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SWP 13/98 'MIND THE GAP': DIAGNOSING THE RELATIONSHIP BETWEEN THE IT ORGANISATION AND THE REST OF THE BUSINESS"

JOE PEPPARD & PROFESSOR JOHN WARD
Information Systems Research Centre
Cranfield School of Management
Cranfield University
Cranfield
Bedfordshire MK43 0AL

Tel: +44 (0)1234 751122
Fax: +44 (0)1234 751806
Email: j.peppard@Cranfield.ac.uk

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'Mind the Gap': Diagnosing the Relationship Between the IT Organisation and the Rest of the Business

Joe Peppard and John Ward
Information Systems Research Centre,
Cranfield School of Management,
Cranfield,
Bedford MK43 0AL
Tel: +44 1234 754477
Email: j.peppard@cranfield.ac.uk

ABSTRACT

The senior management of many organisations are continually disappointed with the benefits and value which they perceive they are getting from their investments in IT. This frustration with IT, and in particular with the IT function, has seen many organisations choose to rid themselves of the 'problem' altogether by outsourcing IT activities to a third party. The fact that there is a separate organisational unit responsible for IT activities has led to the emergence of gap between this so call IT organisation and the rest of the business. Culture is often used to explain the gap as if this somehow justifies an organisations inability to effectively leverage IT. However, the premise underlying this paper is that culture is an excuse for rather than a cause of ineffective application of IT for business benefits and value. The clear message from this paper is that achieving high performance from IT is not about the IT function's ability to build, maintain and deliver systems, but is an organisational wide activity. A framework, firmly grounded in the research literature, is developed and operationalised. The findings of an exploratory survey are presented and research and practitioner implications developed.

Keywords: IT organisation, relationship management, culture gap, IT service delivery, IT performance

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The senior management of many organisations are continually disappointed with the benefits and value which they perceive they are getting from their investments in IT. This frustration with IT, and in particular with the IT function, has seen many organisations choose to rid themselves of the 'problem' altogether by outsourcing IT activities to a third party. The fact that there is a separate organisational unit responsible for IT activities has led to the emergence of gap between this so call IT organisation and the rest of the business. Culture is often used to explain the gap as if this somehow justifies an organisations inability to effectively leverage IT. However, the premise underlying this paper is that culture is an excuse for rather than a cause of ineffective application of IT for business benefits and value. The clear message from this paper is that achieving high performance from IT is not about the IT function's ability to build, maintain and deliver systems, but is an organisational wide activity. A framework, firmly grounded in the research literature, is developed and operationalised. The findings of an exploratory survey are presented and research and practitioner implications developed.

Keywords: IT organisation, relationship management, culture gap, IT service delivery, IT performance

'Mind the Gap'[1]: Diagnosing the Relationship Between the IT Organisation and the Rest of the Business

In a previous paper (Ward and Peppard, 1996) we explored the relationship between the IT organisation and the rest of the business. Building on the concept of culture, we illustrated how the 'gap' could be explained by the cultural differences which exist between these two groupings. Indeed, we argued that many IT organisations are "culturally outsourced" long before a decision is actually made to cut the connection and get rid of the problem with IT by outsourcing some or all IT activity to a third party. However emerging research results are highlighting the folly of short term total outsourcing decisions which are based on an historical and little understood problem (Earl, 1996; Lacity *et al.*, 1996; Venkatraman, 1997). While clearly there is a culture gap, in this paper we argue that if organisations are to attempt to bridge this gap it is imperative to progress beyond describing it as such and seek a better understanding of why it exists, its dimensions and components and ultimately how it might be reduced or eliminated.

One of the problems with attaching the culture label is that it then becomes a *fait accompli*, almost an acceptance of the situation. The 'culture gap' becomes a convenient label with which to attach to a situation which is clearly causing a problem but which organisations are either unable or unwilling to address. In using the culture argument there is an implicit assumption that cultural differences manifest themselves in behavioural differences. This assumption is not necessarily true. We strongly suggest that the culture argument is often an excuse for, rather than a cause of, ineffective working relationships. In essence, culture is a symptom rather than the cause of an ineffective relationship between the IT organisation and the rest of the business and the consequential failure of organisations to exploit and leverage IT for business benefits and value creation. In this paper we delve beyond the facade of culture and explore in greater depth the problems which exist in relation to IT in organisations.

The paper begins by examining some of the recent IS research literature which is grounded in the Resource-Based View (RBV) of the firm to explore the role of IT, and in particular the IT organisation, in the pursuit of sustainable competitive advantage.

