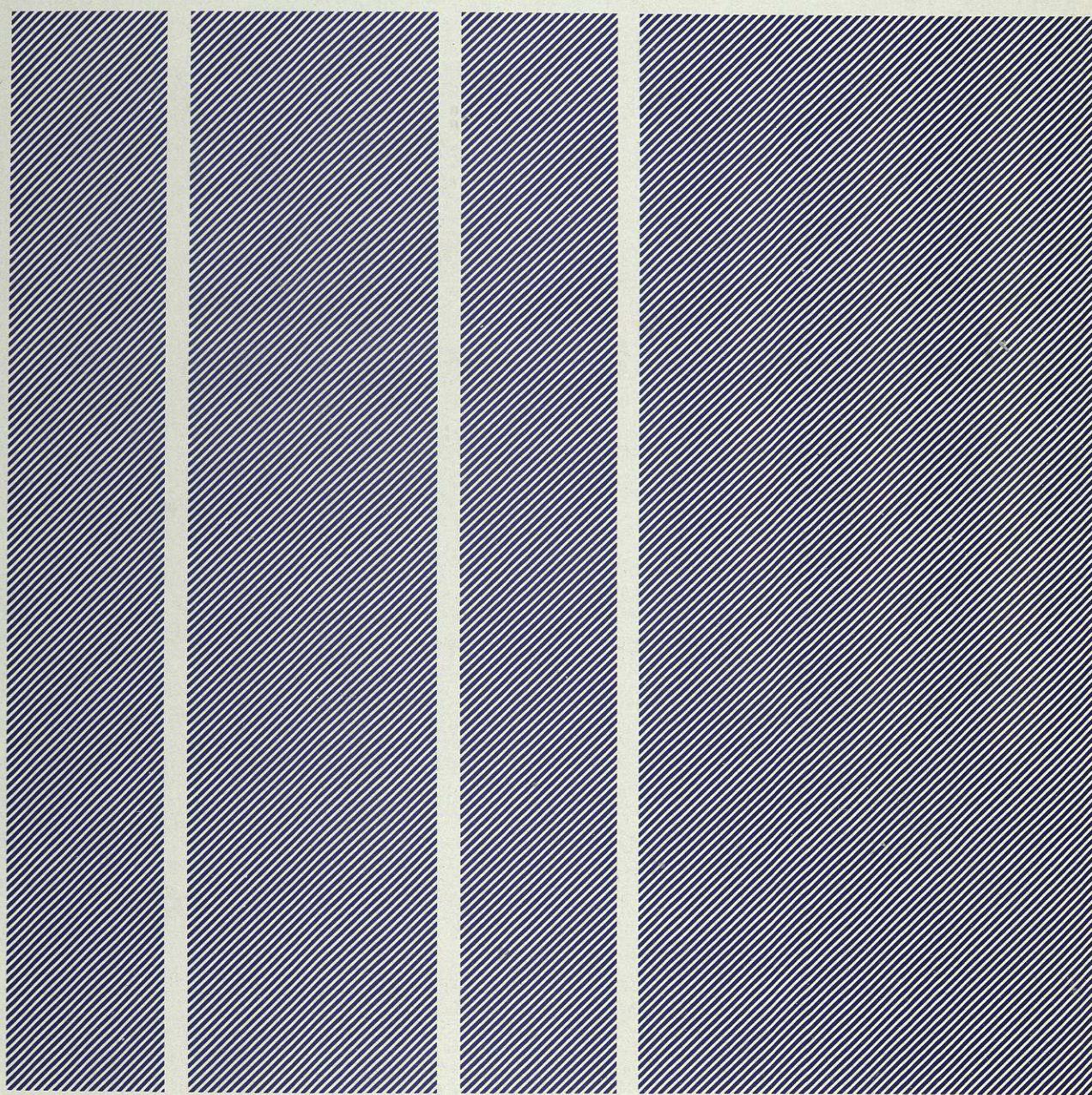Report Series
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STRATEGIC SYSTEMS PLANNING

Abstract

Strategic systems planning is concerned with the objectives, scale and direction of the information systems effort within organisations, and with the rules and mechanisms used to maintain the chosen direction in subsequent tactical and operational developments. The strategic systems plan should be aimed primarily at senior management, whose approval is critical to its success. The plan thereby serves to establish the status for information systems within the business. Ironically, it is the low standing of the information systems function within many organisations that is the main obstacle to effective strategic systems planning.

In this report we look at the role of strategic planning for information systems, the problems that are most frequently encountered and the planning and analysis methodologies that are available. We conclude with a review of the key aspects of the strategic planning task, and present guidelines for effective strategic systems planning.

Research team

This report was researched and written by:

Neil Farmer: a consultant with Butler Cox specialising in office automation studies. He has in-depth experience in the development and operation of strategic systems plans, particularly in the office automation field.

Tony Gunton: a Butler Cox consultant with extensive experience of strategic systems planning covering the fields of computing, telecommunications and office automation. He has contributed to and supervised numerous strategic studies for both user organisations and equipment suppliers. He has also carried out original research into strategic systems planning, including a strategic systems planning model which is described in this report.

Yair Melamud: a consultant with Butler Cox specialising in information and logistics management. He has considerable experience in the development and operation of both corporate plans and strategic systems plans.

THE BUTLER COX FOUNDATION

Butler Cox & Partners

Butler Cox is an independent management consultancy and research organisation, specialising in the application of information technology within commerce, government and industry. The company offers a wide range of services both to suppliers and users of this technology. The Butler Cox Foundation is a service operated by Butler Cox on behalf of subscribing members.

Objectives of The Foundation

The Butler Cox Foundation sets out to study on behalf of subscribing members the opportunities and possible threats arising from developments in the field of information systems.

The Foundation not only provides access to an extensive and coherent programme of continuous research, it also provides an opportunity for widespread exchange of experience and views between its members.

Membership of The Foundation

The majority of organisations participating in the Butler Cox Foundation are large organisations seeking to exploit to the full the most recent developments in information systems technology. An important minority of the membership is formed by suppliers of the technology. The membership is international with participants from Belgium, Denmark, France, Italy, the Netherlands, Sweden, Switzerland, the United Kingdom and elsewhere.

The Foundation research programme

The research programme is planned jointly by Butler Cox and by the member organisations. Half of the research topics are selected by Butler Cox and half by preferences expressed by the membership. Each year a short list of topics is circulated for consideration by the members. Member organisations rank the topics according to their own requirements and as a result of this process, members' preferences are determined.

Before each research project starts there is a further opportunity for members to influence the direction of the research. A detailed description of the project defining its scope and the issues to be addressed is sent to all members for comment.

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The Foundation publishes six reports each year. The reports are intended to be read primarily by senior and middle managers who are concerned with the planning of information systems. They are, however, written in a style that makes them suitable to be read both by line managers and functional managers. The reports concentrate on defining key management issues and on offering advice and guidance on how and when to address those issues.

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*These reports have been superseded.

Future reports

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No. 36 Cost-Effective Systems Development and Maintenance
No. 37 Expert Systems: Their relevance for business users

STRATEGIC SYSTEMS PLANNING

CONTENTS

STRATEGIC SYSTEMS PLANNING

REPORT SYNOPSIS

Strategic planning for information systems can mean different things to different people and organisations. It can be adopted (or attempted) for different reasons, implemented by different groups within an organisation, and based on widely differing assumptions and approaches. It is easy for strategy and tactics to become confused and it is common for organisations of comparable size to apply grossly different scales of effort in the quest for an information systems strategy. For this quest to be successful, the motives, approaches, benefits and likely problems must be clarified at the start.

This report offers guidance in that clarification. Essentially, any strategic systems plan is concerned with the effectiveness of the organisation's long-term information systems effort. The plan defines objectives in terms of benefits to the organisation, and provides a framework for the allocation of resources to information systems. Tactical decisions (on applications, priorities or hardware selection, for example) are made within the limits set by the strategic plan.

While all strategic systems planning has the same fundamental goal — long-term effectiveness of the information systems effort — there are different ways of reaching that goal. Not surprisingly, different approaches will suit different organisations. Most organisations place emphasis on requirements, or on technology, or on resources. These are the three main variables of strategic systems planning, and the planning process itself represents an attempt to bring these three into an optimum balance.

Whatever the organisation, it is clearly beneficial to define long-term objectives and prepare a plan to achieve them. This is the rationale for any strategic planning exercise. In the context of information systems the resulting plan must align the use of information system resources with the overall business objectives of the organisation, at the same time creating a positive environment for tactical planning and individual project decisions.

In the organisations we studied, these variables tended to fit into three main patterns of planning. We describe them as business-led (focusing on aspects of requirements and technology), systems-led (focusing on aspects of requirements and resources) and resources-led (focusing on aspects of resources and technology). These three patterns themselves fit into an overall model of the strategic systems planning process which we illustrate in chapter 1 of the report. Business-led, systems-led and resources-led planning tend to be used in different ways by three broadly different types of organisation: conglomerates, multiples and concentrates.

The theoretical benefits of strategic systems planning are, however, often far removed from the bitter experience of practice, no matter which approach is followed. This report focuses on the strictly practical aspects of getting a strategic systems plan to work, based on the experience of Foundation members and others in attempting to apply a range of methodologies.

Practical experience of strategic systems planning, as outlined in five case histories in chapter 2, shows a range of benefits and problems. One key benefit in the organisations studied was a greater commitment by top management to the information systems function. Information systems resources were better matched to business priorities; the relationship between users and management services staff was improved; and there was a clearer sense of direction within management services.

On the other hand a strategic systems planning exercise can be time-consuming, and it is often difficult to predict the rate of technological change over the long timescales considered. Management services staff may find it difficult to be objective about the information systems function, and indeed both top management and users can vary widely in their understanding of new system opportunities.

The best-known system review methodologies in Europe are IBM's Business System Planning (BSP) and the Nolan Norton and Company (NNC) technique. Two other methodologies have been developed more recently in the United States at the Sloan Business School's Center for Information Systems Research (CISR): these are Rockart's Critical Success Factors (CSF) and Alloway's User Needs Survey (UNS). These

various approaches differ in their orientation, emphasis, level of detail, analytical rigour, time needed and strategic content; the implications for management of these differences are spelled out fully in the report.

The strategic planning process must itself be planned, starting with the basic question of "Why?". The planning parameters must be defined, and the changing orientation of systems must be recognised. This latter point is of central importance, as systems activity moves out increasingly towards the users. In this situation the information systems function must be the catalyst for change. In the past the management services manager sought to identify requirements and satisfy them; now he needs to determine the services that should be offered and how they can be used to maximise their positive impact on the business.

Strategic planning objectives must be defined and the responsibility for planning must be allocated. Essentially the organisational task is to unite the skills and legitimate interests of the users with those of the information systems function. A distinction must be made between a full-scale systems review (normally a once-off exercise) and the regular, continuing planning process. None of the four proprietary methodologies we examined is perfect, so their strengths and weaknesses must be carefully weighed. A strategic systems planning approach must be chosen or developed to meet the needs of the organisation.

As more and more system decisions are taken by decentralised units, it becomes increasingly important to ensure that the strategic systems plan is not undermined by a host of local decisions. Valid priorities for resource allocation can be distorted by forceful individual users unless effective mechanisms are maintained to implement the plan. The most critical issue in the planning process, chapter 3 concludes, is to ensure that the strategic issues prevail over everyday concerns and short-term pressures.

In moving from these general considerations to the detailed task of preparing a strategic systems plan, key questions must be answered in order to clarify the main strategic issues. We list these questions in chapter 4, together with the following checklist for information systems directors:

—Keep the thinking strategic. Focus on the critical areas; do not aim for unnecessary precision; develop strategic planning skills.

—Make sure the plan deals with practical issues, but at a strategic level. Identify objectives, the main steps in achieving them, and major risks and uncertainties.

—Move towards proactive (market-led) planning. Develop business skills and market analysis skills; look for latent needs as well as for definable systems opportunities.

—Secure senior management commitment to strategic planning for information systems. Present the strategic systems plan in business terms; involve senior managers at the appropriate planning level.

