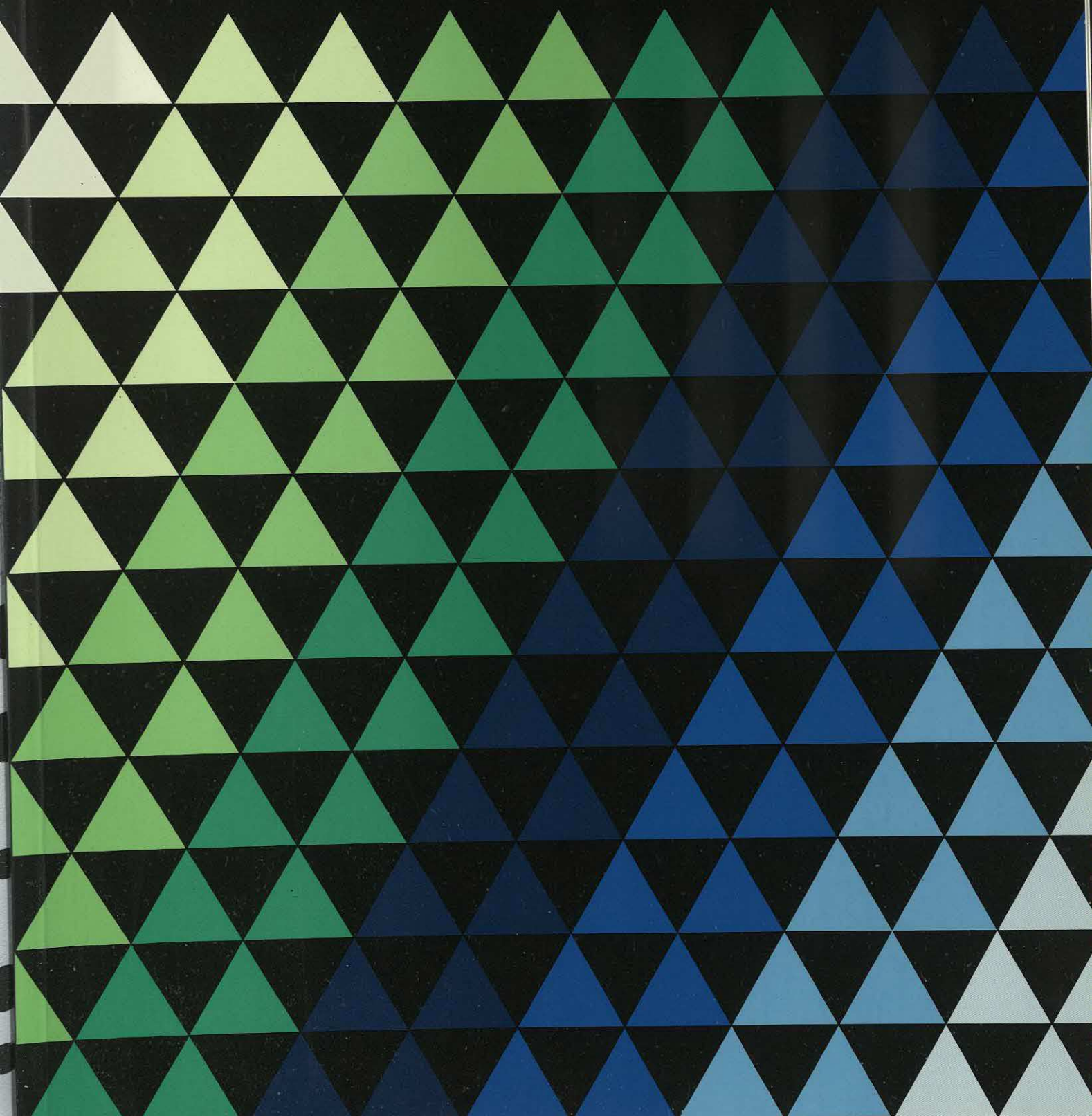


Managing the Devolution of Systems Responsibilities

BUTLER COX
FOUNDATION

Research Report 81, June 1991



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Report synopsis

Devolution is concerned with finding the right balance between those systems responsibilities that should be managed centrally and those that can be devolved to business units. In this report, we describe a framework that members can use to achieve this. It is based on the principles of federalism and it requires a clear distinction to be made between service-definition and service-supply responsibilities. Both line and systems managers will need to acquire new skills if they are to operate effectively in a federally devolved organisation.

Devolution is concerned with finding the right balance between
responsibilities that should be centrally controlled and
those that can be devolved to business units. In this report we
describe a framework that enables you to achieve this. It is
based on the principle of subsidiarity and it requires a clear
distinction to be made between centralisation and devolution.
The framework is based on the following assumptions:
- A company needs to be able to respond quickly to changes in the
market environment.

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A management summary of this report has been published separately and distributed to all members of the Butler Cox Foundation.

Chapter 1

Providing a framework for devolution

During the past few years, there has been a growing trend to decentralise business responsibilities – the aim usually being to improve operational flexibility and customer responsiveness. In turn, this has led to a demand from business managers at divisional or business-unit level to have a greater degree of control over their systems budgets and resources (hardware, software and people). Some corporate boards have responded by decentralising the management of the systems function – in some cases literally overnight – to match the decentralised corporate management style, but the result has often been disappointing.

Complete decentralisation is unlikely to be the best option for most Foundation members. The nature of system activities means that, in most organisations, some responsibilities *have* to be retained at the centre if long-term flexibility is to be protected. Organisations therefore need to determine the most appropriate division of systems management responsibilities between the centre and the business units. The resulting balanced mix of centralised and devolved responsibilities is referred to in this report as a devolved systems organisation. Thus, devolution does *not* imply the complete decentralisation of systems responsibilities.

During the research for this report, we became aware that many Foundation members were seeking a definitive model for a devolved systems organisation. We cannot provide such a model because the extent to which devolution is desirable or possible within any business will depend on individual circumstances, corporate management style and the available skills. The purpose of this report is therefore to provide a framework that can be used to divide the responsibilities in the most appropriate way. In particular, we show how the principles of federal devolution can be applied to allow the line managers as much freedom as possible over their systems activities while not compromising the wider corporate interests. Without such a framework, devolution of systems responsibilities usually produces problems that outweigh any benefits.

Devolution rarely brings the expected benefits

Some organisations have benefited from devolution

Some organisations have gained significant benefits from devolving the responsibility for systems. For example, the rate at which responsibility is being devolved to the individual businesses in Wagons-Lits, a French leisure group with interests in travel, catering and hotels, has been accelerated by the business benefits that it has derived from “more business-oriented data processing and the use of cheaper technologies”.

Very few organisations that we spoke to during our research could, however, claim any lasting benefits from devolving management responsibility for the systems function. (Details of the research team and research programme for this report are shown in Figure 1.1.) The main problem is that devolution is typically seen by both line managers and central systems staff as a compromise between the essentially conflicting aims of corporate and local systems (see Figure 1.2). Central systems staff, aware of the potential dangers of lack of standards and compatibility, are anxious to retain control of the devolved units. Line managers are anxious to rid themselves of 'corporate' interference.

The benefits of devolution have tended to be short-term

Figure 1.1 Scope of the research and research team

This report is based on a programme of research carried out by Butler Cox in late 1990 and early 1991. We received 127 responses to the questionnaire sent out to Foundation members at the beginning of the research. These provided a rich source of information on the successes and problems of members in devolving responsibility for information systems, several of whom supplied substantial additional written material on their experiences and views.

The responses led us to seek the further views of 60 organisations through a series of telephone and personal interviews and research workshops that were held throughout Europe and in Australia. We chose organisations that had first-hand experience of managing devolution and that could therefore offer advice on both the pitfalls and best practice. Our aim was to seek their views about how to harness the potential benefits of devolution while minimising the potential losses.

We also sought the opinions of academics specialising in IT organisational theory and practice, both through personal interviews and through their published material. A bibliography of the material we referred to is included at the end of the report. We also drew on the considerable body of knowledge gained from Butler Cox's recent research work, and from our consultancy work in the field of organising the systems function.

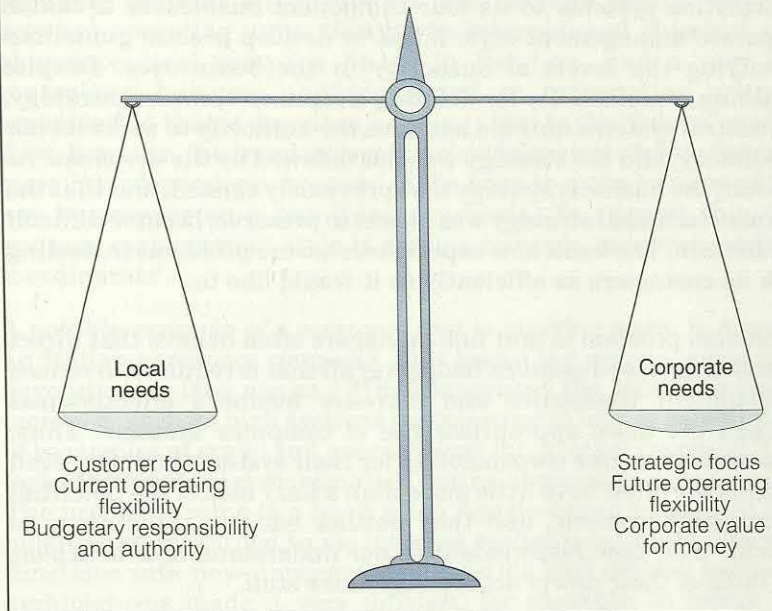
The report was researched and written by Daphne Leggetter, a senior consultant with Butler Cox in London. She was assisted by Roger Barber, a principal consultant with Butler Cox in London. Other contributions were made by Phillip Aspden, Paul Green and George Snyder (all from London), Marc Morin-Favrot (France), Antonio Morawitz (Italy), Lothar Schmidt (Germany) and John Cooper (Australia).

Central systems departments have typically been focused on developing and maintaining core systems – those that are crucial to the day-to-day operation of the business as a whole – rather than those that are specific to a particular business area. The effectiveness of a central unit is judged by corporate management primarily on the basis of cost-effectiveness and quality of output. As a result, a central systems department is likely to take a long-term 'corporate' view of its responsibilities, to maintain a restricted technical infrastructure, to improve systems compatibility and resource utilisation, and to introduce mandatory standards to improve working practices. Central units are consequently seen as unresponsive to local needs, lacking in specific business knowledge, and sometimes unnecessarily restrictive.

Central units are usually considered to be unresponsive to local needs ...

On the other hand, line managers who are personally accountable for business effectiveness and profitability are driven by short-term pressures. They need systems that will contribute directly to their performance as quickly as possible. To achieve this, they want to control their own systems staff, priorities and timescales.

Figure 1.2 Devolution is often seen as a delicate balancing act between conflicting aims



... and line managers rarely take a corporate perspective

A typical sentiment of Foundation members, as expressed by a systems manager of an international chemical company, is that, "In a devolved environment, business pressures force local accountability . . . this has meant that many devolved systems decisions are being made without a full understanding of all the implications – in particular, of the need to continue to cater for corporate requirements. Decisions tend to be taken solely on the basis of acceptability to the business unit."

As long as devolution is seen as a conflict between line managers and central systems staff, it will inevitably result in organisational tensions that lead to poor decision-making. This can cause major problems for the business and can eventually lead to the abandonment of devolution.

Unplanned devolution can cause major technical and business problems

Unplanned devolution leads to a proliferation of incompatible systems

One typical result of unplanned devolution is that the short-term focus of individual divisions and business units leads to a proliferation of incompatible systems. The incompatibilities can eventually become a major impediment to business success. Daimler-Benz (the German car, electrical and aerospace company), for example, found that the uncontrolled growth of incompatible systems in business units was making it difficult for the divisions to communicate with each other. A systems manager from another company recently described the difficulties of integrating incompatible departmental systems in this way: "We had 9 different computer suppliers, 12 different operating systems and 16 different programming languages. We had taken ourselves up a cul-de-sac. Computing had become the fiefdom of departmental barons. There

Chapter 1 Providing a framework for devolution

was information everywhere but no-one from other departments could access it."

A major UK banking group that recently devolved control of its information systems to its four component businesses to match corporate management style failed to develop precise guidelines specifying the levels of authority in the businesses. Despite retaining responsibility for defining a common technical strategy, the central systems unit did not have the authority to make its use mandatory, and the strategy was not followed by the divisions. As a result, the business synergy that previously existed, and that the common technical strategy was meant to preserve, became difficult to maintain. The bank now experiences severe problems in dealing with its customers as efficiently as it would like to.

A common problem is that line managers often believe that direct control of devolved systems budgets is all that is required to reduce development timescales and increase business effectiveness through the more appropriate use of computer systems. Thus, they readily assume responsibility for their systems budgets, even though they often have little more than a hazy idea of the potential of computer systems, and they neither educate themselves to exercise their new responsibilities nor understand how to exploit the skills of their newly acquired systems staff.