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[1] Anyone who has ever travelled on the London Underground will recognise the 'Mind the Gap' announcements warning passengers of the gap between the carriage and the platform. We think that this phrase is appropriate for the IT/Business gap, as we are constantly being warned about it and like the gap which exists with the London Underground it has yet to be bridged. Yet some organisations, like some underground transport networks, for example Munich's U-Bahn or the Metro in Milan, do not experience this problem.

Research which examines the resourcing and structuring of the IT organisation is then reviewed to provide a backdrop to our research. A framework for diagnosing and describing the gap is then presented and developed. We then describe how we operationalised this framework and conducted an exploratory study to diagnose and describe the gap in three organisations. The study results are then presented, the implications of these results examined and future research directions outlined.

IT and sustainable competitive advantage

Throughout the 1980's there was a plethora of articles and papers purporting to link IT and competitive advantage (Ives and Learmonth, 1984; Johnston and Vitale, 1988; McFarlan, 1984). These papers drew on implementations of IT to illustrate how incumbent companies were achieving significant advantage in the market place. Baxter Healthcare's ASAP, Thompson's TOP, Merrill Lynch's Cash Management Account, Otis Elevator's Otisline and American Airlines SABRE system became household names in the folklore of competitive advantage and many organisations sought to emulate them by developing so called "strategic information systems". However, recent studies have cast a shadow over these successes (Dvorak *et al.*, 1997; Kettinger *et al.*, 1994; Powel and Dent-Micaleff, 1997). It is not that the advantage was not real, but the source of the advantage was misinterpreted.

A study by Kettinger *et al.* (1994) evaluated longitudinal changes in performance measures of 30 firms that had been cited as "classic" cases of strategic use of IT, some of which have been referred to in the preceding paragraph. Their analysis indicated that a healthy scepticism concerning the competitive advantage payoffs of IT is in order. They asserted that managers must more than simply assess the uniqueness or availability of emerging technological innovations in developing strategic IT plans. They concluded that the attainment of sustained IT based competitive advantage may be more a process of building organisational infrastructure in order to enable innovative action strategies as opposed to "being first on the scene", the so called 'first mover strategy' in the strategic management literature.

More recently, Powel and Dent-Micaleff (1997) investigated the linkages between IT and firm performance in the retail industry. Again they poured cold water on the IT and competitive advantage debate, asserting that IT alone is not enough. From their study they concluded that some firms have gained advantage by using IT to leverage intangibles, complementary human and business resources, such as organisational flexibility, strategic planning-IT integration, and supplier relationships.

In a conceptual examination of the ability of IT to generate sustained competitive advantage for firms, Mata *et al.* (1995) examined the IT and competitive advantage argument under the headings of customer switching costs, access to capital, proprietary technology, technical IT skills and managerial IT skills. They concluded that only IT management skills are likely to be a source of sustained competitive advantage, a position referred to by Keen (1993) as the "management difference". They described these skills as the ability of IT managers to understand and appreciate business needs; their ability to work with functional managers; ability to co-ordinate IT activities in ways that support other functional managers; and ability to anticipate

future needs. They advised that in the search for IT-based sources of sustainable competitive advantage, organisations must focus less on IT, *per se*, and more on the process of organising and managing IT within a firm. Further support for this position is provided by Dvorak *et al.* (1997) who note that what distinguishes organisations with high performance IT is not technical wizardry but the way they handle their IT activities.

It is this latter theme which has been taken up by a number of scholars and in the following section we examine some of the research in this area.

IT resourcing, structures and relationship management

The centralised IT organisation is a legacy of technology of technology where the sole function was to ensure that the large mainframe actually worked. As technology has assumed increasing importance in organisations, the debate about how best to organise and manage IT activities has swung between centralisation and decentralisation. Decisions have generally be motivated by three main drivers. In some organisations it has been driven by technical concerns, with new technologies like client-server systems supporting a more decentralised structure. In others, the proliferation of inexpensive hardware and software has seen the emergence of 'end user computing' with individual departments taking on responsibility for meeting their own computing needs. Thirdly, in some, the motivation has been more politically oriented with debates centred around the control of resources rather than any particular organisational strategy.

Both centralised and decentralised decision making structures have advantages as well as their disadvantages and recent calls have sought to capitalise on the advantages of both avoiding some of the associated drawbacks. Von Simson (1990) has proposed the notion of the "centrally decentralised" IT organisation while more recently Hodgkinson (1996) has suggested a federal structure. While appealing, at present this federal concept is more of a theoretical construction than having direct practical applicability. One of the central reasons for this is that the delivery of benefits and value from IT is not the sole preserve of the IT organisation. Whereas in the past the function of the IT organisation was to run the organisation's computing systems, today with IT now playing a central role in the competitive strategies of organisations, business management have a critical role to play (Boynton *et al.*, 1992; Dutta, 1996; Earl, 1989; Ward and Griffiths, 1996) and the traditional roles adopted by IT specialists must be re-appraised (Bashein and Markus, 1997; Ross *et al.*, 1996).

