Information Gathering Problems in Multinational Banking

Jasna Kuljis
Department of Mathematical and Computing Sciences
Goldsmiths College, University of London
New Cross, London SE14 6NW, UK
Tel: +44 (0)171 919 7868
Fax: +44 (0)171 919 7853
email: j.kuljis@gold.ac.uk

Robert D Macredie and Ray J Paul
Department of Information Systems and Computing
Brunel University
Uxbridge, Middlesex UB8 3PH, U.K.
Tel: +44 (0)1895 203374
Fax: +44 (0)1895 203391
email: {Robert.Macredie; Ray.Paul}@brunel.ac.uk

Abstract
There has been a tendency for many companies to develop monolithic, centralised computer-based information systems in the belief that this provides the best way of approaching the capture, management and exploitation of the information that is essential for their business needs. Whilst there are several well-documented cases where such systems have been perceived as successful, there are other situations where such approaches have proved problematic. This may be because a monolithic solution was not appropriate, and led to significant (possibly insoluble) difficulties in servicing the information needs of the business. This paper will consider one such organisation, based in the multinational retail banking sector. The context for the discussion is the extent to which the system has had difficulties in supporting business decision making. This is related to problems in gathering and maintaining relevant information. This banking sector provides an interesting focus for the problems of information provision to support decision making as it is undergoing a period of rapid intensification of competition and fundamental change where new products and services are both agents and consequences of change. Competition stems not only from other established banks, but also from non-banking organisations offering financial services. This presents an environment in which it is increasingly important to have information which is timely and of high integrity on which to base decision making to ensure that it is in line with corporate strategy. Poor decisions, taken on the basis of poor information, may impact on the profitability of aspects of the business, particularly in a fiercely competitive market like banking. This paper will introduce the banking sector in order to provide a background for the paper and an insight into the complexities of the business area. It will then go on to briefly discuss decision making and the associated role of information and communication technologies. This will lead into a review of information that is required to support decision making and the difficulties that arise in gathering and managing this information. A related issue is the environmental pressures of the business sector which might restrict information gathering and use. Such issues will be briefly discussed before broad conclusions are presented.

1. Introduction
Banking and the wider provision of financial services is a rapidly changing business area. There have, in recent years, been significant movements away from banks as mainly a repository for the safekeeping of wealth to their offering a wide range of financial products and services. In contrast to twenty years ago, now only a small percentage of a bank’s business will centre on the provision of cash on demand (though either human or automated tellers (Jacoby, [9]). As a result, only a small fraction of a financial institution’s assets will be in liquid form.

Two factors have primarily contributed to the change in the core business of financial institutions: deregulation of the sector; and developments in information and communications technologies. Deregulation has effectively provided the environment in which new financial products and services are developed and offered through a removal of prior restrictions. It is, however, recent improvements in information and communications technologies which have been the enabler and prime driver of this change (Hayter
As Alic [1] puts it, the new financial products and services being offered today are possible only because of deregulation, and practical only because of developments in information and communications technologies.

The move the provision of cash on demand as their core business has effectively made information the currency of financial institutions today. This is well illustrated in the literature: Reich [17] notes their almost total reliance on information; and Jacoby [9] sees them as safekeepers of information. For the information to be accurate, current and accessible it has to be kept and maintained electronically (Egner [5]) and this defines the role of information and communications technologies. The use of such technologies in this area is, however, not without problems, as cases such as TAURUS (the London Stock Exchange system) show (Murray [14]).

Despite such well-documented problems, the financial services sector is one of the primary global users of information and communications technologies. For example, all major banks world-wide use telecommunications networks, such as SWIFT (the Society for World-wide International Funds Transfer), to enable international payments. As well as the use of communications networks over large distance, the financial markets make use of local communication networks and information systems to automate their processes. The Canadian, Parisian, and Brussels Stock Exchanges all use automated trading systems, and the London and New York Stock Exchanges are highly automated.

As a result of this automation, there have been movements in the location of some of the financial services trade. Clemons [3], for example, suggests that up to 25 percent of all French turnover moved from Paris to London, and as much as 85 percent of trading in important Swedish stocks moved from Stockholm to London. Much of this movement occurred because it was no longer necessary to be on the trading floor in order to trade. Effectively, the trading floor moved to the computer desk-top. This indicates a central trend towards the globalisation of aspects of the financial services sector, and is enabling the creation of new forms of trade and organisation by banks' business customers (Lockett and Holland [12]).