Ironically, for the director of information systems there is often a basic dilemma right at the beginning. The standing or reputation of his division may not be high enough to reflect the true strategic significance of information systems to the business. A strategic planning exercise will be the best way to remedy this situation — but if the division's standing is low the exercise is likely not to have senior management support and so cannot be effective. This low standing is at once the most pressing reason for strategic planning, and the greatest barrier against it.

Strategic planning has always been desirable, but strategic planning for information systems is now becoming essential because of the way that systems are evolving. The rapid development of microelectronics technology presents end users with many options, and an ability to satisfy many of their own systems requirements. As a result, the information systems function will find it increasingly difficult to maintain its influence and control over developments — unless it is able to anticipate end users' requirements in a positive way. Strategic systems planning is a key element of this approach.

We expect to see important developments in the strategic systems planning field over the next few years. This will not happen because the methodologies available improve greatly. It will happen because users will improve their understanding of strategic issues.

Our first task in addressing the topic of this report — Strategic Systems Planning — was to arrive at a satisfactory definition. A common dictionary definition of the term strategy is "the art of planning and directing larger military movements and operations of a campaign". Strategy may be contrasted with tactics, which are defined as "the art of deploying and manoeuvring when in contact with the enemy".

Transferring these definitions from the military context, where they originated, to the business context, a corporate strategic plan is therefore concerned with the overall conduct of the business. Such a plan defines business objectives and provides guidelines within which tactical decisions are made and business operations are carried out.

Similarly, a strategic systems plan is concerned with the overall conduct of the information systems effort within an organisation. It defines the information systems objectives in terms of benefits to the organisation, and provides a list of specific guidelines within which system developments may take place. It is not concerned directly with tactical issues, such as planning the priorities and timescales for developing particular application systems, or the evaluation (and subsequent purchase) of specific pieces of equipment. These issues are not part of the strategic plan; they are consequent to it.

These broad definitions of strategy and strategic planning need to be related to the particular situation. For example, the definition of a larger military movement depends on the size and scope of the campaign in question. Equally, the content of a strategic systems plan depends on the type of business or organisation for which it is being prepared.

We have taken a similarly broad definition for the term 'information systems'. Under this heading we include computing, telecommunications and office automation, each of which may be regarded as a subset of information systems. It follows that a strategic plan for one of these sub-areas should be subordinate to, or a component of, the overall information systems strategy. In practice, however, each of these sub-areas may be regarded as sufficiently important to justify a separate strategic planning effort.

As well as the term 'strategic systems plan', there are several other terms that are often used in discus-sions of strategy and strategic planning. We define all these terms below:

— A 'strategic systems plan' is a plan which defines information systems objectives in terms of benefits to the organisation, and provides a list of specific guidelines within which system developments may take place.

— A 'strategic plan for information systems' is another way of describing a strategic systems plan.

— A 'systems strategy' refers to the key contents of a strategic systems plan.

— 'Strategic systems planning' refers to the process of preparing a strategic systems plan.

— A 'strategic systems planning methodology' is a methodology which describes a standard approach to be followed when carrying out a strategic systems planning exercise.

— A 'systems review' is a once-off comprehensive exercise to review the effectiveness of existing systems. (System reviews often lead on to system planning exercises.)

— A 'systems review methodology' is a methodology which describes a standard approach to be followed when carrying out a systems review.

— 'Strategic planning' refers to the process of preparing a strategic plan.

— 'Systems planning' is a general purpose term which may refer to the planning of any type of system at any level (operational, tactical or strategic) depending on the context in which it is used.

The topic of strategic planning has been much discussed throughout the 1970s, and many managers and executives now feel under increasing pressure to include strategic planning as part of their armoury. There is now an abundance of articles and books on the subject of strategic planning in general and information systems strategy in particular. This literature offers a variety of diagnoses and prescriptions. Inevitably, the former far outweigh the latter. Much has been written about the purpose and objectives of strategic systems planning and about the difficulties to be surmounted if the process is to be effective. Far less has been written about the methods that can be

used to arrive at the best answers for a particular organisation.

This imbalance highlights the central issue of strategic systems planning. We believe that many management services directors would take strategic systems planning much more seriously if they could see a practical and effective way to do it. Not only do many of the available strategic systems planning methodologies appear to place heavy demands on management resources, but they are frequently severely limited in their scope and vision. All too often, strategic systems planning is resorted to only in a crisis, or is treated as a necessary chore to meet the demands of a corporate planning process.

We expect to see important developments in the strategic systems planning field over the next few years. This will not happen because the methodologies available improve greatly. It will happen because users will improve their understanding of strategic issues.

Intended readership and purpose of the report

This report is intended both for managers of the information systems function, and for senior managers outside the information systems area who are concerned with, or concerned about, strategic planning for information systems.

Because the content of a strategic systems plan must necessarily depend on the type of business or organisation for which it is being prepared, we have not attempted in this report to provide a single prescription for strategic systems planning. Instead we review the objectives and the methods that might be adopted, so that readers can relate these to their own particular situation.

Our approach to the research

We approached the research for this report with three main objectives:

—To find out what limitations and difficulties Foundation members and other users have experienced in their own strategic planning for information systems.

—To evaluate and assess the available formal strategic planning methodologies.

—To give guidance to Foundation members on how to achieve effective strategic systems planning.

The research contained four main elements:

—A brief questionnaire survey, designed to find out how Foundation members perceived strategic systems planning, and how much effort they devoted to it. (Twenty five replies were received.)

—Interviews with a representative sample of 15 Foundation members (and other major organisations) who had recently conducted a major systems review or a major strategic systems planning exercise.

—Focus group discussions (attended by 24 members in the United Kingdom and Scandinavia) to find out how Foundation members went about strategic systems planning and to reveal significant differences in viewpoint and approach.

—A study of the literature on strategic planning methods, supported by interviews and discussions with specialists and practitioners in the field.

Structure of the report

We begin in chapter 1 by discussing the different approaches to strategic systems planning that emerged in our research and by constructing a model of the planning process. Chapter 2 then reviews the practical experience with strategic systems planning methodologies. Next, in chapter 3 we review the planning process itself. The contents of this chapter can be used as a checklist by the information systems director as he sets about preparing a strategic systems plan. Finally, in chapter 4 we provide a concise set of guidelines for strategic systems planning, including a checklist of the issues that planners should address.

APPROACHES TO STRATEGIC SYSTEMS PLANNING

In this chapter we first identify the objectives of a strategic systems planning exercise, and then discuss the difficulties that have to be overcome before the plan can be prepared. Based on our research, we then describe the different focuses that a strategic systems plan can have and, as a result, put forward a model of the strategic systems planning process which relates these approaches to different types of organisational structures. The chapter concludes by setting out example planning structures that might be used by different types of organisation as they set about their strategic systems planning.

OBJECTIVES FOR STRATEGIC SYSTEMS PLANNING

We have already defined a 'strategic systems plan' as a plan which defines information systems objectives in terms of benefits to the organisation, and provides a list of specific guidelines within which system developments may take place.

The rationale for any strategic planning exercise is that it is better for an organisation to know what its ultimate objectives are and plan how to achieve them, than it is to achieve the objectives by accident or fail to achieve them by default. This implies several objectives for strategic systems planning, the most important of which are:

—To align the use of information systems resources with the business objectives and/or business requirements.

—To decide the parameters of the information systems effort in terms of overall direction, general resource allocation, scale, pace, etc., so as to maximise the benefits to the business and to secure an equitable share of corporate funds.

—To obtain the organisation's commitment to a set of objectives for information systems.

—To make (or prepare for) major investment decisions (a communications infrastructure, for example).

—To create the right environment for making decisions about individual projects. (This will include guidelines on the relative roles of top management, end users, and systems staff.)

—To provide a framework for tactical planning (of equipment type and capacity, systems development resources, etc.).

In addition, strategic systems planning has some important educational and public relations by-products both within and outside the information systems function. The strategic planning exercise frees information systems staff (indeed, to be effective, it must free them) from the short-term pressures of their normal work. The opportunity to take a longer-term view of, say, five years ahead inevitably helps the staff to gain a better understanding of the role of information systems in their organisation. The strategic planning exercise and the strategic plan itself also serve to condition users' expectations, both in the positive sense of making them aware of new possibilities and in the negative sense of making them aware of the economic and technical constraints. The planning exercise may also serve to improve the image of (and the level of confidence in) the information systems function, and it can also help to prepare for technologically induced change.

Some commentators believe that better understanding on the part of information systems staff and users is the most important product of the strategic planning process. Our view is that, valuable though it is, better understanding on its own is not of strategic value. Unless strategic planning contributes to the previously stated objectives, then it must be regarded as a failure, however much understanding it generates.

The objectives of strategic systems planning will largely dictate the key contents of a strategic systems plan. Such a plan will, therefore, include a clear statement of information systems objectives in business terms, an assessment of relevant technology and environmental trends, operational policy guidelines, responsibilities for systems planning and implementation, and guidelines on the scale, pace and direction of future information systems developments. (The contents of a typical, comprehensive strategic systems plan are shown in figure 15, chapter 4.)

DIFFICULTIES TO BE OVERCOME

Many people argue that the information systems environment, with its high technological content and the rapid rate of technological change, creates unique strategic planning problems. It is doubtful whether such problems are unique to this environment, although the widening scope and diversity of information systems applications certainly places heavy demands on the strategic planner. Rather than

diminishing the need for effective strategic planning, the high technological content of information systems reinforces this need. The strategic systems planning process is, in fact, a key vehicle for general management to control the application of technology.

Poor reputation of the information systems function

The Foundation members and other major organisations with whom we discussed the problems of strategic systems planning represented a diversity of businesses and a diversity of approaches to information systems. Undoubtedly, many of the difficulties that they faced stemmed from the organisational structures that had been adopted. But in many organisations the root cause of the difficulties was the poor reputation of the information systems function. This made it impossible either to assemble a strategic plan for information systems, or to ensure that such a plan was followed once it had been constructed.

Lack of a corporate strategy

Several interviewees felt that their strategic planning was seriously constrained by the absence of a corporate strategy to which the systems plan could relate. We would argue, however, that the existence of an explicit corporate strategy does not necessarily make it easier to construct an information systems strategy. For example, the corporate strategy may not be expressed in terms that translate easily into information systems objectives. Equally, users will continue to have requirements for information systems with or without a corporate strategy, and it will be the task of the information systems function to meet those requirements. Perhaps the key point is that a corporate strategy creates a favourable climate within which an information systems strategy can be developed. Except in businesses which use information systems as a competitive weapon, information systems strategy depends most heavily on corporate tactics rather than on corporate strategy.

Difficulties with the planning process

There is often a conflict of interest between the various parties who may be involved in strategic systems planning. Users are nearly always concerned with tactical rather than strategic issues. Management services staff are typically motivated towards a high level of expenditure on sophisticated systems and equipment. Senior managers have their own perceived roles to play and this often affects their objectivity. These conflicts of interest can be a major obstacle to effective strategic systems planning.

Organisational attitudes to strategic planning and the methods used to construct a strategic systems plan are clearly interdependent. Nevertheless, there was a clear and consistent pattern in the difficulties

reported to us, and these related to the planning process rather than to organisation for planning. Three problems were of dominant importance:

Evaluation of opportunities

It is becoming more and more difficult to apply conventional cost-justification techniques to emerging opportunities for information systems. This makes it difficult for the planner to recognise, discriminate between and place a realistic value on the new opportunities. Two main factors are contributing to this difficulty. First, in many organisations, all of the obvious (and easily cost-justified) applications have already been implemented. Second, the changing cost ratios of people, software and hardware are bringing a myriad of small opportunities to the surface, but whose aggregate value might be substantial.

Level of detail

Traditional information systems planning methods use a macro-level version of the techniques used to design the information systems themselves. IBM's Business Systems Planning (BSP) is a good example of this approach, and is also an illustration of the problem the approach creates. Like all good systems design methodologies, BSP is rigorous in its analysis of requirements, and in consequence is time-consuming and demands a vast amount of detailed documentation. The danger is that the detail may obscure the strategic issues, or the strategy may metaphorically collapse under the weight of its documentation. We have given BSP as an example of the difficulty but the problem is not confined to organisations who have used that particular technique.

