effectiveness of the IS/IT strategy process is the extent of stakeholders' resistance, followed by the resources committed to the exercise.

More recently, Segars and Grover<sup>24</sup> conducted an empirical study involving 253 senior IS executives in the USA, aimed at exploring and examining success dimensions and measurements. Using the earlier work of Ramanujam and Venkatraman, they described four common approaches to measuring IS/IT strategy success: goal-oriented judgement, comparative judgement, normative judgement and improvement judgement. *Goal-oriented judgement* refers to the assessment of the degree of attainment in relation to the goals of the strategy process. *Comparative judgement* refers to the comparison between a particular system of planning and other similar systems. *Normative judgement* refers to the comparison between a particular system of planning and



**Figure 3.4** *Success criteria*

an ideal system. *Improvement judgement* refers to the assessment of how the strategy process has evolved or adapted in supporting organizational strategic planning needs. Segars and Grover note that comparative judgement and normative judgement have a narrow focus and, therefore, are more relevant to assess a specific approach to strategy formulation, whereas goal-oriented judgement and improvement judgement have a wider focus and, therefore, are more relevant to assess the broader processes involved in developing this IS/IT strategy.

From analysis of the research literature,<sup>25</sup> the following success dimensions can be gleaned:

- improving the contribution of IS/IT to the performance of the organization;
- extent of alignment of IT investment with the business strategy;
- gaining competitive advantage through deployment of IS/IT;
- identifying new and higher payback applications;
- identifying strategic applications;
- increasing top-management commitment;
- improving communications with users;
- better forecasting of IT resource requirements;
- improved allocation of IT resources;
- development of an information architecture;
- increased visibility for IS/IT in the organization.

Figure 3.4 illustrates a model that relates resource inputs to the IS/IT strategy process and the objectives of the process. IS strategy process dimensions can be summarized in three aspects: resource efficiency, process enrichment and process effectiveness. This multidimensional

perspective of the IS strategy process provides a more comprehensive method of assessing success.

*Resource efficiency* refers to the efficient use and management of input to the process or resources required for the process. This dimension, in some respects, is similar to ‘the relative efficiency of IS planning system’ and ‘the adequacy of IS planning resources’, as described by King. It deals with the ability of the strategy process to manage the input resources in order to maximize their use. Resources involved in the IS/IT strategy process include financial resources and time and effort of IS staff, users and management.

*Enrichment* is process-oriented and refers to the improvement, enhancement and adaptability of the IS/IT strategy process, enabling it to be responsive to continuous changes in the environment and to produce incremental learning. It focuses on communications, interaction, innovation, learning, commitment, motivation, control, change and improvements, advanced by conducting a strategy exercise.

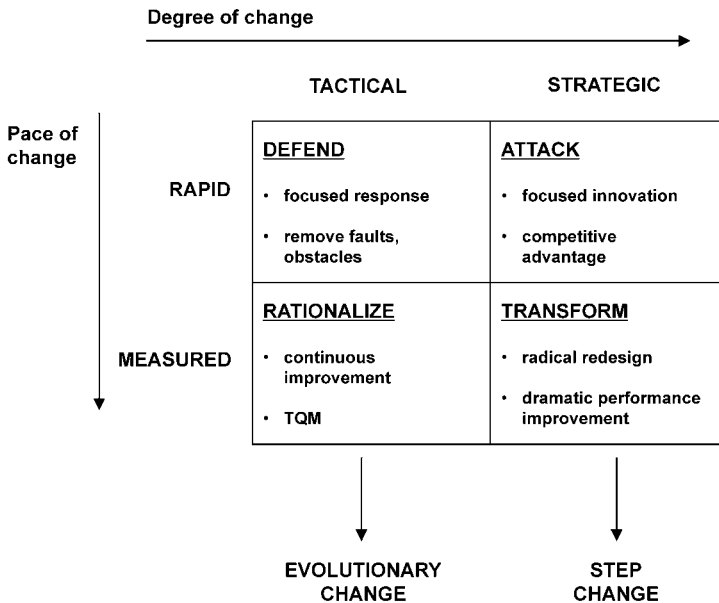
*Effectiveness* is output-oriented and refers to the effectiveness of the IS/IT strategy process in meeting the intended goals. Goals of the process include predicting future trends, evaluating alternatives, avoiding problem areas, enhancing management understanding and knowledge, improving short-term and long-term performance, IS–business alignment, agreement concerning development priorities, viable implementation schedules and clarifying managerial responsibilities.

## **PURPOSE AND STIMULI DRIVING IS/IT STRATEGY DEVELOPMENT**

The purpose in developing an IS/IT strategy is to ensure that the best possible value can be delivered from IS/IT investments. This can be achieved by tightly aligning the IS demand to the business strategy—strategic alignment—and by exploring opportunities for IS/IT to shape the business strategy where it is possible to improve the overall competitiveness, productivity and fitness of the organization to meet the forces acting upon it—competitive impact.

The arrival of threats and opportunities cannot be forced into a convenient timetable to suit the business strategy cycle. An organization that is setting out to be flexible and responsive needs to be prepared to respond to fast-moving stimuli and to change its plans accordingly, and the IS strategy needs to be able to respond in the same way. Figure 3.5 shows how the pace of change in the external environment can prompt business responses. The effect can mean activity in all four quadrants, with IS/IT following the business lead. There is always the





**Figure 3.5** *Dimensions of change*

danger that all of the activity falls into the ‘Defend’ box, but IS/IT can help to strengthen the ability to respond by building up strategic capability.

There are a number of sources of stimuli for IS/IT strategy development, or revising the existing strategy, any of which may have an effect on the aims and objectives of planning.

*External Business Factors.* These factors drive the development and revision of business strategy. They were discussed at some length in Chapter 2, and were mentioned above.

*External Technology Factors.* These sometimes pose threats or opportunities that directly stimulate IS/IT strategy activity. For example:

- competitive opportunities and threats (real or potential) based on new IS/IT developments (e.g. the Internet and wireless technologies);
- new products or markets created by IS/IT;
- major cost-factor changes giving real or potential competitive advantage, producing an urgent need to improve productivity via technology or risk losing business.

If the emphasis in the strategy is on exploitative and entrepreneurial use of technology, it probably implies new attitudes to the use of IS/IT are

required, as well as for new skills and for different people to become involved with new types of technology. It is important that the IS function keeps abreast of technology trends, innovative use of technology and how competing or similar organizations are applying IS/IT, so that they recognize when significant and achievable opportunities emerge, or when to respond to technology threats.

*Internal Business Factors.* Changes in the nature of the business or the structure and organization of the enterprise may result in the need to revisit or reconsider the IS/IT strategy. The stimuli may be as diverse as:

- response to the regular business-planning cycle or budgeting cycle;
- takeover by a new owner(s) or the appointment of a new CEO or management team—this may simply mean a new attitude to technology, or it may herald more drastic change if it occurs as a result of a merger or takeover;
- major rationalization caused by, for example, downturn in the economy, necessitating a severe trimming of IS/IT budgets;
- restructuring—often resulting from corporate strategic planning (e.g. changing a business from a production-led to a marketing-led orientation, and leading to radical business re-engineering);
- new products or markets or channels-to-market—where there is a recognition that the present infrastructure is incapable of adapting to new requirements;
- recognition of the importance of strategy formulation and planning for IS/IT, based on the need to increase its direct contribution to the business.

*Internal Technical Factors.* These factors may arise from the need to deliver increased value for money, to cut costs, to improve the working relationship between the IS function and the business, the recognition that the current environment and legacy systems are starting to ‘creak’ and numerous other factors. They may all prompt IS management or business management to recognize the need to reassess the role of IS/IT and its current strategy. For example, the inability of many legacy systems to handle the new millennium dates absorbed the greater part of many IT budgets for up to two years to solve the so-called Y2K problem.