Underpinning much of the development in new financial services is the need to make informed business decisions. Central to this is the gathering and maintaining of information by the financial institutions. The remainder of this paper will consider some of the issues involved in business decision making to carry out a business strategy for such institutions. This paper will draw on the earlier work of Kuljis and Scoble [11] and will make use of information gathered through interviews with senior managers in the retail banking sector.

A key feature of the paper is on the need for the domicile financial institution - the ‘centre’ - to establish clearly what information is required to support decision making. The ‘centre’ will ultimately require reports (in either paper or electronic form) to permit informed management and decision taking and, indeed, the coherent development of the business strategy.

In the following section, the paper will examine the role of information and communications technologies in business information management. The section on business decision making that follows introduces decision making in general and in the particular context of multinational financial institutions. The role that information and communications technologies play or might play in such organisations will then be discussed. This leads into a broad discussion of the information that might be required for decision making and the difficulties that arise in gathering and managing this information. A related issue is the environmental pressures of the business sector which might restrict information gathering and use. Such issues will be briefly discussed before broad conclusions and opportunities for further research are presented.

2. ICTs in Business Information Management

A key determinant of the success of information and communications technologies (ICTs) in a business environment is their alignment with the business. It is extremely important for ICT plans and strategies to be linked directly to the objectives and strategies of the business unit and of the wider organisation. Such alignment, however, is often missing leading the organisation to have ineffective ICTs. In such cases, the organisation may change business practise to align itself with the ICTs functions. This may lead to the alteration of efficient and effective business processes, which may have detrimental outcomes for the business.

To avoid this, it is important that businesses make ICTs are closely considered in light of the business, and are employed to reduce the cost and/or to support business differentiation strategy. The strategic use of ICTs as differentiation support means that ICTs can improve existing processes or enable new things to be achieved.

To ensure that there is a good chance of gaining such strategic advantages, Ward and Griffiths [20] suggest a range of questions that may help identify strategic opportunities. One set of these questions focus on the customer, asking how ICTs may help to: find more about customer requirements; monitor customer perceptions of service; and get customers through to the best source of an
answer to a query. Other questions encourage the organisation to consider how ICTs can help to provide faster delivery on urgent orders, reduce product change lead time, and improve quality control on key components. Ward and Griffiths [20] final questions can be seen to be more concerned with supporting effective decision making at various levels in the organisation, for example by asking how ICTs may help to: enable market intelligence to be available to research and development staff; integrate the management decision making and planning processes; and provide individuals with pertinent information from which ideas can be developed.

 Whilst all of these are valid issues which should be considered by businesses, it is the final set of questions, focusing on the management of information to help support decision making, in which this paper is particularly interested. The increasingly global nature of financial markets and institutions means that collection and management of information on which decisions might be based is increasingly complex. There is a growing requirement for the integration of information flows at individual and departmental levels, and across processes and organisational boundaries. This poses a variety of complex challenges which involve ICTs. These include ensuring that information is always available, developing automatic information transfer mechanisms, and presenting timely and accurate information. Addressing these issues will contribute to a business making informed and effective decisions faster than its competitors, giving it a strategic advantage which protects and develops its business.

3. Business Decision Making

Having introduced important features of ICTs in the management of business information, this section will provide a basic overview of business decision making. This will provide the background for the following discussion of information required for decision making in the financial sector and the general difficulties that may be encountered when using ICTs to support its management.

The information required for running a business can broadly be broken down into three types:

(i) that required for regulatory, financial and tax reporting, without which the business could not legally function and which must be produced quickly, accurately and efficiently for the purpose of external reporting;
(ii) that required to manage day-to-day situations and decisions;
(iii) that needed to support longer-term decision making and the development of strategy.

The first of these will tend to be specified locally - in a single country or regulatory environment, for example. The second type of information may, at least to a certain extent, be common across different business units but will require tailoring for local market circumstances. The third type of information will necessarily be common across all business units involved if the intention is to develop and monitor a strategy in an integrated business.

It is mainly this final type of information with which this paper is concerned, although there will be overlaps between all types of information since the divisions may largely be conceptual. The final type of information can be characterised as that required when considering strategic decision making.