In contrast, high level strategic planning methodologies (such as the User Needs Survey described in chapter 2) demand fewer resources but are often difficult to relate to tactical decisions and to real system developments.

Implementing the strategy

This difficulty was put most succinctly by one interviewee who said "How do we get from the mess we are in now to the perfect architecture of the future?" Strategic planning purists would argue that this is a tactical rather than a strategic issue, but nonetheless the question remains a pertinent one. If a strategy is likely to fail because it places excessive demands on tactical skills, then it clearly is not a good strategy.

Difficulties in the United States

A questionnaire survey conducted recently in the United States (by R. M. Alloway of the Sloan Business School's Center for Information Systems Research) asked managers of the information systems function in Fortune 500 companies to indicate, first, the main problems they experienced in strategic planning and, second, the strategic planning problems that existing methodologies did not address. In the 170 replies

received, four problems scored highly on both counts. These were:

—The company is too complex.

—It is difficult to implement the strategic planning recommendations.

—The available strategic planning methods are impractical.

—Short-term pressures interfere with strategic planning.

The first three of these parallel our interviewees' problems closely. The fourth problem did not feature in our research because we concentrated on organisations who took strategic planning seriously enough to resist the short-term pressures that afflict all information systems functions.

THE FOCUS OF THE PLANNING TASK

Although all strategic systems planning has the same fundamental goal — long-term effectiveness of the information systems effort — its focus varies, depending on the viewpoint of those who conduct the planning exercise. A planner at the apex of a very large corporation, each of whose operating units has its own information systems function, will have a perspective and a set of issues to address that are very different from those of the information systems manager in one of the operating units. Yet both are contributing to the same goal when they develop their strategic systems plans.

Our research identified three main approaches to strategic systems planning, with the principal focus being on requirements, on technology, or on resources.

Focus on requirements

This approach to strategic systems planning concentrates on the ways in which an organisation depends on and can benefit from information systems. The approach includes not only the systems that individual parts of the business will find valuable, but also features of the environment within which the business operates — competitive pressures, for example.

For strategic planning purposes, the requirements can be sub-divided into three types — extant requirements, latent requirements and business needs. Extant requirements consist of the systems at present under development and the backlog of requests for systems. Latent requirements are those that either have not yet surfaced because no one has realised that something useful can be done in a particular area, or those that have been suppressed because

the potential users have not felt it worth their while asking for systems that they believe they will never get.

Business needs are largely reflected in the extant and latent requirements, but sometimes they are independent of them. Thus a conglomerate organisation (that is, one comprising a collection of companies with varied outlets and functions, such as an organisation created by acquisition rather than growth) may wish to be free to dispose of a subsidiary company at any convenient time. A business need for such an organisation will therefore be to keep the subsidiary's systems independent and autonomous.

Focus on technology

The rapid and continuing developments in information technology force some organisations to focus on technology during the strategic systems planning exercise. (This phenomenom is sometimes known as 'technology push'.) Technology push will take its own course independently of any particular business, driven both by the technology itself and by market forces that determine its availability and the way it is packaged into products. An individual business can, however, choose which technologies to exploit and when, and can seek to control their use within the business.

For strategic systems planning purposes, technology can be classified as primary and secondary. Primary technology is used to satisfy a particular systems requirement and can therefore be cost justified. Secondary technology is used to establish a capability (such as a data dictionary system or a communications network) that will be applied to a range of system requirements.

Focus on resources

For some organisations, the most important consideration in their strategic systems planning will be the limited resources available to put the technology to work for the business. They will need to ensure that the available resources are allocated where they will have the greatest positive impact (although the detailed allocation of resources is a tactical function, rather than a strategic one).

Three types of resources need to be considered during a strategic systems planning exercise:

—The existing systems, which represent the past investment in hardware and software.

—The money that is available for investing in new systems, training, personnel, etc.

—The people available to the organisation, their skills and capabilities.

THE BUTLER COX STRATEGIC SYSTEMS PLANNING MODEL

In reality, a strategic systems planning exercise will not fall neatly into one of the three main approaches we have just described. Although the plan is likely to focus on one of the three, inevitably there will be some overlap between them. Also, although available resources need to be considered at the strategic planning stage, requirements and technology are the main input. Resources are allocated as a consequence.
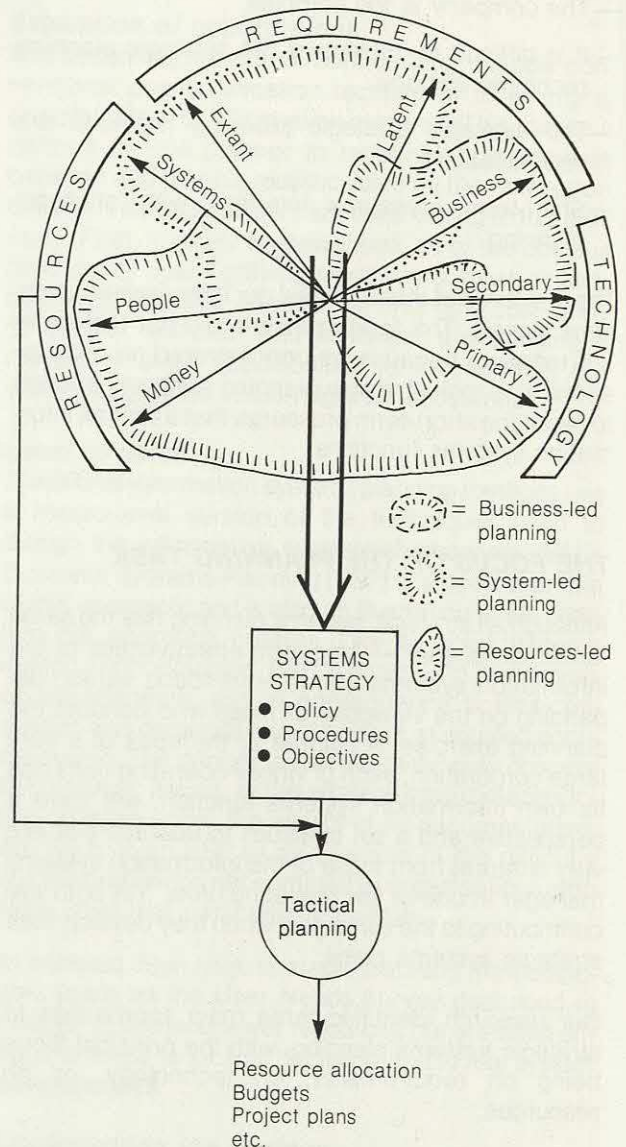
Requirements, technology and resources can be regarded as the three main variables of strategic systems planning. The planning process itself represents an attempt to bring these three variables into an optimum balance. Figure 1 illustrates the Butler Cox model that we have developed to explain the ways in which these variables can be combined. The figure identifies the three different forms of strategic systems planning practised by the organisations we examined during our research as being:

— Business-led planning, which focuses primarily on business needs and secondary technology, but also takes account of latent requirements and primary technology. This type of planning therefore concentrates on the needs of the business for information systems, and the value of information systems to the business. It also seeks to establish a corporate sense of direction and to influence the way in which the available resources will be allocated.

— Systems-led planning, which focuses primarily on systems, both extant and latent, but also takes account of people resources and business needs. This type of planning considers the known and anticipated requirements of users for systems, in order to optimise the future allocation of resources.

— Resources-led planning, which focuses primarily on people resources, the money available and primary technology, but also takes account of existing systems and secondary technology. This type of planning considers the capabilities and limitations of technology, and the internal resources available, in order to exploit both in the most effective way.

Although all three types of planning implicitly or explicitly acknowledge influences other than those they focus on, they each emphasise particular planning inputs in preference to others. These differences of emphasis are not accidental. They reflect a different view of what is of strategic significance, and also differences in the information available on which to plan.

They may also reflect the status of management services within the business. Thus, for example, one implication of adopting a resources-led approach is

Figure 1   Butler Cox's model of the strategic systems planning process

= Business-led planning

= System-led planning

= Resources-led planning

SYSTEMS STRATEGY
● Policy
● Procedures
● Objectives

Tactical planning

Resource allocation
Budgets
Project plans
etc.

that requirements cannot be determined in a clear or precise enough form to be the basis for the strategic plan (although they are, of course, bound to underlie it).

Although we have described the three types of planning approach separately, it is clear from our model that they are not mutually exclusive. In organisations where systems responsibility is decentralised, systems-led planning will (or should) take place at the point of accountability for systems, while business-led or resources-led planning takes place either at the corporate level or within a centralised management services division. Indeed, in the largest companies, all three forms of strategic planning will be practised and will interlink at various points in the organisation.

Each of the three planning approaches has characteristic weaknesses, as the domains of application shown in the model suggest:

—Business-led planning provides minimal help with the tactical problems of resource allocation.

—Systems-led planning tends to be weak in the context of technology.

—Resources-led planning will not ensure that requirements are treated on their merits. On the contrary, those users who shout loudest are likely to have resources allocated to them.

We noted a strong correlation between the three types of planning described here and the type of organisation. In a recent multiclient study carried out by Butler Cox & Partners ("The Market For Office Technology") we identified three main types of organisational structure for large enterprises:

—Multiples, which typically are large organisations with many functionally identical outlets (clearing banks, public utilities, supermarket chains, etc.).

—Conglomerates (which we have already described on page 3).

—Concentrates, which are divisionalised organisations, usually (but not necessarily) concentrated in a single location. Examples include local government offices and merchant banks.

Business-led planning is appropriate at the apex of a conglomerate. Its aim is to create an environment in which the many individual decisions taken lower down the organisational structure can reinforce one another, thereby enabling the organisation as a whole to take advantage of its size and resources.

On the other hand, in many multiple organisations the systems strategy is the next major project (minicomputers in the branches of a bank, for example). Thus, systems-led planning is dominant in multiples.

In contrast, concentrates seek to establish a sense of direction that transcends decision-making about systems. They therefore tend to focus their strategic systems planning on evaluating 'technology push' and its effective exploitation. This focus is characteristic of resources-led planning.

EXAMPLE PLANNING STRUCTURES

In this section we describe the planning structures that typically exist in multiples, conglomerates and concentrates.

Multiples

Our research showed that in multiples, procedures and methods are developed centrally, although, sometimes, operational control of systems is devolved to the outlets. Typically, systems-led planning is carried out by the information systems function at the centre. Because of the fundamental importance of the information systems to the business, the board of directors or a high-level steering committee is involved directly in all major systems decisions. This same body will review the role and mission of the information systems function as part of its own (business-led) planning.

Conglomerates

In these companies, the head office is often a holding company which exercises little operational influence over the subsidiaries. Accountability for information systems (and system resources) is decentralised, although there may be some centralised services, such as a bureau or a corporate telecommunications network, which are operated on a quasi-commercial basis. There may be a corporate systems planning function, conducting business-led strategic planning, which will influence and be influenced by systems-led planning at operating company level and, if applicable, by resources-led planning in the corporate service functions.

Concentrates

Systems accountability in these companies will normally be decentralised, although processing resources and specialist skills will usually be pooled within the information systems function. Central planning will be resources-led or business-led. Systems will be planned on an ad hoc basis, with conflicts resolved by a systems steering committee.

SUMMARY

We began this chapter by listing the most important objectives for a strategic systems planning exercise, and then we discussed the difficulties that have to be overcome (some of which are perceived rather than real). We then showed that the focus of the planning task will vary according to the type of business or organisation for which the plan is being prepared. As a result of our research we have constructed a model of the strategic systems planning process which shows the relationships between the three main variables. The model identifies three different approaches to strategic systems planning — business-led, systems-led and resources-led — and we suggested that each of these approaches will be more applicable to a particular type of organisation.

We do not advocate that strategic systems planning should set out to cover all of the ground shown in the model. On the contrary, we suspect that an attempt to produce such an all-embracing strategy would be never-ending. And the planners would find it extremely

difficult to refrain from considering tactical issues. In practice, only part of the ground will be of genuine strategic concern. What is important is that the plan-

ners should choose the ground on which they will concentrate, and recognise the limitations of any resulting strategic systems plan.

In this chapter we discuss systems review and planning methodologies, looking at the strengths and weaknesses of both well-established and recently developed methodologies.