Line managers often underestimate what devolved responsibility entails

The impact of unplanned devolution on systems staff can be equally serious for the business. Devolution frequently results in systems staff being transferred to divisions or business units, but without arrangements being made for them to retain the peer contact and career development opportunities that the central environment provided. We noted in Report 71, *Staffing the Systems Function*, that the uncertainties and confusion created by re-organisation can cause massive initial increases in staff turnover. We also predicted that high turnover levels would be likely to continue if systems staff perceive their career opportunities to be limited to the devolved unit to which they are at present assigned. Our research for this current report confirmed that this has been a common problem for Foundation members, once the initial impetus created by closer involvement with the business has worn off. One damaging consequence is that the cost of staffing the devolved units increases, and line managers are unable to implement the 'cheaper and better' systems that are one of the driving forces for devolution.

Unplanned devolution can have a damaging effect on staff retention

Line managers also frequently find it difficult to integrate devolved systems staff successfully into the business. The result is that the devolved staff are unable to contribute effectively to the design of business-specific systems. One business manager we heard of during our research kept his new business analysts organisationally separated from the business users whom they were supposed to help. The analysts were unable to function any more effectively than they had in the central unit, until the business manager was persuaded to locate them in the user workgroups.

Some organisations have abandoned devolution

Not surprisingly, we learned of some organisations that have abandoned devolution and are either recentralising their systems responsibilities or are moving towards complete decentralisation.

Others, who realise that their first attempt at devolution was not successful, are trying again.

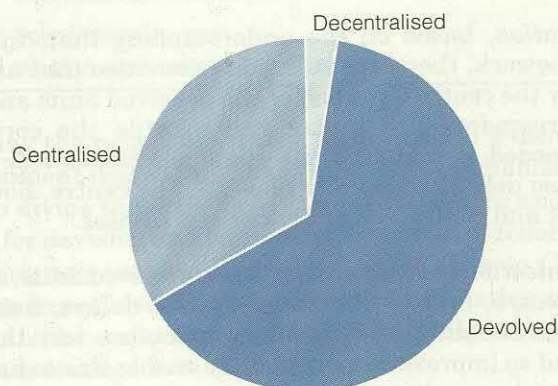
In some instances, recentralisation has been a natural response to changing business circumstances that demand greater synergy between operating units. Solvay, an international chemical and pharmaceutical company based in Belgium, had a very decentralised business philosophy and an information systems organisation that it describes as being close to the 'federal' model. Now, however, the trend in corporate management style is towards more interdependence because of the need to manage some of the key businesses on a pan-European basis. To support this, the systems management style is moving towards 'consensus-driven coordination'.

A notable example of a company that is starting again is Agusta, an Italian aerospace company, that began the original process of devolution as long ago as 1978. Throughout the 1980s, problems emerged, such as high systems costs (owing to lack of exploitation of economies of scale) and poor systems integration resulting from lack of planning and coordination during application development. The problems came to a head when Agusta began to acquire new businesses, which led to an internal realignment of its business functions into new divisions. The existing and diverse technical architectures made it very difficult, for example, to merge the production-planning systems of two plants that were allocated to the same division in the re-organisation. Agusta is now going through an interim stage of centralisation, aimed at rationalising its technology and applications, before preparing for a new round of devolution. Next time, Agusta will ensure that the divisions conform with a flexible, but corporate-wide, technical architecture.

The federal model provides a framework for successful devolution

As Figure 1.3 shows, nearly two-thirds of the Foundation members who responded to our survey described their systems activities as

Figure 1.3 Devolved structures for the systems function are common among Foundation members



(Source: Survey of Foundation members)

being devolved, with the devolved systems organisation being based on what they referred to as the 'federal' model. Moreover, almost half of those who currently describe their organisations as centralised are considering devolution. By describing their systems organisation as 'federal', Foundation members mean that the responsibility for systems is divided between the centre and devolved systems units. Usually, however, their organisation structure does not embody the true principles of federalism. We believe that the lack of understanding about the true nature of federalism is at the heart of the difficulties that many organisations have experienced when trying to devolve the responsibilities for systems.

Few devolved systems organisations embody the true principles of federalism

The difficulty is that many organisations have not progressed beyond the first stage of devolution (depicted in the middle section of Figure 1.4), which can be described as hierarchical devolution. Although some responsibilities are delegated from the centre, the central systems unit still views itself as the main controlling influence over all aspects of IT and is reluctant to give up this influence. Devolved systems units, which may be at divisional or business-unit levels, react against any 'interference' from the centre and tend to operate autonomously, concentrating on their new 'bottom line' responsibilities to the business area that they serve. As there is rarely a formal allocation of responsibilities, or a framework of rules, they are free to do this. Working relationships typically involve communication between devolved systems groups and the central unit. There is little (or no) communication between the devolved groups for sharing ideas and experiences, fostering cooperation and initiating joint systems ventures. Hierarchical devolution does not therefore result in a workable and stable division of systems responsibilities between the centre and devolved units.

Most organisations have reached only the first stage of devolution

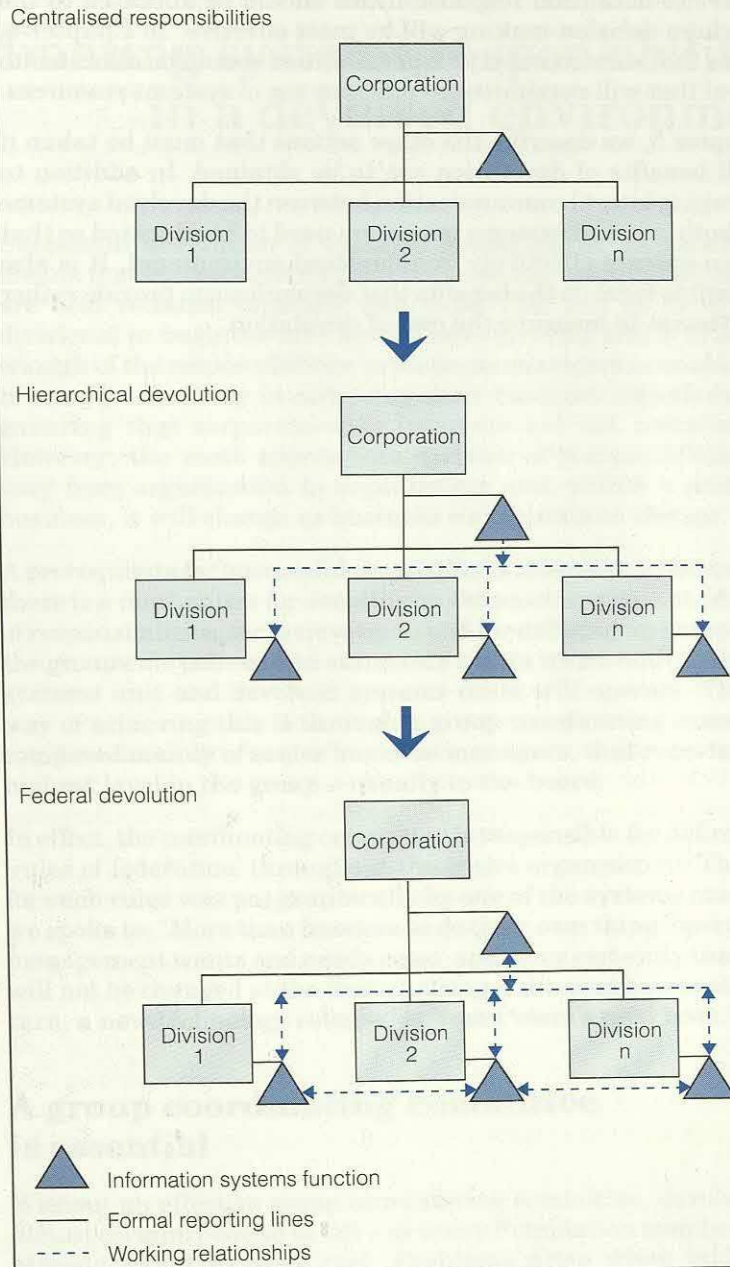
Organisations that develop beyond hierarchical devolution to a full federal organisation are able to harness the full potential of devolution. The federal model has three main principles:

Separation of, and clear accountability for, each type of systems management responsibility matched with an equal amount of authority, to ensure that decisions are made by groups who have the business perspective needed to make informed decisions. This will ensure that the decision makers are neither isolated from the impact of their decisions nor powerless to enforce them.

Reverse delegation, based on the understanding that, within a devolved framework, there are still some activities that are best undertaken by the centre *on behalf of* the devolved units and with their full agreement. The centre can provide the corporate perspective needed to maintain the synergies *between* devolved groups and also deliver economies of scale. The centre, however, does not direct and control; it influences and advises.

Direct communication between groups in the devolved units, as well as with the centre, to avoid bureaucracy and delays, build the corporate understanding and vision that is often lost through devolution, and so improve cooperation. To enable this to happen, systems and line managers need to open up paths of communication between groups, the aim being to foster learning and sharing, and to generate a corporate spirit.

Figure 1.4 A central systems function moves towards federal devolution via hierarchical devolution



Applying the principles of true federalism in a devolved systems environment means that there must be a mechanism for deciding how to divide the activities between the centre and the business units, for devising and mandating the 'rules of federation', and for resolving any conflicts that arise. As we show in Chapter 2, this role can be performed only by a group coordinating committee that reports to the corporate board and that is composed mainly of senior business managers.

In deciding how to divide the responsibilities, the group coordinating committee should recognise that there are two main types of

Chapter 1 Providing a framework for devolution

systems responsibilities – service-definition and service-supply. Different criteria should be used to divide each type of responsibility between the centre and the devolved units. In Chapter 3, we show that service-definition responsibilities should be allocated to the level where decision-making will be most effective. In Chapter 4, we show that service-supply responsibilities should be allocated to the level that will maximise the efficient use of systems resources.

In Chapter 5, we describe the other actions that must be taken if the full benefits of devolution are to be obtained. In addition to encouraging lateral communication between the devolved systems units, both line and systems managers need to be educated so that they can operate effectively in a devolved environment. It is also important to focus on the benefits that devolution can provide rather than attempt to measure the cost of devolution.

Chapter 2

Coordinating systems responsibilities in a devolved environment

Successful devolution of systems management responsibilities means finding the right balance between the responsibilities that are best retained centrally and those that can be devolved to divisional or business-unit level. The overriding aim is to devolve enough of the responsibilities to business managers to enable them to use IT effectively in achieving their business objectives while ensuring that corporate-wide interests are not compromised. However, the most appropriate division of responsibilities will vary from organisation to organisation and, within a particular business, it will change as business circumstances change.

A prerequisite for successful devolution is therefore to ensure that there is a mechanism for deciding on the most appropriate division of responsibilities, for reviewing it, and for defining and mandating the groupwide policies and standards within which both the central systems unit and devolved systems units will operate. The best way of achieving this is through a group coordinating committee, composed mainly of senior business managers, that reports at the highest level in the group – usually to the board.

In effect, the coordinating committee is responsible for defining the ‘rules of federation’ throughout the entire organisation. The need for such rules was put graphically by one of the systems managers we spoke to: “More than freedom to do their own thing, operational management wants and needs rules, and some certainty that these will not be changed at the first challenge, the next business downturn, a new technology release, or Tom Peters’s next book.”

A group coordinating committee is essential

Without an effective group coordinating committee, devolution is almost certainly bound to fail – as many Foundation members have already found to their cost. Problems arise when budgetary authority for systems is devolved to line managers before the division of responsibilities has been defined. The result is that no-one assumes responsibility for the ‘corporate’ interest. This leads, at best, to arbitrary decision-making whenever line managers’ and corporate interests are in conflict and, at worst, to deadlock, where no-one is prepared to make a decision.

An example of this occurred in a technology-based group with highly devolved systems responsibilities. Group management tried to implement a set of common inventory-control systems across several business units. The business units, however, decided that they were not going to abandon their diverse local systems in favour of common systems. This deadlock could not be resolved

A group coordinating committee will prevent both arbitrary decision-making and protracted stalemate

because there was no-one in the management structure who could mandate the use of common systems by the business units.

Some corporate boards now recognise the integral role that systems play in the success of business strategy in a devolved organisation, and are therefore recognising the need for a groupwide responsibility for coordinating systems activities. One example is Unilever, the multinational based jointly in the United Kingdom and the Netherlands, consisting of 500 separate companies. Unilever has a central computing and communications group that, until recently, gave advice only if asked and produced policy documents that the companies were under no obligation to take account of. However, because information at Unilever is considered to be the cornerstone of business success, its handling and availability is seen as a corporate responsibility. The corporate board has therefore now asked the group IT director to suggest ways in which Unilever could exploit corporate information technology opportunities. The result is likely to be the introduction of a compulsory set of standards, mandated by the board, that will enable information from numerous databases to be passed electronically between all Unilever companies.

The group coordinating committee in a devolved systems environment usually comprises at least one main board member, senior business managers from the divisions and business units, the group IT director and, to act as advisors, the most senior systems managers from the central systems unit. Sometimes, external advisors are also included to act as facilitators. Figure 2.1 describes how one multinational defines the role of its group IT coordinating committee, and shows its membership.

