recent study referred to above (Lederer and Mendelow, 1989), the two IS executives from banks were cited as being active participants in their organisation's strategic planning processes. Jang's doctoral study of organizational factors in information systems strategic planning made the 'serendipitous' finding that 'type of industry' explained much of the unexplained variance in factors between firms (Jang, 1989). (One could well argue that such a finding should not have been serendipitous).

Participation in strategic planning processes is linked to the discussion of consensus about strategic orientation. Wooldridge and Floyd (1989) have argued that the scope of consensus intersects with the extent to which strategic orientations are accepted. In large organizations, which are more likely to have an incremental approach to strategy, the scope of consensus required extends beyond the senior management team involved in decisions on strategy. In large information intensive firms, where business strategy is heavily dependent on information strategy for its implementation and achievement, there is a greater requirement both for participation in, and for communication of strategy to information personnel. In the information systems context, recent research reported that participation is more effective in developing a sound understanding of top management objectives than communication of that strategy which did not involve active participation (Lederer and Mendelow, 1987; Lederer and Sethi, 1988). Firms may have to make some trade-off in the level of confidentiality of their strategic directions in order to achieve effective functional integration of strategies.

An important connection made in the process of the literature analysis and empirical study in this work is the linking of strategic planning processes with the notion of 'information richness' from the organizational theory literature (Daft and Lengel, 1984, 1986; Daft and Huber, 1987). Organizations process information through many channels, and appropriate 'media selection' is closely linked to the amount of learning in organizations (Daft and Lengel, 1984, 1986). This study supported the proposition that strategic planning processes, if well done, with the sufficient participation and outcomes well communicated, provide 'rich' information channels to reduce uncertainty and clarify ambiguity.

The findings in this study support the notion of planning as organizational learning (DeGeus, 1988) in an environment where the ability to learn faster than competitors may be the only truly sustainable advantage (Stata, 1989). Planning processes where management teams question and review their 'shared mental modes', their markets and their competitors constitute 'institutional learning' (DeGeus, 1988). This lays the
groundwork in organizations for the clarity and specificity of business strategy from which information strategy can be concurrently planned and realized.

11.2.3 Output from Strategy Formation Processes

Though the strategic planning processes of the four banks in the empirical study appeared superficially to be similar, particularly in the nature of their annual cycle and lead at Executive Committee level, the extent to which they were embedded in organizational processes varied and this was most evident in the type of documentation from each. The clarity and specificity referred to in Section 11.2.1 above can be at least partially conveyed in strategic planning documentation.

While Bank Two had the most extensive Board-level strategic planning documentation of the three for whom full access was given, this documentation was lacking in clear indications of timeframes and specific individual and unit responsibilities. Bank Three had reduced the extensiveness of the documentation required in the past three years, was more focussed on a smaller number of critical issues and indicated specific responsibilities for implementation. Bank One had only limited documentation which did not provide an informed basis for developing plans at succeeding levels.

There is considerable debate, particularly in the strategic information technology literature, concerning the extent to which formal planning processes enable or hinder the identification of what, in this study, have been termed examples of information-based comparative advantage (IBCA) (See for example Runge, 1985; Ward, 1987; Earl, 1988a). In tracing the development of the major IBCAs for each firm, it became clear that it is not the existence of a strategic planning process or its formality that facilitates or hinders, but rather the nature of that process and the consideration given to I and IT matters in business strategy, vis-a-vis IS/T management's more limited consideration of information systems planning. Strategic planning processes can enhance the development of IBCAs, provided these processes are not too rigid in form and format, and permit, and even encourage, ongoing championing in the manner of innovation management. This added dimension, likening strategic IT management to innovation management, is referred to in the work of Munro and Huff (1985), Earl (1989) and Weill and Broadbent (1990).
11.3 Organizational Context Factors

11.3.1 Agreement on Organizational Strengths and Weaknesses

The strengths and weaknesses of the firm's strategic planning processes provided information about strategic planning outcomes and were also an indicator of senior management agreement concerning organizational strengths and weaknesses. In this study, the Bank with the highest level of agreement about its strengths and weaknesses, Bank Three (See Figure 10.5) was also the Bank which had the best IBCA position in relation to competitors. This is consistent with Hrebiniak and Snow's findings that senior management agreement on their organization's strengths and weaknesses was positively related to firm performance (Hrebiniak and Snow, 1982). Such agreement may be more important than perceptions of the nature of those strengths and weaknesses.

Some evidence to support the importance of such agreement can be gleaned from the different responses to questions concerning information problems and assets. Major information problems of Bank Three were in fact areas in which that bank was investing considerable resources and had already gained some advantage over competitors. While Banks Two and Four identified the same major problem of 'customer information', efforts to overcome this were considerably behind those of Bank Three, and Bank Three was continuing developments in this area to maintain its lead.

11.3.2 Complementarity of organizational structure to strategic orientation

The need to link strategy and structure is well embedded in organizational design literature and is elaborated in Chapter Two and Section 3.8. The four banks in this study were in varying stages of evolution of divisionalised structures, though there were considerable differences in the nature and extent of that divisionalisation and the responsibilities and accountabilities at business unit levels. Divisionalised structures are well suited to large and complex organizations with a variety of clients, products and geographic locations. However, there was some variation amongst the executive managers concerning the extent to which divisionalisation had resulted in devolution of responsibility, with the appropriate levels of accountability and GHQ coordination.

Bank One had put in place a regionalised structure for retail activities, though support areas were not yet devolved to the extent required to adequately capitalise on this
regionalisation. Bank One's predominant strategic orientation of 'Product and service differentiation' would be expected to require a greater degree of devolution to respond to market needs than was evident in that bank. Bank Four was in a similar position to Bank One, having only recently (early 1989) divided the firm into eight business units. However, there was greater recognition of the need to focus on further devolution in Bank Four than Bank One, particularly in support areas.

Bank Two executives indicated that the Bank had gone through some difficult periods in its divisionalisation, and ongoing examination of areas which belonged in the same Business units was continuing. Bank Two's emphasis on providing a different and unique range of products and services is suited to a heavily divisionalised structure. However the bank's recent documentation indicated the need for closer attention to productivity and pricing. The increased orientation towards cost controls and the need for a greater level of interconnectivity between Business unit products, meant that divisionalisation without some agreed standards and overall coordination represented a structure that could be dysfunctional to Bank Two's strategy.

Bank Three executives expressed the view that the Bank was as divisionalised and decentralised as it should be. The structural and functional arrangements worked reasonably well, but needed constant monitoring. As one participant indicated, Bank Three had a 'strong commitment to strategy and a complementary organizational structure'. A further subjective observation would be that Bank Three had engendered in its personnel the view that, in the current turbulent and competitive economic environment, regular changes in organizational structure were to be expected. Such changes were to be seen as a positive, rather than a negative, recognition of the need to align structure with strategy and the environment. An example of this, cited by Bank Three managers, was the consideration being given to further restructuring of some of the information service units to provide a more effective Management Information capacity, particularly at GHQ level.