Ross *et al.* (1996) contend that to apply IT to enhance competitiveness lies in the development of an effective IT capability: the ability to control IT-related costs, deliver systems when needed, and effect business objectives through IT implementation. Their research suggests that this capability derives from careful management of three key IT assets: a highly competent IT human resource, a reusable technology base, and a strong partnering relationship between IT and business management.

The notion of managing IT resources as a *value centre* has been proposed by Venkatraman (1997). He suggests that there are four independent sources of value from IT resources and each requires different management approaches and priorities. In a somewhat similar vein, Lacity *et al.* (1996) present a framework for considering IT sourcing decisions based around purchasing strategy (purchasing a resource or a result) and purchasing style (relationship or transaction). This work builds on Venkatraman and Loh's (1994) contention that with the growing array of IT supply options organisations are increasingly moving from managing a technical portfolio to managing a relationship portfolio. The challenge, of course, is to optimise the construction of this portfolio and manage its contents.

The message from these studies is that as IT assumes an increasingly central role in the strategies of companies, how they organise for IT becomes crucial. The task is not just the provision of IT and IT services to the business, but to ensure that the benefit and value of any investments are leveraged This demands moving beyond the narrow centralisation-decentralisation debate. Addressing the IT organisation in isolation is limited in what it can achieve. While only the business can unlock value from IT, the IT organisation does have a crucial role to play. In most organisations there is clearly a 'gap' but attaching the culture label is a convenient approach but one which may obscure issues that can in reality be addressed. In the following section we present a framework which we have developed which can aid in diagnosing and describing the gap in greater detail.

A framework for diagnosing the gap

Through synthesising a diverse literature in the IS field we have developed an initial framework to characterise the gap which is of relevance to this question. This framework is based around four dimensions. These dimensions are leadership, structures and processes, service delivery and value and beliefs (see figure 1).

Leadership is concerned not just the leadership of the IT organisation but also the leadership which the chief executive officer (CEO) exhibits vis-à-vis IT. For example, is the CEO supportive of IT initiatives? Structures and processes are concerned with how the organisation organises for IT, including IS/IT strategy development, delivery of IT benefits, structures for service delivery, mechanisms for business and IT organisation to come together, etc. Service delivery recognises that the provision of some IT services will be based around a customer-supplier relationship. This might entail meeting predefined or expected criteria and service levels, some of which may be enshrined in formal service level agreements. The values and beliefs of organisational members have a tremendous impact on many dimension of IT in organisations, including how it is managed and how the business For example, if business managers do not believe that IT is strategic this is likely to defines how they manage and deal with IT and associated issues.

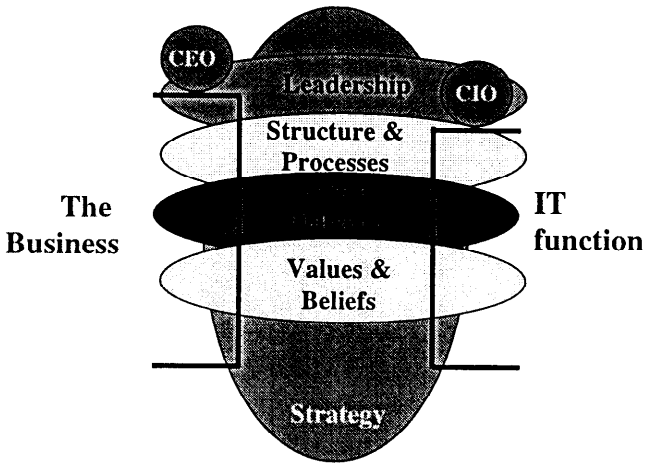

Figure 1 A research framework for Diagnosing the gap.

Leadership

In the IS literature, there are two main streams of research regarding leadership. The first are studies which examine the characteristics and role of the IT director or Chief Information Officer (CIO) (Applegate and Elam, 1992; Earl and Feeney, 1994; Grindley, 1991; Stephens *et al.* 1992). Earl and Feeney (1994) conclude that the IT director's ability to add value is the biggest single factor in determining whether the organisation views IT as an asset or a liability.

Successful IT directors are seen to contribute beyond their functional responsibility (Feeney *et al.*, 1992), although there is often little agreement as to what actually their role and function is in an organisation (Price Waterhouse, 1993). IT directors too often see their role as custodians of the organisation's technology. However, with the increasing range of IT supply options now available, Venkatraman and Loh (1994) contend that the role of the IT director has shifted from managing a technical portfolio to managing a relationship portfolio.