The group coordinating committee comprises senior business and systems managers

The most important responsibility of the group coordinating committee is to decide on the most appropriate division of responsibilities for information systems, and on the most

Figure 2.1 The group IT committee coordinates the systems activities in a devolved group

One multinational group with a devolved management structure defines the role of its group IT committee in the following terms:

Purpose	To ensure the effective use of IT throughout the group.
Responsibilities	<p>To review and approve:</p> <ul style="list-style-type: none">— Group systems strategy, policies and standards.— The status of information systems throughout the group, particularly from a competitive advantage viewpoint.— Divisional systems plans, to ensure that they are consistent with business strategies and group policies.— Resource allocation, to ensure that resources are properly deployed throughout the group.— Corporate funding proposals.
Composition	<ul style="list-style-type: none">— Two main board directors.— Head of corporate planning.— Head of corporate IT.— Two business-division directors.— Two senior managers from national operating companies.— Two external advisors. <p>The group head office systems planning function acts as the secretariat for the committee.</p>

Changes in the allocation of responsibilities are agreed by the committee

appropriate level in the organisation to which some of the responsibilities should be devolved. The resulting systems organisation will need to be reviewed at regular intervals in the light of changing business circumstances, with any changes in the allocation of responsibilities being agreed by the committee. Chapters 3 and 4 describe in detail the factors that need to be taken into account in deciding on and maintaining the balance of responsibilities between the centre and devolved units.

In the rest of this chapter, however, we describe the other two main responsibilities of the group coordinating committee:

- Maintaining group strategy, policies and standards in line with current needs.
- Coordinating systems-planning activities, both at the corporate and business-unit levels.

Groupwide policies are required in a devolved systems environment

One of the main responsibilities of the group coordinating committee is to agree and mandate groupwide IT policies. The policies themselves will usually be drawn up by the IT director and systems managers, and presented to the committee for ratification.

The need for groupwide policies in a devolved systems environment is often underestimated, however. Most organisations can see the need for some control over the proliferation of different technical infrastructures, because this makes it easier to interchange information between business units and improves organisational flexibility. Corporate policies that go beyond this are often seen as unnecessarily restrictive, and organisations find them difficult to enforce. Corporate IT policies in a devolved environment are important because they embody the framework of rules that keep devolved systems units operating as an integral part of the organisation.

Both restraining and enabling policies are required

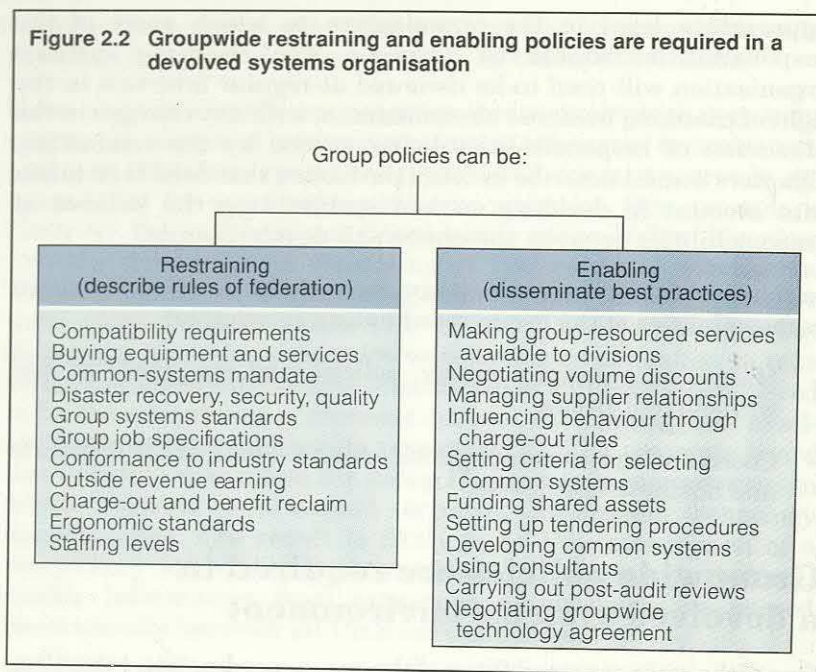
The key to defining a workable set of policies is to recognise the two categories of policy – restraining and enabling – identified by Brian Edwards (formerly a senior business consultant at IBM) in *Managing Information Systems for Profit*, and to define and mandate each kind appropriately. Figure 2.2, overleaf, lists the major policy topics in each category. Some of the items in the restraining list are similar to those in the enabling list because the downside of having rules is that there must be procedures for administering them.

Restraining policies

Restraining policies are needed to describe the ‘rules of federation’ and to delineate the boundaries of authority between devolved and central systems units. Planning for devolution cannot be undertaken satisfactorily until policies have been issued on at least the following topics from the ‘restraining’ list in Figure 2.2:

- *Compatibility requirements*, which define the technical architectures required to ensure that the organisation does not disintegrate into incompatible ‘islands of automation’.

Figure 2.2 Groupwide restraining and enabling policies are required in a devolved systems organisation



- *The freedom that divisions or business units have to procure and operate equipment and services, including the budgeting rules for capital and revenue expenses.*
- *Deciding whether to make the use of common systems mandatory, to avoid the dangers of deadlock mentioned earlier in this chapter.*
- *Extent of provision for disaster recovery, security, quality, privacy and systems audit.* The policy should describe what investment is to be made to cover these items, the justification for the investment, and the means of ensuring compliance.
- *Group systems standards* for documentation, data dictionary, languages and so on, to make it easier to audit systems and to ensure data integrity and security.
- *Conformance to group job specifications*, to enable career planning and development to be managed consistently in the devolved units and to enable the lateral career progression that is a feature of the federal organisation.

Foundation members reported a variety of ways of enforcing restraining policies. "Policies are enforced by budgetary sanction, friendly persuasion (velvet glove, iron fist) and the self-policing that can come with a Teutonic management regime" is how one interviewee described his organisation's approach. An effective way of ensuring conformance is for the group coordinating committee to review all systems plans, although in some cases, the committee might decide that there is a business justification for allowing non-conformance.

The coordinating committee reviews all systems plans to ensure compliance with restraining policies

Enabling policies

One of the key principles of the federal organisation is that the devolved units are encouraged to think and act for themselves, but

under guidance from the centre. This is both a practical and valid approach for generating the enabling policies that are needed to disseminate best practices from one devolved unit to another. These policies arise specifically from the day-to-day operating experience of the systems managers in the businesses.

In Nestec (the technical advisory division of Nestlé, the Swiss-based food company), for example, enabling policies emerge from discussions between the systems managers from each 'market' (country or zone), meeting under the guidance of the group's central management services division, which acts in an advisory capacity, giving strong recommendations rather than setting policy *per se*. Solvay devotes considerable resources to policy development and the achievement of a consensus view. The group IT director frequently travels to devolved national systems units to seek the opinions of national IT directors. Three to four times a year, the directors meet to discuss policy issues, and once a year, they hold a week-long meeting to discuss strategic issues. The group IT director describes his approach as achieving consensus prior to the detailed development of policy guidelines.

Acceptance of groupwide enabling policies is very dependent on personalities

The personality of the group IT director is a major factor in gaining conformance to groupwide enabling policies. One senior business manager who has watched devolution proceed with varying degrees of success in different divisions of his organisation comments that the success of a devolved structure is very people-dependent. He has noticed that when relationships between central and devolved systems managers are informal, friendly and based on mutual respect, it is easy to get everyone to conform with the policies. When relationships are distant and formal, it is more difficult.

Systems plans at group and business-unit levels need to be coordinated

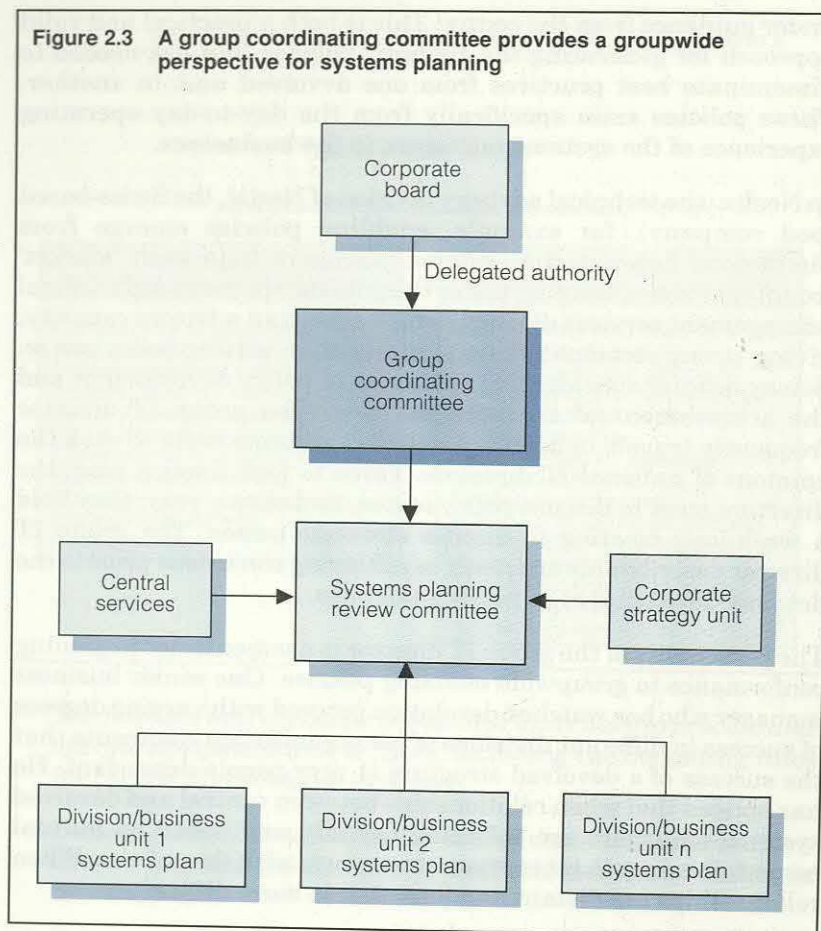
The group coordinating committee needs to ensure that systems plans at business-unit level are reviewed and coordinated. In particular, it should review divisional or business-unit systems plans for consistency with group strategy, policies and standards, and decide where business expediency warrants exceptions. The committee will also resolve any conflicts between group strategy and the systems plans drawn up by the divisions or business units.

The coordinating committee provides a corporate perspective during the systems-planning process

The group coordinating committee can perform this role most effectively by providing a groupwide perspective during the systems-planning process, as illustrated overleaf in Figure 2.3. It is fairly common for the systems managers from the divisions or business units to meet regularly while they develop their detailed plans for the coming year. These meetings provide an opportunity for each systems manager to resolve any priority, scheduling and resourcing difficulties. Unresolved problems, together with the individual systems plans, can then be presented to the coordinating committee for resolution and review.

At W H Smith, a major UK retail and distribution organisation, for example, responsibility for information systems was devolved to create a federal structure towards the end of 1989. Systems strategy is agreed and monitored by a committee comprising the managing directors of the business units, known as the IT Policy

Figure 2.3 A group coordinating committee provides a groupwide perspective for systems planning



Executive. The systems managers from the business units meet regularly to review plans and progress under the chairmanship of the group IT director, who subsequently attends the IT Policy Executive. He reports that, "Achieving synergy and running joint initiatives are now easier as, for the first time, IT is being addressed at the high-level IT Policy Executive".

Philips, the multinational electrical and electronic goods manufacturer based in the Netherlands, has a similar two-tier structure that operates across countries. At the highest level, the coordinating committee comprises a subset of the main board of management. This body is advised by a committee comprising the systems managers from the corporate automation office, product divisions and some countries.

The main benefits of a group coordinating committee are that the participants can add a corporate perspective and so minimise the possibility of incompatible strategies arising by default rather than by deliberate choice. It is also business managers, rather than systems managers, who set priorities and make choices, based on an informed view of the business and its priorities. Another advantage is that businesses with a growing reliance on cross-functional systems are better able to resolve the 'territorial' sacrifices that are inevitably required by divisions and business units to develop and operate such systems.

The coordinating committee ensures that incompatible strategies are not adopted by default

Chapter 3

Allocating service-definition responsibilities for effectiveness

Service-definition responsibilities are concerned with planning the amount and type of support that information systems will provide for the business. The responsibilities require a proactive style, and the main management criterion for allocating them is effectiveness. There are two distinct groups of service-definition responsibilities:

Defining systems strategy, which is concerned with determining *what* applications are needed to support the organisation. Some systems strategy responsibilities will be devolved to divisions and business units; others will usually be retained at the centre.

Defining technology strategy, which is concerned with *how* the applications will be delivered to the organisation. It will therefore need to cover technical architectures, technical standards, technical policies, and the security and methods needed to ensure that the technology employed is in line with business requirements.

As Figure 3.1 shows, each group has a different management focus. The figure also lists the activities that are typically included in each group of responsibilities (the lists are indicative, not exhaustive). Classifying service-definition responsibilities in this way means that each group can be allocated separately to achieve maximum effectiveness. The guiding principle is to determine the level at which managers have the necessary perspective, information and authority to add the most value to the decision-

Figure 3.1 Each group of service-definition responsibilities has a different management focus and different activities

	Systems strategy	Technology strategy
Management focus	Application-oriented Division/business unit/ function-based Demand-oriented Business-focused	Delivery-oriented Activity-based Supply-oriented Technology-focused
Activities	Identifying systems to support business objectives Watching competitors' use of systems Defining development methods and standards Identifying opportunities for cross-functional systems Choosing delivery mechanisms Planning and budgeting for systems development projects	Defining technical architectures Defining technical policies Managing supplier relationships Defining security procedures Monitoring developments in technology Disaster and backup planning Defining technical standards

making process. This is determined by recognising the different management focus of each group of responsibilities.