11.4 Information Services Contexts

11.4.1 Top Management Consideration of Information Strategy

As indicated in Sections 3.3, 3.4, 3.6 and 3.8.5, the role of executive management in supporting and championing information systems developments is well documented as a key factor in effective management of information resources and technology.
Recent research studies have added to this base, suggesting that firms with a high level of integration between 'IS and the business' have business managers who perceived the exploitation of information technology as of potentially strategic importance (Feeny, Edwards and Earl, 1987; Feeny, Earl and Edwards, 1989a, 1989b; Johnston and Carrico, 1988; Lederer and Mendelow, 1989).

In this study, almost all of the executive managers indicated that they believed that their bank was highly dependent on information systems and services both for its day-to-day operations and also for its strategic orientation, and IT was referred to in all strategic plans reviewed. More discriminating indicators than this needed to be identified in this group of large, information intense, financial services firms. These indicators included the nature of the consideration of IT in strategy processes and the analysis of annual reports to gain a measure of the centrality of IT as evident in the CEO's letter to shareholders.

Drawing both on the coverage given to IT in strategic documentation and on the interview responses of executives, the current position concerning the consideration of IT in strategy processes was identified. Bank Three's strategic planning processes explicitly linked business strategies and their I and IT implications and requirements, as did, in recent times, those of Bank Two. Bank Four was revising its firm-wide procedures in the light of the gaps and needs identified in its 1990 Systems Strategy plans. While Bank One's strategic developments were information-dependent, there was no overall long term plan for IS, nor any clear indication of the ways in which information developments related to business units. The need for those links is exemplified in the work of Henderson and Sifonis (1988), Earl (1989), Parker, Trainor and Benson (1989), Henderson and Venkatraman (1990) and the findings of Feeny, Earl and Edwards (1989a) and Johnston and Carrico (1988).

The situation for each bank, though, is as much a factor of the state and stage of its firm-wide planning processes as it is of the bank's information systems and technology developments. Again Bank One was seen as a laggard, with short timeframes and little specificity of plans and implementation responsibilities. Banks Two and Four were in 'turnaround' situations, while Bank Three appeared to already model some of the major attributes being sought by Banks Two and Four.

Though it may be classed as a somewhat crude indicator, the annual reports of firms provided some further evidence of strategic orientation and the centrality of IT to that orientation in each of the banks. In quantitative terms, Bank Three had the highest
number and concentration of IT phrases in annual reports. From a qualitative perspective, Bank Three showed the earliest attributions of IT to strategy, with the later reports of Banks Four and Five making the link more explicit. The path of IT developments as portrayed in annual reports for each of the banks was found to closely resemble that gleaned from executive managers and from strategic planning documentation.

Thus, in this study, 'top management' support was assessed with a cluster of indicators as those usually cited did not provide sufficient discrimination. This study provided further evidence of the links between 'top management support' and the development of more effective information systems and services. These more effective information systems and services are those which have provided firms with a greater degree of information-based advantage than their competitors, and are more overt in their consideration of the linkages between information technology and business strategies. The degree of consideration which was only just becoming a reality according to King (1987), was very much evident, at least in some information intensive firms in 1989. This is consistent with the later findings of King and his colleagues (King, Grover and Hufnagel, 1988).

11.4.2 Structure and Processes for Information Services Developments

The need for organizational 'validity' (Markus and Robey, 1983; Section 3.8.2) and, thus, the contingent nature of information systems and services was very evident in examining the organizational arrangements for information services in this study. Firms were divisionalised and were generally increasing the amount of devolution of responsibility to Business units. While financial service institutions need centralised transaction processing systems, these were progressing in concert with increased provision for decentralised or distributed access and usage.

Attempts to achieve effective arrangements, encompassing issues of structure, functions, personnel and physical location, involved continual monitoring and preparedness for shifts in responsibility and decision-making scope. The changing information perspectives, referred to in Section 3.8.3, had brought about some fundamental changes, with the legitimacy of information-based activities throughout firms being recognised to a high degree in at least Banks Two and Three. These changes had resulted in increasing recognition of the suitability of a 'federation' of information systems and services with GHQ level coordination but with IS activities and responsibilities divided between GHQ and business units. This pattern is similar
in form to the 'federal' structure identified recently by Feeny in his study of 13 large and complex organizations, most of which were based in the UK (Feeny, Edwards and Earl, 1987; Feeny, Earl and Edwards, 1989a), and is supported by other more polemical works such as that of Applegate, Cash and Mills (1988) and Rockart (1988).

Executives in Banks Two and Four recognised that they had to undertake considerable further work to ensure the most appropriate arrangements for information services, though different problems were evident in each Bank. Bank Three executives were the most positive about the match between their organizational structure, strategic orientation and their information-oriented structures and processes. While the Bank had a centralised transaction processing systems, and a high level of consideration was given to information systems matters as part of strategic planning processes, this was matched by a relatively high level of devolution of responsibility for developments and their implementation to Business units. In Bank Three, each information systems development was owned by a Business unit and the project or steering committee for the development was chaired by a manager from the Business unit.

Feeny's recent work identified the devolution of information system development responsibilities to business units as a characteristic of firms with a high level of business and information systems integration (Feeny, Earl and Edwards, 1989a). The presence of all seven of Feeny's characteristics of firms with high business and information systems integration were evident in Bank Three. Changing organizational processes in Banks Two and Four were underway at the time of, or commenced soon after, the completion of executive manager data collection in those banks. At the time of data collection, at least four were present in Bank Two and three in Bank Four, though in both cases, experience were limited in the area of top-down planning process at business unit level, linking information systems applications strategies to business needs.

Bank Three's GHQ information systems units were under the one GHQ IS/T Manager, unlike those of Bank Two at the time of data collection. In Bank Two, three IS/T oriented GHQ units were treated as separate Business units in the Bank Two structure. However, this has changed since the data was collected so that the structure of Bank Two's GHQ IS responsibilities more closely resembled that of Bank Three.
The most effective management of information resources and technology appeared to take place when these resources were managed by those who were closest to business needs. Thus, business and information strategy alignment was enhanced in the case study firms by appropriate devolution to business managers, who accepted that responsibility. As with the firms in the Feeny study, a federal structure was emerging as the preferred option. This involved the devolution of selected information activities to business units, with a GHQ or corporate centre unit responsible for formulation and monitoring of firm-wide information strategy, and coordination and control of the centralised transaction processing centre.

The firms in this study were making choices in their information services arrangements across at least two dimensions as depicted in Figure 11.1, and in light of what has been termed their 'IS heritage' (Feeny, Edwards and Earl, 1987). These choices had been made possible by the increased ability to decouple technology from organizational and information services structures. The first dimension was between the management of the physical resources and the management of the products and services from those resources. The second dimension was the need to separate the 'strategy and information planning' from the 'production and operations planning'. Business unit management in quadrant B seemed to be essential if firms were to realize alignment between their business and information strategies, while quadrants A and C required Business unit participation.

**Figure 11.1  Information Services Management Dimensions**

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<td>PLANNING DIMENSIONS</td>
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<td>Strategy and Information Planning</td>
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Responsibilities for Strategy and Information Planning, and Product and Service Management should be Business Unit functions, developed and managed in the
context of the firm's strategic and technological parameters. This required a federated arrangement for Information Services with GHQ oversight and setting of standards, but with responsibility for information-based developments with implementers and users as owners. In most situations, this would also involve some form of charging back for services to ensure adequate accountabilities were in place.