### **Assessment of the Current Organizational Environment**

During the initiation stage of strategy formulation, the current organizational environment and any pertinent issues will need to be understood, so that the planning activity is set up to deal with these factors. While the

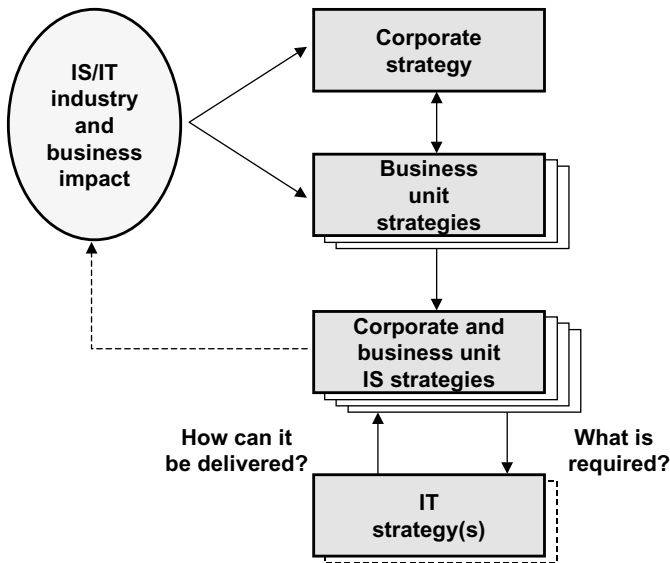
precise issues will be specific to the organization at the time of planning, there are common factors worth assessing so that the IS strategy process is properly positioned and set up to be successful such as:

- A broad overview of the business perspective, as far as it is available—its long-term mission, goals, vision for the future, strategy, drivers for change, proposed change initiatives, structure, values, culture, management style, performance monitoring and any short-term critical demands. Detailed analysis and interpretation of all these will take place later on in the planning process.
- How effective IS has been in supporting business strategy in the past, and the composition and strengths and weaknesses of the current application portfolio.
- The current role of IS/IT in the organization, its effectiveness, coverage, structure, skills and maturity, and the role IS/IT is playing in comparable external organizations in the same industry or similar businesses.
- The views held by business managers regarding IS/IT.
- How IS/IT strategies have been developed in the past, their deliverables and the benefits derived.

### **SCOPE, OBJECTIVES AND EXPECTATIONS**

Having confirmed the purpose of the IS/IT strategy process and assessed the current organizational environment, it is then necessary to determine clearly the scope and objectives of the planning activities, and to ensure that the business has clear expectations of what will emerge as a result. In establishing the scope, it is important to reiterate a point made in Chapter 1. While most IS/IT practitioners understand that their objectives have shifted, there is still a tendency to consider technology issues alongside business needs in such a way that confuses the supply (technology as a means of delivery) and demand (business needs expressed as information systems requirements). This is why it is critical to make the distinction between IS strategy and IT strategy.

IS strategy deals with *what* to do with information, systems and technology, and how to manage the applications from a business point of view. It thus focuses on the close alignment of information and systems in support of business needs and on identifying and exploiting competitive opportunities for IS/IT. IT strategy designates *how* technology is to be applied in delivering information and how the technology resources are managed to meet the range of business needs.



**Figure 3.6** *IS/IT strategy in context*

### The Strategic Business Unit (SBU)

In a large organization, where there are likely to be a number of distinct business units, it is probable that each should have its own IS strategy, tightly coupled to its business strategy. The available evidence suggests that organizations that have done this achieve and recognize a more direct contribution from IS/IT to business performance. It does not necessarily follow that there should be IT strategies one for one with IS strategies in that organization. A single IT strategy may be appropriate for the whole organization, especially if there is centralization of other corporate functions. On the other hand, it may be more effective to focus IT support at divisional, regional or even unit level in a diverse and highly-distributed enterprise (see Figure 3.6).

A PIMS/MPIT study<sup>26</sup> showed that IS/IT is, generally, more effectively deployed in organizations where vertical integration is between 50 and 75% (i.e. 50–75% of total business costs are under the control of the business unit), enabling management to control the degree of systems integration across functions. Second, the study showed it is more feasible to develop a coherent IS/IT strategy for a strategic business unit than for any other organizational grouping. Given the arguments above, this would seem to follow.

In practice, information flows through the business, along its primary

business processes, to and from customers, across logistics and product processes, and to and from suppliers, to enable supply and demand and the use of resources to be reconciled. The primary systems requirements depend on effective linkages through these processes. The secondary/supportive control and planning systems can be overlaid on that structure, although, in the past, these types of system have often driven the primary systems requirements. This aspect will be considered in more detail when the value chain analysis techniques are discussed later in Chapter 5, and also when business process redesign and business re-engineering approaches are discussed.

### **Implications of Focusing IS Strategy Formulation on the SBU**

Considering the implications of focusing strategic planning activities at the business unit level, as reflected in Figure 3.6, some conclusions can be drawn:

- Historically, ‘strategies’ were essentially the cumulative total of functional and/or departmental systems ‘strategies’, which often lacked integration with the business and each other. Personal computing, in the 1980s, often caused an even lower set of ‘individual’ strategies to develop, as discussed in Chapter 1. The senior management and IS management reaction was often to attempt to develop a ‘corporate IS/IT strategy’. There is little evidence that this can be achieved. Most case histories of the attempts of large companies to develop an overall, comprehensive ‘corporate IS/IT’ strategy from the centre show that lengthy planning blights descend on the units and then nothing results! It can work where all the units are replicas of one another, operating in different locations. Unless the corporation is essentially a single business-unit company, or the units are nearly identical, the task is almost impossible.
- Developing IS/IT strategies at ‘group level’ is equally unlikely to be successful, unless it is a group of very similar businesses. There are potential dangers associated with attempting to develop common systems across group companies. Unless the whole organization is very similar in terms of its products, operational strategies and markets, then each unit is likely to have very different business needs. In this case, an IS strategy that meets one unit’s needs is not likely to be optimal for another’s. Even when the individual business units are very similar, they are still likely to have different IS priorities. For example, their market penetrations may be different, or their customer base has a different profile or, because of scale factors, their unit costs are very different. Even where organizations

have 'imposed' common strategies for ERP or CRM applications, the implementation in each unit may vary considerably, producing little commonality in terms of systems, although the software package is the same. Often, group reorganization can occur such as the refocusing and restructuring of many organizations in the 1990s from a manufacturing- or product-based structure to more market-based, making a nonsense of any previous group systems synergy.

- In conglomerates, where the buying and selling of businesses is a key part of the corporate strategy, it obviously makes most sense to align the strategy to each business unit, and it is probably impossible, in reality, to do much else.

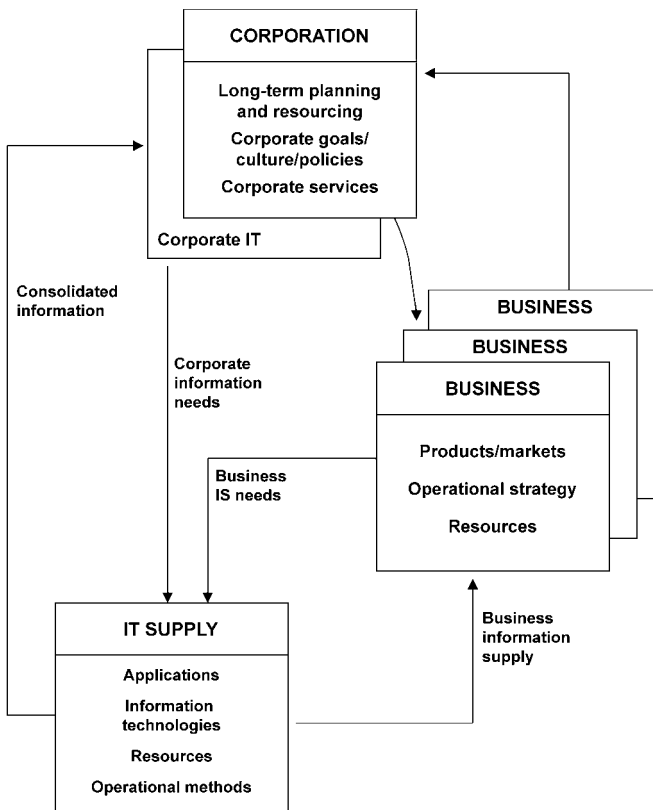
### **IS Strategy for the 'Corporate' SBU**

The 'corporation', in many cases, is best seen as a business unit in its own right—it will have information system needs based on the way it chooses to manage the component businesses, whatever at any one time they are. At one end of the scale, a holding company may only be concerned with a very limited number of objectives and, as such, may only need a few elementary enquiry and modelling systems, to access, say, profit and revenue figures. Alternatively, there may be a need for an IS strategy to meet corporate information requirements, which are entirely different from those of the business units, whose interests are in supporting their own particular business strategies. Corporate information needs support long-term planning and allocation of resources, and draw on consolidated information from the business units. Frequently, common policies for IT across the whole organization are implemented to achieve economy of supply and consistency across internal interfaces. The focus of strategies at the corporate, business and IS/IT levels and the relationships between these levels are illustrated in Figure 3.7.