Responsibility for systems strategy should be devolved to match corporate management style

The role of information systems in large organisations has generally moved beyond merely providing support. In some cases, the opportunities provided by the technology itself have led directly to new forms of business organisation and products. Indeed, it is often difficult to isolate the costs and benefits of the systems element of a new business venture. The implication is that it is no longer sufficient to ensure that systems strategy *supports* business strategy – it can also be an important *determinant* of business strategy.

Systems strategy should be devised by those accountable for business strategy

Systems strategy is therefore increasingly concerned with what systems will do to support the business, and as such, should be developed by the managers with accountability for formulating and implementing business strategy. As far as possible, therefore, responsibility for systems strategy should be devolved to a level that matches corporate management style, as shown overleaf in Figure 3.2. There is little point in devolving responsibility for systems strategy to managers who do not have the authority to decide on business strategy. Thus, where the group management style is centralised, responsibility for systems strategy should be allocated to corporate head-office managers. Where business-management responsibility has been devolved to divisional or business-unit level, responsibility for systems strategy should be devolved to match.

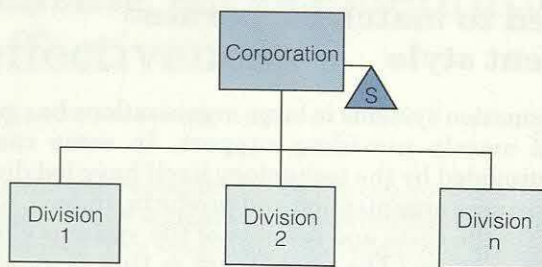
There may be cases for systems strategy to be more devolved or more centralised

The exception is where systems strategy is designed to *anticipate* corporate management style. This might be the case, for example, in highly centralised companies trying to foster entrepreneurship and to push management control down the organisation. In this situation, it would make sense to devolve the responsibility for systems strategy because this will encourage the development of systems that are needed for local autonomy. Conversely, in highly decentralised companies that rely on cross-functional coordination, or in organisations that grow by acquisition and need to integrate a new business into the corporate structure, the systems strategy will need to encourage the development of a common systems infrastructure and integrated systems. In these types of businesses, the responsibility for systems strategy may therefore be more centralised than the responsibility for other business functions.

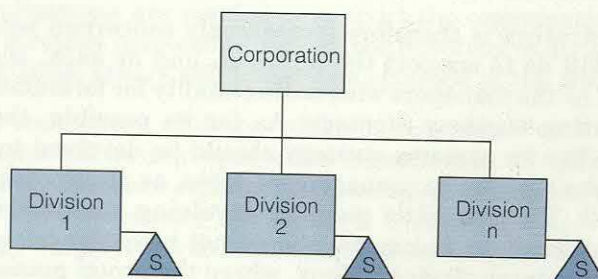
An example is provided by BIS Applied Systems, an American-owned computer services group, which has grown by acquisition and markets its products and services worldwide. It sees information systems as the most important tool in “getting the divisions pulling together”. The business objective is to present a uniform company image to potential clients and to offer all of them a full range of services. It aims to have a centrally defined systems strategy, the purpose of which will be to promote groupwide synergy and facilitate a common marketing approach, the latter being perceived as a powerful business weapon. Centralising the responsibility for systems strategy is far harder to achieve than

Figure 3.2 Responsibility for systems strategy should be allocated in line with business management responsibility

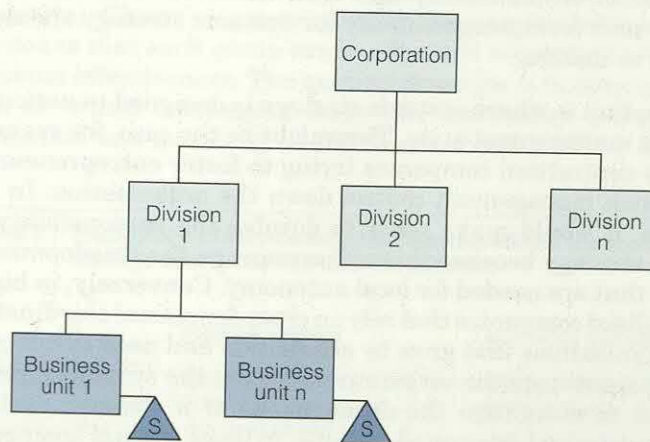
Business management is a corporate responsibility




Responsibility for business management is allocated to the divisions



Responsibility for business management is allocated to the business units



 Systems strategy responsibility

decentralising, however, and cannot be achieved without the backing of the corporate board, expressed through the group coordinating committee. As BIS's group IT executive pointed out, "Decentralisation is like having four horses in a field and letting them out to run in four directions. Centralisation is like trying to round up four wild horses and bring them together in one field."

We learned of at least two organisations during our research that transferred the ownership of technical assets (computers, terminals,

local networks and so on) to business units but kept a tight central control of systems strategy. This served no useful purpose that we could discover. The result was that business users had no control over the way that systems were used to support the business, but had to take on the additional costs and responsibilities of asset tracking and maintenance. Needless to say, neither organisation judges its devolution to be a success.

Aligning systems strategy responsibilities with those for business-management strategy is crucial if the business is to make the most effective use of information technology. At Fokker, the Dutch aircraft manufacturer, for example, responsibilities for selecting development priorities and systems have been devolved to divisional level. The divisions also have the flexibility to redistribute their budgets, so they can spend more, or less, on systems as they wish. Before devolution, there was much dissatisfaction among users about the timeliness of the service they received from the central systems unit, and about the lack of influence they had over systems priorities. Now, with 'user ownership' of one of the key determinants of business performance, Fokker expects that users will find more and better ways of using systems. This new arrangement is already leading to a marked increase in user satisfaction.

*Responsibility for systems strategy
should be allocated to senior line
managers*

A critical factor for the successful devolution of systems strategy is to ensure that the responsibilities are allocated to the most senior line managers in the division or business unit concerned. One way to achieve this is to transfer systems managers to become part of the business-management team in each devolved unit. The principal benefit of this is that information systems are perceived by the management team to be of strategic importance to the business and so worthy of their attention. By participating in the management of the businesses, the systems managers are better able to help shape business initiatives through strategic uses of information technology and this increases the likelihood that worthwhile benefits will materialise. The close working relationship is also likely to speed up the transfer of knowledge between systems and business managers and thus lead to a better understanding of the role that information systems can play in supporting and developing the business. This means that the role of information systems will be taken fully into account during the business-planning process.

*Misaligning the responsibilities for
systems and business strategies
causes problems*

The difficulties that arise if the responsibilities for systems and business strategy are not aligned are illustrated by the experience of a multinational chemical company that recently began the process of devolution. Centrally based account managers are allocated to help promote the use of systems in the devolved units. This arrangement is proving to be unsatisfactory for two reasons. First, the account managers are unable to provide useful input to the business-planning process because they are unfamiliar with the business. Second, the business managers do not consider the account managers to be their peers and so they delegate their own systems responsibilities to a lower level in their business hierarchy. This guarantees that the role and contribution of systems will not be taken properly into account during the business-planning process.

Many organisations told us that they believe that positioning systems managers in business-management teams is crucial for the successful devolution of information systems. A successful

partnership between business and systems managers does, however, require both groups to acquire new skills. We discuss the education needs of both groups in Chapter 5.

Not all systems strategy responsibilities can be devolved to divisional or business-unit level, however. There will also be a need for a corporate-level systems strategy for groupwide applications.

The corporate systems strategy promotes groupwide business opportunities

Devolving the responsibility for systems strategy to line managers and making them accountable for systems expenditure is likely to result in applications that are better focused on individual business needs, but it does not guarantee that proper attention is paid to looking for systems opportunities across functional or divisional boundaries. A corporate systems strategy is also required to identify any groupwide initiatives that must take precedence over divisional or business units' systems plans, if the business units are to continue to work together as an effective whole.

The corporate systems strategy identifies groupwide initiatives

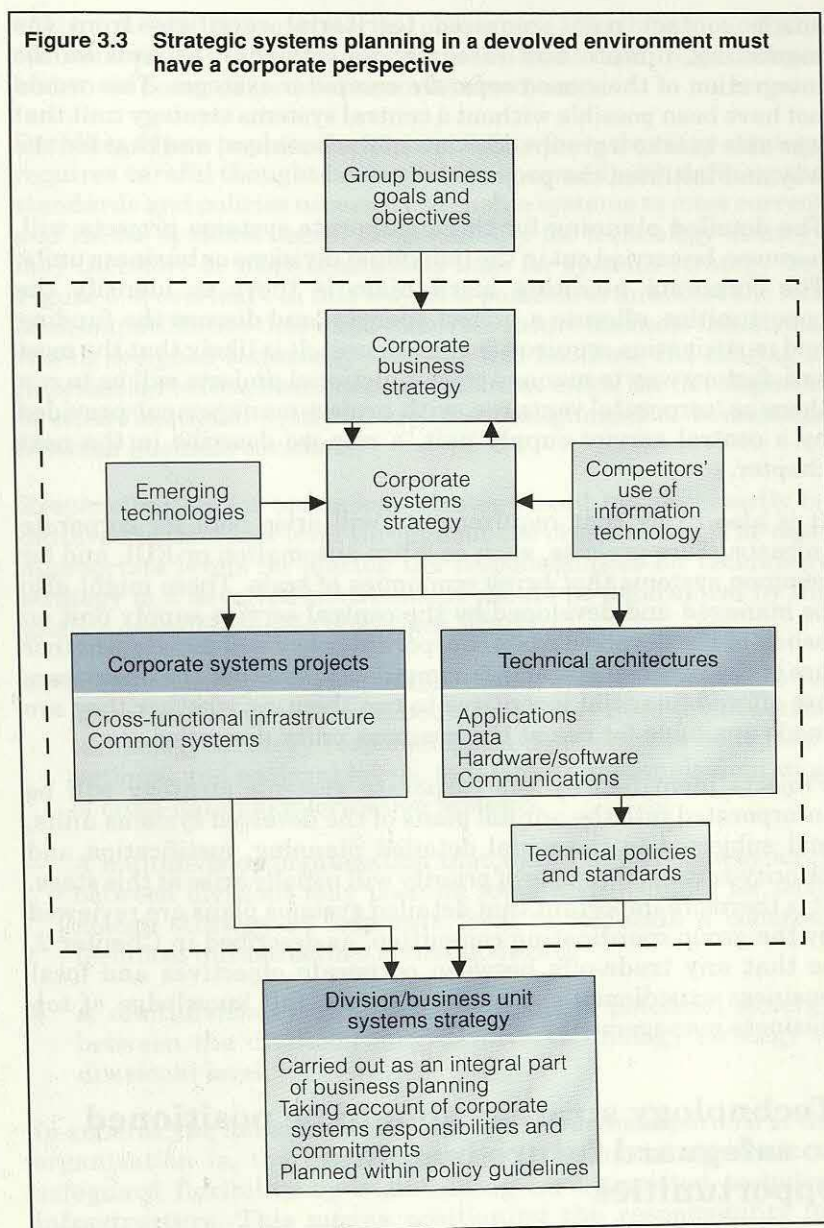
Corporate systems planning in a devolved environment is a delicate balancing act. The objective is to link systems planning in the divisions and business units with corporate-level business planning. This enables opportunities for joint or cross-functional initiatives to be spotted *before* individual divisional or business-unit planning takes place. Corporate systems planning does not imply the development of detailed application plans, however. It is a high-level exercise that requires those involved to have the imagination to spot new applications for technology, the breadth of vision to identify cross-functional systems opportunities, and the powers of persuasion necessary to resolve the 'territorial sacrifices' that may be needed from some business units to develop and implement the applications.

Inevitably, the organisational boundaries between business units will inhibit cross-functional thinking. For this reason, the development of the corporate systems strategy should be led by a skilled systems planner located in the central systems unit, or within corporate business planning. It is essential that the planning procedure is formalised and not left to *ad hoc* initiatives and that it is systematically linked into the corporate business-planning cycle. The procedure is highly interactive and needs to bring together the combined experience and judgement of corporate business managers, corporate business planners, and the senior systems managers from the central and devolved systems units, with the central systems planner facilitating the whole process.

The corporate systems strategy must be based on cross-functional thinking

Figure 3.3 illustrates a top-down approach to developing the corporate and business-unit systems strategies in a devolved environment. The starting point is a broad statement of goals and objectives from the chief executive and corporate business management, which is translated into a corporate business strategy. The role of systems managers at this stage is to work closely with the business planners and to provide insights into how the business strategies can benefit from information systems possibilities. They should also think creatively about new ways of doing business made possible by emerging technologies, or suggested by competitors' use

Figure 3.3 Strategic systems planning in a devolved environment must have a corporate perspective



of today's technologies. They should also consider the opportunities for cross-functional initiatives. The corporate systems strategy that evolves from the joint planning process will be a broad statement of requirements, from which a coherent technical architecture and specific corporate systems projects can be identified.