We then consider practical experience with strategic systems planning. We present five short case histories. They illustrate the different approaches that are being adopted and the problems that are frequently encountered when organisations prepare strategic systems plans.

We conclude the chapter by summarising the lessons learnt from practical experience of strategic systems planning.

METHODOLOGIES

We now describe two of the best-known system review methodologies — IBM's Business Systems Planning (BSP) and the Nolan Norton and Company (NNC) methodology derived from Nolan's well-known theory for the development of data processing. Both of these have been used extensively in Europe. Our purpose here is to assess objectively their strengths and weaknesses. We then compare and contrast these well-established methodologies with two approaches based on recent research at the Sloan Business School's Center for Information Systems Research (CISR) — the Critical Success Factors (CSF) approach developed by Rockart and the User Needs Survey (UNS) approach developed by Alloway. These two newer approaches have been applied quite widely in the United States but have been used only to a limited extent in Europe.

IBM's Business Systems Planning (BSP) methodology

Business Systems Planning (BSP) is a study methodology that has been offered as a market-support programme by IBM since 1970. It was developed as a result of experience acquired by the IBM corporate information systems (I/S) architecture group when I/S was still centralised during the late 1960s.

Study objectives
The methodology is used primarily to identify the implications of managing (or not managing) the data of the business. It also identifies the business areas that offer the greatest potential benefits from investment in information systems.

Analytical approach
A 'top-down' analytical approach is employed with management interviews being used both as a source of data and as a means of identifying system priorities. Although the information provided by this approach is not sufficient to specify detailed requirements or design specifications, BSP is heavily data-oriented in nature. (That is, it focuses primarily on the data inputs required to manage the business and treats business processes and information outputs as being less important.) BSP defines business functions primarily as a means of identifying the data requirements and proving that the same data is being used by multiple processes, thus determining whether or not a data problem exists. The analysis begins by defining the products (or services) of the business unit. Next, the resources required to produce the products are identified. Then the processes that have to be performed to manage the products and resources over their life cycles are identified and, finally, the data required to manage the processes is defined. The relationships between the processes and the data are then documented to form a structure (or architecture) that represents the 'functional specifications' and the 'material (data) specifications' of the information required to support the business unit.

The BSP approach generates two main outputs:

—A structure, or architecture (in information terms) that describes the business unit under study.

—A list of management's priorities as related to the structures developed.

Strengths and weaknesses
BSP's main strength is that it is a rigorous approach: it is well-documented and painstakingly thorough. In addition, it has the advantage (and status) of being an IBM market-support programme. Also, BSP's entry cost is low — the manual is inexpensive and no external support is needed to use the methodology. It is at its best when it is used to identify latent applications and to establish priorities for information systems. Some organisations have found that it is a useful means of gaining the commitment of senior user management to information systems developments.

BSP's weaknesses derive largely from the same

source as its main strength. By seeking to build a rigorous business model, a BSP exercise becomes extremely laborious. Most of the BSP users we interviewed had experienced this problem and had then either decided to use only part of the BSP process or had tailored it radically to make it more manageable. Although BSP is good at illuminating certain aspects of information systems requirements, it does not cover some major areas of strategic concern. It belongs firmly in the systems-led sector of our planning model, and typifies the limitations of such approaches. Several users of BSP said that another disadvantage was that it relied on participants having a good knowledge of the various technological possibilities. In reality, the participants tended to focus on systems solutions based only on the technology that they knew.

In summary, BSP is a reliable and readily accessible method that can be used to clarify requirements for information systems. But its contribution to strategic, rather than tactical, systems planning will normally be limited.

The Nolan Norton (NNC) methodology

The Nolan Norton (NNC) methodology is based on the research work carried out by Richard Nolan and his associates which culminated in the Nolan stage theory of the development of data processing. Although the theory and its derivations are widely known (the transcript of the Butler Cox Foundation Management Conference held at Birmingham in November 1979 contains a comprehensive review of the theory), the NNC planning methodology is proprietary and is available only from the consulting firm set up by Nolan and his colleagues.

Study objectives
A study using the NNC approach sets out to establish how advanced different parts of the business are in terms of their use of information systems, and how effectively the information systems function is performing. Using this information, key areas for attention are identified and a strategic plan is developed.

Analytical approach
As an illustration of the NNC approach we describe below the six main steps of a study undertaken recently in the United Kingdom:

—Business objectives were determined by talking with senior managers, in a discussion group (workshop) type of environment.

—Expenditure on information systems was analysed and compared with NNC benchmarks. In particular, systems development expenditure was compared with systems maintenance expenditure, and the total costs of hardware and software were compared with the employment costs for informa-

tion systems staff. Expenditure was also measured as a percentage of company turnover.

—The expertise level of systems staff and the level of technology employed for information systems were examined, and were used to determine the company's stage of development in the application of databases, data management, etc.

—Management discussion groups identified all significant business activities. These activities were then transposed onto a three-level hierarchy triangle, with basic activities at the bottom and strategic activities at the top, as shown in figure 2.

—Questionnaires were used to determine the parts (percentages) of particular business activities that could be (or were) automated, and to determine the effective quality of existing information. When the hierarchy triangle was completed, it showed quite clearly how well (or poorly) each functional area was supported by information systems and highlighted underdeveloped areas.

—This overall process identified key areas for future information systems development, and from this information a detailed five-year strategic plan was prepared.

Figure 2   The NNC hierarchy triangle
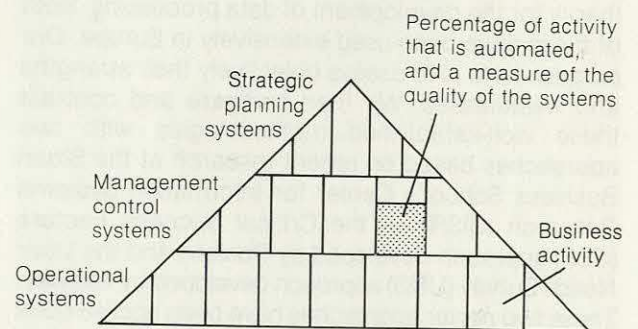
Strengths and weaknesses
The strengths of the NNC approach lie in its inward-looking analysis of the present situation and its assessment both of the existing portfolio of systems and of the past performance of the information systems function. During our research, however, we received strongly conflicting reports on the value of a strategy derived from this approach.

We concluded that the quality of the results depends very heavily on the analytical skills of the consultants leading the study. In this respect the NNC approach is not as rigorous as BSP. The NNC approach also seems to be weak in linking business and information systems priorities.

Cost is a further disadvantage, because the study must be conducted with substantial outside assistance. It also requires considerable senior management involvement. (Six to nine months is a typical timescale for carrying out a study based on the NNC approach.)

The Critical Success Factors (CSF) methodology

The Critical Success Factors methodology was first made public by John Rockart, director of CISR at the Sloan Business School, in an article published in 1979 (Bibliography item 8).

Study objectives
The CSF approach rests on Rockart's conviction that most widely used analysis techniques do not recognise the real (and changing) information needs of managers. A CSF exercise sets out to identify "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation". These areas are then described in terms of the information needed for management control. This information forms the basis on which the information systems plan is developed.

Analytical approach
Group interviews and individual interviews with managers are used to identify the Critical Success Factors relevant to different areas of the business. The interviews also identify the key ways to measure each critical success factor. Figure 3 illustrates the results of one such exercise that was carried out in a microwave communications company.

Figure 3 Critical success factors developed to meet Microwave Associates' organizational goals

Critical success factors	Prime measures
1. Image in financial markets	Price/earnings ratio
2. Technological reputation with customers	Orders/bid ratio
	Customer "perception" interview results
3. Market success	Change in market share (each product)
	Growth rates of company markets
4. Risk recognition in major bids and contracts	Company's years of experience with similar products
	"New" or "old" customer
	Prior customer relationship
5. Profit margin on jobs	Bid profit margin as ratio of profit on similar jobs in this product line
6. Company morale	Turnover, absenteeism, etc.
	Informal feedback
7. Performance to budget on major jobs	Job cost budgeted/actual

The CSF measurement methods are then refined further to give formats for the reports that are necessary to monitor each critical success factor. This is done by examining existing information systems and identifying the sources of relevant data. The CSF approach then defines a set of requirements and a scheme of priorities for information systems development.

Strengths and weaknesses
The great strength of the CSF approach is its close attention to the information needs of specific managers, on whom the future success of the business depends. (Rockart argues that these information needs depend both on the business a manager is controlling and on the methods a manager uses to control the business.) It is a more direct and a more selective way to uncover information requirements, than, for example, the BSP approach.

The CSF approach does, however, have two main weaknesses:

— It lacks rigour; it is heavily dependent on the skills of the interviewer to uncover information requirements and translate these into system terms.

— It does not address longer-term 'architectural' issues — it deals solely with information requirements.

Both the CSF approach and the BSP approach largely ignore the technological tools that might be adopted, and they tend to ignore implementation issues. Indeed, both CSF and BSP can be regarded primarily as methods to clarify information systems requirements, particularly the decision support needs of managers.

The User Needs Survey (UNS) methodology

The User Needs Survey (UNS) methodology, developed by Dr R. M. Alloway, is based on research into the changing needs for information systems. (This work is closely associated with Dr Scott-Morton's research into decision support systems.)

Study objectives
The User Needs Survey (UNS) approach is based on a structured questionnaire survey both of management services management and of user area management. The questionnaires are designed to elicit management views on:

— The performance of the management services function and the effectiveness of current information systems.

— The evolving information systems requirements of different business units.

Analytical approach
Future systems requirements for a business unit are

analysed using a classification of information systems in four different categories — monitoring, exception, inquiry and analysis. (These system categories are defined in figure 4.) This approach contends that different mixes of systems from these categories are appropriate to different levels of maturity of the business unit's product. The proportion of the total information systems investment to be allocated to each business unit is related to the net present value of that unit's product to the business. Budgets are then prepared to reflect these proportions in terms of an appropriate mix of systems from the various categories described in figure 4.

Figure 4   UNS system categories

System category	Functional description
Monitor	The system monitors daily detail activity producing standard reports on a fixed schedule (daily, weekly, or monthly).
Exception	The system processes daily detail activity but produces exception reports where the definition of exception conditions is fixed.
Inquiry	The system provides a database with flexible inquiry capability, enabling managers to design and change their own monitoring and exception reports.
Analysis	The system provides powerful data analysis capabilities (modeling, simulation, optimisation, or statistical routines) and the appropriate database to support managerial decision making.

The UNS approach also recommends that different project approval criteria should be used for assessing the merits of transaction processing and decision support systems. This approach argues that the benefits of these two types of system are fundamentally different and that they must, therefore, be assessed in a different way.

Once the budgets have been established and approved by senior management, user management and management of the information systems function jointly allocate funds to individual systems projects. This overall process is illustrated in figure 5.

Strengths and weaknesses
One strength of the UNS approach is its economy — it requires only one to two hours' time for each manager who participates in the exercise. During this time managers attend a seminar (at which the purpose of the questionnaire and the classification of system requirements are explained) and fill in the questionnaire.

The UNS approach also identifies latent requirements

Figure 5   Macro view of the UNS budget process
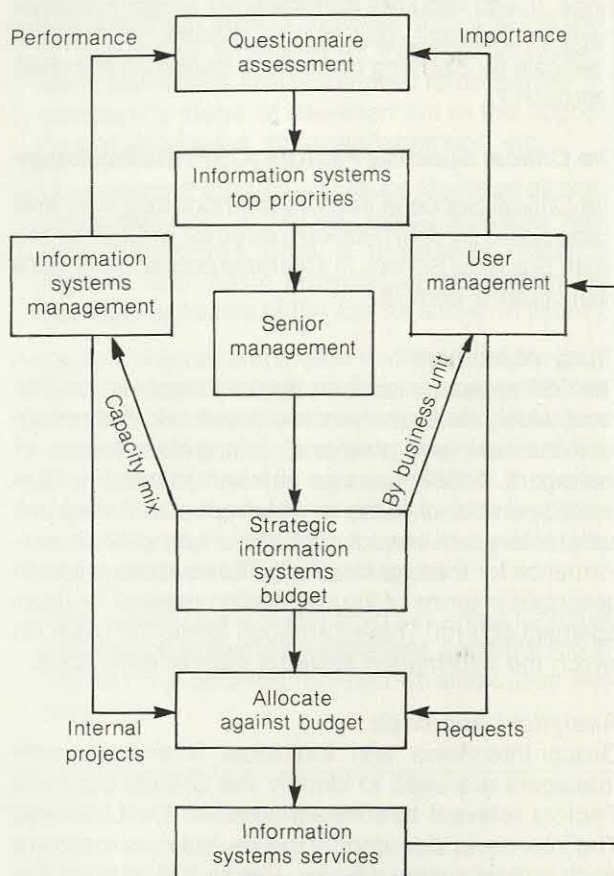
and is closely linked to budgetary mechanisms to ensure that the strategic objectives revealed by the questionnaire are pursued effectively.