In future, large organizations might see more decentralised information service units, operating within business units. This would involve what would be seen as a 'federation of information services' within organizations: that is, a range of information services for people working at different levels, developed from key information sources and using different types of largely compatible, and possibly interconnected, information systems. The information services units at corporate or GHQ level in large organizations would be expected to focus on developing strategic technological and informational architectures for the firm, and provide analyzed and evaluated strategic information for management. Figure 11.2 depicts a divisionalised firm in which information services units and personnel would be expected to be located in each of the SBUs as well as at corporate level. The extent and nature of linkages between these units would depend on the requirements of the firm, its IS heritage and its industry area. A compatible architecture is in no way incompatible with distributed information services provision and access.

The major impetus to, and advantages of, federated arrangements for information services as articulated by executives in Banks Two and Three was the ability to change direction more quickly, and to introduce new products and services based on customer information and market analysis. The introduction of Bank Three's information-based advantage of 'Integrated customer data' required changes in the bank's centralised transaction processing and, thus, major GHQ decisions. Once in place, though, the development of other products and services did not require major system changes. However, its exploitation and the realization of competitive advantage was dependent on business unit use and commitment. At the time of data collection, Bank Two was seeking to overcome the excesses of divisionalisation and decentralisation by introducing a firm-wide technology strategy. This strategy involved the development and approval of between ten and twelve architectures, which were to be consistent and compatible across all Business units and would enable changes to be made to products and services with the minimum of systems change and development.
The contact between Information Services personnel and Business units, based on responsibility and accountability arrangements in the firms under study, was the most extensive in Bank Three, the firm which had developed the greatest number and most pertinent range of IBCAs. The lack of such interaction was lamented by executives in Banks One and Four. Bank One had the most minimal IBCAs and Bank Four had sought to develop some information-based advantages which were not consistent with that firm's strategic orientation. Direct contact between the 'IS function and line divisions' was found to be an important factor supporting the strategic utilization of IT (Johnston and Carrico, 1988:43). The same is true where there are mechanisms in place which provide for greater 'line influence' on IT (Johnston and Carrico, 1988:44).
11.5 Business and Information Manager Education and Experience

The federated arrangements outlined above required new skills of both business and information managers at many levels. The 'IT era' requires leadership involvement from business management and has many more stakeholders concerned with IT than did the former 'DP era' (Earl, 1989). As Zmud, Boynton and Jacobs (1989) have argued, there is now a need to emphasise the importance of the management of information technology-related interactions across firms, taking into account the role of influential and knowledgeable individuals. This recalls the importance of the political dimension in information systems management, as identified by Markus (1983) and acknowledged by other researchers, including Olson and Chervany (1980), Weill (1988) and Weill and Olson (1989). Clemons and Row recently stressed the need to manage the inter-relationships between business units within firms (Clemons and Row, 1989). Johnston and Carrico (1988) claimed that integration of strategy and information functions was more effective when activities such as transfers of senior people between functions and joint task forces have been initiated.

Improvements in the alignment of business and information strategies would be expected to be enhanced by two complementary developments: business managers with a better understanding of the ways in which information and information technology can be utilised to achieve business objectives; and information managers who had a sound grasp of business strategy and processes which built on their information and technology expertise base. In some cases these improvements might be achieved with the rotation of staff or short term secondments or work in a particular project team. The focus needs clearly to be on the business and organization-specific needs and demands, which Earl (1989) has usefully categorised as information management 're-education' in four areas: 'refocusing', 'retooling', 'reskilling' and 'reinforcing' (Earl, 1989: 200-201). Ongoing education for business managers in the capability and potential of information technology was a factor in Feeny's 'high' business and information systems integration group (Feeny, Earl and Edwards, 1989a). In a recent Australian Delphi study, over 75% of participants believed that most Information Systems Managers would be required to have a general business background by the mid 1990s (Hunt and Dampney, 1990).

Banks Two, Three and Four had each recognised the changing educational and experience needs of both business and information personnel. Banks Two and Four had made recent appointments in the IS/T area of staff with business and/or strategy
backgrounds in order to improve the business orientation of technological developments. Bank Three executives indicated that they had had staff development practices in place for seven years in order to give potential senior business managers experience of managing technology projects. Their IS/T Manager came from from a business rather than a technology background.

11.6 Concern with Information Content

The literature of business and information strategy alignment has a strong focus on the uses of information technology to gain a competitive advantage, often with little acknowledgement of the importance of information resources, or the content of the information, as opposed to technology as the conduit. The importance of distinguishing between 'information' and 'information technology' was identified by King (King and others, 1986) and Marchand and Horton (Marchand and Horton, 1986) and those distinctions validated by an empirical study (King, Grover and Hufnagel, 1988). However, Wilson noted that while firms were giving greater attention to the strategic uses of information technology, there was little recognition of the importance of information in the development of information strategies (Wilson, 1988, 1989).

Three of the eighteen IBCAs in this study met King's criteria to be classed as strategic uses of 'information resources' rather than 'information technology', though they may be dependant on technology (King and others, 1986). The categories 'Integration of customer data', 'Market analysis, marketing' and 'Competitor intelligence' each involved the use of important new information or using available information in different ways. Bank Three had achieved a strong IBCA in the area of 'Integration of customer data', and was also ahead of competitors in the area of 'Market analysis, marketing'. 'Competitor intelligence' was not marked by any of the executive managers, though several indicated that this was a gap in their firm's information service provision.

'Management information' was seen as a problem area by executives in all four banks. The three information-oriented categories identified above, together form an important component of what constitutes 'Management information'. At the time of data collection, only one bank, Bank Three, indicated that it was making major improvements to address this problem and, thus, was seeking to recognise more adequately the range and types of information requirements within firms. It may be
that the concern with information content in firms surfaces and is addressed more overtly once a firm has greater confidence in its information technology developments. These are given precedence over meeting some concerns about information content, particularly management information.

11.7 Grounded Hypotheses

This study sought to generate well-grounded hypotheses related to the alignment of business and information strategy. The key question addressed in this research was:

Are there organizational factors which might be related to the alignment of business and information strategies? If so, what are those factors?

The literature analysis and empirical components of this study have resulted in a beginning list of indicators for business and information strategy alignment of particular relevance to large organizations in information intensive areas. Alignment was operationalised in a relative sense as the extent to which a firm had gained an information-based advantage when compared to its competitors.

This study provides evidence to indicate that each of the following factors are positively related to business and information strategy alignment:

1. The level of clarity and consistency of a firm's strategic orientation.
2. A higher level of agreement amongst executive managers concerning the strategic orientation of the firm.
3. Longer experience in firm-wide strategic planning.
4. Strategic planning processes which involve business unit participation.
5. Strategic planning processes which have a longer timeframe.
6. Planning which focuses on critical and strategic issues.
7. A higher level of participation in strategic planning processes throughout the firm.
8. The development of strategic planning documentation which indicates responsibilities and accountabilities.