The corporate systems projects that are identified from the broad requirements are likely to be of several types. First, there are the cross-functional systems that will be a cornerstone of business-process management. (We addressed the issues concerned with the management and redesign of business processes in Report 79, *The Role of Information Technology in Transforming the Business*.)

In one company, for example, a single person now handles all the shipment tracking, technical questions, billings and other service activities on behalf of a customer. Providing the customer with a

single contact point required territorial sacrifices from the marketing, finance and research departments, as well as the integration of their once separate computer systems. This would not have been possible without a central systems strategy unit that was able to take a groupwide view of the business, and that led the way and initiated the project.

The detailed planning for these corporate systems projects will, however, be carried out in the individual divisions or business units. The corporate planning mechanism is there to identify the opportunities, allocate a project sponsor, and discuss the funding and participation required from each unit. It is likely that the most satisfactory way to manage cross-functional projects will be to run them as 'corporate' ventures, with project management provided by a central service-supply unit, a role we describe in the next chapter.

It is also likely that requirements will arise both for corporate infrastructure projects, such as office automation or EDI, and for common systems that bring economies of scale. These might also be managed and developed by the central service-supply unit on behalf of the devolved units. Corporate policy will dictate whether use of the common systems is compulsory, whether the businesses are offered financial incentives to use them, or whether they are made available for use at the business units' discretion.

Projects identified by the corporate systems strategy will be incorporated into the annual plans of the devolved systems units, and subjected to the usual detailed planning, justification and priority-setting. Conflicts of priority will usually arise at this stage. It is therefore important that detailed systems plans are reviewed by the group coordinating committee, as described in Chapter 2, so that any trade-offs between corporate objectives and local business expediency are made with the full knowledge of top business management.

Technology strategy should be positioned to safeguard future business opportunities

Technology strategy is concerned with defining the technical architecture needed to develop and run the applications defined by the systems strategies, and requires significant input from systems specialists. To be effective in influencing subsequent detailed planning of projects in the divisions or business units, the architectural framework must be embedded in corporate policies and standards that are mandated by the group coordinating committee. (We shall provide advice about developing a technical architecture in Report 83.)

The technical architecture describes the rules needed to preserve the group's flexibility to handle information across the organisation. It provides the framework within which subsequent divisional or business-unit planning must take place. Depending on the complexity of the cross-functional business requirements to be supported, the architecture is likely to govern how applications can be integrated, and how data is to be defined so it can be used as a corporate resource. It will also describe the hardware and software

Detailed planning of corporate systems projects is done at division or business-unit level

The architectural framework must be embedded in corporate policies and standards

To preserve business flexibility, responsibility for technology strategy may be more centralised than it is for systems strategy

environments appropriate to preserving flexibility, and the communications protocols needed to facilitate data, voice, images and so on being passed between devolved units.

Deciding where to place the responsibility for technology strategy requires careful thought because it is concerned with defining the standards and policies necessary to enable systems to meet current and future systems needs. Responsibility for technology strategy may therefore be more centralised than for systems strategy (see Figure 3.4, overleaf). In this way, it is possible to minimise the risk of incompatibilities that could constrain future business initiatives. A well designed technology strategy will facilitate the sharing of information between autonomous business units, the development of cross-functional systems, and the realignment of boundaries between business divisions.

Responsibilities for technology strategy need not necessarily be devolved to the same level throughout the organisation. The most appropriate levels for placing the responsibilities for technology strategy in a devolved environment should be determined by the group's overall business objectives. Thus:

- A multinational organisation that wants to coordinate its operations across national boundaries may need to have some technology strategy responsibilities positioned at both international and national levels, to facilitate the implementation of cross-national information systems.
- A multidivision organisation that wants to facilitate synergy between divisions may position some responsibility for technology strategy at corporate level to maintain a coherent technical infrastructure across divisions.
- A multidivision organisation with little potential synergy between the divisions may devolve technology strategy to divisional level.

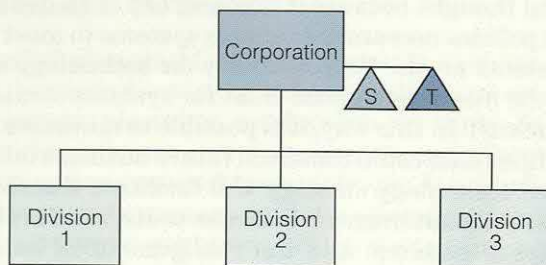
Technology strategy should be positioned where business plans are coordinated

In general, the more uncertain the future business pattern of the organisation is, the more advisable it is for management to safeguard flexibility by maintaining an integrated technical infrastructure. This means positioning the responsibility for technology strategy at as high a level as possible in the organisation. A good guiding principle is to position technology strategy at the level at which business plans are coordinated.

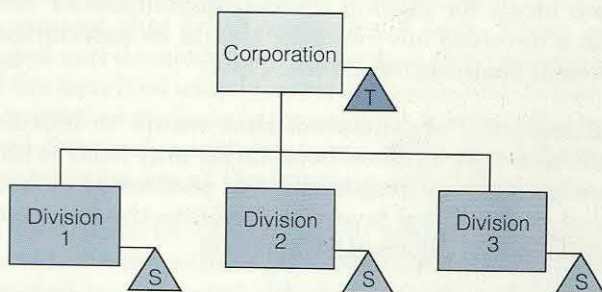
Two organisations that we spoke to during our research expect to gain widely different business advantages in retaining some technology strategy responsibility at corporate level. Unilever intends to introduce corporate standards for data networks, EDI, applications and database-access methods to enable it to pass information freely between its 500 companies. It believes that business managers will see the advantages of this approach, because it will enable Unilever to "survive into the next century". George Wimpey, a leading construction firm, has very little need to transfer information between business units. However, its corporate-level technology strategy (which also includes standards for minicomputers, networking and certain applications) enables it to interchange systems staff freely between divisions without the need to retrain them to work in a different computing environment.

Figure 3.4 Responsibility for technology strategy may well be more centralised than responsibility for systems strategy

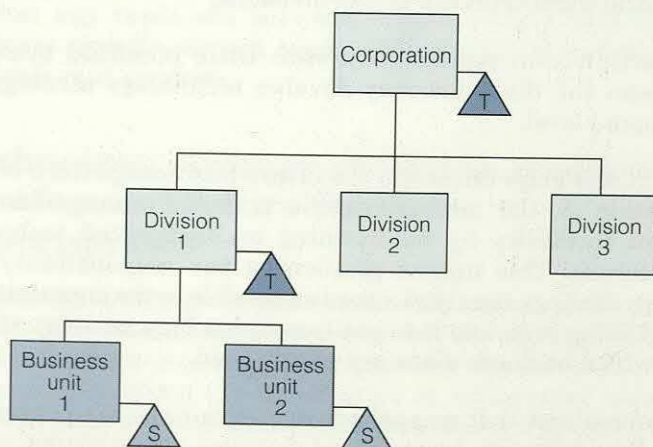
Systems strategy is a corporate responsibility





Responsibility for systems strategy is allocated to the divisions



Responsibility for systems strategy is allocated to the business units



 Technology strategy responsibility
 Systems strategy responsibility

Service-definition responsibilities are concerned with planning the demand side of the information systems function. The final task in allocating responsibilities in a devolved systems environment is to focus on the supply side and allocate the service-supply responsibilities.

Chapter 4

Allocating service-supply responsibilities for efficiency

Service-supply is concerned with providing and maintaining the IT resources (people and equipment) identified by service-definition planning. Service-supply responsibilities require a reactive style and the main managerial criterion for positioning them is efficiency.

In many organisations, much of the debate about devolution is concerned with whether the corporate centre, divisions or business units should own the IT resources. The problem of where to site resources is complicated by the diverse and highly specialised skills needed to provide a service in today's complex technological environment. Figure 4.1 indicates the wide range of skills that is required.

Figure 4.1 Diverse and specialised skills are required to provide systems services

The skills required now include, but are not limited to, those listed below.

Business analysis	End-user support
Information analysis	Data-storage management
Relational and hierarchical database design	Capacity planning
Third- and fourth-generation languages	Network design and management
Project management	Telecommunications
Implementation	Quality control
Prototyping	Systems programming
Package evaluation	Operating
Supplier evaluation	Backup and recovery
Cross-functional systems design	Personal computer installation and support
Office automation	Data security and privacy

Devolved systems units often believe that, to control the resources, they must also own them. Permanent ownership of resources, they believe, is the means of providing a better service. The real issue, however, is how to make the right resources available, at the right time and at the right price. It may well be more efficient to provide services to devolved units from a central unit.

Some services should be provided from within the devolved systems units

Some service-supply responsibilities must be discharged within the devolved systems units. We have already explained, for example, the need for a close working partnership between business and

systems managers to ensure the full and appropriate exploitation of systems opportunities. It is also important for staff with the responsibility for designing the functional aspects of systems to have a detailed understanding of the business and to gain the trust and respect of business staff. These are more easily acquired by people who actually work in the business area, and increasingly, organisations are successfully training 'business analysts' from within their own ranks. Business managers with ultimate accountability for the successful outcome of systems projects also need direct managerial control over project resources, at least until the project is completed successfully.

While there are compelling business reasons for particular systems staff to be assigned to a business area for significant periods of time, there can be drawbacks to recruiting or devolving teams of systems staff to work permanently in a particular business area. The first drawback to setting up permanent devolved service-supply units is that, unless the workload is sufficient to warrant employing a team of at least 20 people, the units lose their resilience. One organisation that set up devolved units, each with four systems staff, found itself particularly exposed when one person left and another fell ill in the same team. Another organisation explained that, "Previously, central staff could fall back on several layers of experts. Now, business units tend to have fewer experts and are vulnerable to the legendary 'bus' running over their entire team in specialist areas. The vulnerability is aggravated by the central staff becoming more specialised."

There are drawbacks to setting up permanent devolved service-supply units

Another drawback, and one that we mentioned in Report 71, *Staffing the Systems Function*, is the need to provide a career development path for systems professionals. This can rarely be provided by a permanent posting to a single business area. If costly turnover or professional stagnation is to be minimised, organisations must provide opportunities for the skills advancement and career opportunities that systems staff need. The best way of achieving this is to allow them to work in a variety of business areas. This invariably implies some corporate-level responsibility for career progression, a topic we discuss further in Chapter 5.

Finally, there is a tendency for devolved service-supply units to aim for complete self-sufficiency, and they staff their units accordingly. As a result, it is not unusual to find several technical-support groups spread throughout the business, research projects on new technology being duplicated around the organisation, and several devolved units wrestling with the problems of trying to introduce the same software package. This may provide each devolved service-supply unit with the level of autonomy it seeks, but overall, it can lead to duplication of effort and a wasteful use of specialist resources.

An alternative way to make specialist technical skills available to devolved units efficiently is to consider the possibility of developing 'competency centres'. In this arrangement, one business unit has a critical mass of specialists who are contracted to other business units when needed. Philips, for example, has made France its competency centre for videotex (Minitel), the Netherlands its competency centre for the PROFS electronic mail system, and the United Kingdom its competency centre for EDI.

Central service-supply provides economies of scale

Organisations should also consider whether any economies can be gained by providing systems services to devolved units from a central unit. The operation of 'indivisible' corporate systems resources, such as mainframes and networks, by a corporate data centre is commonplace and accepted as the most efficient way of managing expensive resources. One company we interviewed also chose to contract the control and operation of its 10 dispersed minicomputers back to the central systems unit, to economise on management, technical skills, space and air conditioning. Several companies claimed to be achieving economies by retaining a central pool of technical staff, while at the same time devolving business analysts to divisions or business units – "improving the focus while maintaining the skills", as one Foundation member commented.

The economies of scale of a central service-supply unit are under-exploited

Generally, however, the opportunities to exploit economies of scale by providing staff resources from a central service-supply unit are under-exploited. It is difficult to persuade devolved business units to use a service that is seen as part of the old, unresponsive, central-management hierarchy, especially when the central unit both defined the services that would be available and was responsible for providing them. This perception has to be changed if systems services are to be provided in the most efficient way.

Separating central service-definition and service-supply responsibilities provides a more responsive service

The key to doing this is to allocate separately the responsibilities for central service-definition (in other words, for defining corporate systems strategy and policies) and for central service-supply. This will enable the management of the supply side of the service to evolve in ways that are more responsive to its customers. In particular, a central service-supply unit must learn to market its services effectively. Without effective marketing, it may 'lose' contracts for which it is professionally better suited than alternative suppliers because of its inability to sell its services. We learned of one systems department that successfully countered the 'threat' of devolution by sending its staff on a marketing course and adopting an aggressive marketing campaign. Solvay's group IT director believes that marketing is one of his key roles, and this is typically done through presentations to business-unit systems managers.

Many other organisations are now applying the techniques described in Report 66, *Marketing the Systems Department*, to great effect. One IT director explained that his central service-supply unit now holds 'open days' for its customers to look around the computer room and have its mysteries explained to them. "They used to ask why the network failed so often", he said. "Now, they ask why it doesn't fail more often."

The four most widely practised options for managing central service-supply are a corporate data centre, an internal software bureau, a commercial business venture, and a facilities management contract. The central service-supply unit may also have a groupwide quality-assurance role, aimed primarily at identifying and disseminating good practice throughout the group.