Strategic decision making is a central part of the management of an organisation, with strategic decisions having to answer two fundamental questions: in which activities should the organisation be involved; and how will the organisation compete in its various business areas (Jennings and Wattam [10]). This can encompass both making decisions in line with existing strategy, and developing the organisation’s strategy in response to relevant changes in the business environment.

The implicit nature of strategic decisions is that they will be implemented and will operate in a changing business environment which cannot therefore be fully anticipated by the organisation. The function of strategy is not to solve (unknown) problems but to structure the business situation in such a way that problems that emerge in the future are solvable.

Given the overarching aim of strategy, information required for its development will necessarily cover all areas of an organisation’s operations (i.e., customer segments, products, industry groupings, delivery channels, sources of income and costs, risk profiles, etc.). Whilst one organisation may place emphasis on one or more specific areas, all organisations will require information on these areas to develop strategy and monitor progress against their chosen goals.

4. Information Required for Business Decision Making

In order to understand the information that might be required for strategic decision making in financial institutions, it will be helpful to provide a brief discussion of some of the key concepts and information areas which are used in banking and which provide the context against which decisions are made.

As noted earlier in this paper, financial institutions are increasingly global organisations. This can mean that
banks which previously had quite distinct operations in different countries have brought them together in some way as a single group. In the case of European operations, this may be because of European de-regulation and moves to harmonisation in certain financial areas across different members of the European Union. The result may be that the organisation now has a variety of processing and accounting systems across its operations, which satisfy the diversity of local reporting and regulatory requirements but which may make it difficult to assimilate and manage business information to inform strategic decision making.

Egner [5] recognises this when arguing that the bank that can meet regulatory requirements and assimilate the most comprehensive, efficient, and accessible database of business information is likely to dominate. The effective use of this information can help the organisation make effective strategic decisions about the products and services which it provides. This effectively highlights marketing as critical to today’s financial institutions in a way that probably was not the case in the past. Indeed, Jacoby [9] claims that understanding the nature of a financial institution today as a marketing entity is essential since automation has turned financial products into commodities which differ only in their packaging and the quality of the service offered in their delivery and support. The primary distinguishing characteristics tend therefore to be generated by marketing strategies, which must incorporate considerations of delivery strategies. However, whether this can this be achieved in businesses that span national boundaries, which have to satisfy different regulatory requirements and which have to adapt to different cultural and social circumstances is questionable.

Financial institutions have sought to address these challenges by requiring all distinct business units to work towards a common organisational strategy for aspects of their business, such as retail banking. Issues around which such strategies might be developed are: customer segmentation; product offering; and systems.

Management requires information to a reasonable level of detail in all these areas if it is to create effective policy and develop future business plans. A key issue is how and at what stage to align data requirements to avoid flaws in the development of the strategy. In particular, there is a real challenge in analysing costs and profitability by segment. However, the lack of such a homogeneous approach slows down developing a strategy at ‘the centre’ and can have a direct and fundamental impact on information requirements and consequent information systems development.

A challenge that can face financial institutions is taking an enlightened view of ‘profit’. Clearly, making profit is crucial for an organisation’s survival, and it forms natural focus of management. However, it is easy for business managers, when analysing what contributes to profit, to consider only particular aspects of the business information. This may arise because the profit-information is complex and extremely wide and is therefore hard to capture and analyse. Information which directly or indirectly influences profit could be discussed in terms of the following four categories (with illustrative instances):

(i) **Information about customers**: the number of customers in particular segments, their loyalty, the growth in the customer base, the profitability by customer, their satisfaction with the service;

(ii) **Information about products**: the extent to which products make money, their attractiveness to customers, whether they are priced correctly, whether a bank is getting them to market quickly enough, whether or not investment products are performing well compared to the competition;

(iii) **Information about processes**: whether or not mistakes are being made, how long it takes to process items or turn around applications, risks associated with lending, the likelihood of fraud;

(iv) **Information about staff**: matching staff with staff-role, matching numbers of staff in different functions such as selling and processing, level of staff satisfaction, level of staff training and development, levels of staff absenteeism and turnover.

These elements would form a key part of delivering a strategy and are applicable to almost any service business. In addition, information is also required from outside sources: particularly benchmarking with competitors on, for instance, market share (of particular segments), product pricing, even image and reputation in the market. Financial services institutions that can identify and move into rapidly expanding products ahead of the competition often harvest large profits, at least until their rivals catch up. The development of such a strategy requires taking into account other information reflecting demographics, economic trends, GNP growth, tax regimes, and so on.