### **Selecting a Starting Point**

While the scope may be obvious when there is only one SBU under consideration, it may be more difficult when there are several. A few pointers that are worth considering in making the choice of starting point, for example, when choosing an SBU where:

- strong management commitment and involvement are assured;
- clear business plans and direction are known and available;
- the role of IS/IT is already respected;
- strategic business planning is well established.



**Figure 3.7** *Relationships and information demand/supply*

In cases where an IS/IT strategy process is not well established, it might be more appropriate to scale down the scope of the exercise so that the learning curve can be contained and the new techniques and processes of IS strategy formulation and planning can be exercised on a small scale to demonstrate their validity, before being applied to a larger organizational unit.

### **Consolidation across Business Units**

If more than one unit is engaging in an IS/IT strategy process, and especially if the units are similar in their business profile, then cross-referencing during the strategy process is a good idea. Alternatively, planning activities can be staggered to take advantage of common elements. There may well be common factors emerging from the outputs for each unit. Opportunities for mutual support can be as diverse as:

- Acting as sounding boards during analysis, perhaps holding some joint-opportunity identification workshop sessions.
- Sharing tools or, at least, using common tools for capturing planning output.
- Sharing application portfolios or individual applications. Similar portfolios do not necessarily emerge from what, at first sight, are similar businesses. Synergy is most likely to occur when the product/industry profiles are in comparable stages of maturity, when their generic strategies are similar and when there are sufficient common features in their business competitive strategies.
- Sharing software developments, if appropriate. When environments and implementation policies differ, this may only be for requirements analysis.
- Building common conceptual models for selected parts of the business. This may occur even when the application portfolios differ considerably. There may still be substantial overlap in the information architecture, and benefits from transferring 'best practice', as well as saving in cost and time from sharing high-level models, common naming standards and data dictionary definitions. This is covered further in Chapter 10, which considers information management. Some rationalization may be needed between models for different units.
- Allowing for effective intercommunications, by using consistent information definitions. This could facilitate sharing databases, or pave the way for sharing systems, implemented in different environments, or to make them available to other businesses in the organization.

Some large businesses have well-defined, comprehensive corporate IS/IT management strategies, which impact all the business units. Such strategies can include policies for consolidation (e.g. to combine business data models across the corporation). However, if corporate headquarters are only interested in, say, financial considerations, then the potentially-massive task of rationalizing models across a large enterprise would not be sensible or justifiable, except for the finance functions.

### **Objectives**

The objectives for IS strategy development and planning are primarily derived from the business objectives and drivers for change. It is necessary to ensure that these objectives are sensible and achievable given the current situation and available resources. A very general set of objectives may be set as in Table 3.5. They could form a blueprint set of objectives for introducing a strategy process for IS/IT into an organization, but they



**Table 3.5** *General set of objectives for IS/IT strategy formulation and planning*

To build a robust framework for the long-term management of information, information systems and information technology and to:

- Identify current and future information needs for the organization that reflect close alignment of business and IS/IT strategies, objectives and functions. Recognize that the needs of the business will evolve, and that long-term needs are likely to change.
- Equip the IS function to be responsive to fast-changing business needs, and to be able to meet urgent requirements.
- Determine policies for the management, creation, maintenance, control and accessibility of the corporate information resource.
- Reposition IS function more centrally in the business, with representation at top management level.
- Ensure that a sound information systems architecture is created so that high-quality systems can be built and maintained.
- Identify a portfolio of skills that will be required over the lifetime of the plans, and develop migration plans to overcome weaknesses and exploit the skills in the IS function.
- Determine an effective and achievable organization structure for the IS function.
- Ensure that the IS function is outward looking and not focused internally on technology issues, and that the aims of the function are not only clearly linked to business needs but also widely communicated.
- Ensure that there is an acceptance of shared responsibility between IS/IT and business people for the successful exploitation of information and technology.

hardly meet the real-world conditions normally encountered. Usually, there are pressing stimuli and obvious problems to be resolved. These, in turn, predetermine the focus and critical requirements. Clearly, every case is different and must be examined on its merits, balancing needs, starting position, resources, etc.

Even when the primary objectives are the alignment of business and IS/IT, and the pursuit of competitive advantage, it is likely that the recommendations will include the creation of an integrated architecture, coupled with the stabilizing of the information resource and minimizing maintenance, among other things.

### **Expectations**

It has been stated several times that no two strategy formulation and planning initiatives will have the same objectives. The variations arise because of factors such as:

- the size of the business unit under consideration;
- the sophistication of the current application portfolio and current IS/IT operation;
- the stage of development of the organization's strategic processes—as discussed in Chapter 2;
- the immediate problems facing the management team.

Depending on the reasons that prompt IS/IT strategizing in the organization, different emphasis may be placed on certain activities and deliverables. For example, a set of common scenarios that reflect varied expectations are given in Box 3.2. They illustrate how the focus of strategy and planning may vary from business to business. There are others that are rather more 'tactical' in nature—for instance:

- Justification of the IT budget—it is quite common for IT management to be under attack from senior management for the seemingly endless rapid increases in IT budgets. If the budget can be directly related to the business strategy, these attacks can be avoided.
- How to select new technological environments for the future.
- How to distribute data and systems development capabilities to end-users.

It is also often wise to state clearly the reverse of objectives and scope (i.e. what the strategy process will not do), for example:

- no recommendations will be made concerning specific hardware and software products;
- overseas and branch companies are outside the scope.

## **AN IS/IT STRATEGY FRAMEWORK AND APPROACH**

The process of strategy formulation for effective exploitation of IS/IT is complex, if tackled comprehensively. It needs to address several dimensions within its overall scope, and, thus, a combination of approaches and tools are required. It seeks to satisfy efficiency, effectiveness and competitive or value-adding objectives. Its implementation timescales encompass the immediate future and a time horizon in keeping with the horizon for the business strategy. While the critical future applications are probably 'strategic' systems, it is likely that the planned development portfolio will include entries in all quadrants. In addition, there is a high probability that improved integration of information and systems is needed. Because of the legacy of current information and systems

**Box 3.2** Common scenarios indicating expectations from IS/IT strategy process

- *Gradual evolution of IS/IT strategy:* where alignment with business strategy is relatively new, or being pursued for the first time, one focus of IS strategy may be to effect a gradual reorientation from a technology-based to a business-based focus.
- *Gaining management understanding:* in an environment where there is a low level of awareness of the potential of IS/IT among the business community and a history of disappointed expectations from the business viewpoint, the focus may be to determine objectively the value of the contribution made by existing systems to the current and future needs (where known) of the business.
- *Determining priorities for allocation of budget and resources:* frequently, one of the main objectives of strategy is to develop prioritized plans for provision of information and systems. These could stem from new systems, enhanced existing systems and more accessible integrated information. Invariably, this is coupled with the need to budget and resource from an insufficient supply of funds and skills.
- *Gaining a competitive edge:* seeking out opportunities for using IS/IT as a competitive weapon, directly or indirectly, in offensive or defensive competitive activity is often quoted as an objective. It would appear that few organizations, including it for the first time in their planning, know how to go about finding the most promising opportunities.
- *Finding an early winner:* a high-risk objective for strategic planning may be taken up by the IS/IT group to find one or two 'prizewinner' ideas that can be implemented quickly, bringing significant benefit to the enterprise. The underlying reason may be to win over reluctant supporters within the executive controlling body to commit to IS/IT taking a more central role in the business.
- *Defining a global information architecture:* the focus here is the creation of a global architecture for each business unit, where the purpose is to instil consistency and integrity throughout the information resource and to provide a springboard for comprehensive and flexible provision of information from an integrated resource.

infrastructure, this could be a very complex and costly operation, and requires careful justification.

As far as recommending an approach to IS/IT strategy formulation, this book supports a mixture of the formal and informal. Formal techniques are used if the requirements demand that all appropriate elements of the business are explored in a structured manner, and the business drivers are applied to achieve effective prioritization within a consolidated program of business IS initiatives. But, informal techniques are also included to capture innovative ideas where they arise in the business, both during the initial strategy process and thereafter. The overall approach put forward in the book consists of a composite model in which business planning, business analysis, information analysis and innovative thinking all have a part to play.