Corporate data centres

Centralising the management of computers, networks and shared databases into fewer and larger data centres can produce cost savings large enough to persuade many organisations to abandon 'local' data centres. The potential for cost savings arises from a variety of business and technical factors, illustrated in Figure 4.2.

Figure 4.2 A combination of factors may make consolidating data centres a cheaper option

Business factors

- Company-wide/industry-wide pressure to reduce costs
- Centre processes commodity work that is not strategic to business success
- Need to raise funds
- Need to concentrate resources on core business
- Lower software-licence fees
- Easier to provide systems security
- Less management overhead

Technical factors

- Weak systems infrastructure
- Poor service delivery
- Organisation too small to handle growing needs
- Under-utilisation of capacity
- High degree of technical complexity
- Inability to attract and retain staff
- Need to improve responsiveness
- Need to implement common standards
- Need to consolidate other service bureaux and outsourcing contracts
- Need to defer major jumps in fixed costs

One of the most common economies that Foundation members have achieved is the reduction in software-licence fees charged for each site. Organisations with multiple data centres can reduce such fees considerably by consolidating data centres into fewer sites. One American consumer-products company, for example, reduced its \$40 million annual computer operations budget by at least 20 per cent by consolidating multiple computer facilities into two centrally managed centres. A substantial part of the saving was due to reductions in software-licence fees.

Reducing the number of data centres can significantly cut software-licence fees

A corporate data centre can also negotiate volume discounts, special terms and other concessions from vendors. One petroleum company, for example, has been able to achieve significant discounts by setting up a central contracting unit staffed with experienced negotiators. Another company is able to negotiate cheaper maintenance contracts and facilities management deals through its data centre than the business units are able to achieve individually.

A corporate data centre can also provide the opportunity to make more effective use of skilled and expensive technical staff. This benefit no longer applies solely to mainframe sites that have traditionally required large teams of technical-support staff such as systems programmers, capacity planners and so forth. One organisation, for example, has benefited from contracting the support of its dispersed minicomputers to a central systems unit. Several others have reduced their network-management costs by contracting the management of locally implemented networks to the data centre. In addition, technical skills that a single devolved

The costs of minicomputer operations and network management can also be reduced

unit will require only intermittently, such as personal computer installation and support, and database administration, can be provided efficiently on an *ad hoc* basis by a central service-supply unit.

Internal software bureau services

A common inefficiency resulting from devolution arises from permanently locating all systems skills in devolved units. This gives rise, in particular, to under-utilisation of staff, and to the danger that business units will be vulnerable if a few key staff leave.

An internal software bureau service can overcome these problems by managing systems staff as a corporate asset, and making sure that they are available, on contract, for as long as they are needed. Figure 4.3 illustrates the conditions under which an internal software bureau service becomes an efficient option.

Figure 4.3 An internal software bureau implies resilience and efficient use of resources in certain cases

- Achieving critical mass
- Implementing common systems
- Building cross-functional systems or new systems to cope with re-organisation
- Ensuring maximum use of capacity
- Attracting and retaining specialist staff
- Developing corporate infrastructure systems
- Learning and maintaining technical skills
- Improving productivity through use of common tools and techniques

An internal software bureau can maximise the use of resources and reduce costs

The advantage to business managers arises from the ability of the software bureau to provide specialist skills on an *ad hoc* basis, to make skills no longer required by one unit available to others, and to improve the effectiveness of recruitment and training. The advantage to the organisation is that the internal software bureau can maximise the use of resources in the systems unit, and so reduce costs.

An internal bureau may provide services in competition with alternative sources, such as external software houses, and may recover its costs by providing agreed services, on a contract basis, at pre-arranged prices. The formalised supplier/customer relationship that results often forces the service provider to become more customer-oriented and more efficient, particularly when competing with other potential suppliers. Sometimes for the first time, the staff in the newly formed bureau are compelled to find out, and supply, what the customer really wants. They are also forced to be far more innovative in the types of service they offer. The advantage for devolved business units is that their flexibility to staff projects from alternative sources is increased, without the problem of paying for surplus capacity when the resources are no longer required.

An internal bureau can maintain an inventory of specialist skills

The bureau can also maintain an organisation-wide inventory of specialist skills that can be drawn upon to service needs wherever they arise. Such an inventory prevents the unnecessary duplication of specialist skills throughout the organisation. The specialists included in the inventory may have broad experience that makes them valuable as designers of cross-functional systems, or they may have acquired knowledge as a result of a particular research and

development activity. They may also have pioneered the introduction and use of a new tool or technique and be able to pass on valuable experience to other units, thus shortening the time required to go up the learning curve elsewhere in the organisation. Other specialist skills might include software-package evaluation and implementation, supplier negotiation, data analysis and database design.

To reduce the dependence of business units on a few key systems staff, the central bureau can provide a complete systems development and support service. Such a service is likely to be attractive to divisions, business units or head-office departments that cannot justify the full-time employment of a reasonably sized team (say 20 employees or more). A potential problem, however, is that the internal bureau has to equip itself to meet a workload that might not materialise, creating spare capacity.

A central bureau can also reduce costs by undertaking research and development projects on behalf of devolved units. The IT director at Ciba Geigy in Italy, part of the multinational pharmaceuticals group, suggests that research projects of general interest to an organisation could be financed by a series of consortia of interested parties. The investigation of a new technique would fall into this category. The research would be conducted as a central service to the 'shareholders' in a consortium, who would be divisions or business units, and who would have joint property rights in the results. A regular 'customer' for such a service is likely to be the corporate strategic systems planner (or planning unit).

An internal bureau can do research and development on behalf of devolved units

Some projects should be managed by a central bureau as 'corporate' projects, such as cross-functional systems design and development. Such projects are best staffed by cross-functional teams whose loyalties are to the corporation while the project lasts. The bureau can develop and provide high-quality project-management skills to lead these complex projects, and keep the project members focused on the corporate rather than on divisional or business-unit objectives for the duration of the project. Other organisations have contracted the development and maintenance of 'infrastructure' projects, such as office automation, to a central unit. British Steel has achieved valuable economies by developing system 'cores' centrally, which are then sold to business units for implementation and individual tailoring.

Some large organisations have found, however, that reward schemes based on a recognition of individual contributions to business-unit objectives can make it difficult for staff to cooperate on corporate projects. This is most easily solved by giving team members corporate as well as business-unit objectives, and including these in the criteria by which their performance is judged.

Systems staff may need to be given both business-unit and corporate objectives

Commercial business ventures

A commercial business venture operates in the same way as an internal bureau, except that it has an additional mandate to seek customers outside the organisation and to operate profitably. This has the advantage of making the service wholly commercial, but can create a conflict of interest, as systems staff seek more varied work from outside their parent organisation and the latter becomes just another client. Most organisations tackle this problem by

Some in-house systems staff may find it difficult to adjust to a commercial environment

limiting the amount of 'outside' work to a certain percentage of the business venture's revenue.

A potential difficulty of establishing an in-house systems department as a separate business venture is that the staff may find it difficult to adjust to working in a fully commercial environment. This problem is highlighted by the experiences of SAS Data, recently established as a wholly owned subsidiary of the Scandinavian airline, SAS, with a mandate to achieve more than 25 per cent of its revenue from the external market within five years. The company was formed from an in-house computer division that was judged by its users to be both too expensive and too slow.

The business venture has provided many benefits. Competition has made the new service company much more alert to its customers' needs. Costs have fallen, both because tasks are now clearly defined and there is less misunderstanding, and because SAS Data has become more efficient. Charging market rates has encouraged the staff to raise the quality of their service. The relationship between SAS Data and its customers (including those in the airline) has become more professional – a formal tendering process for each job ensures that staff in SAS Data know exactly what is expected of them, and the customers know what they are getting for their money.

For the staff of SAS Data, however, the change has been difficult. As a systems manager explained, "Staff working in external consultancies chose those environments because it was what they wanted, while staff in SAS Data, who chose to work in a large service department, now find themselves in a small new company exposed to market forces." Staff demotivation was initially a major problem. SAS Data now recognises that it is as important to market the benefits of the changed way of working to its own staff as it is to the customers, if the benefits of the business venture are to be fully realised.

Facilities management

With facilities management, service-definition responsibilities are retained in-house, but service-supply is subcontracted

The fourth option for managing central service-supply efficiently is a facilities management contract that removes the management responsibilities for service-supply (but not for service-definition) from the organisation. Recruitment, staff retention, computing capacity, backup and development schedules can be transferred to the facilities management supplier to manage. Economies of scale are achieved because the supplier has the ability to expand his customer base and fully use his resources.

Successful use of facilities management depends crucially on the ability to predict requirements accurately enough for the contract to remain appropriate throughout its life. For organisations undergoing rapid change, a fixed contract for several years is likely to be unsuitable. We provided guidance on the benefits and pitfalls associated with facilities management (or more generally, outsourcing) in a Directors' Briefing published in April 1991.

Groupwide quality assurance

It is clearly in the long-term interests of the organisation to have the best possible quality-assurance practices followed by all the

devolved systems units. Central coordination is required to ensure that all the units are aware of these practices and follow them.

The best way for a central service-supply unit to carry out this coordination role is to provide a systems-review service. Unlike internal audit, this service is concerned primarily with promoting systems quality by reviewing the business and technical functionality of systems. The reviewers examine applications design, applications interfaces, compliance with technical standards, data validity and integrity, systems documentation, systems security, and overall systems performance.

A systems-review service will help to disseminate good practice

By providing a systems-review service, the central unit can act as a clearing house that disseminates awareness of best practices and encourages their adoption by devolved units. The purpose of the clearing house is to keep track of applications, tools, techniques and practices that are pioneered and introduced in individual divisions or business units, to suit specific business needs. The information gathered by the centre is then used to help other devolved systems units avoid bad practices and to make the units aware of the best practices being used by their peers in other units.

So far in this report, we have presented guidelines on how to divide systems responsibilities in a devolved organisation to achieve maximum effectiveness and efficiency. Figure 4.4 illustrates how

Figure 4.4 Shell UK has designed a framework for the successful devolution of information systems

Shell UK, part of the Royal Dutch/Shell Group, employs some 1,000 IT staff to provide a computer service to its 13,000 employees. Shell UK's three main operating divisions are engaged in oil exploration and production, refining and distribution, and petrochemicals. These operating divisions are further divided into 32 business units.

At the end of the 1970s, all computer services were provided by a central unit, UIC. As responsibility for company profitability was devolved to divisions and then to business units, however, line managers became increasingly concerned about the rapid growth in IT expenditure. Not only did they have no direct control over it, but they also found it difficult to measure the business benefits being achieved. It became clear that Shell UK needed to structure the definition and supply of its computer services to provide better control over expenditure, better techniques to predict and measure benefits, and clearer accountability and responsibility for ensuring that the benefits were realised.

In response to these business pressures, responsibility and accountability for IT expenditure has been progressively devolved into a three-tier structure. Management of IT investment is now a line responsibility. The chief executive and the heads of divisions have prime responsibility for planning, implementing and evaluating all IT investment throughout the business as an integral part of their business-planning responsibilities.

Responsibility for systems strategy was devolved first to the divisions, and since 1987, to the business units in the exploration and oil-marketing areas. Business-unit managers are responsible for the cost- and business-justification of expenditure on applications, and IT has to compete for funds with other business needs. Shell UK believes that placing responsibility for systems strategy with the people in the 'firing line', who understand the company's strategic needs, is more likely to result in the development of systems that are really supportive of the business.

The business-unit managers are advised by systems managers who have been devolved to the business units to become members of the business-management teams. Individual systems plans are subsequently consolidated at divisional level where opportunities are spotted for joint systems ventures. Shell UK finds that there is usually a 'natural' owner for a potential joint venture, who develops the system and then charges other business units for its use. Responsibility for infrastructure systems, such as office automation, is retained at divisional level.

Responsibility for technology strategy remains with UIC, which realised that an undisciplined growth of minicomputers and personal computers would result in a high cost and practical difficulties in interconnecting them. The result was the creation of a company-wide 'architecture'. This consists of guidelines on the equipment, and the operating and systems software that users can employ, and also the mandatory requirements for any system that needs to be linked into the company's computer network. UIC, however, tends to seek compromise rather than to enforce the policy. Thus, if a specific engineering application is required, for example, that does not comply with the existing guidelines, the rules are likely to be waived in the interests of business expediency. UIC finds that it has to strike a balance between too much interference, which could lead to inflexible operations, and too little, "which could break the empire into pieces".

Shell UK believes that the keys to successful management of IT in a devolved organisation are providing line management with IT education and selecting senior IT managers who have appropriate personality characteristics. A devolved structure needs IT managers who have a strong business sense, can operate through persuasion, and are prepared to spend time liaising, discussing and reaching compromises with their IT and business colleagues throughout the company.

one organisation has used these principles to design a framework for the successful devolution of information systems.

A clearly defined framework for devolution is a necessary but not sufficient condition for success. Learning to operate successfully in the new environment demands an enormous commitment from everyone. In Chapter 5, we describe how this commitment can be gained.

Chapter 5

Gaining the full benefits of devolution

Devolution that is undertaken in response to immediate pressures often runs out of steam as soon as the devolved systems management structure is in place. Learning to operate in a true federal organisation demands continued commitment from everyone involved in defining and providing the systems service, and a willingness to abandon traditional roles. The key to making the federal structure operate successfully is to encourage lateral communication among the devolved systems units, to educate line and systems managers for their new roles, and to move away from perceiving information systems as a cost to be minimised, and introducing, instead, ways of measuring the increased value provided by systems in a devolved environment.