Understanding the key ‘profit-information’ elements of the business is an extremely important component of overall business success. The organisation must understand the profit ‘levers’ of its business. To achieve this, the necessary monitoring mechanisms must be put in place to enable the organisation to make informed decisions and take actions which will ensure the continued success of the business. Developing a clear, shared understanding of ‘what is important’ across management in all countries/operations will facilitate the whole management process. The management and monitoring of the agreed long-term business strategy is therefore essentially led and
developed through the gathering of key short-term information.

Global financial markets (such as foreign exchange and equities markets) can operate on global information systems which provide the organisational centre with standard business information. However, where there are localised markets, such as the retail banking sector, systems are necessarily localised. This provides the organisational centre with particular challenges in gathering and managing the information required for decision making. A central question here is how best to gather, manage and use this business information without overburdening the organisation’s information systems and management structures.

5. Problems in Gathering Business Information

There are many contributory issues which impact on the management of business information and its subsequent use to inform decision making. Some of these are common to organisations in different business areas, such as those noted by Ward and Griffiths [20]:

- Information resides in multiple files and proprietary databases and on multiple platforms, which are not well integrated or accessible. These are the legacy of many years of uncoordinated development, and may have resulted in poor quality and inconsistent information.
- Some information is computer-based and well structured, stored in centrally managed computer applications; some is less well structured, and stored in many independent dispersed PCs; there is a huge volume of unstructured and frequently non automated or unrecorded information.
- Information is created for different purposes by different people at different times, and based on different definitions, resulting in many conflicts and inconsistencies.
- There is a backlog of information requirements and legacy systems needed to be linked with newly developed and packaged applications.
- Complex information exchanges exist across organisational boundaries, comprising a mixture of electronic, paper-based and verbal communication.

These problems are still present even in some large retail banking organisations. The following example experienced by one of the authors illustrates the inconsistency in keeping up-to-date customer information and problems when changing customers data in one of the major UK banks. The customer X receives from her bank branch a monthly statement addressed to Ms X, most of her correspondence is addressed to Mrs X, all check and pay-in books have Ms on the cover and Miss on the individual checks and on the pay-in slips. When X changed her address she communicated it to her bank branch. Her branch altered the address. However, the head office kept sending all correspondence to the old address. When X wanted to change her bank branch, instead of just changing the address of the branch in her record, the bank closed her account, cancelled all her cards, checks, etc. and issued a new account number, and new cards, check book, etc. In the process the title on the check books was changed from Miss X to Mr X. This is an obvious example of information being kept in multiple files/databases.

Other contributory issues are directly linked to the business context. For financial institutions these might include local regulatory practises which require particular types of reporting, which in turn has a strong influence on how information is handled by the organisation.

Where multinational financial institutions have different core systems, are serving different customer bases with different products (even a current account operates differently in different countries), and reporting different information to different regulators, the same type of information may be held on a range of different ‘information systems’. These may range from a mainframe in one operation, through a spreadsheet in another to a hand-written record in a third. If the organisation is to maintain and develop its strategy and make informed decisions to this end, there will be a need for the ‘centre’ to handle business information uniformly.

A potentially appealing approach is to impose an information systems from the ‘centre’ of the organisation. Many large multinational organisations like Microsoft and Motorola, for example, have adopted standard systems. However, for organisations which were formed through organic growth and acquisition, like Barclays Bank (Kuljis and Scoble, [11]), this approach is not easy to implement nor is it straightforward. Whilst this may have short-term advantages, there may be severe shortcomings which should be carefully considered. Without co-operation and mutual understanding of points of commonality and differences, multinational organisations cannot successfully operate. Therefore, introducing ICTs should be a joint venture where systems are developed with an active involvement of all the relevant parts of the business. If standards and procedures are introduced from the ‘centre’ through a centralised system which all business units are forced to use, problems are likely to occur. Developing standard programs or interfaces which gather and standardise information from the different business units can also be problematic. Changes in requirements of the system, which are likely given the dynamic nature of global
finance, may lead to the need for new interfacing programs for a range of operations. Even after the interfacing programs are implemented, it is important to ensure that the definitions of data are common across the information systems and respected by all parts of the business that use the system. Language and cultural differences across business units in different countries can have an important influence on the extent to which this may be successfully achieved.