While giving guidance and structure to the process, the emphasis is on suggesting a wide variety of techniques, and providing an adaptable framework that can meet most eventualities for delivering a good strategy and plan. The most important ingredients are a well-balanced high-quality team, endowed with a good balance of knowledge, strategy and planning skills, experience and more than a pinch of common sense.

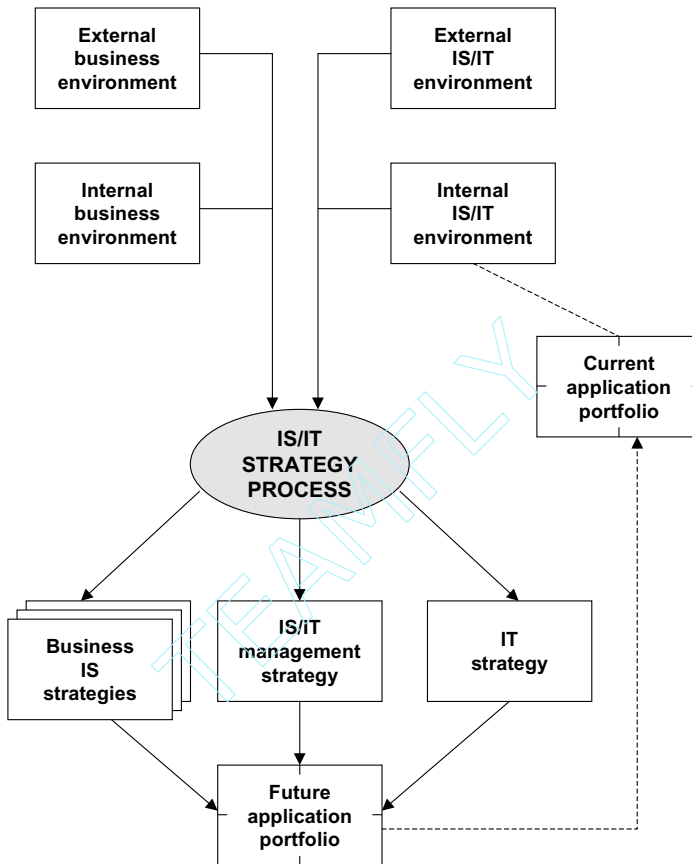
### **The IS/IT Strategy Formulation and Planning Framework: Overview Model**

An overview model, shown in Figure 3.8, illustrates the building blocks of the strategy formulation and planning framework—the inputs, outputs and essential activities. Briefly, these are:

#### *Inputs*

1. *The internal business environment:* current business strategy, objectives, resources, processes, and the culture and values of the business.
2. *The external business environment:* the economic, industrial and competitive climate in which the organization operates.
3. *The internal IS/IT environment:* the current IS/IT perspective in the business, its maturity, business coverage and contribution, skills, resources and the technological infrastructure. The current application portfolio of existing systems and systems under development, or budgeted but not yet under way is also part of the internal IS/IT environment.
4. *The external IS/IT environment:* technology trends and opportunities and the use made of IS/IT by others, especially customers, competitors and suppliers.

They are described in some detail in Chapter 4.



**Figure 3.8** *The IS/IT strategic model*

### *Outputs*

1. *IS/IT management strategy*: the common elements of the strategy that apply throughout the organization, ensuring consistent policies where needed.
2. *Business IS strategies*: how each unit or function will deploy IS/IT in achieving its business objectives. Alongside each of them are application portfolios to be developed for the business unit and business models, describing the information architectures of each unit. The portfolios may include how IS/IT will be used at some future date to help the units achieve their objectives.
3. *IT strategy*: policies and strategies for the management of technology and specialist resources.

These and other ‘soft’ outputs are described under the heading ‘Deliverables from the IS/IT Strategy Process’, later in the chapter.

### **Selecting, Defining and Implementing a Strategy Approach**

Having confirmed the scope, the objectives and the deliverables, the next step is to ensure the IS/IT strategy process is linked effectively to business strategy formulation activities and existing business strategies and plans. This will in part depend on the comprehensiveness of the existing IS/IT strategy, how long since it was updated, how much change is needed and how well that strategy was integrated with the business strategy.

The process needs to be understandable and acceptable to all concerned, and it must not be too complex or constrained by unnecessary bureaucracy. No approach will, by itself, guarantee success. Responsibility for a successful outcome rests heavily on the leader of the strategy process and the people involved. It is their responsibility to understand why each step in the process is being done and why each document or diagram is being produced. Failure to do this could result in the endless ‘diagram production’ syndrome. This commonly arises because the team is using a generalized method and diligently produces the diagrams mentioned, simply because ‘the method says to do it’.

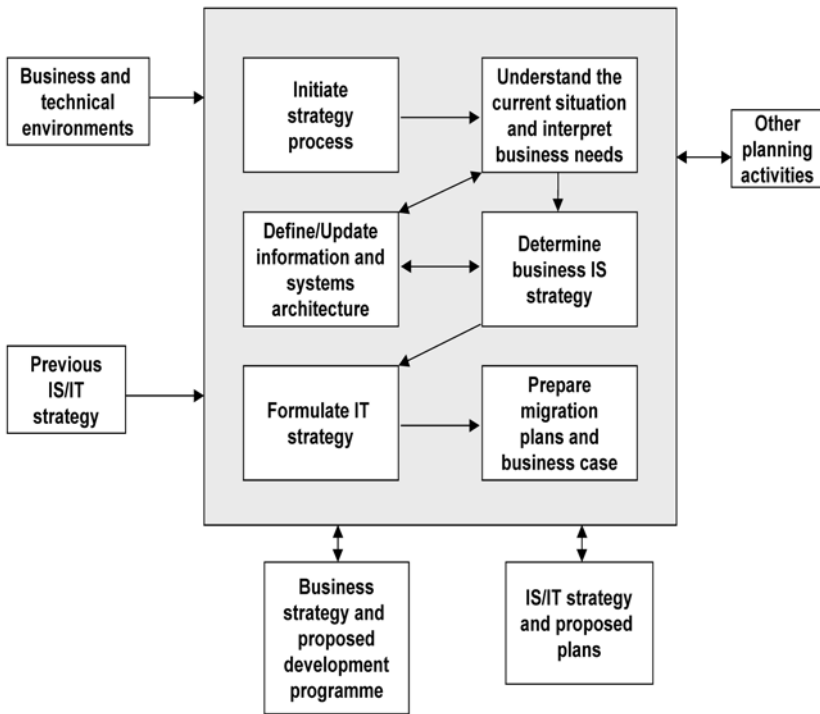
In any strategic process, some sort of structure to the approach and clear principles are obviously necessary. Box 3.3 contains a set of characteristics that are recommended in any approach adopted. Whichever approach is chosen, it will have to be suitable for the explicit needs, and the environment, culture, organizational maturity and skills available. In summary, the approach chosen should have the following characteristics:

- flexible, modular and able to pick up deliverables from earlier or parallel activities;
- emphasis on deliverables;
- clear checkpoints;
- recognition of the interactive and cyclic nature of the process;
- recognition of the importance of the human side of the process;
- simple diagramming tools.

Without attempting to constrain the process, it is nevertheless helpful to propose a framework that enables all the essential elements to be incorporated. Once IS/IT strategizing and planning is established in an organization, several of the deliverables will be available from the previous cycle, and in need of review and update only, rather than building

**Box 3.3** Characteristics recommended to be included in any IS/IT strategy approach

1. *Overview:* the approach chosen should include a way of obtaining an overview, or top-down view, of the whole area to be studied, although one may be available from an earlier activity. One of the biggest dangers in IS strategy development is the attraction of using a detailed tool (e.g. normalization for data analysis) that is a very good tool in itself but completely inappropriate for the top-down view needed in strategic planning.
2. *Consistency:* the philosophy of the approach and the techniques used need to be consistent between the various stages of the process and any earlier strategy deliverables. It would be inadvisable, for example, to be obliged to redraw diagrams containing essentially the same information simply because a particular approach advocates using one schematic diagram and another advocates a different one in two separate stages. Furthermore, the outputs from the various stages in the process should be consistent with other company methods (e.g. the process may need to take output from a parallel business process redesign project) and the outputs should be in a form that can be used as direct input to any encyclopaedia of information and process objects, used in application development.
3. *Communication:* one of the major reasons for using a standard approach is to facilitate communication between team members and the business community. This means that the approach and techniques advocated should be relatively easy to learn and use. In particular, they should not be so complex as to dominate the whole process.
4. *Documentation:* the hard deliverables of the process are reports and business and portfolio models. This implies that any approach should give clear guidance as to the contents and form of these 'deliverables' and their supporting appendices.
5. *Rationalize decisions:* any strategic planning approach should provide management with a vehicle to make rational decisions. These decisions should be made at logical and clearly-defined checkpoints, which break the whole process up into easily-comprehended units of work and prevent wasting time on unwanted deliverables.