Encourage lateral communication among devolved systems staff

The devolution of information systems responsibilities is usually in response to the need to integrate the business and systems-planning processes more closely. While such integration remains the biggest potential advantage, devolution can nevertheless create new problems of integration *between* the systems staff in different parts of the organisation. The difficulties arise not only because there is a need to coordinate the work of specialists working in the devolved units, but also because of the inherent nature of systems staff. Previous research by Butler Cox, carried out as part of our Productivity Enhancement Programme, has shown that the personality characteristics of systems staff differ markedly from those of the population in general. By nature, systems staff tend to have a higher need for opportunities for career development and skills advancement.

The danger is that systems staff assigned to work permanently in a particular business unit will have their horizons narrowed, in terms of business outlook, skills expansion and career progression. Successful devolution depends critically on providing the integrating procedures that enable devolved systems staff to expand their horizons in all these respects.

Research carried out as part of the Massachusetts Institute of Technology's 'Management in the 1990s' programme concluded that, "The IT organisation is responsible for building the 'network' infrastructure – the vital set of 'roads and highways' through which the networks of shared work, expertise, decision-making, and so on, work". (This research programme took place at the Sloan School of Management between 1985 and 1990; its aim was to develop a better understanding of managerial issues, particularly those relating to expected advances in information technology.) The

Devolution can create communication problems between staff in different parts of the group

Systems staff permanently assigned to devolved units may have their horizons narrowed

network infrastructure referred to is not software or hardware, but the formal and informal channels of communication that must be forged between systems staff throughout the organisation.

There are four main ways of achieving this: allocating responsibilities for the 'horizontal threads' that cut across business units, establishing lateral career paths for systems staff, encouraging informal 'networking' between staff in the devolved systems units, and considering the advantages of 'virtual centralisation', where staff from devolved units undertake assignments that would otherwise be carried out by staff from a central systems unit. All of these will be appropriate to varying degrees.

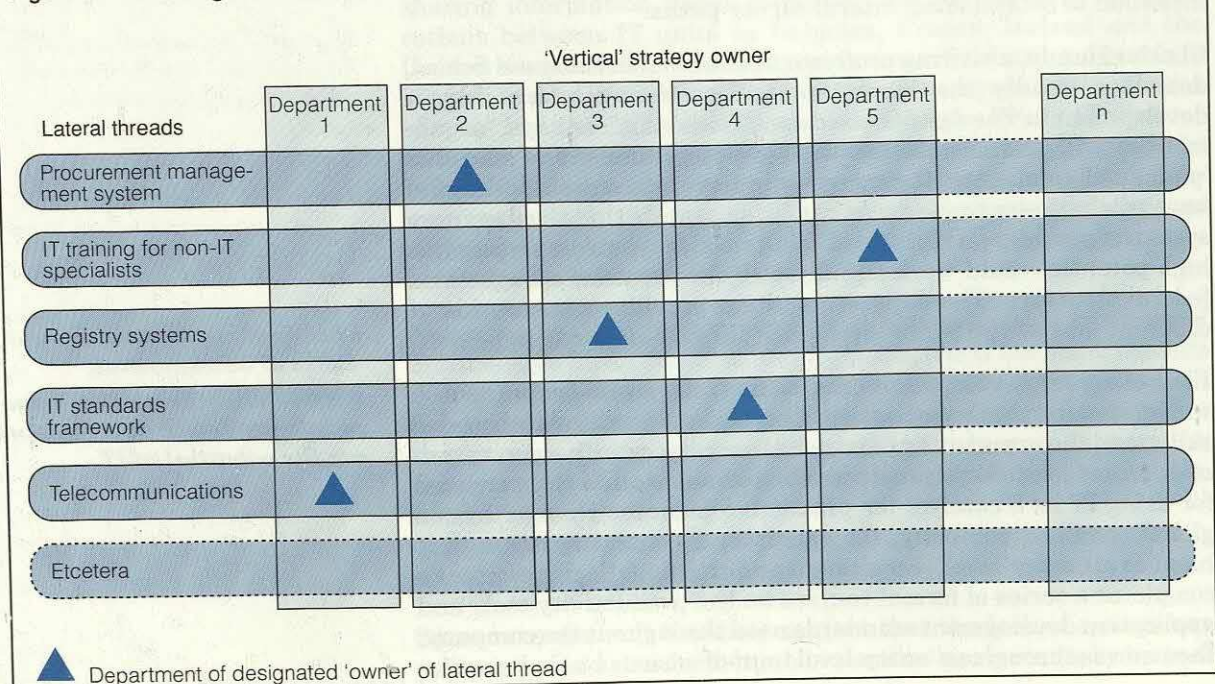
'Horizontal threading'

Horizontal threads are elements of systems strategy common to all parts of the business

Systems and technology strategies in a devolved organisation invariably include horizontal threads – elements common to all divisions or business units, as well as elements unique to the particular business areas. Several Foundation members have encouraged systems staff to take a corporate perspective by appointing an individual in one business unit to develop these horizontal (or lateral) threads *on behalf of* the other units. The threads can represent the development of common applications such as personnel systems, which are then included in a division's 'vertical' strategy, as appropriate, or they can be common technical infrastructure services, such as telecommunications.

Figure 5.1 illustrates some of the lateral threads identified by a UK government department. It is interesting to note that this department has included a service-supply element – IT training for non-IT specialists – as a lateral thread. The department appoints an 'owner' who has overall responsibility for a lateral thread, and

Figure 5.1 One UK government department encourages corporate vision through lateral threads



a manager, who is responsible for its detailed development and maintenance.

AMS, the Swedish labour market administration organisation, has used horizontal-threading principles in introducing common software into its 24 devolved systems locations. Each common system has an owner, and details of both the system and its owner are published in AMS's standards documentation. Staff throughout AMS are encouraged to seek guidance and expertise from the systems' owners in preference to asking the central IT department.

Similarly, an American organisation with multiple operating units and a policy of maintaining 'lean' corporate staff and delegating 'major work' to the functional groups has instituted what it calls 'resource centres' to delegate cross-functional responsibility to a particular business unit or functional group. There is an important additional feature to this arrangement, however, that helps to promote its success. The managers in charge of resource centres are measured and rewarded by how well they carry out their resource-centre responsibilities as well as their functional-unit responsibilities.

Lateral career paths

We pointed out in Report 71, *Staffing the Systems Function*, that managing the careers of systems staff in a devolved organisation needs particularly careful handling. Federal organisations are much flatter than hierarchical ones, and vertical career-progression opportunities must be replaced by lateral development opportunities. These can be achieved by rotating people both between systems-oriented and functionally oriented roles, and between business divisions. We also predicted in Report 79, *The Role of Information Technology in Transforming the Business*, that limited vertical career progression for business staff will be an inevitable result of business transformation. The resulting dual pressures from business and systems staff will force organisations to pay serious attention to establishing lateral career paths.

Charles Handy, a visiting professor at the London Business School, describes vividly the importance of providing lateral career development in *The Age of Unreason*. "Without it", he says, "organisations will find themselves with growing numbers of so-called 'plateaued' managers, managers who have run out of ladder and have nowhere else to go except out." He suggests that the Japanese system of providing a horizontal 'fast-track' for younger people with high potential could work equally well for people of all ages in a federal structure. The Japanese system provides a succession of different jobs at the same level, with tough standards to be met.

Lateral career development creates more versatile people with a wider view of the organisation, the chance to develop broader skills, and the opportunity to enrich their careers with a succession of different jobs. Such people are better able to see the potential for using IT as a catalyst for productive business change. In one global chemical company, for example, a central systems unit handles all 'entry-level' recruitment and training. Each new intake completes a series of formal courses on the productivity tools and application development standards used throughout the company, then moves through an 'entry-level tour' of various business units.

Vertical career paths are limited in a federal organisation

With lateral career development, people are better able to appreciate the potential of IT

After three years, successful recruits choose longer-term assignments anywhere in the company. By managing their early career, the central unit ensures they take with them a consistent approach to applications development, and have established working relationships with their contemporaries throughout the organisation.

Informal 'networking'

Staff recently devolved from a central systems unit are likely to retain some informal contact with previous colleagues and share ideas and experiences. In time, however, and particularly as staff leave, these important links will fade unless efforts are made to encourage the continuation of informal 'networking' between systems staff in different units. Without informal links, the formal channels of communication are unlikely to be effective.

*Informal working relationships
reinforce formal communications
channels*

An American insurance company, for example, has discovered that its new devolved environment requires more teamwork among the divisions and has arranged many more ways for employees to get to know one another informally and socially. The company has arranged ball games, lunch-time concerts and departmental social events to celebrate notable achievements.

A multinational oil company has encouraged the development of an informal forum for its devolved systems managers, including 'awayday' meetings, with the chairing role being rotated among the participants. The advantage of this is that the forum is not perceived as a device for enabling the group IT director to coerce the participants into accepting a 'centralist' viewpoint. On the contrary, those attending are encouraged to participate – especially when it is their turn to chair the meeting.

The formal planning-committee meetings of devolved systems managers can also be a valuable means of fostering voluntary cooperation. The IT steering group at Wiggins Teape, a multinational manufacturing group, has provided an excellent forum for sharing information about products, and for exchanging applications between IT units in Belgium, France, Ireland and the United Kingdom. The resulting move towards sharing a portfolio of applications is enabling Wiggins Teape to regain the economies of scale lost through devolution. Similarly, the group IT director at Glaxo, an international pharmaceuticals company, regards its information technology committee as a "group focus and communications vehicle", to help make the whole greater than the sum of the parts and to help ensure that the group IT strategy currently being developed is willingly adopted.

*Informal networking facilitates
participation in cross-
functional teams*

According to John Henderson of the Massachusetts Institute of Technology's Sloan School of Management, one of the major benefits of such 'social networking' results from the fact that it spans both functional areas and the hierarchy in the firm. It therefore provides the impetus for individuals to participate in and support the requirements of cross-functional teams quickly and easily when the need arises.

'Virtual centralisation'

Some management theorists suggest that the lack of a corporate perspective in a devolved organisation can be overcome by 'virtual

centralisation'. They point out that, in theory, all 'central' service-definition and service-supply responsibilities can be carried out by individuals drawn from devolved systems units working part-time or on a project basis, and aided by electronic links such as electronic mail and computer conferencing. Thus, corporate systems and technology strategies could be developed by a council of representatives drawn from all the major business units, or research and development activities could be distributed throughout the organisation, provided that the participants can communicate, plan and manage the introduction of new technology on a project basis. It might also be possible for a business unit to perform an activity such as research and development or systems development on behalf of the group as a whole – a form of internal 'outsourcing'.

Central responsibilities can be discharged by devolved staff, supported by electronic communications

The main potential advantage of this approach (apart from reducing the staff at the centre), is that decisions would be taken *and* implemented by peer groups, rather than by a 'higher authority'.

Educate line and systems managers for their new roles

There is much evidence to support the view that the companies that manage to use information systems successfully to achieve their business objectives actively involve line management in key decisions relating to computers. Line managers will therefore need to participate in identifying, specifying and managing the introduction of new systems that will bring strategic business advantages – but they should do so within a corporate context. They need to be encouraged, for example, to look beyond their parochial business interests to cooperate, if necessary, on the development of cross-functional systems. This means that there should be mechanisms to ensure that they do not incur financial penalties as a result of devoting effort that helps other business functions. Line managers should also understand the business justification for corporate systems policies and standards, be prepared to contribute to their formulation, and be willing to uphold them. Most organisations find, however, that line managers are unprepared to play such an active role in managing information systems, other than controlling budgets.

Most line managers are unprepared to play an active role in managing information systems

Although devolution brings information systems decisions closer to line managers, it can also intensify the problems of understanding between line and systems staff that were always present in a centralised environment (see Figure 5.2). Management attention is inevitably diverted away from longer-term planning to solving these problems. The devolution of information systems is often timed to coincide with the decentralisation of line-management responsibilities. This too can distract line managers' attention from learning to cope with the problems of managing their newly acquired systems responsibilities.

In many organisations, the biggest problem is that line and systems staff are initially separated by a gulf of misunderstanding stemming from their disparate backgrounds, skills, motivation and objectives. The first step in closing the gap is to introduce a systematic education programme for line and systems managers to prepare them for their new roles.

Figure 5.2 Devolution often intensifies problems of understanding between line and systems staff

Systems managers' perceptions of line managers' failings	Line managers' perceptions of systems managers' failings
No clear service or business plans available	Inability to match information systems to business needs
Inability to spot strategic uses of IT	No targeted education programmes
No policy/political objectives set for information systems	'Decibel' planning of systems projects (those who shout loudest get service)
Failure to grasp management and organisational implications of IT	Preoccupation with the technicalities of IT
Failure to communicate requirements to systems staff	Lack of understanding of business environment
Lack of appreciation of technical complexities of IT projects	Failure to communicate realistic resource and timescale requirements
Failure to measure business benefits of information systems	Failure to market the business successes of information systems
Insistence on cost-justifying all investments	Lack of measures to evaluate business benefits

Line-management education

Line managers need to know enough about information technology to view it as a crucial factor in strategic and operational business planning. Put another way, they must be in a position to manage IT as a normal part of their business-management responsibilities. Educating line managers to be able to do this is hindered by their experiences with personal computers over the past few years. Sophisticated graphics packages, complex networks and incompatible architectures can easily give them the impression that IT is more about *technology* than about *information*.