The weaknesses of UNS are, firstly, that it does not build a business model, but relies on the aggregation of individual user requirements to develop a strategic systems plan. And, secondly, UNS does not examine technological or implementation issues at all, but treats these issues as being of tactical rather than strategic concern.

METHODOLOGY CONCLUSIONS

Our review of strategic systems planning methodologies shows very clearly how different methodologies tend to focus on different aspects of the overall problem, while ignoring other aspects. Which of these aspects are of genuine strategic concern, and which can be neglected altogether or left to tactical planning, is a matter of judgement. Figures 6 and 7 show two comparisons drawn up by Dr Alloway which, naturally enough, place his own UNS methodology firmly in the strategic area but which nonetheless provide a useful and concise way of highlighting the differences between the methodologies discussed earlier.

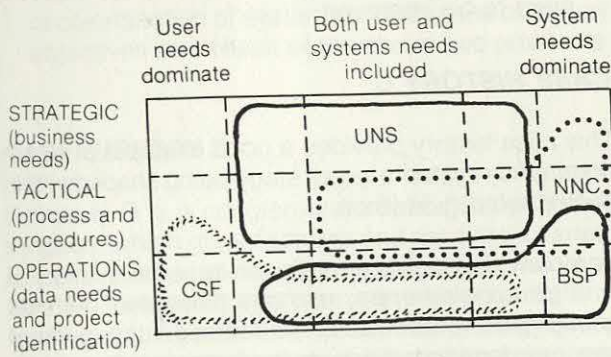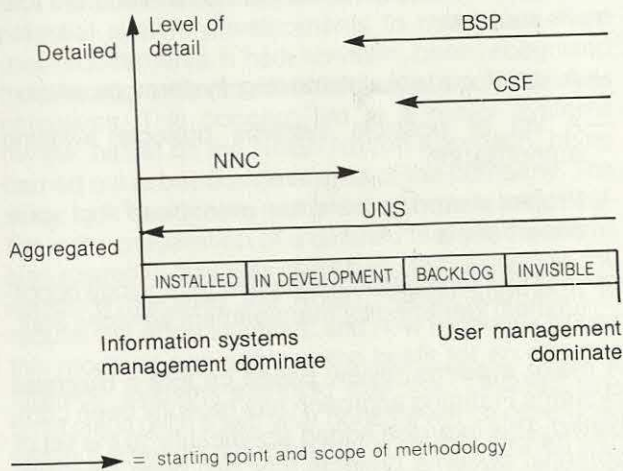Figure 6 Comparison of alternative system review methodologies

Figure 7 Comparison of alternative system review methodologies

= starting point and scope of methodology

We now present five short case histories to illustrate various systems planning approaches that are being adopted.

CASE HISTORY A

This case history illustrates a predominantly business-led strategy that provides an overall strategic framework within which user systems requirements can be developed. (None of the four methodologies described earlier are used.)

Company A is a large multinational oil company that has a corporate information systems strategy team based in London. When this team began working on the corporate strategic systems plan, one of their first actions was to obtain a copy of the corporate strategic planning manual which is used to produce an overall strategic plan for the business. This manual provided them with both a practical approach to strategic planning and a structure that was already

familiar to the company's senior management. The main elements of the strategic planning approach, as adapted for office automation, were to define:

—The characteristics of the offices (current office characteristics and automation levels, current technology and future technology trends, future demands for office services of various types, current and future supply of these office services, rewards and risks of automation, and comparison of office performance with competitors).

—The criteria for successful systems installations (technically feasible, effective internal support, flexibility, acceptability and cost justification).

—The strategic objectives (overall office performance).

—The programme of activities (how to get the desired results).

—The expected outcome from the installation of information systems (benefits, timing, etc.).

To compile the strategic plan, the strategy team then examined various five-year plans that are regularly prepared by data processing staff in each of the company's operating units. The team also examined relevant technology trends. Using these two types of basic information the team members projected likely systems requirements and looked at constraints such as manpower levels and the funds available for information systems development.

The detailed output of the strategic planning process included:

—A recommended minimum rate of return from future expenditure on systems.

—An analysis of system architecture alternatives for information systems (for example, networked unintelligent terminals, clustered intelligent terminals, etc.) and guidance to operating companies on structuring systems to meet common types of requirement.

—Guidelines for internal charging arrangements.

—Advice on organisational changes relating to the various information systems functions in the company.

—Policy advice relating to infrastructure requirements, such as networks that cross organisational boundaries.

CASE HISTORY B

Company B is a large manufacturer of foodstuffs based in the United Kingdom. A centralised management services department serves all the divisions of

this otherwise decentralised organisation. There are, however, a few small independent systems teams who report directly to various line managers within the company. At present this organisation is going through a transitional stage between simple systems planning based on lists of potential projects, and a comprehensive strategic systems planning approach linked closely to corporate business objectives. Historically, senior analysts in the management services department have compiled lists of potential projects for input to a two-year rolling systems plan. The lists were enhanced by an extensive systems review, based on IBM's Business Systems Planning approach, which was carried out at various locations over a period of three to four years. More recently, various modifications to the strategic planning process have been made.

Several lessons were learned during the development of this strategic planning process:

— There was, historically, a real danger of continuing to enhance existing systems for a limited number of existing users, so neglecting many potentially important application areas.

— There was a great variation in user management's awareness of potential systems applications. (User education is now a key element in the new strategic approach.)

— New user areas have been introduced to system applications as a result of the BSP exercise.

— Technology is now used more imaginatively as a result of the larger base of system users.

— Strategic planning provides a clear future direction both for management services staff (of all types) and for system users.

— The introduction of improved strategic systems planning methods has helped to improve the image of the management services department with system users.

Although this approach did lead progressively to a broader base of systems use, the company was concerned that systems developments should be more closely linked to business objectives. A strategic systems planning team within the management services department has, therefore, recently completed a strategic systems plan based on priorities derived from the company's business objectives.

Three main problems still remain, however, in connection with the new strategic systems planning process:

— It is difficult for management services staff to define objectively the types of service (and organisation) that the information systems function should adopt in the future.

— There are difficulties in predicting the pace and direction of technological change.

— User education levels for information systems still need to be improved.

CASE HISTORY C

This case history provides a good example of a predominantly systems-led strategy being shaped within business-led guidelines.

Company C, which is a European-based subsidiary of a large conglomerate, manufactures and markets consumable products. A centralised management services department serves the larger locations, with a separate computer department serving two factory locations. The centralised management services department prepares a rolling three-year systems plan, which occupies about 15 man-weeks of effort each year. The input for the plan is derived from four main sources:

— A list of current outstanding systems projects.

— A list of possible systems projects awaiting authorisation.

— Projects and problems mentioned by user departments.

— Opportunities (applications and technology opportunities) identified by management services staff.

A major systems review based on IBM's Business Systems Planning approach has recently been completed. This exercise added significantly to the list of potential systems projects that had been identified previously.

The revised list of possible systems projects resulting from this exercise was then discussed individually with relevant company directors in a process designed to relate projects to the overall strategic plans of the company. The benefits of this strategic planning process, as seen by management services staff, were:

— Better user commitment to systems development plans, because of the approval given by the directors.

— A means of motivating management services staff and monitoring their performance.

— A means of generating greater commitment to, and funding for, the information systems function at board level.

Several problems, however, were associated with this systems planning process:

— The degree of involvement by company directors varied considerably.

—The level of user management awareness of information systems opportunities was also variable.

—There were considerable differences in the degree of co-ordination of systems projects and company objectives as a result of the above two problems.

CASE HISTORY D

Company D is a conglomerate based in the United Kingdom which manufactures and markets a variety of consumer products. The management services function historically has been centralised but is now evolving into a centralised policy and strategy group which will support decentralised management services units who have responsibility for applications within the various business areas.

Systems planning had, until recently, been carried out on a system-led basis by compiling lists of current and potential system developments to meet perceived user requirements. It had, however, been recognised that this approach did not effectively support business objectives. This concern led to a major systems review, based on the Nolan Norton approach, being carried out in one business area of the company. The study took nearly nine months to complete and resulted in the preparation of a detailed five-year systems plan related to business objectives. Subsequently, the company modified the Nolan Norton approach to reduce the effort involved, and now proposes to use this modified approach as the basis for an ongoing strategic systems planning exercise. Detailed systems plans (with a two year horizon) will be developed within a strategic direction that is closely aligned with business objectives, and these plans will be reviewed annually.

The company has identified the main benefits of the NNC approach as:

—Senior managers from management services and user areas worked as a team during the planning process, and this has led to better working relationships.

—Top management's perception of the value of information systems has been increased.

—The plan produced a statement of commercial objectives for the business which was accepted by all the relevant managers (this had not previously been achieved) and clearly aligned system objectives to commercial objectives.

—The plan forced management services managers critically to review their own operations.

This type of planning approach does, however, have inherent difficulties:

—The exercise demands a considerable amount of top management time.

—Top management's understanding of information systems often varies considerably, and this may lead to some imbalance in the content of the strategic systems plan.

CASE HISTORY E

Company E is a large diversified manufacturing company based in continental Europe. It exports more than 80 per cent of its products. Until recently, most data processing services within this organisation were provided by a centralised management services function. Certain subsidiaries were, nevertheless, free to buy their own systems and, as a consequence, a variety of different equipment had been purchased. Early in 1982 the information systems function was reorganised into a corporate management services department responsible for policy and strategic planning. In addition, decentralised management services departments were established, each responsible for systems developments in their own particular area. Information systems activities are now co-ordinated, organisationally, through a number of co-ordination committees attended by senior staff from the various management services departments.

Prior to the reorganisation, systems planning was resources-led and was limited to capacity planning and the allocation of development resources based on user demand. Following the reorganisation, a short-term systems development plan was formulated to provide guidelines for the work of the co-ordination committees. The overall policy on which the short-term plan is based is one of controlled, co-ordinated decentralisation.

The present strategic planning methods for information systems are not based on the methodologies described earlier but are related to those used for other parts of the business. The basic planning timeframe throughout the company is five years, with a quantified three-year rolling plan and a precise plan and budget for the first year. Strategic systems planning is essentially 'bottom-up', based on guidelines provided by the corporate management services department. There are iterations to systems plans at various levels (division, subsidiary, etc.) before the plans are consolidated by local management services managers and then sent on to the corporate management services department. The strategic systems planning manager in the corporate management services department can reject a plan or demand changes to it. The company intends to establish closer links in future between the strategic systems plan and the overall corporate business plan. The annual strategic systems planning process currently occupies

between 12 and 18 man-months of effort for the total organisation.

A corporate information systems audit team, expected to be operational within two years, will monitor the implementation of the agreed systems plans.

Management services staff believe that the most important aspect of this systems strategy is that it provides a deliberate policy statement, defines objectives and conditions expectations. This, in turn, is expected to result in a much more coherent approach to systems development, so minimising the systems problems that have troubled this organisation in the past. Management services staff now visualise the strategic systems plan as providing a funnel within which system development projects together with short-term and medium-term planning, may take place. This concept is illustrated in figure 8.

SUMMARY OF THE LESSONS LEARNT

User experience of strategic systems planning has highlighted a number of important benefits and significant problems. The main benefits reported during our research were:

— A more balanced allocation of information systems resources in relation to business priorities. (This has often resulted in a wider base of information systems users.)