6. Constraints and Challenges

Banks are confronted with numerous constraints and challenges in order to survive and indeed make a profit in the competitive market. Holland et al. [8] argue that the broad competitive forces of information technology, globalisation, and deregulation are de-stabilising the banking industry. They see the strategic response of most large banks, particularly the trend towards mega-mergers and internal cost-cutting, as insufficient in the long term to offset the reduction in income and counter the new competitive forces. The challenges on which this section will focus are those that are associated with the nature of the business environment and cost and quality aspects of the information that is required to support decision making in the business. Some of these issues are summarised here, before moving on to a discussion of the development of effective information systems for multinational banking.

6.1 New Entrants

The competitive position of banking is under increasingly serious challenge from non-banks offering financial services. Technology such as database marketing, risk management software and electronic delivery channels allows new entrants to quickly and easily enter the banking market and select the most profitable customers [Holland et al., 8]. Consequently Holland et al. [8] see effects such as lowering of profit’s margins and raising of expectations in the banking market as a whole because superior products are being offered in many cases. For example, as a result of pricing and product advantages non-banks have gained a nearly 70 percent share of U.S. financial assets (McCoy et al., [13]). Established banks have to ensure that they are competing in areas where they are likely to be successful - that is they have to have a clear strategic position. A topical example is the internet banking sector, where existing banks are trying to develop internet facilities for their established customer base, but are losing out in generating new business to providers who only offer internet banking and therefore have none of the associated costs of offering conventional ‘high-street’ banking.

6.2 Central versus Local Control

As this paper has already noted, international banking organisations could ensure availability of necessary information by simply imposing everything ‘from the centre’. However, retail banking does not currently lend itself to this approach, although the standardisation of currency and a regulatory environment could conceivably permit such an approach in years to come. Currently, it is important that local managers may have different ways of looking at their business, arising from their local environment, that this will at least partially determine their information requirements, and that this may be different from the ‘centre’s’ view. However, there is a trend in a number of institutions to cut costs by removing the individual processes from branches and increasing the scale efficiency of the centralised processes by merging with similar institutions. This inevitably affects the ability of a bank to understand its customers’ needs.

6.3 The Cost and Quality of Information Provision

Competing in a global, multinational environment adds an additional dimension of complexity when considering information provision, and makes efficient and effective information management of foremost importance. There are, however, costs associated with information provision of which organisations have to be aware. These costs will depend, amongst other things, on mode and time of delivery.

There are also issues of ‘quality’ in information provision: the quality of the data used and the correctness of the processing procedures that transform the data into the required information are fundamental in decision making and developing well-founded business strategy. Those responsible for managing the business information resource have to identify cost-effective strategies to improve critical data items and processes in the context of required decisions and plans. But, as Ballou and Pazer [2] point out, the information used by decision and planning processes - or at least dimensions of data quality such as accuracy (the degree to which the reported value is in conformance with the actual value) and completeness - becomes better over time, which allows for the release of updated, more accurate revisions to the business plans.

Although aspects of data quality may improve over time, the underlying business environment which the information is intended to describe is dynamic and therefore is also changing. So the increasing accuracy of the data may be of less relevance in decision making and planning as the business environment changes. This implies that some balance needs to be struck between using
current but inaccurate information and accurate but outdated information (Ballou and Pazer, [21]). Ensuring that the data is as timely as possible - another dimension of data quality (DeLone and McLean, [4]) - may help here, and the maintenance of data in electronic form may help through faster data gathering and processing.

6.4 Strategic Development of Information Systems in Multinational Banking

Organisations have to be very careful when analysing information systems which are currently in place. If they are considering redesigning the system, they have to be particularly aware of the impact that this may have on the accuracy of information. An ad hoc approach to information systems development accompanied by a clear business focus may lead to rapid systems development. But resulting systems may be inflexible and may have a lack of integration across component parts of the system (Walsham and Waema, [19]). Strictly following IS design and development methods can also be problematic. Such approaches can be slow and are often outdated prior to their completion.

Walsham and Waema [19] further claim that the implementation of IS/IT strategy needs the active intervention of senior management in the process of change. Such ‘championing’ of IS strategy and associated IS developments, along with a close understanding of the interests of stakeholder groups, is one approach to hands-on management of the implementation process which has been associated with successful system outcomes.