Management education should not be concerned with technology, however. Instead, managers should be encouraged to think about how different ways of handling, combining and viewing information could improve their current operations, or enable new ones to be introduced.

IT education for managers should be organisation-specific

All systems executives whom we consulted agreed that the keys to success were to make management education organisation-specific and action-related, and that it should be a continuous process, not a one-off 'awareness' course. General courses are therefore inadequate. To be of real, lasting value, education programmes have to be designed *specifically* for each organisation. (This is precisely the advice we gave in Report 58, *Senior Management IT Education*, published in July 1987.)

Foundation members have approached line-management education in a variety of ways. Wiggins Teape applies the philosophy that, "Until you have your fingers burned, you do not have the experience to gauge how hot the fire is". Although it provides formal education for line managers, it has found that the lessons register only when education is associated directly with a line manager's responsibilities.

George Wimpey had a line-management IT education programme in place for several years before devolution actually began. The IT director explains that, "The business-unit managers are now thinking through problems rather than worrying how they will be solved in IT terms. They leave that to others." He has also found that the growing awareness by line managers of how to manage information systems has been accumulated through experience rather than through formal education.

Highly successful education programmes have also been achieved by those organisations that practise career-rotation for line and systems staff. In Neddata, for example, the systems function of Nedlloyd (a Netherlands-based international transportation company), IT has been part of management development since the late 1980s. Some management trainees start in the information systems department, and Neddata finds that this provides valuable background experience – the best ideas for using information technology now originate in the business.

The most critical factor for successful leadership of information systems activities by line managers is that they learn to challenge technical explanations. They must insist that business and information systems planning are integrated, that a full business justification is presented for each proposal, and that there is evidence of alternative solutions and lateral thinking in each systems proposal.

Line managers should learn to challenge technical explanations

We learned of one novel way to motivate line managers to accept their responsibilities for the success of information systems in their business. A managing director, keen to raise the level of awareness among line managers, took to telephoning them regularly to discuss problems he had heard about in the day-to-day operation of their information systems. It took just six months for the managers to become thoroughly familiar with the specific issues.

Education for systems staff

Systems staff, as well as business managers, must be educated so that they can carry out their new responsibilities in a devolved environment. In particular, they must learn to focus less on technology and become committed supporters of line-management initiatives. Devolution has major implications for the skills required of all systems professionals. Many of them still have to make a determined effort to shake off their traditional image, which is often perceived by line managers as 'alien' and obstructive.

IT directors must learn new leadership skills

The role of the IT director at the centre of a devolved organisation is also changing – from that of decision-maker to that of ensuring that the procedures, structure and skills are in place to enable the right decisions to be made. A major part of this responsibility is to provide the strategic view necessary to guide and improve the shorter-term decision-making in the devolved units. The IT director should ensure that business units adhere to the corporate technical infrastructure, and advise on the effective deployment of systems resources throughout the organisation. The biggest challenge facing the IT director is to learn to operate through personal credibility and persuasion, rather than through direct control of people and budgets.

IT directors must learn to operate through personal credibility and persuasion

Until now, the IT director in a centralised systems department has been accustomed to being perceived as the organisation's IT expert. The new relationships that need to be fostered in a devolved environment require skills that are, according to one IT director, more akin to an 'orchestra leader', requiring the skills of both communicator and consultant. As Jerry Kanter, executive director of the Center for Information Studies at Babson College, Massachusetts says in *More Power to the Masses*, "To many who have grown up in the hierarchical business environment of the '70s and '80s, this is completely antithetical to their style and way of managing. The key question is how does one change, or more directly, is it possible for one to change?" Our research suggests that it can be done, and that those who have managed it have increased their status and influence.

Given the cultural background of most IT directors, adopting this type of leadership role represents a huge challenge if they are to operate effectively in the new environment. One IT director participating in a seminar on change management suggested that, to be successful, "You must believe in participative management and an intelligent workforce, committed to its objectives. Thirty years ago, people were told what to do and they followed the rules; today, you must *convince* employees that you are doing the right thing."

The group IT director in a devolved organisation requires leadership qualities

We found widespread agreement among IT directors in devolved environments that their role requires leadership and is different from a line-management position. One told us that he spends a considerable amount of time visiting the devolved national information systems units in his group in order to learn of local issues and to build a consensus. Another explained that he is very aware of the need for 'mutual trust' and for 'leadership not management', and he is now very involved with providing high-level consultancy services to devolved systems managers and their business managers. The IT director of a multinational conglomerate, who has the support and mandate of the corporate board to override decision-making in devolved units in the interests of group synergy, nevertheless feels that the new culture requires him to sell his ideas to the various companies in the group. He said that he would consider that he had failed if he ever needed to resort to using board endorsement of his views.

The communication abilities of systems staff must be strengthened

The role of business-unit systems managers in devolved organisations will also expand. They should be able to educate line managers in their new responsibilities, generate ideas about effective uses of information technology, understand the real business concerns and pressures of the business areas they support, and help design and implement business-specific systems. The role of a business-unit systems manager is moving away from that of a technical expert, and becoming closer to that of a business executive. Their greatest challenge is to expand into this role, without losing the corporate perspective that was present in the centralised systems environment.

The role of systems manager in a devolved unit is akin to that of a business executive

We have already highlighted, in Figure 5.2, that the closer working relationship between systems staff and business managers will intensify the problems of understanding between the two groups.

To overcome these problems, systems staff need education to help them improve their communications skills. A variety of initiatives can be taken to achieve this. Above all, they must be good listeners and good persuaders, prepared to understand the pressures that drive the business-management team.

Systems staff need to communicate better with systems managers

The same qualities must be developed in business systems analysts, and in anyone responsible for designing the functional aspects of computer systems. They, too, will need to develop a detailed understanding of the business areas that they serve.

Central service-supply personnel will also need to change their attitudes completely. As one IT director said, "Our IT service functions have had to change their attitude and their role. They are now seen as just another possible supplier." Staff training at SAS Data, for example, has changed to reflect the new service role. All staff are now trained in customer awareness, and the customers' needs are seen as the driving force of the business.

Measure the value, not the cost, of devolution

Many organisations attempt to measure the cost implications of devolution, but with little success, mainly because costs are dispersed in a devolved environment and are therefore less easy to identify. A common observation is that one of the major disadvantages of devolution is that it is no longer possible to measure accurately the true IT costs and thus it is not possible to measure the effectiveness of devolution. Business units always seem confident that devolution will result in reduced costs, while the corporate view is generally the opposite. Although it is easy to measure the reduction in the central systems budget that results from devolution, the cost impacts on devolved business units are more elusive. It is not easy, for example, to identify devolved staffing costs, which typically account for more than half of all systems expenditure, when management, development and implementation tasks are absorbed into the jobs of business staff.

One systems manager commented that concentrating on the cost of devolution is likely to increase the risk of failure rather than result in increased efficiency. He explained that, regardless of the strategic reasons for devolution, business units are likely to be under severe pressure to reduce IT costs and timescales. This will encourage business managers to cut corners to meet IT cost and timetable objectives. 'Unnecessary' costs, such as training users, parallel running, building interfaces to corporate systems, and other 'IT obstacles to a cost-effective solution' are likely to be cut. There was widespread concern about this issue in the organisations we researched. One systems manager, however, took the unusual view that devolution would result in a reduction in costs because there would be less argument between business units and the centre.

Concentrating on the cost of devolution will increase the risk of failure

To be concerned with measuring costs is to miss the point. The main potential benefit of devolution is to improve the ability to use IT for business advantage, by involving people with the right perspective to add value to decisions about the use of IT. As a systems manager in ICI Australia put it, "There is probably no significant difference between the cost of *well managed* devolution and

Devolution improves an organisation's ability to use IT for business advantage

central control, but *poorly managed* devolution costs a lot more. Therefore, devolution should be a strategic business decision and not driven solely by a desire to save money.”

What is needed is a set of business-performance criteria that can demonstrate the added-value of each devolved and central systems unit. Figure 5.3 suggests some appropriate criteria for assessing the benefits of devolution.

Figure 5.3 Benefits in a devolved environment should be judged on business value, not on cost reduction

Devolved systems units

Business expansion achieved
User satisfaction increased
Information systems seen as strategic by business management
Business management involved in directing use of IT
Competitive advantage achieved

Corporate systems-strategy unit

Business synergy enhanced
Flexible growth/contraction achieved
Business leverage of information systems across divisions enhanced
Technology not seen as a constraint on business initiatives

Central service-supply unit

Staff attraction and retention improved
Resources fully utilised
Customer satisfaction obtained
Skill levels enhanced
Productivity improved
Delivery timescales shortened
Service levels improved

The systems manager of a multinational agrees that it is the added-value of devolution that is important. “IT could not have continued to operate in the old way. The changes are now taken for granted and no justification is necessary. IT costs have gone up. Measuring the benefits may not be possible. Rather than measuring quantitative benefits, perhaps it is better to ask questions such as: Does the business have a better feeling for IT? Is the business proud of its IT work?”

To ensure success, devolution must be well managed

To be successful, the devolution of systems responsibilities *must* be managed. It is an onerous task, but as the experience of the organisation described overleaf in Figure 5.4 shows, it can be done. The notable features of this, and other successful devolutions that we researched, are that they:

- Recognise that information technology is a top management issue.
- Define a management framework in which responsibilities are allocated and clearly understood.
- Have procedures in place to encourage groupwide communication and synergies.
- Educate line and systems managers to fulfil their roles effectively.

Figure 5.4 Philips has successfully applied the principles of federal devolution to devolve systems management responsibilities

Philips is a multinational electrical and electronics goods manufacturer. It is organised into nine product divisions that are further subdivided into more than 40 business units and span more than 60 countries. Responsibility for profitability was transferred in the mid-1980s from the national organisations to the product divisions.

To match the more devolved general management style, and because Philips consists of many diverse businesses, responsibility for information systems has been devolved into a federal structure. The company believes that this is the best way to ensure that responsibility for systems remains close to the business, and will ensure that systems continue to meet business needs.

Philips has designed a management framework for systems responsibilities that distinguishes clearly between service-definition and service-supply. This framework provides two main advantages. First, it provides a clearer statement of service-definition responsibilities, with emphasis being given to *what* is needed rather than on *how* to supply it. Second, it makes a more formal approach to service-supply responsibilities possible through the use of contracts and service charges, with the emphasis on efficiency.

Responsibility for systems strategy is devolved as far as possible to product divisions, and in some cases, to business units. Each division (or unit) decides what applications it needs to support its business. Because the product divisions span national boundaries, however, responsibility for 'national headquarters' systems, such as finance, is devolved to national systems managers. All large investments in applications have to be reviewed and approved at product-division level.

Technology strategy is the joint responsibility of the corporate automation office (a group-level systems unit) and the product-division systems managers. They agree on groupwide standards for vendors, data definitions, telecommunications and systems development methods. Part of their groupwide responsibilities is to maintain a list of standard application packages that business units are encouraged to implement.

Service-supply is the responsibility of two units. An external software house, set up as a joint venture between Philips and a Dutch software house, provides systems development expertise and also offers services to third parties. An internal bureau, known as Communications and Processing Services (C&P), provides telecommunications and data processing services, and owns and manages most of Philips's mainframes. C&P is in the process of consolidating its many IBM data centres into three megacentres to gain economies of scale in hardware and software costs, and skills. For some software services, the product divisions can, however, use alternative suppliers. The external software house acquired the marketing and account-management skills to enable them to compete effectively for in-house business when it combined with the commercial software house. C&P is also having to develop these skills.

Overall responsibility for coordinating the management of information systems in Philips rests with a subset of the main board of management. Recommendations are put to it for decisions by a committee comprising the systems managers from the corporate automation office, the product divisions and some countries.

Philips has found that a critical factor in the success of its federal systems structure is to employ systems staff with sufficiently broad technical and business skills to enable them to become systems managers in the product divisions. The value of lateral career movements to broaden skills is acknowledged, and careers are managed on a groupwide basis. The corporate automation office is responsible for managing the careers of the most senior systems staff, and the national systems managers are responsible for all other career planning.

Another critical factor is to ensure that business managers in the product divisions have the skills to exercise their new systems responsibilities effectively, and Philips has invested heavily in management education. This is tackled by a mixture of internal presentations to the business by systems managers, and external workshops, in which the topics covered include using IT for competitive advantage, information planning and strategy.

Philips believes that the systems function could not have continued to operate successfully as a central service. It is now taken for granted that devolution is the right approach. Any marginal increase in costs has been more than outweighed by the business benefits gained through the more effective use of information systems.

Finally, systems directors should recognise that the increased business advantages that the devolution of information systems can potentially provide requires a complete overhaul of the traditional, hierarchical way of viewing and managing the systems function. There are enormous benefits to be gained by those organisations whose systems directors recognise the need for the management framework described in this report and use it to manage their organisation's migration to a fully devolved federal systems structure.

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