— Greater top management commitment to the information systems function, sometimes resulting in increased funds for information systems.

— An improved relationship between users and management services staff (a conditioning of user expectations).

— A clearer sense of direction within management services because of the framework provided by the strategic plan.

Figure 8   The strategic systems funnel concept

year 1   2   3   4   5   6   7
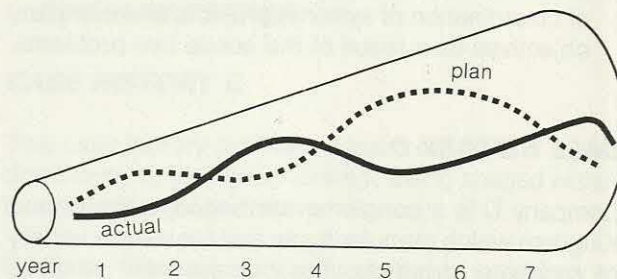
Note: The strategic funnel framework becomes wider as the degree of certainty decreases in future years.

The main difficulties reported were:

— The extent to which top management (and users) appreciated and were interested in information systems opportunities varied considerably, leading to difficulties in the strategic planning process.

— Difficulties were experienced in predicting the rate of technological change.

— Management services staff found it difficult to be objective about the future role and organisation of the information systems function.

— Strategic systems planning exercises could be very time-consuming.

— Strategic objectives were sometimes in conflict with short-term (cost-justified) applications. This conflict may be related to the future direction of systems or it may simply be a conflict of resource allocation (for example, a new order processing system versus a new telecommunications network).

REVIEW OF THE STRATEGIC SYSTEMS PLANNING PROCESS

We present in this chapter a step-by-step review of the strategic systems planning process, such as an information systems director might undertake prior to initiating strategic planning within his organisation. Managers in organisations that already have established strategic systems planning procedures may wish to use this review to evaluate those procedures.

The prerequisite to a strategic systems planning exercise is for the director of information systems to identify why he needs to plan strategically. This is not a straightforward issue, because in deciding whether or not to initiate strategic planning, he faces a classic dilemma. Suppose he asks himself the question "Has my division a high enough standing and influence within the organisation to reflect the strategic significance of information systems to the business?" If the answer is "no", then a strategic planning exercise will almost certainly be the best way to remedy the problem, because it will bring home to senior management what is at stake. Unfortunately, this answer also implies that it will be difficult to establish strategic planning for information systems on the right basis. Without senior management support the planning exercise will be at best severely limited in scope and at worst hopelessly crippled. The dilemma therefore is that the low standing of the information systems function is the greatest barrier to effective strategic planning and, at the same time, the most pressing reason for strategic planning to take place.

Where the standing of the information systems function is right, then strategic systems planning serves to sustain that standing. It also enables the information systems director to influence the circumstances which will determine the success or otherwise of his mission.

DEFINE THE PLANNING PARAMETERS

Before embarking on a strategic systems planning exercise, the director of information systems must define the overall planning parameters. For whom is the plan being prepared? How much effort should be put into the planning exercise? Should it be a once-off exercise or a continuing process?

The intended readership

A clear implication of the argument at the beginning of this chapter is that strategic systems planning should be aimed, first and foremost, at senior man-

agement. The strategic plan must therefore be expressed in terms that senior management will respond to. This is not just a question of terminology — it affects the whole orientation of the plan. It also means that information systems skills and management ability are not sufficient on their own. We noted that, in those organisations where strategic systems planning has had its greatest impact at board level, the planners usually either possessed corporate planning skills or had deliberately set out to acquire them.

The effort required

According to our research, the annual amount of effort devoted by Foundation members to strategic systems planning varies between a few man-weeks and many man-years. Surprisingly, there is no obvious correlation between the amount of effort and the size or complexity of the business. Without doubt, this lack of correlation is due to the different ways in which different organisations define the boundary between strategic and tactical systems planning.

We believe, however, that there is a practical maximum size for a single strategic systems planning exercise, above which it becomes more and more difficult to sustain the strategic content and to avoid being overwhelmed by the detail. Based on our consulting experience in helping clients to develop their strategic systems plans, we believe that this maximum is about two man-years. This view was broadly supported by the comments of those interviewees who recently had undertaken major systems reviews.

We therefore recommend that strategic systems planning exercises should be partitioned into manageable segments, of two man-years' effort or smaller. The implication is that large, complex organisations should think in terms of a high-level, business-led strategic systems plan, both fed by and feeding into systems-led or resource-led planning at a lower level. Alternatively, an overall information systems strategy could form an umbrella for sub-strategies relating to particular business areas or functions (communications, data management or office automation, for example).

Planning frequency

Once an effective strategic systems planning procedure has become established, the requirement for major, once-off review exercises gives way to a continuous planning process. The ongoing strategic planning process will then be punctuated by annual check-

points associated with the corporate planning and budgeting cycles and, sometimes, by major reviews associated with a crucial systems decision. (A strategic systems plan will have, typically, a planning horizon of three to five years, but in some cases a planning horizon as much as ten years ahead may be appropriate.)

RECOGNISE THE CHANGING ORIENTATION OF SYSTEMS

The central issue affecting the approach to strategic systems planning, and hence the whole posture of the information systems function, is whether to adopt a reactive or a proactive outlook. Traditionally, data processing departments have tended to adopt a reactive philosophy, as have telecommunications managers responsible primarily for speech networks. But the environment in which both operate is changing, and a reactive approach is no longer adequate. In particular, the orientation of systems is evolving so that systems activity in the future will increasingly be centred on the users. This trend is evident from:

—The increasing decentralisation of decision-making on systems.

—The growth of end-user computing and other user-driven systems activity (such as office automation).

—The progression from operational transaction-based (or first-generation) systems to decision support (or second-generation) systems.

As a result, the role of the information systems function will change from being the prescriber of change to being the catalyst for change. In turn, this implies that the information systems function must adopt a proactive approach to planning. Thus, the strategic systems planner will need to determine the services that should be offered and how they can be used to maximise their positive impact on the business, rather than (as in the past) seeking to identify the requirements that will emerge and planning to satisfy them effectively.

These two approaches to information systems planning have been described as traditional (reactive) and futuristic (proactive). Figure 9 summarises the attributes of both approaches.

DEFINE THE PLANNING OBJECTIVES

Before initiating a strategic systems planning exercise, a director of information systems should address the question that is the classic preliminary to any strategic review — "What business am I in?". The objectives for the exercise should relate to the mis-

Figure 9   Traditional and futuristic approaches to information systems planning

Attribute	Traditional approach	Futuristic approach
Scope	Project oriented	Mission oriented
Philosophy	Reactive	Proactive
Image of the information system function	Data processing	Decision making
Time horizon	Short (6 months +)	Long (10 years +)
Activities supported	Operational Managerial	Operational Managerial Strategic
Decisions supported	Well defined	Well defined ill defined
Innovativeness	Evolutionary	Opportunistic
Orientation	Parochial	Organisational
Criteria	Process	Decisions

(Source: MIS Quarterly, June 1979)

sion of the information systems function, encapsulated in the answer to that question.

In addition, as we have already suggested, it is important to focus the strategic planning effort on the few really critical variables, if necessary by partitioning the task. In chapter 1, we postulated a model of the strategic systems planning task in terms of three major variables, each of which can be sub-divided. The scope and focus of a particular strategic systems planning effort will vary within that framework, depending on the mission of the information systems department, the maturity of the systems and the type of business. In his stage theory, Richard Nolan suggested that strategic planning is characteristic of organisations that have reached the fourth of his six postulated stages (rapid growth in a slack environment). But he also made it clear that planning would help to avoid mistakes in the earlier stages.

Most directors of information systems will know what stage (in Nolan's terms) their organisation has reached, and will also know where in our planning model their critical weaknesses lie. This knowledge, we believe, should be a sufficient basis on which to define the initial planning objectives. Also, the list of questions given in chapter 4 on pages 21 to 23 may help to identify specific issues to be addressed.

The fact that some aspects of the information systems environment are not the main focus of a particular planning exercise does not mean that they are ignored. They may be included as planning assumptions or may be left for further attention in subsequent lower-level planning exercises. Strategic planning will

re-define its own focus as a natural consequence of the work, provided that the right methods and organisation are adopted.

ALLOCATE THE RESPONSIBILITY FOR PLANNING

The key problem when considering how best to organise for strategic systems planning is how to unite the skills and legitimate interests of the users with those of the information systems function. The difficulty in planning for information systems arises because only user managers can in the end be accountable for the results achieved in their own business areas. Nevertheless, the information systems function will play a vital part in creating the circumstances that determine success or failure.

The information systems director must decide, therefore, whether to allocate the planning responsibility to his own staff, or to the users, or to a combination of both.

Planning by systems staff

During our research we found that the most common organisational approach to strategic systems planning was for the information systems function itself to initiate and conduct the planning exercise. This effort was usually led by managers in the systems department, supported by senior systems staff (or business analysts) representing particular business areas. Often, strategic issues were dealt with as an integral part of the tactical planning exercise which established budgets and a systems portfolio for the coming period. The organisational structure for this approach is shown in figure 10.

Using information systems staff in this way has many advantages, notably their knowledge and understanding of the technology. It also makes co-ordination of the planning exercise easier. This approach has three potential disadvantages, however:

— It over-emphasises technology issues.

— It is weak on input by users.

— It may fail to adopt a corporate view.

These disadvantages may be overcome partially by the use of staff with planning skills, or by project management techniques (allocation of accountability for the strategy project; setting precise objectives; allocating responsibilities for particular actions). But the greatest danger remains that the view of requirements prevailing in the information systems function will override the views of the users. Not only will information systems staff find it difficult to stand back from their immediate problems to look at requirements objectively, but users will also adjust their

Figure 10   Organisational structure for planning by systems staff
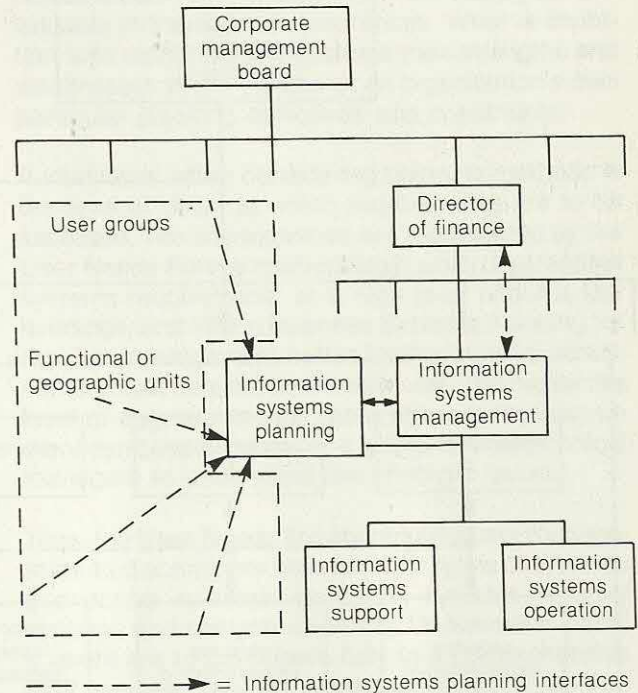
requirements to what they expect to get. This expectation will be conditioned largely by the past performance of the information systems function and by the users knowledge of the technology.

Planning by decentralised user groups

There are two major alternatives to planning by systems staff. The first alternative is planning by decentralised user groups. It represents the opposite extreme to allocating planning responsibility to the information systems function. (Figure 11 overleaf illustrates the organisational structure required.) Its advantages and disadvantages are the converse of those already discussed. Thus, the main dangers are a lack of awareness both of the potential and the limitations of technology, and a fragmentation of the systems effort. These dangers can be combated by business-led or resources-led strategic planning on the part of the information systems function itself, to set the framework within which the decentralised systems-led planning takes place.