**Figure 3.9** Framework for IS/IT strategy formulation and planning process

from scratch. For example, the business model could be unchanged, except in minor details, unless the business is undergoing major revision of core processes. On other occasions, the requirement may be to focus on one short-term need and to adapt the existing strategy to accommodate this. Figure 3.9 illustrates the main components of the framework, briefly described below.

### Initiate Strategy Process

This is the set-up stage of the process, in which:

- The purpose, objectives, scope and deliverables are confirmed.
- The approach is determined and resources acquired, such as automated tools.
- Business participants are identified and the team assembled and, if necessary, trained.



- The steering and management mechanisms for the process are created.
- How the work will interface with and feed into business planning.
- The people who are needed to participate are identified. This gives an indication of the time needed for the fact-finding and analysis stage, since, on average, it takes 1.5 to 2 elapsed days to conduct an interview, including its planning, writing up, analysis and feedback. Organizing and conducting workshops and documenting the results takes even longer.
- Plan for the work, tasks, timing, roles and responsibilities, and checkpoints defined.

One of the most important aspects of the initiation stage is that it enables the sponsor to develop an understanding of the business needs and drivers that prompted the IS/IT strategy process. This is required in order to 'sell' the need for IS/IT strategy formulation and planning to take place, not only to other senior management, but also to operational management and professional staff whose knowledge is vital to the process, but who all have a full-time 'day job' to do. Some may see 'planning' as a threat to their current independence of action concerning IS/IT. In the case of the strategy process, it must be shown that its conduct and the resulting strategy will assist all levels of management in achieving their objectives and resolving key problems.

It is also important that management accept that the costs involved are merited. In the case of the strategy, the cost should be repaid by focusing future investment in IS and IT more precisely on the achievement of corporate objectives, by undertaking projects with clearer, deliverable benefits. It also ensures that management avoid doing 'the wrong projects'—which have no chance of success or are not of any strategic value. The costs of undertaking the process are relatively easy to derive—they are people costs for the team, consultants (if they are used) and the time of participants in workshops and interviews.

A checkpoint at the end of this stage is to ensure that the TOR are clear and acceptable to the senior management and key participants, that adequate resources are allocated, and that interdependencies and consolidation plans with the rest of the business strategy and plans are achievable.

Team education is essential to ensure that everyone has a common basis and adequate understanding to proceed. Some time is probably required in order for the team to:

- understand the principles behind the IS/IT strategy process;
- understand the approach being adopted and learn how to use the

techniques of IS/IT strategy formulation such as determining critical success factors, information analysis, value chain analysis, organizational modelling and interviewing;

- agree on individual tasks and review the analytical tools and techniques available;
- understand deliverables and take responsibility for specific report activities and outputs.

Given the mix of people involved, some of the team members will have absolutely no knowledge of any information analysis methods or procedures. Conversely, some of the more technical people will have little or no knowledge of the business world of the organization. This means that education will be a continuous on-the-job process for all team members.

### **Understand the Current Situation and Interpret Business Needs**

This step can take various forms including studying existing documents, interviewing users, holding workshops and brainstorming sessions with groups of users. Its purpose is to develop an extensive understanding of the business in its environment, and to interpret its current, planned and future potential needs. These fall into three categories:

1. Analysis of the business strategy, objectives, critical success factors, critical problems and processes, in order to determine the current situation, its strengths and weaknesses, and the information needs and thus the focus for investment in systems to meet these needs. This is covered in Chapter 4.
2. Evaluation of the current IS/IT operation, its systems, information provision, resources, organization, skills and services, to determine coverage and contribution and where improvements would be beneficial. This aspect is also addressed in Chapter 4.
3. Analysis of the external and internal business environment to identify business-based innovations that depend on potential applications of IS/IT. This is considered in Chapter 5.

Tools such as high-level information analysis, critical success factor and balanced scorecard analysis, value chain analysis and creative techniques for identifying opportunities are put to use here. They are described in subsequent chapters.

### **Determine the Business IS Strategy**

The accumulated business IS demand is turned into recommendations for the deployment of IS/IT at SBU level and throughout the organization. These are documented in the management and business IS strategies. Conceptual information systems are consolidated and mapped onto an applications portfolio, representing the current, required and future potential position, for each SBU considered.

They are described briefly in this chapter in the section headed 'Deliverables from the IS/IT Strategy Process', and are considered in some detail in Chapter 6.

### **Define Information and Systems Architecture**

This step takes the results of the analysis of processes and information needs in order to build a proposed business model for the business. It represents the future 'ideal' in terms of process, information and systems, and is necessary in order to plot a direction when developing migration plans. The work can commence once analysis of the environment begins, and continues up until the end of the formulation of the business IS strategy. The development of the architecture is described in Chapter 4.

### **Formulate IT Supply Proposals**

The remaining tasks are to define the elements of the IT supply proposals. They are listed in this chapter under 'Deliverables from the IS/IT Strategy Process', and are addressed in detail in Chapters 7–11.

In practice, at this point the IS strategy and the IT supply proposals can be fed back into the business strategy process for consideration, and ultimately for consolidation. Senior business management can then decide on the most beneficial and feasible investment program for the business. Outline plans can then be constructed to plot a route map and milestones for the main initiatives established. This is likely to entail close cooperation with the business areas to pull together the IS/IT and business aspects of the 'approved' developments to produce an outline migration plan and a high-level business case for each. Detailed business cases will still need to be prepared for each element of the program when development funding is actually requested.

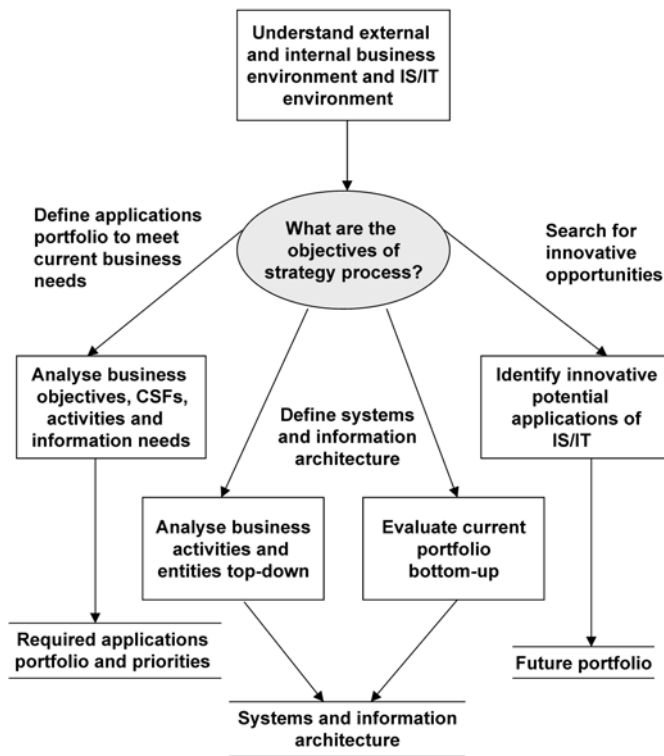
### **Analytical and Creative Techniques**

While the strategy framework and its essential components have been described, it is important to understand the use of both analytical and

creative techniques in order to ensure that the necessary dimensions are explored adequately, and the deliverables are achieved. The former takes a structured route through the upper levels of the organization, systematically analysing and decomposing the business requirements into their constituent parts, and delivering a structured view of the business objectives, strategy, activities and information needs. The latter, enabled by techniques that facilitate more lateral thinking, focuses on areas of likely high potential and relies more on sharing knowledge and creative thinking. There is a good deal of crossing over since, in the initial analysis of the business environment, it is likely that embryonic ideas for future winners may emerge. Figure 3.10 illustrates the approaches and their common roots:

- Top-down techniques are used to examine and decompose the business requirements into their constituent parts and to extract information needs, from which the required applications portfolio is derived.
- Top-down information and process modelling to assess current business models. These continue the top-down analysis of the business, with the emphasis on core processes and the information needs and activities that are already in place, or need to be implemented to support objectives and strategy.
- Bottom-up examination of the information and processes reflected in the existing application systems portfolio fleshes out the systems and information requirements.
- Creative techniques are used to identify business opportunities that can be sustained, strengthened or created by application of IS/IT. Increasingly, innovative proposals are based on the systems and technology themselves where the product or service has an intrinsic IS/IT element or is delivered via the technology.