9. A higher level of agreement amongst executive managers concerning the firm's major strengths and weaknesses.

10. Organizational structures which match the firm's strategic orientations.

11. Organizational decision-making processes which match the requirements of strategic orientations.


13. Organizational arrangements for information services which match the organizational infrastructure of the firm.

14. A higher level of commitment of resources towards meeting management information needs.

15. A higher level of interaction between business and information managers.

16. The existence of programs to develop or renew the information and information technology understanding of business managers.

17. The existence of programs to develop the business skills and improve the business focus of information managers.

Within a firm, these factors are in complex interaction and combine in different ways to affect business and information strategy alignment. At the same time the firm is in constant interaction with the wider environment and is affected by industry developments and the practices of other firms.
11.8 Revised Alignment Model

The alignment of business and information strategy requires a complex and contingent set of strategy, organizational and information infrastructure arrangements. Arrangements which are appropriate for one industry and one firm will not necessarily be adequate or appropriate in another. This is because of the different environmental positioning and situation of industries and firms, and the different ways in which firms in the same industry area have evolved.

The revision of the Preliminary Alignment Model (See Figure 3.3 in Section 3.9), sought to depict the organizational factors identified in the literature analysis for which the empirical study found some support, as well as including other factors which emerged in the course of the that study. Figure 11.3 presents a working model of alignment, in which four areas are seen as major inputs to the alignment of business and information strategies: strategy formation processes, organizational infrastructure, information services strategy and technology strategy.

The content of the seventeen hypotheses listed in Section 11.7 are regrouped into these four quadrants. This model does not claim to be comprehensive, but rather indicative of areas and factors for which there is grounded evidence.

Though the interconnectedness of the four quadrants in this grid are acknowledged, these four areas would ideally be addressed in order, commencing with the Strategy Formation Process, as shown in the Alignment Process Model (Figure 11.4 below). Following the steps in the process - from Strategy Formation, through Organizational Infrastructure, Information Services Strategy and then Technology Strategy - could be expected to maximise the opportunities for alignment. At the same time, sound development of Technology Strategy, the fourth stage of the process, would increase the extent to which technological decisions could then stimulate further strategic business considerations and options.
11.3 Alignment Content Model

**STRATEGY FORMATION PROCESSES**
- Appropriateness of strategic orientation
- Clarity and consistency of strategic orientation
- Executive manager consensus on strategic orientation
- Nature of strategy formation processes
- Executive management consideration of information strategies
- Communication of the outcomes of these processes

**TECHNOLOGY STRATEGY**
- Appropriate technology architectures
- IT to suit organizational infrastructure
- IT to suit generation of required information products and services

**ORGANIZATIONAL INFRASTRUCTURE**
- Organizational structure appropriate to strategy
- Decision-making processes appropriate to strategic orientation
- Accountabilities appropriate to strategic orientation
- Business responsibilities for information-based developments

**INFORMATION SERVICES STRATEGY**
- Appropriate balance of IS responsibilities
- Interaction between IS and business staff
- Development of business skills in IS staff
- Development of IS understanding in business staff
- Identification of required products and services
- Concern with information content
In Chapter One, the challenge of identifying the task of information strategy was seen as being preceded by the more general question of 'What is the basis for the organization's effectiveness?'. A prescriptive approach to the process of identifying the task of information strategy is depicted in the models presented. Answering the question posed in Figure 1.3 in Chapter One, 'How does the firm compete?', involves identification of corporate and business unit strategies. The strategy of the organization then needs to be translated into an appropriate organizational design and infrastructure, followed by identification of the information products and services and thus suitable organizational arrangements for information services. The fourth step is the process is the identification, selection and implementation of technology options which meet the requirements to generate those information products and services.

Figure 11.4 Alignment Process Model
Drawing on this alignment model, organizations seeking better alignment between business and information strategies should work towards:

1. Greater clarity and consistency in their firm's strategic orientation and a shared understanding between senior managers.

2. Formulation of strategic directions and guidelines initiated at top management level, with other levels developing tactical and operational plans consistent with those guidelines. Some form of participation is a key factor in ensuring understanding of strategy at all levels in firms, and the successful interlocking and cascading of strategic, tactical and operational plans and activities.

3. Well documented strategic processes and outcomes which identify implementation stages, strategies and responsibilities. At the same time, these processes should not be too rigid and should allow for individual ideas to be championed.

4. Ensuring that business units and groups include the implications for information and information systems requirements in their strategy development. Such developments need to be realistically costed, prioritised and checked for consistency and compatibility, where required, across the organization. The human resource implications of developments to exploit information systems and technology have to be clearly delineated, particularly in relation to non-IS staff. These could include programs which involve education, training, motivational and reward programs or arrangements for non-IS staff.

5. Developing organizational arrangements for information services which match the organizational infrastructure of the firm. If a firm is divisionalized, with decision-making responsibility heavily devolved, the IS/T arrangements should mirror this, while taking cognizance of the firm's technological architecture.

6. Identifying technological architectures which provide compatibility of systems across the firm, between Group Headquarters and business unit levels and amongst business units. While business units need the autonomy to develop market-oriented products and services, these should
be developed in the framework of the firm's agreed range of hardware and software standards.

7. Increasing the interaction between business and information managers, particularly in the strategy and information planning area by the use of joint task forces and developmental groups. As far as possible, business managers should have responsibility for the initiation, control and oversight of information-based product and service developments, with the IS/T area serving the business in a client relationship.

8. Having programs in place that renew the information and information technology understandings of business managers and the business skills and business focus of information managers. This might include staff rotation, secondments and exchanges, in addition to formal inhouse or external education and training programs.

The Alignment Model in Figures 11.3 and 11.4 are consistent with two other models identified in the later stages of this study, those of Earl (1989) and Henderson and Venkatraman (1990). Earl linked three levels of strategy which were important in using IT to gain a strategic advantage: Board-level 'Information Management Strategy' encompassing the management or 'wherefores?'; applications-oriented 'Information Systems Strategy', an SBU responsibility, focusing on the 'what?' of strategy; and functional level 'Information Technology Strategy' which was concerned with the delivery, or the 'how?' of strategy. In this study of large Banks, the strategic responsibilities were not as clearcut as in the Earl model, with some aspects of both Information Services and Technology strategies requiring corporate or Board level decisions and oversight.

Henderson and Venkatraman's recent work develops a framework for research on the strategic management of information technology. Their 'Strategic Alignment Model' has four quadrants which are similar in outline to those in Figure 11.3: business strategy, organizational infrastructure and processes, IT infrastructure and process and IT strategy. While this model is focused very much on IT rather than both information and information technology it makes a contribution to the development of a strategic information technology management, particularly in its identification of attributes which characterize alternate choices in information technology management processes.
The hypotheses in Section 11.7 above are consistent with contingent theories of organization design outlined in Chapter Two. Each hypothesis generated provides an area for subsequent research. The extent to which these hypotheses are interrelated provides further and challenging research opportunities.