Planning by a corporate steering committee

Planning by a corporate steering committee (depicted in figure 12 on page 19) lies between the two extremes just discussed. It uses a corporate systems steering committee as a mechanism to bring users' and information systems' views and interests into balance. We believe that, if it can be made to work, this approach is the most effective vehicle for

Figure 11   Organisation structure for planning by user groups
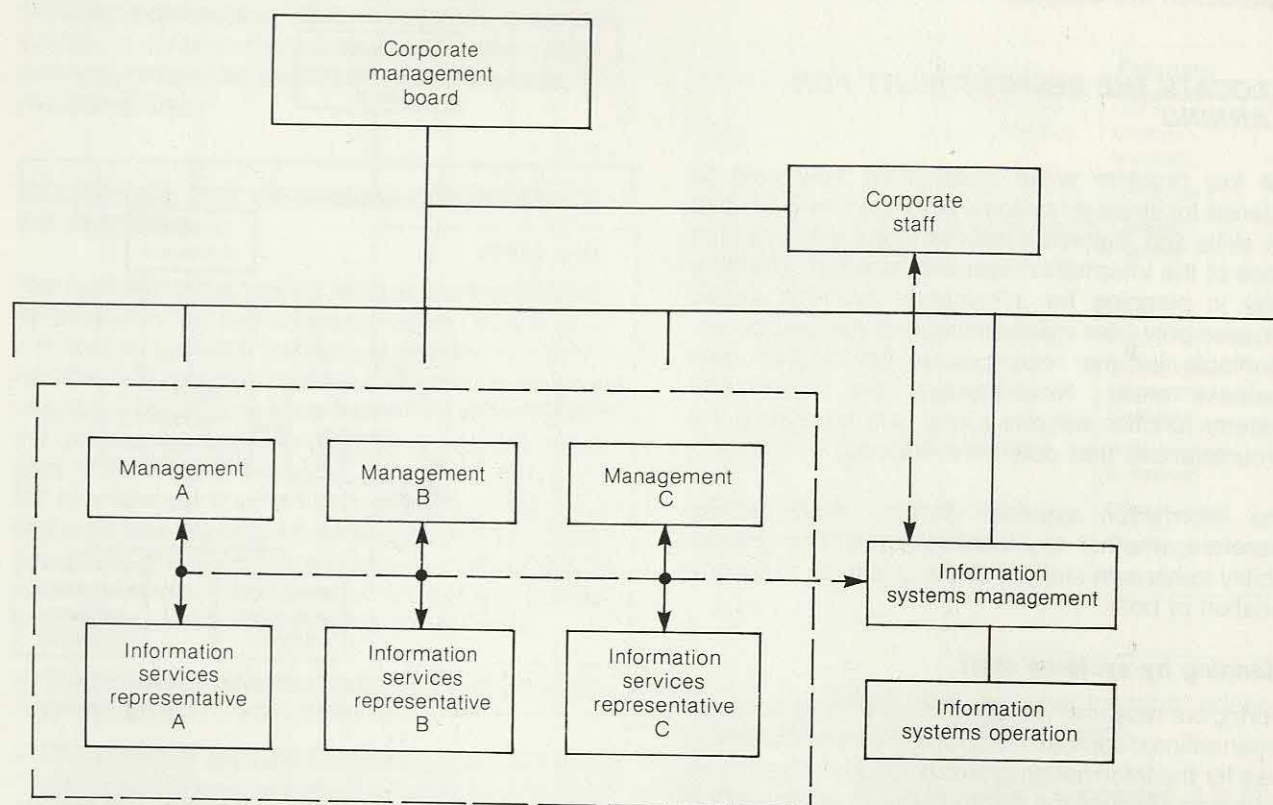
A, B and C are functional or geographic units

———— ▶ = Information systems planning interfaces

strategic systems planning. In addition, it is an effective means of controlling the information systems effort in the medium term.

Some organisations have tried the corporate steering committee approach and have discarded it. Others have used it successfully. Our belief is that the failures have occurred not because the concept is unworkable, but because the members of the systems steering committee have been called upon to play an inappropriate role (or have not fully understood the role they are to play).

The success or failure of this type of approach is linked strongly with the form of strategic systems planning that is adopted. Business-led planning is more likely than either systems-led or resources-led planning to provide a framework with which non-technical senior managers are comfortable. Business-led planning, as we suggested earlier, will lead naturally to investment criteria and organisational issues being considered, and these are precisely the issues that senior management should be addressing. Systems-led or resources-led planning, on the other hand, can easily place the steering committee

in the position of arbiter of technical issues which are beyond its competence.

DETERMINE THE NEED FOR A SYSTEMS REVIEW

Before we discuss the criteria for choosing a planning method, we need first to distinguish between a full-scale systems review (such as the BSP or NNC approaches) and the regular planning process. The former will normally be a once-off exercise which will engage many man-months (or even man-years) of effort, whereas the latter will, year-by-year, build incrementally on previous experience and previous plans. Ideally, once an effective strategic planning process has been established there should be no need for a major review, but that may be a counsel of perfection. Only one of the Foundation members who returned our questionnaire had not carried out a major systems review in the past two or three years. Moreover, many of the respondents and many of the Foundation members we interviewed had only recently implemented formal strategic systems plan-

Figure 12   Organisational structure for planning by corporate steering committee
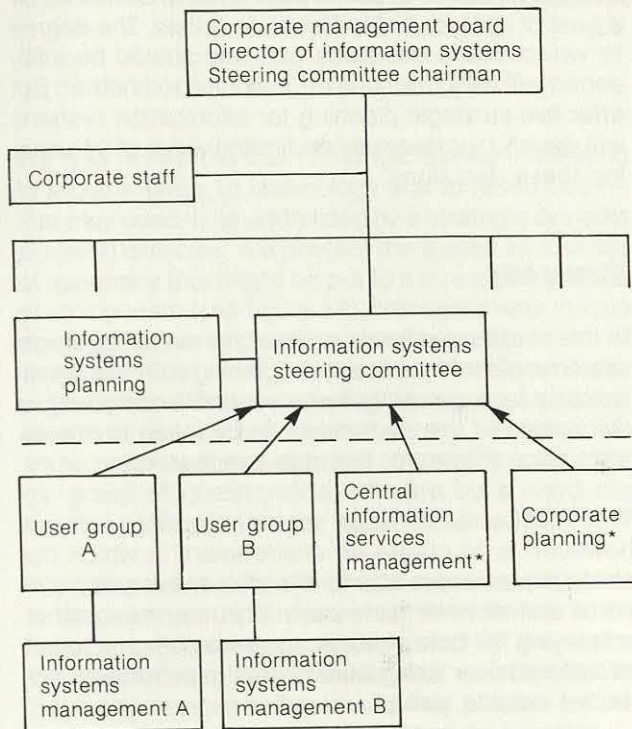
*Possible steering committee secretary

ning. The need for such planning had been identified as a result of the systems review.

Sometimes there will be a specific trigger for a major systems review — a significant decision, for example, or a change of management. Nevertheless, a high proportion of systems reviews are initiated by a desire to sort out the current mess, rather than as a conscious attempt to anticipate circumstances before being overwhelmed by them. The proportion of these problems that is attributable to bad planning, bad management or bad luck is impossible to determine. But, as several of our interviewees believed, it seems more than likely that lack of planning is an important factor.

CHOOSE THE PLANNING METHOD

The experience of the organisations we examined shows clearly that no ready-made, widely applicable strategic systems planning methodology exists at present. Several of the organisations had experimented with more than one methodology and were now seeking to define their own procedures, by preserving the best and discarding the worst of the proprietary methodologies and by tailoring procedures

to their particular organisational and planning environment.

Nonetheless, the proprietary methodologies are valuable in the right circumstances. What is important is to recognise and evaluate their strengths and weaknesses in the context of an organisation's own particular planning objectives and constraints.

A vital issue when considering planning methods is the level of detail at which requirements are to be assessed. The two extremes are represented by the User Needs Survey methodology, which aggregates systems requirements at a high level under a few headings, and IBM's Business Systems Planning (or the data management based methodologies), which constructs a detailed business model. The higher the level of aggregation, the more efficient the assessment can be and the easier it will be for non-technical managers to understand the strategic issues.

Thus, the User Needs Survey requires user management to discriminate between four types of systems (monitoring systems, exception systems, enquiry systems and analysis systems). On the other hand, if users are to participate fully in a comprehensive BSP exercise, they will need to understand sophisticated systems and data management concepts.

A planning methodology that uses a high level of aggregation does, however, leave users and the information systems function with a wide gap between the strategy and the detailed plans for the next systems. Where the initiative for new systems comes primarily from users, and where users' appreciation of the possibilities is (or can be made) sufficiently advanced, then bridging this gap should be seen purely as a tactical issue. In this situation the systems strategy must ensure that user requests are evaluated on their merits. Equally, it must also establish a procedure for recognising where users are failing to exploit the possible systems opportunities. In either case, the information systems function must take on the resulting tactical problems.

Where users cannot be relied on to press their own case, then systems-led planning (or a major systems review) can be used, with discretion, to bring the opportunities out into the open.
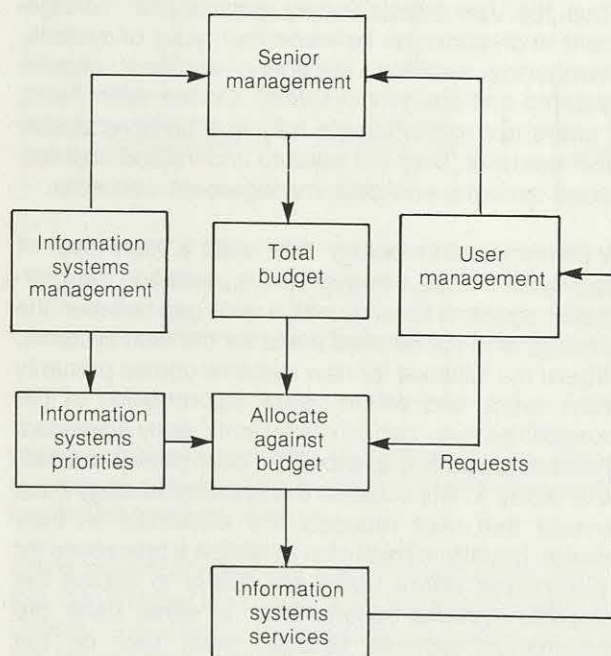
ENSURE THE PLAN IS NOT UNDERMINED

Any strategic systems plan is devalued if the mechanisms needed to put it into effect do not work properly. Any self-respecting strategic plan should, in fact, review these mechanisms and recommend changes to them should they become ineffective. These mechanisms will condition the procedures for accessing and using the information systems re-

sources, including formal procedures (such as those for sanctioning capital expenditure) and less-structured procedures (such as informal education and public relations). The most important mechanisms will relate to procedures for approving systems projects and for charging out the cost of systems.

Too many strategic systems plans appear to reach valid conclusions about the allocation of resources, only to be undermined (or subverted) by those users who promote their own needs most forcibly or who have the political influence to ensure that their projects take priority. Planning methodologies such as the User Needs Survey can prevent the plan being undermined in this way, because they tie into the subsequent budgetting and project approval mechanisms. Figure 13 summarises what typically happens in reality.

Figure 13   Typical reality

As more and more systems decisions are taken by decentralised units (that is, at the point of consumption), it will become increasingly important to ensure that the strategic systems plan is not undermined by a host of unco-ordinated local decisions. The degree to which these decisions can and should be influenced will vary from one organisation to another. But effective strategic planning for information systems will depend increasingly on finding ways of influencing these decisions.

SUMMARY

In this chapter we have reviewed the overall strategic systems planning process, beginning with the prerequisites to a planning exercise and ending with a discussion of the steps that can be taken to ensure that, once prepared, the plan is adhered to.

The most critical issue in the planning process however, is to create an environment in which the strategic issues are able to prevail over everyday concerns and short-term pressure. This may mean either employing full-time strategic systems planners to act as catalysts, or using consultants to provide an objective outside view.

For the same reason, it is important to maintain a clear separation between strategic and tactical (or operational) planning. That is not to say that strategic planning should remain uninfluenced by tactical considerations (many of our interviewees were concerned about the difficulty of translating strategy into systems solutions), but rather that tactical concerns should be kept in view without being allowed to obscure the strategic issues. Strategy defines the limits within which tactical manoeuvre is possible.

The systems strategy defines what will constitute success for the information systems function, and the next (and subordinate) problem is to translate that strategy into information systems functionality through a tactical plan.