The creative element provides additions to the portfolio, since it looks for opportunities (or threats) within the business, and especially at the boundaries with the external environment, where innovative information systems or use of technology may be possible. Searches for such opportunities are not appropriate in all circumstances and probably not at all if the culture of the organization is risk-averse or not sympathetic to innovation, preferring to copy others in its use of IS/IT. It may be that one or more creative ideas can be brought to fruition very quickly, and it is often one of the aims of the strategic process to find and implement such ideas in order to demonstrate the potential contribution of IS/IT. In Chapter 1, the main types of strategic systems and commonly-observed characteristics of such systems were described.



**Figure 3.10** *Analytical and creative approaches to interpret business strategy*

## DELIVERABLES FROM THE IS/IT STRATEGY PROCESS

The outputs stemming from the IS/IT strategy process are a mixture of hard and soft deliverables. The hard outputs are documents defining strategies and plans, and frequently include computer-based material in the form of dictionaries, matrices and information analysis models. Soft outputs relate to human factors such as skills, awareness and motivation. The main purpose of the hard outputs is to document:

- the current situation;
- the vision and rationale for what is being put into place—information, systems, technology, people and so on;
- the plans for how it is going to be achieved, with the milestones along the implementation route.

The timescale for the vision and plans has to be consistent with the business vision and its plans, and similarly will be reviewed in line with business strategy and planning reviews.

### **Structure for the Deliverables**

Every organization will decide on the best structure to use for its purposes, depending on house style and how 'strategy' is communicated in the organization. However, whatever structure and format an organisation may choose to document its strategy, the objective is to ensure that users, management and IS professionals all understand the key elements of the strategy and each thoroughly appreciate those parts of the strategy they have to carry through. The structure described below is consistent with the model for the strategy process shown in Figure 3.8.

The following are a few general points relating to the deliverables:

1. The statements of demand, in terms of requirements for information, systems and technology, are contained in the business IS strategy and the accompanying application portfolio. The supply elements are contained in the IT strategy, while the IS/IT management strategy contains the overall policies for satisfying and balancing the demand and supply.
2. There should be one IS/IT management strategy for any organization where consistent policies for IS/IT are applied throughout the corporate body. However, there may be several business IS strategies, one for each SBU, or even separate strategies for defined functional or geographic units. There may only be one IT strategy for the whole organization, although there could be separate hardware and IT services dedicated to certain business units (see Figure 3.6).
3. The executive summary is a short paper comprising summaries of conclusions and recommendations, drawn from all the elements of the strategy. This may be the only paper to be read by the executive management team, and needs to be succinct and underpinned by effective presentations and discussions. (If possible, an executive summary should be avoided to encourage a more detailed understanding of the strategy by senior management.)
4. The strategy needs to record the current business and IS perspective, and their respective issues, as a record of the starting point in any planning cycle. The 'library' of deliverables is also valuable in providing supporting evidence of the rationale for choices made.
5. The IS perspective is important due to the pace of change in the industry in general. This pace of change may be in stark contrast

with the innate conservatism of many an IS function, which is often resistant to change while expecting user departments to accept change willingly!

### **IS Strategy: Management of Demand**

The business IS strategy states how the business will deploy IS/IT in achieving its objectives, and the responsibility for its relevance and comprehensiveness lies with the executive management of the business unit. Its purpose is to link IS/IT clearly and firmly to the business strategy. The strategy, defined by the business management and users, states the applications and service requirements, with reference to the business plans and activities, and any associated priorities for development of infrastructure or application systems. Not all the requirements will be for new application developments. Some will demand extensions to existing operational systems to improve their effectiveness. Box 3.4 shows the contents of a typical business IS strategy.

If the organization is contemplating or undertaking business process redesign, then it is very likely that its information needs and information systems requirements will display a much higher degree of integration than formerly. It is also likely that freer flows and access to information along end-to-end processes and across external boundaries will become priority IS requirements.

### **‘Soft’ Factors**

These consist of the unit’s management style, corporate values and cultural factors, as well as its skills, resources and competencies. Such information may already be documented in the corporate or business unit strategies; if not, this is an appropriate time to determine these details. In the context of defining IS and IT strategies that have considerable impacts on the business, organizational dynamics play a significant role, since it is necessary to be able to assess the effect of a strategy that runs counter to the culture of the business. In this case, it is necessary to assess with great care whether to implement the recommendations or whether it may be better first to focus on changing the underlying contrary behaviours. If they cannot be changed, then it is unlikely recommendations will deliver their potential benefits, and it may be better to revise the strategy, taking a more incremental approach to change.

One engineering business, managed jointly by two managing directors, embarked on developing an IS/IT strategy using external consultants. The sponsor—one of the two managing directors—was taken ill during the course of the planning process and was forced to retire. Having lost

**Box 3.4** Basic structure/contents of IS strategy documents

1. *Purpose of IS strategy*—reasons for new/updated strategy—key changes in business and IT context since last strategy: it is feasible for the IS strategy to be an annual update of the previous one.
2. *Overview/summary of business strategy*—to provide context for IS strategy: objectives and Critical Success Factors (CSFs), if known, plus analysis of competitive forces and/or similar analyses (e.g. strengths, weaknesses, opportunities, and threats [SWOT], competencies) and resulting issues affecting the IS strategy. *These tools will be described later in Chapters 4 and 5.*
3. *Argument for:*

- new IS opportunities (to gain advantage);
- critical improvement areas (to avoid disadvantage).

These should be based on Item 2 above but with further detailed analysis of competency issues, value chains (external and internal) and CSFs/balanced score card to determine the opportunity/problem areas and reasons for investment in them. Details of methods (e.g. value chains) should be included in Appendices.

4. *Summary of opportunities/problem issues*—‘1 page’ for each—explaining the application/opportunity/issue: outline description, the rationale, potential benefits from investment, any critical dependencies and initial action to be taken in the context of an overall estimated time frame for the investment (more detailed plans can be included if known). These opportunities/issues should be separated into:

- strategic, high potential, key operational (and possibly support); and
- prioritized high/medium/low based on business timescales (e.g. H = within 6 months, M = 12 months, L = 2 years).

For each application, the business managers responsible should be identified.

5. *Review of current application*—portfolio and status of current projects (i.e. other investments currently in hand) and the overall resource implications of:

- completing outstanding work and ongoing commitments (major components should be described in Appendices);
- resources available to address new work from Item 4 above;



- any critical issues requiring resolution within the existing strategy.
6. *Future application portfolio*—incorporating the output from Item 4 above to show the intended/potential investments, with priorities, and the implications for the rest of the portfolio (e.g. replaced systems, etc.).  
Initial resource estimates (and costs) of the investments should be appended to the portfolio, with an initial plan (including a simple Gant chart).  
(It is often useful to show how the balance, in using resources, is changing as the portfolio evolves.)
  7. *Issues arising from the IS strategy*—these are things that require senior management attention (e.g. the establishment of a steering group) to enable decisions affecting the strategy (priorities, resources, organization, other initiatives, etc.) to be made in the required time frame. These may also include issues to be addressed by the IT strategy in order to provide the infrastructure to support the future applications portfolio.

How the document is used/ratified will depend on the organizational management processes, but it is likely that a ‘draft for discussion’ will be needed, probably its key aspects presented to senior management and subsequently an agreed version produced as the basis for detailed planning (and budgeting) and progress review.

(*N.B.* No executive summary is suggested here—if one is deemed necessary, it should be at the end, not the beginning, since it discourages busy managers from understanding the real content! The strategy *is* the summary of a lot of work/discussion, etc. and further summary often loses the important details.)

his very vigorous commitment, the positive attitude hitherto displayed by the directors and senior managers collapsed, prompted by the second MD, who had not shared his former colleague’s optimism and active leadership.

### **Application Portfolio**

Brief details of application systems requirements are recorded within the business IS strategy. The portfolio is categorized in terms of the applications and their role in supporting current and future business strategy

in the four categories already described—strategic, high potential, key operational and support.

The portfolio not only contains stated requirements but may also include potential applications and propositions for enhancing the business strategy in the future. These proposals are most likely to address customer-related and competitive activities, and may well be described in outline only at this point, since significant further work may need to be undertaken before they are introduced within a competitive initiative. It may turn out that the way to proceed is to develop one or more small pilot ideas, with the intention of adding increments as the ideas prove themselves.