Replication of the study in other industry areas in Australia, or in the financial services sector in other countries, would provide a substantive comparative base against which to evaluate the findings of this study. At the same time, studies of this type could be further extended into the business units of divisionalised firms, or undertaken in firms with other types of organizational arrangements. Because of the current volatility of business and firm environments, some form of replication of this study in three to five years would provide a sound longitudinal base for identifying factors related to alignment.

11.9 Strengths and Contribution of this Study

The strength of this study comes from the combination of its extensive and informed analysis of the literature combined with the multiple sources used in the empirical study in the 'leading edge' information intensive area. The study had a firm theoretical and conceptual base both in the organizational design and in the strategy literatures.

The population of large firms in the Australian banking industry was a carefully and purposefully selected population, where evidence for alignment of business and information strategy could be expected to be most acute, with examples of information-based advantage being more highly developed than other industry areas. These were critical sites in the sense defined by Yin (1984).

The level of cooperation in four of the five firms was high and the multiple sources of data inputs thus gathered enabled the triangulation of data. Additional internal and confidential material was sought when needed and this made it possible to construct a chain of evidence. Key informants, in the form of the executive manager participants plus other senior staff who assisted with access to confidential material, reviewed summaries of the written responses and interview findings for their firm. The content of these summaries was not disputed by the participants. The fact that access to confidential strategic planning material was given subsequent to participants receiving
these summaries provides evidence to indicate that the researcher’s findings were considered by the firms to be accurate and authentic.

The procedures followed in the collection of the case study material are detailed in Chapter Five and their execution is evident in the content of Chapters Six through to Chapter Nine. The instruments used are documented in the Appendices and written and/or taped accounts exist for each of the executive manager interviews. The assumptions indicated in Section 4.8 were well founded: the alignment of information strategy with business strategy is seen as desirable in the firms studied as well as in the literature; information and information technology-based comparative advantages are seen to exist in large firms in the Australian banking industry; executive managers in four of the five firms were willing to participate in the study; and access to strategic planning documentation was made available, though not to the extent sought in one of the four banks.

This study is constrained in a number of ways. Due to the paucity of research-based theoretical frameworks, this research did not test a series of well-operationalised hypotheses. The empirical component of the study examined only one industry group, that of large Australian banks. There are five banks in this group and one of these five would allow only the IS/T manager to participate. The limited material for this bank is included as Appendix Five, though it is rarely drawn on in the comparative analysis of the firms. The level of confidentiality which was required for the participation of the case study firms meant that some sources of publicly available data, such as financial data, could not be used. However, there were no inconsistencies in the overall financial performance of the firms and their information-based performance.

If the study was being repeated with a different group of firms the researcher would amplify the response categories to Questions 10 and 11 on the Preliminary Response Form. These are about the strategic orientation of the 'Bank as a whole' and of retail banking. A graduated response ranging from 'not part of strategy' to 'dominant', similar to that used by Weill (1988), would have provided greater discrimination amongst the responses. Further evidence for strategic orientation was sought in other sources of evidence.

Some of the interview questions were partly reliant on the memory and recall capacity of executive managers, but they did not indicate that this was a problem for them. It is
possible that the executive managers in some way collaborated in their participation and responses, though there is no evidence for this.

This study contributes to the research base of information management and in particular to business and information strategy, in its methodology, scope and its findings.

In the methodological area, the extent and nature of the multidisciplinary literature review succeeded in drawing together conceptual viewpoints and research findings from a number of related but often separate literatures. Links between these literatures were identified, as was the relevance and utility of theories of organizational design to the often theoretically-bereft area of business and information strategy alignment.

The empirical study is the first of its kind into the Australian banking industry. Sager's work (Sager, 1988) relied mainly on newspaper sources, augmented by an unspecified number of unstructured interviews. This study appears to be the only one of its type into business and information strategy alignment in large firms in the banking industry anywhere. In a competitive and turbulent environment such an information intensive industry provided a rich source of data about factors which might be relevant to strategic alignments.

The range and combination of data sources in and about firms was unique in the business and information strategy area. Studies involving written responses and focussed interviews with executive managers from different vantage points of business, information and strategy responsibilities in the one firm are rare. The inclusion of professional planners, as a source of useful insights, together with senior managers, was suggested by Lederer and Mendelow during the course of data collection for this study (Lederer and Mendelow, 1989). These data sources were combined with an analysis of confidential material including Board level strategic planning documentation. Further insights were gained from a content analysis of five years of annual reports.

Studies in the business and information strategy alignment usually focus solely on the strategic or competitive uses of information technology. This study took a wider perspective and incorporated the information content, or information resources, component as well as information technology-based developments.
The operationalisation of business and information strategy alignment in information intensive firms as the extent and nature of information-based comparative advantage contributed a new way of depicting alignment. The consistent and conceptually based terminology used in this study provides a starting point for other studies which might improve the terminological haze in the information services area.

The findings of the study make an important contribution to the knowledge base of business and information strategy alignment in two major areas: the questioning of assumptions about the clarity, consistency and extent of agreement amongst executive managers concerning their firm’s strategic orientations; and the identification and clarification of the importance of the nature of strategic planning processes and their documentation in the alignment of information with business strategy. The strategic planning process was identified as a potentially rich information medium, particularly in situations of high uncertainty and ambiguity.

Other findings listed in Section 11.7 are consistent with the small number of rigorous or informative research studies in this area and have not been combined in such an extensive manner previously. The combination of findings enabled the development of an informed revised Alignment Models, which provide a basis both for further research and for practical application in firms.

The understandings gained in this study are useful beyond the particular settings of Australia’s major banks and, thus, meet an important criteria for evaluating the case study component of the research (after Smircich, 1983).

Though the research base of business and information strategy alignment remains small, the quality of the research-based literature has improved dramatically since 1988. This research study has contributed to that base, in tackling one segment of what is needed in the generation of theoretical and prescriptive frameworks.

Galliers and Land (1987) claimed that the measure of success in information systems research is whether or not our knowledge has been improved, and the extent to which that knowledge can be applied in practice. This exploration of business and information strategy alignment meets that measure in that the findings add to the knowledge base and provide guidance in improving business and information strategy alignment for practitioners.
APPENDIX 1

Preliminary Response Form
The first group of questions asks for responses concerning the strategic planning processes of the organization. Later questions focus on information services and systems.

**PART A: STRATEGIC PLANNING**

Listed below are a number of statements which describe some aspects of strategic planning processes. On a scale of 1 to 5, please indicate to what extent each accurately describes the ACTUAL situation of the BANK AS A WHOLE at present.

STRATEGIC PLANNING, in the terms of this study, is the identification of opportunities and threats that lie in the future environments which, in combination with other relevant data (such as company strengths and weaknesses) provide a basis for a company's decisions to exploit the perceived opportunities and to avoid the threats. Strategic planning may involve both formal and informal processes which set forth basic objectives to be achieved, strategy and policies needed to reach the objectives and tactical plans to make sure that strategies are properly implemented.

1. To what extent is strategic planning inextricably interwoven into the entire process of management.

   1       2       3       4       5
   Not at all          Some extent          Great extent

2. Does the CEO recognise strategic planning as being a major component of his or her task?

   1       2       3       4       5
   Not at all          Some extent          Great extent

3. To what extent is it true that top management has not identified the purposes of strategic planning and not explained this at all management levels.