Time pressure is ever present and banking organisations are perhaps more acutely affected than most. Developing any information system is a time consuming exercise. The business has to continue whilst the development is ongoing. A difficult occurs because the system is being designed against specific requirements whilst the organisation develops, introducing new business objectives and practices, and perhaps being subjected to new legislation. The ‘requirements-as-contract’ model is irrelevant to most software developers today, with other issues like coping with incompleteness and prioritising requirements being more important (Shekaran and Siddiqi, [18]). Paul [15] points out that information systems built to an exact specifications are likely to fail because a system which is built for one hypothetical point in time still have to work over some time continuum. Systems which are subsequently forced to adapt to changing circumstances are unlikely to be as adaptive as systems that are designed to be adaptive in the first place. Hence, Paul and Kuljis [16] propose that what is required for living businesses are “living information systems”, that is information systems that evolve over time depending on the needs of organisations and the individuals using such systems. The simple fact is that ‘things change’ so that what is important for a business to monitor one year may be quickly superseded; segments may be re-cut for perfectly valid business reasons, or new products may be introduced and others discontinued. From this perspective, there is a risk of information systems becoming redundant very quickly, or, perhaps worse, being slavishly fed with information which is no longer relevant to the business. Technology cannot solve these problems - it has to respect and reflect them.

One approach for multinational business organisations is to adopt a pragmatic approach to information systems development and the use of information technology. One the one hand, monolithic IS development cannot fulfil the requirements of such organisations. On the other, it is evident that the ‘centre’ should not impose IS/IT on its operations. The way forward may be incremental, business driven information systems development, in which all sides participate in requirement specifications and in systems design. Such systems should have an architecture that primarily maintains data integrity and at the same time allows easy modifications, adding new functionality, and discarding parts of the systems that become obsolete. This is a key point - businesses have to avoid the temptation to hold on to parts of the system that are no longer useful otherwise systems can quickly become unwieldy and over-complex, with large parts of the system serving no purpose but degrading performance.

The key challenge is to bring the two communities - business and IT - together, with a shared awareness that the requirements of a system go well beyond simple operational needs. Representatives of the ‘business’ itself, both in the units and in the ‘centre’, must set out the information requirements needed to run the business and generate profits for the shareholders. The IS/IT community should aim to support, not lead, the establishment of these requirements. If this is not the case, the management information required on a particular product may not be built into the system that supports it before launch. In this case, the likelihood is that any information provided subsequently will fall back on the spreadsheet and fax solution.

7. Conclusions

The financial institutions market is a rapidly changing business sector, with banks under increasing competition from non-banks offering financial services. To maintain and strengthen their position, organisations have to find ways of providing better services and a wider range of
products. However, in global markets traditional financial institutions are often hampered by the distributed nature of their organisation and the complexity of information capture and management that this brings. The effective management of such information is important in informing business decision making and the development of business strategy.

There are acute difficulties in gathering this sort of information: operations in different countries may have different core business information systems; they may be serving very different customer bases with different products; and they are likely to be reporting different information to different regulatory bodies. The information may also be held on different platforms - mainframe or distributed systems, for example; and may be in different application programs. Yet this information has to be communicated to the organisational ‘centre’ for planning and decision making purposes. This in itself can be very difficult.

The long-term nature of strategic decisions means that they will be implemented and will operate in a business environment which the organisation cannot fully anticipate. Establishing a strategy which is broad enough to handle the range of differences, but is precise enough to drive the business forward is therefore a further challenge.

In order to be in line with the business, approaches to information management must be aligned with the business ‘vision’ and strategy. This can also be difficult in a changing environment with a range of stakeholders. A partnership culture has to be developed between the ‘centre’ and the operating units, both at business and IS/IT levels. This partnership needs to be informed by shared understandings of the costs and benefits associated with effective information management.

As the paper has suggested, effective information management is an important contributory factor in the efficiency of multinational financial institutions, though there are many associated problems which do not have obvious or simple answers. This highlights areas which have great potential for future research. These include an comparative investigation across different financial institutions to explore the extent to which alignment between strategy and IS provision is realised and to examine the mechanisms which support effective alignment. Research into the ways in which these organisations also cope with realignment of information provision as their business develops is also an area that is potentially fruitful. From our perspective, the extremely dynamic nature of the global financial sector provides a context against which to look at ways of providing adaptable information systems provision to support effective decision making which may be applicable in other organisational settings.

References