### **IT Strategy: Management of Supply**

The IT strategy should not only cover the responsibilities of the ‘central’ IS function but also the responsibilities of users, where appropriate. Its prime purpose is to define how resources and technologies will be acquired, managed and developed to satisfy business IS strategies within the management strategy framework. In addition, it should reflect current trends and developments in IT that could cause future opportunities or constraints.

Many of the elements of the required IT infrastructure may have already been defined separately, in which case there are also likely to be procedures for reviewing and updating the strategy. Nevertheless, a review of the IT policies, methods and standards in place, and adherence to them is needed. The IT strategy will then focus on the areas where change is necessary due to business requirements, or where new options are available due to changes in technology, experience or capability, which may not have been previously recognized and pursued.

Whether defined during the IS/IT strategy process or separately, the IT strategy will normally address the following supply factors:

- application portfolio management;
- organization of IS/IT, the management of its resources and administrative matters;
- managing the information resources and provision of information services;
- managing application development;
- managing technology.

These are considered in detail in Chapters 7–11.

### **IS/IT Management Strategy**

The management strategy covers the common elements of the strategy that apply throughout the organization, ensuring consistent policies where needed. It is particularly necessary where several SBUs develop their own business IS strategy and may or may not operate their own IT supply function.

Where there is a high degree of centralization in the organization, then the number of issues addressed in the management strategy and the degree to which common policies are imposed will be considerably higher than in an organization where the central corporate body is small and each unit operates virtually autonomously. Even then, it is quite likely that the autonomous units will share centralized support functions, of which IT services are quite likely to be one. It may cover technology directives that state mandatory factors concerning the IS/IT infrastructure and other principles that should be followed (e.g. portability of applications around the group).

Any information systems needs of the corporate body can be addressed in a business IS strategy treating the corporate body as if it were an SBU. Clearly, some of its information needs will be closely linked to the other SBUs and frequently derived by consolidation of output from applications run in the SBUs. Aside from its information needs, the management strategy should state known corporate objectives and critical success factors (CSFs) relating to corporate activities and needs. The strategy should also contain a concise summary of the individual business IS strategies and any IT strategies derived for the organization. It should also relate them to its own stated corporate aims and CSFs.

In a single SBU organization, or one with complete autonomy, the IS management strategy can be amalgamated with the business IS strategy. A minimum number of common issues may also be addressed in the management strategy, namely:

1. *Scope and rationale*—it will need to lay out the business background, scope and rationale for the directives it is stating, and preferably describe a vision of the corporate IS/IT environment and its expected impact on the business community. If major changes are in the offing, it will need to describe them and give a timetable for their introduction.
2. *IS function*—organization, resourcing and the allocation of responsibility and authority for IS/IT decisions. This includes both formal and informal structures and any steering group or management committee overlay structures to provide coherence. The allocation of

authority and responsibility indicates how much control is retained in the corporate body and how much is devolved into the business and functional units.

3. *Investment and prioritization policies*—implementation of the strategies will require many separate decisions on investments to be made. Management cannot consider each one in detail and certainly not continuously allocate and reallocate priorities. Rules must be defined—pertinent to each of the elements of the portfolio (strategic, key operational, etc.)—stating how investments should be appraised, the need for financial evaluation and acceptance of business judgment of line and IS managers and the balance and discretion expected. They should state how the budgeting for expense and capital items and later project or capital expenditure allocation processes tie together. They also need to define a mechanism that reflects the investment decision-making process, for day-to-day priority setting for resource allocation to ensure that the best return on investments is obtained from the actual resources available. Some measurement of results and any control and audit procedures should be incorporated here. This is covered in detail in Chapter 9.
4. *Vendor policies*—these may state specific vendors, or the parameters that must guide choice of vendors, such as interconnectability, financial soundness, service provision, etc. They should also cover differences in policies where central approval is needed or where local decisions can be taken.
5. *Human impact policies, including education*—it is only too easy to jeopardize IS/IT strategies due to mismanagement of the people issues—new job content, reorganization, even redundancy. Some organizations have ‘technology agreements’ with unions or staff groups. Where organizational issues are seen as critical to success, this must be adequately addressed at a corporate level. A common set of policies and guidelines must be laid down to avoid evolution by precedent and a negative, reactive stance by those affected. Each project, in each area, with each new technology should not need separate negotiation—progress will be slow and inconsistent, the strategy will undoubtedly be continually disrupted.
6. *IS accounting policies*—in many organizations, strategies can fail due to insensitive or inappropriate accounting policies for the charging of IS/IT resources. The objectives of such policies should be clearly stated and understood. While they initially appear to be management accounting systems for cost allocation, once implemented they become ‘transfer pricing’ systems on which users will make decisions. The policies will depend on, among other things:

- other cost accounting/transfer pricing policies for other services;
- profit/cost centre management of organizational units (including IS unit);
- the cost of administering the charging system itself, which, when the budgeting complexity is added, may prove very expensive to carry out.

For each of these, and any other elements of the IS management strategy considered at a corporate level, there should be a clear statement of rationale, objectives, policy and procedures for review and exception handling.

It is quite likely that the IS/IT management strategy has been determined in a separate phase before any individual SBU conducts its own IS/IT strategy process. In this case, it has to ensure that the policies laid down in the management strategy are consistent with the business needs being addressed and that there is a mechanism for feeding back into the IS strategy management process any anomalies or troublesome constraints uncovered during the strategy process.

### **‘Marketing’ the IS/IT Strategy**

As well as the hard deliverables, there are a number of other benefits to be gained from a well-conducted and well-received strategy process. The people who have been heavily involved are likely to be well motivated and well versed, not only in the planning process, but also with a very broad understanding of the business, its people, direction and environment. They should continue to motivate the organization toward maximum exploitation of IS/IT from wherever they are based, be it managing the IS/IT strategy, in business planning or in their management or professional role. The other ‘soft’ output should be an enthusiastic and committed senior management. This is most likely to be gained if the enthusiasm and commitment was earned before the process began and has been courted throughout.

### *The Audience for the Strategy*

It is not possible to generalize about who should be informed and kept informed, and at what stage or to what depth, since this depends on so many factors in each situation. But, it is likely that the audience should include:

- senior management;
- IS/IT management and staff;

- all participants in the planning activities;
- line and functional management and user area representatives;
- individuals in existing project teams;
- other interested parties within the organization (e.g. corporate strategy and planning groups, human resources, etc.);
- in some cases, major shareholders and non-executive directors may also be part of the audience;
- in the public sector, the audience could also include elected representatives and other government departments, etc.

It may also be useful to include certain external bodies such as suppliers of systems and technology, or selected suppliers or customers of the business, particularly if proposed systems emphasize communication between them and the firm.

There are substantial benefits to be derived from effectively communicating the strategy. First and foremost is the need to obtain demonstrable and actual commitment across the organization to implementing the recommendations and to providing the resources to do so. It is also important to obtain agreement from all concerned on how the impacts on the organization will be absorbed. Other benefits from communication can be obtained by asking for feedback from people who did not participate directly in the planning process (usually for straightforward practical reasons). They may be able to identify problems that were not exposed during the process and perhaps introduce potentially better options than those proposed.

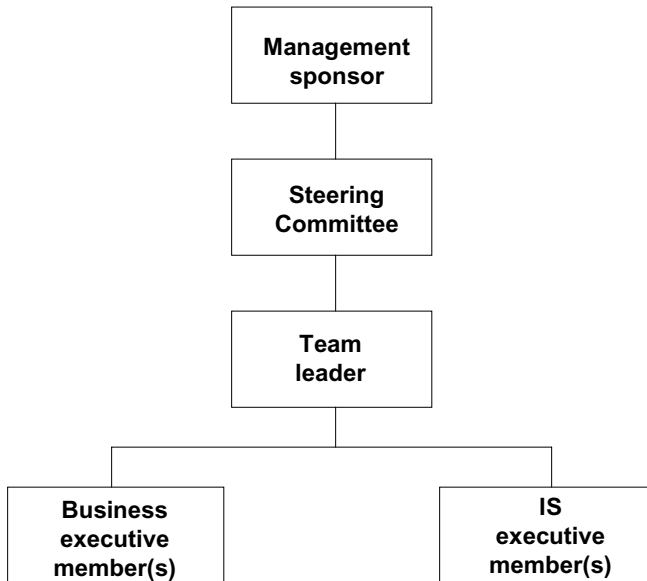
The strategy needs to be communicated in a consistent fashion so that the right items are emphasized and so that misunderstanding and false impressions are avoided. It should reach audiences at different levels, with different interests and over an extended period, possibly several months. It is therefore worthwhile developing high-quality 'marketing' presentation material and collateral that can be tailored to each type of audience.