   1       2       3       4       5
   Not at all          Some extent          Great extent

4. To what extent is it true to claim that strategic planning systems have not been designed to achieve purposes which take into account the unique characteristics of the Bank and its managers.

   1       2       3       4       5
   Not at all          Some extent          Great extent

5. Is there an inappropriate balance in the strategic planning process amongst managerial intuition, judgements, values and formal analytical processes?

   1       2       3       4       5
   Not at all          Some extent          Great extent

6. Is it true to say that the core focus of the planning processes is on the formulation of strategies, but proper attention is still paid to current operations?

   1       2       3       4       5
   Not at all          Some extent          Great extent
7. To what extent do you believe that most managers, from the lowest to the highest, give careful attention to all relevant aspects of the problem of how to assure efficient and effective implementation strategies.

1  2  3  4  5  
Not at all  Some extent  Great extent

8. To what extent is it true that capital allocations are linked to strategic planning processes?

1  2  3  4  5  
Not at all  Some extent  Great extent

9. What do you see as the major strengths and weaknesses of the planning processes of the RETAIL BANKING SERVICES area at present?

Strengths:

Weaknesses:

PART B: STRATEGIC ORIENTATION

Please circle the number next to the most appropriate response to each question and add any additional comments you wish to make at the end of each question.

10. Some companies, or Single Business Units (SBUs) pursue one BUSINESS STRATEGY more than another in order to gain an advantage over competitors. Could you indicate which of the following strategic thrusts most accurately describes that currently pursued by RETAIL BANKING SERVICES:

1. **Product or service differentiation:** gaining advantage by distinguishing products and services from competitors, or conversely, by reducing any differentiation advantage that might exist.

2. **Overall cost leadership:** reducing supplier or production costs, or raising the costs of competitors.

3. **Segmentation or Innovation:** introducing new products, services or processes which transform the way in which the business is conducted.

4. **Growth:** volume or geographical expansion, vertical integration or diversification.

5. **Alliance:** forming partnerships or joint ventures.

6. **Some combination of these:** Please indicate the combination.

________________________

7. **Other:**

Comments: ________________________

314
11. Which, if any, of these strategic thrusts most accurately describes the current strategic orientation of the BANK AS A WHOLE:

1. **Product or service differentiation**: gaining advantage by distinguishing products and services from competitors, or conversely, by reducing any differentiation advantage that might exist.

2. **Overall cost leadership**: reducing supplier or production costs, or raising the costs of competitors.

3. **Segmentation or Innovation**: introducing new products, services or processes which transform the way in which the business is conducted.

4. **Growth**: volume or geographical expansion, vertical integration or diversification.

5. **Alliance**: forming partnerships or joint ventures.

6. **Some combination of these**: Please indicate the combination.

7. **Other**: __________________________________________

Comment: __________________________________________

12. To what extent are the details of the strategic thrusts of the BANK AS A WHOLE documented in written statements?

   a. Not at all   b. Some extent   c. Great extent

13. To what extent are the details of these strategic thrusts of RETAIL BANKING SERVICES documented in written statements?

   a. Not at all   b. Some extent   c. Great extent

**PART C: INFORMATION RESOURCE AND TECHNOLOGY USE**

Information services and systems may have a variety of roles and impacts in different organizations and in different parts of the same organization. The next set of questions seeks responses concerning the role of information services - including information technology and information itself - in the Bank as a whole and then in the Retail Banking Division.

13. Please indicate to what extent the BANK AS A WHOLE is dependent on information services and systems for its day-to-day operations?

   1   2   3   4   5
   Not at all  Some extent  Great extent

14. To what extent are information services and systems critical to the strategic orientation of the BANK AS A WHOLE?

   1   2   3   4   5
   Not at all  Some extent  Great extent

15. To what extent is the RETIAL BANKING SERVICES dependant on information services and systems for its day-to-day operations?

   1   2   3   4   5
   Not at all  Some extent  Great extent
16. To what extent are information services and systems critical to the strategic orientation of the RETIAL BANKING SERVICES?

1 2 3 4 5
Not at all Some extent Great extent

17. On a scale of 1 to 5, how would you rate the BANK's use of information-based comparative advantage when compared to your competitors?

1 2 3 4 5
Low Average High

18. On a scale of 1 to 5, how would you rate the use of information-based comparative advantage when compared to its competitors in the RETAIL BANKING area?

1 2 3 4 5
Low Average High

19. Listed below are areas where financial institutions in Australia and elsewhere have indicated that they have developed some services or systems which provide information-based competitive advantage. Please circle those areas where you believe that the Bank has gained some advantage over its competitors by utilising information and/or information technology. Some of these may overlap.

a. Differentiated customer services
b. Differentiated customer products
c. Electronic home banking
d. Electronic Funds Transfer/Point Of Sale Terminals
e. Number and availability of automated teller machines (ATMs)
f. ATM interchange links with other financial institutions
g. Integration of customer data
h. Centralised transaction processing centre
i. Consolidation of applications onto a uniform product base
j. Market analysis, marketing
l. Competitor intelligence
m. Internal networking systems
n. Office automation, records management
o. MIS Planning and control
p. Cost accounting
q. Risk management techniques
r. Inventory or Stock control, asset management
s. Investment and Financial planning

20. Are there any other areas which should be added to this list in the case of this Bank?


21. From your perspective, in which area of the Bank's activities are information services and systems currently best developed and utilized:


THANK YOU VERY MUCH FOR YOUR PARTICIPATION AND ASSISTANCE.
I LOOK FORWARD TO OUR DISCUSSION ON SOME OF THESE MATTERS.
APPENDIX 2

Interview Schedule
BUSINESS AND INFORMATION STRATEGY ALIGNMENT

DRAFT INTERVIEW SCHEDULE

January 1989

Interview Sections

PART A  COVER SHEET
PART B  COMPANY DETAILS
PART C  COMPANY ENVIRONMENT
PART D  STRATEGIC PROCESSES
PART E  INFORMATION ISSUES OR PROBLEMS
PART F  INFORMATION BASED ADVANTAGE EXAMPLES
PART G  INFORMATION SERVICES IN THE ORGANIZATION

NOTE: This is an Interview Schedule, not a Questionnaire. Thus the questions will be asked in person (or by phone) by the researcher and answers recorded by the researcher. Any clarification required at the time by the interviewee can be given by the researcher 'on the spot'. If the interviewee consents, the interview session will also be recorded.
INTERVIEW COVER SHEET

Part A  BASIC DETAILS

A1. Organization: ____________________________

A2. Interviewee: ____________________________

A3. Title/Position: ____________________________

A4. Address: ________________________________

A5. Phone: ________________________________

A6. Date and time of Interview: ____________________

A7. Other Comments: ____________________________

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

319
PART B  COMPANY/INTERVIEWEE DETAILS

Introductory Comments

The purpose of the interview is to identify and clarify some key issues facing the organization and to look more closely at the way in which the Bank plans and utilises information and information technology.

I would like to begin with some general questions about the organization, the current environment in which the company operates and then lead on to seek your views about some of the information-related issues, problems and developments currently taking place in the Bank.