GUIDELINES FOR STRATEGIC SYSTEMS PLANNING

We now review the main strategic issues — relating to requirements, to technology and to resources — that may need to be addressed by a strategic systems planning exercise. We present the issues as a series of questions that might be put to a strategic systems planning team (see figure 14). Managers who initiate strategic systems planning should specify which of these questions are of most concern to their particular organisation. We have adopted this approach so that we do not present strategies that may be relevant to some organisations but not to others. Each question (or group of questions) is followed by a short discussion of its significance and the desired outcome.

We then present a list of the main contents of a typical strategic systems plan into which the answers to the listed questions may be incorporated. At the end of the chapter we give a checklist that can be used by information systems directors as they prepare for and progress a strategic systems planning exercise.

ISSUES RELATING TO REQUIREMENTS

1. In what ways will our business success depend on information systems?

2. How does our information systems capability compare with that of our competitors?

3. What return should we expect from our future investment in information systems?

4. How might information systems be used as a competitive weapon by us or against us?

All these questions belong in the 'business' section of the requirements area. They are not easy questions to answer. The main reason for attempting them is so that senior management may better appreciate information systems and their potential impact on the business. The aim is to create an appropriate (and, it is to be hoped, favourable) climate for decision-making about information systems in the future. It may well be that specific investment criteria or a long-term investment plan will also result.

5. Is the organisation structured in the best manner to exploit information systems in the future?

The strategic plan for information systems is the right place to address this question, because it relates to the mission and organisational framework for the information systems function. Equally, it also relates

to the role and responsibilities of users, both in the decision-making process and in the development and operation of information systems.

6. Which business objectives can be served by information systems?

7. What structure is appropriate for information systems serving a particular business area?

Figure 14   Strategic planning questions

Issues relating to requirements

1. In what ways will our business success depend on information systems?
2. How does our information systems capability compare with that of our competitors?
3. What return should we expect from our future investment in information systems?
4. How might information systems be used as a competitive weapon by us or against us?
5. Is the organisation structured in the best manner to exploit information systems in the future?
6. Which business objectives can be served by information systems?
7. What structure is appropriate for information systems serving a particular business area?
8. What are management's priorities for information systems?
9. Which areas of the business are under-developed or under-supplied in terms of information systems?

Issues relating to technology

1. What new opportunities will be opened up by information systems technology?
2. When will the market deliver the key technologies?
3. For which of our needs is the market unlikely to deliver the right technology?
4. Where are the main technological uncertainties which relate to our business?
5. What are the product plans of our key suppliers? Do they conflict with the organisation's future plans and requirements?
6. What type of systems architecture suits our view of the technology in relation to the organisation's requirements?
7. What changes in our approach to systems does technological change necessitate?
8. What are the broader implications of technological developments?

Issues relating to resourcing

1. How should resources be deployed for the best effect in the future?
2. What kind of skills will be needed (and in what quantity) to deliver information systems in the future? How does our present capability match this need?
3. How best can we exploit our existing investment in information systems?
4. What are the strengths and weaknesses of the information services function vis-a-vis the organisation's requirements?

The first of these questions is the most fundamental strategic question in the requirements area. In looking at particular requirements for information systems, it is important to recognise the immediate requirements and to attempt to reconcile them with the longer-term need to create an enduring structure for information systems.

The conflict expresses itself, as far as a user with a systems requirement is concerned, as a trade-off on the one hand between the cost and time required to develop a system and, on the other hand, between the lifetime of the system and the future spin-off benefits to the business. These trade-offs are reflected in the model of the planning process (described in chapter 1) by the division of technology into two areas — primary technology (which meets immediate requirements) and secondary technology (which is used to provide a systems infrastructure, such as a data dictionary system or a flexible communications network). The strategic plan may, indeed, seek to interpret requirements in terms of secondary technology.

Some organisations also use the concept of 'stepping-stone' projects. Stepping-stone projects contribute to longer-term system goals than those of the project alone. Such projects must therefore be evaluated in terms of the longer-term goals, as well as on the merits of the project itself.

8. What are management's priorities for information systems?

9. Which areas of the business are under-developed or under-supplied in terms of information systems?

These questions are relevant (in terms of our planning model) to the division of information systems requirements into extant and latent requirements. Extant requirements will be reflected in current plans for systems and in the backlog of requirements for systems. Latent requirements on the other hand may only be assessed in one of two ways:

— By relating the demand for information systems to an external benchmark of some kind.

— By a systematic analysis which seeks to reveal the fundamental requirements rather than simply those that have emerged of their own accord.

The results of such an analysis may become the basis for a scheme for setting project priorities, or for project approval mechanisms. These would then ensure that the allocation of resources reflects the needs of the business as well as the demands of the users.

ISSUES RELATING TO TECHNOLOGY

1. What new opportunities will be opened up by information systems technology?

2. When will the market deliver the key technologies?

The timing issue raised by the second question is probably the most important of the two to address. Although it is relatively easy to foresee the arrival of new technologies, it is quite another matter to forecast accurately when usable products will be available. Consideration of these issues may result in specific policy measures relating to the adoption or non-adoption of technology. Alternatively, it may lead to an awareness programme, which could be aimed either at the information systems function itself or at the organisation as a whole.

Senior management (and others directly involved in the planning exercise) should gain a clearer perception of the available technological choices through the strategic plan itself.

3. For which of our needs is the market unlikely to deliver the right technology?

4. Where are the main technological uncertainties which relate to our business?

Not all the technology choices will relate solely to timing, nor will the market necessarily deliver what a particular business requires in an appropriate timescale. The strategic systems plan may need to look at this negative side of the technology issues as well as at the new opportunities. The result would be either a guide to internal research and development requirements, or the identification of pilot or high-risk projects that should be undertaken for strategic reasons.

5. What are the product plans of our key suppliers? Do they conflict with the organisation's future plans and requirements?

An organisation's choice of suppliers exercises such a long-term influence on the direction and pace of information systems development that it is often necessary to treat it as a strategic issue. It may also be necessary to limit the number of suppliers of computer-based equipment used by the organisation. Using equipment from many different suppliers could become a major constraint on future plans for interworking or integration. Preferences for particular suppliers may be expressed either as a purchasing policy or as guidelines for evaluating and choosing equipment.

6. What type of systems architecture suits our view of the technology in relation to the organisation's requirements?

This question is a more generalised version of the previous one relating to suppliers. The architectural preference may, of course, be expressed in terms of preferred suppliers and products. Equally, it can take the form of rules for the location of processing power and of

files. These rules would be applied to applications according to their characteristics, thereby imposing an overall architecture for information systems.

7. *What changes in our approach to systems does technological change necessitate?*

8. *What are the broader implications of technological developments?*

A systems strategy may concern itself at two levels with the impact of technological change — how it affects the information systems function itself and, more broadly, how it affects the organisation as a whole. Such an exercise may result in a changed approach to systems development and implementation. In addition, it may provide input for personnel or industrial relations policies and for staff training and education.

ISSUES RELATING TO RESOURCING

1. *How should resources be deployed for the best effect in the future?*

The optimum allocation of resources could be expressed in terms of one or more of the following:'

— The ratio of new applications to maintenance (or enhancement) of existing applications.

— The balance between centrally directed and decentralised systems effort.

— The allocation of effort across different areas of the business.

In reality, the process for allocating resources will often be supported by mechanisms and policy designed to control or influence decision-making about projects.

2. *What kind of skills will be needed (and in what quantity) to deliver information systems in the future? How does our present capability match this need?*

Appropriate skills are in short supply, and the profile of skills needed by the information systems function will continue to evolve. Personnel and training policies are relevant here, and this question also raises 'make or buy' issues with regard to software.

3. *How best can we exploit our existing investment in information systems?*

It is arguable whether the need to protect the organisation's existing investment in information systems is a strategic issue. Obviously, this question must not be allowed to dominate strategic thinking, which will principally concern itself with the future. Nonetheless, the existing systems normally place such significant constraints on what can be achieved in certain application

areas that they can hardly be ignored during strategic systems planning.

4. *What are the strengths and weaknesses of the information services function vis-a-vis the organisation's requirements?*

A review of the performance of the information services function, both in terms of past achievements and in the view of user management, may reveal areas of over-achievement as well as under-achievement. An information services function that prides itself on its technical skills, for example, might conclude that continuing improvements in levels of skill are a luxury rather than a necessity. As a result, it might then change the emphasis of its training and recruitment policies.

CONTENTS OF A STRATEGIC SYSTEMS PLAN

The content of strategic systems plans will vary considerably, depending on organisational requirements and the scope of the plan (for example, all information systems, data processing, telecommunications or office automation). In figure 15 we have listed the main items that typically are addressed by a strategic systems plan.

Figure 15   Contents of a strategic systems plan

1. Reasons for having a strategic systems plan.
2. A statement of strategic (business related) objectives for information systems.
3. Recent performance compared to previous strategic systems plans (including a systems portfolio).
4. Technology, supplier and environmental trends.
5. Criteria for success (technical feasibility, user acceptance, cost justification, etc.).
6. Evaluation of potential rewards and risks at various levels of commitment.
7. Operational policy (architectures, standards, supplier policy, personnel/industrial relations policy, policy on the use of mainframe computers, microcomputers, etc.).
8. Organisation methods (responsibilities of management, systems staff and end-users; methods of approval, etc.).
9. Planning methods (responsibilities, timescales, monitoring procedures, etc.).
10. Programme of activities (resources needed, pace of development, scale of investment, etc.).
11. Expected outcome (benefits, timing, etc.).

Managers who are involved in strategic systems planning may modify or expand this list to meet their own organisation's specific requirements. Answers to the questions described above will provide the key inputs to the resulting strategic systems plan.

A CHECKLIST FOR INFORMATION SYSTEMS DIRECTORS

To conclude this final chapter of the report, we offer a strategic systems planning checklist for directors

of information systems, which summarises the main lessons from our research.

Keep the thinking strategic

—Focus the planning exercise on the critical areas.

—Define the strategic issues and separate them from tactical and operational concerns.

—Do not aim for unnecessary precision. Strategy defines the likely range of possibilities. It does not forecast the future. By extension, strategy should also concern itself with different courses of action and with their associated risks and uncertainties.

—Acquire or develop strategic planning skills within the information systems function.

—Prevent strategic planning from turning into a low-level routine exercise.

Make sure the plan deals with practical issues (but at a strategic level)

—Identify where you want to be (in terms of information systems).

—Determine the main steps to get from today's situation to where you want to be.

—Identify the major risks and uncertainties, and quantify them.

—Ensure that the strategy is not subverted.

Move towards proactive (market-led) planning

—Encourage the development of business skills and market analysis skills.

—Prepare to market information systems services internally, rather than rely solely on short-term cost justification.

—Relate systems and investment priorities to an information systems ('market') development plan, as well as to their significance for the business and/or the organisation's ability (or willingness) to pay for them.

—Look for latent needs as well as for definable systems opportunities.

Secure senior management commitment to strategic planning for information systems

—Present the strategic systems plan in business terms, emphasising the negative effects of failure to exploit information systems as well as the anticipated benefits.

—Involve senior managers at the appropriate (strategic) level of planning and make sure that their role and the mission of the management services function are mutually understood.

In this report we have concentrated on distilling the lessons learnt from the practice of strategic systems planning, rather than giving theoretical arguments for or against the principle of strategic planning. We believe that the results of our research will enable those who wish to apply strategic systems planning in their own organisations to do so as effectively and as economically as possible.

It is clear that strategic planning is becoming an increasingly valuable exercise for many information systems functions. Moreover, the continuing evolution of information systems will, we are sure, increase the value of strategic systems planning in the future. The rapid development of microelectronics has multiplied the choices facing end users, and is enabl-

ing them increasingly to realise their own systems requirements. As a result, the information systems function will find it increasingly difficult to maintain its influence and its control over developments, unless it is able to anticipate and condition end users' requirements in a positive way. It is difficult to see how this can be achieved other than through strategic systems planning.

We expect to see important developments in the strategic systems planning field over the next few years. This will not happen because the methodologies available improve greatly. It will happen because users will improve their understanding of strategic issues.

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