### **Managing the Process and Resources**

A suggested structure for managing and steering the process is shown in Figure 3.11.

#### **Management Sponsor**

This person, who is preferably a director or senior executive of the organization, should fulfil the following functions:



**Figure 3.11** *Strategy process management structure*

- chairing the steering committee and approving the budget and plan for any IS/IT proposals;
- assuring management participation and commitment, through active backing and allocation of the right resources;
- representing the interests and priorities of the planning process in the business;
- heading the ‘marketing’ effort (which should not be underestimated);
- acting as the focal point for decisions about the scope, TOR and conduct of the work.

### **Steering Committee**

Depending on the scope of the planning process, it may be necessary for this group to meet once every month, or simply to be present at the appropriate checkpoints. A minimum requirement is that the management sponsor should function as a one-man steering committee and report to the board of directors where necessary. Typical steering committee functions are:

- providing strategic direction and guidance on business requirements, and priorities to the planning team;

- reviewing and approving plans, and taking up risk management issues;
- conducting checkpoint reviews;
- authorizing continuation of work on the next planning activity;
- reviewing and contributing to final strategic plans, before submission to the business executive team.

Other roles are shown in Box 3.5.

### **Team composition and *modus operandi***

- The enterprise, as a whole, needs to be convinced that the strategy and planning exercise is important. If the most senior executives work on the planning activities, then this message will come across.
- The participants in discussions will be from very senior levels. They must know and respect the team or they will not have confidence in the resulting strategy.
- During discussions or workshops, the strategy team must recognize if they are being deliberately or unconsciously misled or the resultant strategy will be rejected.
- A large part of the information requested and given will be sensitive and confidential. This will be more readily given to peer group members than to subordinate group members.
- During analysis and strategy formulation, team members have to be capable of taking decisions that will ultimately affect the whole organization, so the organizational level of these team members has to be high, for both the user and IT team members. These people, with the qualities mentioned above, are precisely those executives who do not have time to spend on such work!

In addition to the senior end-users and IT staff, it is often beneficial to include one or two IT staff who are experienced in documenting interviews and workshop outputs using diagramming tools and in undertaking the subsequent information analysis. Also, if the strategy process is new to the organization, it may be appropriate to retain a consultant who specializes in this area.

Usually, if the management committee has agreed to finance the strategy process, they will recognize the importance of the type of person on the team and provide the requisite managerial backing. The acid test of involvement is the decision physically to relocate the prospective team member for a significant portion of his working time. This avoids the syndrome where a manager will say that he is available any time, but in practice is impossible to contact in his native habitat.



### **Box 3.5 IS/IT strategy team composition and roles**

#### **Strategy team leader**

- Plan, manage and do much of the day-to-day work. As such, this role involves a major time commitment on his or her part.

#### **Strategy team members, drawn from both the user and the IS communities**

- At least two full-time members are needed, in general. They may require the assistance of other part-time members like technical specialists. The number of people required will vary with the size of the project and the desired completion date. A critical factor is the number of people to be interviewed, if this is a major requirement of the process, as this is a most time-consuming process.
- There is a further factor to consider in team selection. Acceptance and commitment from the members of the 'formal' management team is obviously needed. What is not so obvious is the need to involve people who, although they do not have formal titles, are the effective powers behind the throne. Such a person could, for example, be the bright young economics graduate in the finance department who has set up an elementary, but much admired, budgetary system for the directors on his semi-legal PC. These people are sometimes known as 'gatekeepers' because they effectively control the gate of acceptance or rejection of any information systems proposals. Whether or not they are included in the team is a matter of judgement, but the team must be aware of their existence and importance.
- Another point to consider is that, although it is possible and perhaps necessary to use external personnel in the team, it is essential that the organization itself provides at least one full-time team member, if not from the user community then from the IS function. This is because the strategy process should result in the specification of a number of subsequent projects, and someone from the organization, who has participated in the process, is needed to guide these projects during implementation.

#### **Business participation**

- It is necessary to identify, right at the start of the strategy process, those members of the organization who will participate

in discussions, interviews or workshops. They can be briefed about what is involved, sold to, if necessary, and appointments may be set up in their diaries.

- Other participants may be identified later, but the great majority should be prepared at the start. A few of them may be included purely for political reasons, rather than for any positive contribution they can make.

### **Strategy team composition and skills**

The quality of the products depends on the quality of the team selected. The team leader and members should come from different parts of the organization and have:

- Broad knowledge of the business and its organizational objectives, management styles, culture, processes and people.
- Good communication skills.
- Ability and authority to make and implement plans and decisions that may affect the whole organization.
- Respect of management and staff.
- An interest in areas other than their own and an ability to analyse objectively.
- Experience of IS/IT strategy formulation and planning in at least some of the team.

Another catch here is the person who is only available for, say, 30% of the time. This occurred during one strategy exercise where, right up to the start, all of the planning had been done assuming that the person in question would be a full-time team member. His explanation, and his manager's explanation, was that, as he thought he knew only about one-third of the business, he would only be needed for one-third of his time! It should be impressed on all concerned that a substantial commitment is needed from all team members, with the exception of the sponsoring management and steering committee members, who are required to read reports, attend review meetings and be available for *ad hoc* discussions when required.

### **Automated Support Facilities**

The conduct of an IS/IT strategy will require the use of basic automated tools such as word processing, spreadsheet and drawing tools. In particular, the graphical ability of drawing tools to construct any necessary diagrams (e.g. matrices, flow diagrams and data models) should be

assessed. In addition, the provision of a suitable data dictionary structure for the recording of such things as descriptions of data and activities, interview results and definition of business objectives is a general requirement for any drawing tool selected.

Before deciding on the use of any automated tool, the team must decide on what information it wishes to record and how this information is to be structured (i.e. connected). For example, it is important to know such things as: How much detail is to be recorded from each interview? Is a standard interview record format required (normally, the answer is yes)? What is to be recorded about each major business activity and data group?

### **Physical Facilities**

At the very least, there needs to be one room dedicated to the team. It is usual to keep lists, tables and diagrams of general interest (e.g. company structure charts and process models) permanently on the walls of this room for easy reference. The information collected, both from desk research and from discussions, is usually highly confidential and sensitive. Therefore, the strategy process room must be secure at night or facilities provided for the locking away of such sensitive material.

It is preferable to have rooms set aside for discussions, equipped with manual and printing whiteboards, flip charts, etc. and arranged so as to be conducive to good interviews and workshops. It is infinitely preferable if meetings and workshops, especially with senior executives, can be held physically away from their own offices, reducing the likelihood of any interruptions and getting the executive away from 'today's' problems.

### **SUMMARY**

Devising a strategy for the role of IS/IT in the SIS era is accepted as a major issue, and despite a plethora of methodologies, automated planning tools and brigades of consultants willing to propel organizations into strategic systems developments, is still more of an art than a science.

This chapter has focused on an overall approach to strategizing and planning for IS/IT and emphasized the continuous nature of that process, involving the combined knowledge of key business and IS/IT staff, thus facilitating genuine, lasting and productive partnerships between business and IT.

Experience has shown that the most effective strategy process takes place at the strategic business unit level, with appropriate rationalization

and consolidation across the whole organization. In addition, there is no 'ideal' approach to IS/IT strategy formulation and planning, but there are a number of factors that could be considered critical for its success:

- Using the 'best' people available from the business, IS function, external advisers—they provide the invaluable knowledge of the industry and the business, the IS/IT relevance and, above all, the creativity, none of which can be derived from a methodology.
- Gaining the enthusiasm, commitment and involvement of top management.
- Getting a thorough understanding of the internal and external business and IS/IT environments, the business imperatives and culture and the real stimuli driving strategy and planning.
- Setting objectives consistent with experience and maturity, and tailoring the approach to meet them, employing a mixture of analytical and creative techniques.

However, it should be remembered that having a good strategy is only a means to an end—its implementation is when the value of the strategy is actually realized. A key aspect of the formulation process is ensuring the organization is both willing and able to implement its chosen strategy. This will depend as much on how the strategy was derived, and who was involved, as it will on the actual content of the strategy.

## ENDNOTES

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