(Responsibilities)

B1. The TITLE of your current position is:

B2. Could you just outline for me your MAJOR RESPONSIBILITIES in the Bank (Is a job specification available?):

B3. And to whom do your REPORT? (level in the organisation)

(Broad organizational structure)

B4. In looking at written material on the Bank's organizational structure, the Bank appears to have a xxxxxxxx structure which ..................

Have I gleaned a fairly accurate picture? How does this work in practice?


(Company Environment)

Part C  COMPANY ENVIRONMENT

C1. Thinking generally about the ENVIRONMENT in which the Bank operates, what have been the dominant CRITICAL ISSUES facing the banking industry over the past five years:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

C2. How has the Bank responded to these?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

C3. Now, focusing on the companies that compete against you within your industry (in Australia), what have been the major competitive pressures that have confronted your company in the past five years?:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

C4. And how has the Bank responded to these competitive pressures?:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
(Strategic decision making processes)
Part D STRATEGIC PROCESSES

D1. In the Preliminary Response Form, you indicated that the Bank followed a strategy of XXXX. Could you expand on this a little please - How is this implemented in practice?


D2. Could you outline for the me the way in which STRATEGIC BUSINESS DECISIONS are made in this company? (e.g. Planning processes, levels of decision making)


D3. Which members of staff are usually involved in this process? (e.g. who attends strategy meetings and in what capacity):


D4. In your PRF you indicated that the Bank's strategic thrusts are documented in some written form. Could you explain, in what form this appears. How was it formulated? (Explore for use of external consultants)


D5. Are there any references to information, information technology or resources in that plan? Please elaborate:


D6. Your responses in the PRF indicated that the Bank was strong in the strategic planning process in areas such as YYYYYY (From Q1-6 on PRF). Why do you think this is so?


D7. At the same time the Bank appears to have problems in the ZZZZZ areas. (From Q1-6 on PRF). Is that a reasonable assessment? Why do you think this is so?


Part E  INFORMATION ISSUES OR PROBLEMS

(Perceptions of Information, Information Policy)

E1. Your responses in the PRF indicated that the Bank was dependent on information services and systems to 'a xxxxxx extent' (Q13-16 on PRF). Could you elaborate on this a little? Why do you think this is so?

E2. What do you see as the major INFORMATION issues or problems facing the organization? (This question is meant to be wide ranging and to solicit interviewee's perceptions of information).

E3. What do you regard as this company's most important INFORMATION RESOURCES OR ASSETS?

E4. Why do you regard these assets as so important? (Role in overall company strategy?)
Part F. EXAMPLES OF INFORMATION BASED COMPETITVE ADVANTAGE

In the PRF you marked a number of areas where you believed that the Bank had some information-based advantage over competitors. I would like to review each of these areas to indentify how this use came about, how it was implemented and what benefits are seen to accrue from each development.

List the examples here:

For each example, interviewer completes one of the sheets over.

AT END COME BACK AND ASK

FF1. What is it that you think your competitors do better in the other areas? And Why?
Information-Based Comparative Advantage  -  Application Data Sheets

F1. Description/Purpose/Rationale of the Use

______________________________________________________________

______________________________________________________________

F2. Significant or Sustained Advantage achieved

______________________________________________________________

______________________________________________________________

F3. How did this come about? How was it decided to utilize IR/IT in this way?
Process by which the Use was initiated, justified, designed implemented and
benefits tracked:

Initiation:

______________________________________________________________

______________________________________________________________

Justification:

______________________________________________________________

______________________________________________________________

Design:

______________________________________________________________

______________________________________________________________

Implementation:

______________________________________________________________

______________________________________________________________

Tracking of Benefits:

______________________________________________________________

______________________________________________________________
Part G INFORMATION SERVICES IN THE ORGANIZATION

(Information services infrastructure)

INFORMATION SERVICES UNITS in organizations have, as their major focus, the provision of information resources or technology to OTHER units within the organization or to particular client groups.

G1. Could you list for me the major INFORMATION SERVICE units in this company and the type and nature of IS provided by each:


G2. What is the mix of centralization and decentralization of Information services in this company (May be variations in Structure, Function and Processes)


G3. How has this mix come about? Deliberate policy or otherwise?


G4. To what extent are you satisfied with this mix? What works and what doesn’t work?


327
G5. Who would you name as the three most senior information personnel who work in this company and their titles?


G6. Would you have named different titles/positions two years ago? If so, why?


G7. Which step of the 8 below, most urgently requires senior management attention? (See the last page)

Response:


G8. What new investments would you like this company to make in the IR area? Why?


G9. Are there any questions which I should have asked you but did not?


G10. Is there is anything you would like to add to the comments you have already made?

Are there comments you would like to make about the future orientation of the Bank, particularly in the information area?
Which step of the 8 below most urgently requires Senior Management attention?

The arrow → indicates the direction of the communication process.

1. Conceiving Executive/Business managers
2. Planning Business Managers/Information Managers justify design
3. Information Systems implementation/Test
4. (4)
5. (5)
6. (6)
7. Post installation review and Benefits Tracking
8. (8)
APPENDIX 3

Basis for Annual Report Coding Scheme
APPENDIX : CODING SCHEME
(and examples)

A. Overall Quantitative Measures
   # of reports with IT related phrases
   # of companies with IT related phrases
   # of IT related phrases

B. Content Analysis Measures (All examples, where appropriate, are from the Midland Group’s 1987 Letter to shareholders)

<table>
<thead>
<tr>
<th>Context of IT phrase</th>
<th>Nature of IT phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial performance</td>
<td>Neutrally stated IT</td>
</tr>
<tr>
<td>(def.: review of the financial</td>
<td>expenditure;</td>
</tr>
<tr>
<td>position of the company</td>
<td>Favorably stated IT</td>
</tr>
<tr>
<td>and provide explanation</td>
<td>expenditure;</td>
</tr>
<tr>
<td>for results)</td>
<td>Unfavorably stated IT</td>
</tr>
<tr>
<td>(Level 1 codes)</td>
<td>expenditure)</td>
</tr>
</tbody>
</table>

- Investment in IT to offer products (“the launch of Telepath a sophisticated treasury workstation”).
- Investment in IT to change production or production economics (“branch cashiers are equipped with automated counter terminals.”)
- IT executive change (“we were fortunate to obtain the services of Gene Lockhart as our first director.”)
- IT reorganization (“we had an opportunity to reorganize a number of support functions, notably information technology.”)
- IT consolidation (“the Group has begun to consolidate and standardize its various data centres.”)
- IT repositioning in the firm (“Last year was a landmark year for IT in Midland Group”)
- IT repositioning in the industry or society (“IT is one factor which will progressively determine the basis for competitive success in the banking industry.”)

Future Outlook (def.: puts [Same as for ‘Major event of the year’] forth future short and long-term activities of the company)

From Jarvenpaa, Sirkka & Ives, Blake ‘Information technology and corporate strategy’, Accepted for publication in Information Systems Research, March 1990.
APPENDIX 4

Revised Annual Report Coding Scheme
### REVISED CODING SCHEME FOR ANNUAL REPORT ANALYSIS

<table>
<thead>
<tr>
<th>Context of IT phrase (Level 1 codes)</th>
<th>Nature of IT phrase (Level 2 codes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Financial Performance</td>
<td>1.1 Neutrally stated IT expenditure</td>
</tr>
<tr>
<td></td>
<td>1.2 Favourably stated IT expenditure</td>
</tr>
<tr>
<td></td>
<td>1.3 Unfavourably stated IT expenditure</td>
</tr>
<tr>
<td>2. Major Event of the Year</td>
<td>2.1 Investment in IT to offer products</td>
</tr>
<tr>
<td></td>
<td>2.2 Investment in IT to change production or production economics</td>
</tr>
<tr>
<td></td>
<td>2.3 IT executive change</td>
</tr>
<tr>
<td></td>
<td>2.4 IT organization/reorganization</td>
</tr>
<tr>
<td></td>
<td>2.5 IT consolidation, incl security</td>
</tr>
<tr>
<td></td>
<td>2.6 IT repositioning in the firm</td>
</tr>
<tr>
<td></td>
<td>2.7 IT repositioning in the industry, alliances</td>
</tr>
<tr>
<td></td>
<td>2.8 Health and safety considerations</td>
</tr>
<tr>
<td>3. Future Outlook</td>
<td>3.1 Investment in IT to offer products</td>
</tr>
<tr>
<td></td>
<td>3.2 Investment in IT to change production or production economics</td>
</tr>
<tr>
<td></td>
<td>3.3 IT executive change</td>
</tr>
<tr>
<td></td>
<td>3.4 IT organization/reorganization</td>
</tr>
<tr>
<td></td>
<td>3.5 IT consolidation, incl security</td>
</tr>
<tr>
<td></td>
<td>3.6 IT repositioning in the firm</td>
</tr>
<tr>
<td></td>
<td>3.7 IT repositioning in the industry, alliances</td>
</tr>
</tbody>
</table>
APPENDIX 5

Bank Five Results
1. Executive Manager Data Collection Results

1.1 Introduction

As indicated in Section 5.6, one of the five firms approached to participate in the study declined participation, other than by providing access to the executive manager responsible for IS/T area for interview and information purposes. This manager was interviewed, using both the Preliminary Response Form and the Interview Schedule, in July, 1989 and was available to answer questions. Access was also given to some internal documentation, particularly in relation to information systems and technology developments, but not Board level strategic planning documentation.

A limited section on Bank Five is included because of the relationship of Bank Five to the other major Australian banks. The remainder of this section is drawn from the one interview with the IS/T manager, and comparable numbering is used to that of Chapters Six to Nine. This section does not include all the areas covered in senior manager data collection for the other banks and of course does not carry any information about differences in views that might exist between executive managers. Sections 1.2 and 1.3 are drawn from written material provided by Bank Five. Section 1.4 is similar to the comparable section in chapters six to nine analysing the Bank Five's annual reports.

1.2 Critical Environmental Issues

Deregulation and increased competition had been external driving forces for Bank Five. At the same time, the Bank had been involved in merger and growth activities.

1.3 Strategic Planning and Decision Making Processes

Bank Five's strategic planning processes had been greatly enhanced in the past five years. Previously the process had been 'numbers driven' and short term, lacking clear or articulated objectives. The Bank now had an annual planning process as part of a rolling three year cycle. This commenced in February each year and was 'objectives driven', performance oriented and tied in with staff effectiveness
reviews. After a February meeting of senior executives, strategic guidelines for that year were produced. Business units then provided one, two and three year projections.

1.4 Strategic Orientation

The strategic thrust of Bank Five as a whole and for the Retail area was based on 'Growth'. This thrust enabled service quality and productivity in mass markets and thus profitability. Other areas, such as Corporate/International, aimed for greater customisation and differentiation.

1.6 Information and Information Technology (I&IT) in Planning Processes

The strategic orientation of quality and productivity based on growth was systems oriented and systems dependant and this was recognised in the planning processes. However, it is the task of the IS/T area to 'plug into' the technology strategies identified in the Business units, as the IS/T area operated in a 'chargeout' manner with the Business units as clients.

1.7 Information Problems and Assets

The need to link systems to an integrated customer information database was seen as the major information problem, but one which was being addressed in developmental work. Other areas for development were the need to move to an integrated database of products and services, and better management information. This was not seen as a need when systems were originally built, but data accessibility was now a key need.

The IS developmental processes had been hampered by inadequate efforts on the part of the data processing area to properly identify business requirements. Data processing staff were not good in this area. At the same time, business managers were lacking in technological literacy and needed education in technology management.

Information assets were identified as the names and addresses of clients, and the nature of the bank's deposit and lending base.
1.11 Information-Based Comparative Advantage (IBCA)

The IS/T manager saw Bank Five's use of IBCA as currently average in relation to major competitors, with no competitors out in front. Areas where some advantage had been gained to date were Electronic Home Banking, EFTPOS, ATM numbers and interchange arrangements, and work on the 'integration of customer data' and 'consolidation of applications' which was more of an anticipated future advantage from current developmental work (See Figure Appendix 5.1).

Figure Appendix 5.1 Number and range of IBCAs in Bank Five

<table>
<thead>
<tr>
<th>Information-Based Comparative Advantage</th>
<th>Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Differentiated customer services</td>
<td>1</td>
</tr>
<tr>
<td>b. Differentiated customer products</td>
<td></td>
</tr>
<tr>
<td>c. Electronic home banking</td>
<td>*</td>
</tr>
<tr>
<td>d. Electronic Funds Transfer/Point Of Sale Terminals</td>
<td>*</td>
</tr>
<tr>
<td>e. Number and availability of automated teller machines (ATMs)</td>
<td>*</td>
</tr>
<tr>
<td>f. ATM interchange links with other financial institutions</td>
<td>*</td>
</tr>
<tr>
<td>g. Integration of customer data</td>
<td>*</td>
</tr>
<tr>
<td>h. Centralised transaction processing centre</td>
<td></td>
</tr>
<tr>
<td>i. Consolidation of applications onto a uniform product base</td>
<td>*</td>
</tr>
<tr>
<td>k. Market analysis, marketing</td>
<td></td>
</tr>
<tr>
<td>l. Competitor intelligence</td>
<td></td>
</tr>
<tr>
<td>m. Internal networking systems</td>
<td></td>
</tr>
<tr>
<td>n. Office automation, records management</td>
<td></td>
</tr>
<tr>
<td>o. MIS Planning and control</td>
<td></td>
</tr>
<tr>
<td>p. Cost accounting</td>
<td></td>
</tr>
<tr>
<td>q. Risk management techniques</td>
<td></td>
</tr>
<tr>
<td>r. Inventory or Stock control, asset management</td>
<td></td>
</tr>
<tr>
<td>s. Investment and Financial planning</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

'Electronic home banking' was an IBCA also possessed by one other major Bank. This had succeeded in removing some people from queues at branches. Bank Five was the first bank to introduce EFTPOS and it was done as a deliberate action as part of changing the nature of distribution outlets. The same rationale was behind
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BROADBENT, MARIANNE

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