Applegate and Elam (1992) surmised that that ideal candidate for the senior IS position in a company is apparently an individual who has a combination of business, technology and leadership skills. Their research suggested that new appointed IS executives are just as likely to come from outside as inside the organisation and to have business experience outside the IT function. The ability of the IT director to build relationships with both business managers, vendors and suppliers is seen as a crucial attribute (Mata *et al.*, 1995; Ross *et al.*, 1996; Venkatraman, 1997).

A second area of research relates to the role of the CEO in relation to IT. Of particular interest is the relationship between the CEO and IT director, specifically whether or not the CEO is supportive of the IT director and IT initiatives (Feeney *et al.*, 1992). Central are the beliefs which the CEO has about IT and its importance to the business. This is an issue which is covered in the dimension of *values and beliefs*.

Korac Kakabadse (1997; Korac Kakabadse and Kouzmin, 1996;) has looked extensively at the performance of top teams and two dimensions which she has identified which are of relevance to the leadership debate is the extent to which IT

directors feel part of the top management team and the overall coherence among the top team (Korac Kakabadse, 1996). In many organisations the IT director is not part of the 'inner sanctum', very often reporting to the finance department. The extent of the involvement of the IT director in the business strategy formulation process can give a good indication of where IT is positioned in the organisation (Enns and Huff, 1997).

Structures and processes

Structures and processes are the mechanisms through which organisational activity takes place. Inadequate or inappropriate structures and processes can severely impinge on the success of IT in an organisation (Blanton *et al.*, 1992). Traditionally structures in relation to IT have been devised around the concept of technology delivery with a reactive IT organisation developing products (i.e. applications) in response to business requests or at worse to what it suspects the business requires.

To facilitate IT/business integration, appropriate structures and processes are necessary (Venkatraman, 1997). Brown and Magill (1994) have gone some way in developing a model of antecedents in alignment of the IS function with the enterprise. Yet this exclusive focus on structural dimensions ignores the importance for total organisational involvement in IS/IT. Von Simson (1990) subscribes to an IS design with IS roles played by both a central IS organisation and the business units, but here a "centrally decentralised" IS organisation, with strong dotted-line reporting relationships is prescribed.

In addition to structural issues, there are also processual mechanisms such as the involvement of business management in IS/IT strategy formulation (Ward and Griffiths, 1996; Earl, 1989; Dutta, 1996; Rockart and associates, 1995) which can impact the overall ownership of that strategy (Bowman and Kakabadse, 1997); alignment of the IS/IT strategy with business objectives (Venkatraman, 1991; Henderson and Venkatraman, 1993; Ward and Griffiths, 1996); and responsibility for delivering business benefits (Farbey *et al.*, 1993; Ward *et al.*, 1996).

Service delivery

Over the last decade, the marketing and quality literature have devoted reams to the issue of service quality and delivery. Within the quality movement there are the notions of the 'internal customer' and 'service level agreements' which are often devised to set parameters around the expected relationship. The development of IT oursouring has also seen the development of legally enforceable service level agreements specifying the level of service which the client can expect from the vendor. Marketing has its own sub-discipline of 'service marketing'.

Recently there has been some interest in applying the concept of service management to IT (Pitt *et al.*, 1995; van Dyke *et al.*, 1997; Whyte *et al.*, 1997). This is to be expected in that some of what is now provided by the IT organisation can be characterised as a customer-supplier exchange. What this indicates is that the

traditional role of the IT organisation as the developer and maintainer of IT systems has been usurped by a variety of factors and its function now includes a significant service component. IS research has tended to focus on products rather than service and only recently has this service aspect been addressed.

What can be difficult for IS specialists to appreciate is that service quality is customer defined and is assessed based on perceptions (Clutterbuck *et al.*, 1993). It is founded on a comparison between what the customer feels should be offered and what is actually provided (Parsuraman *et al.*, 1988). To this end, customer is the ultimate arbiter of quality.

There have been debates in the IS literature as to the applicability of instruments such as SERVQUAL (Parsuraman *et al.*, 1988) and SERVPERF (Cronin and Taylor, 1992) from the service marketing and service quality literature to IS (Kettinger and Lee, 1997; Pitt *et al.*, 1997; Pitt *et al.*, 1995; van Dyke *et al.*, 1997). While Pitt *et al.* (1995) conclude that SERVQUAL is an appropriate instrument for IS service quality, van Dyke et al. (1997) have raised a number of methodological issues, although these have been addressed in a reply to their paper (Pitt *et al.*, 1997).

Despite these debates, there is general agreement that there are four dimensions to service quality in relation to the provision of IS/IT services:

- *Reliability*: the ability of the IT organisation to perform the promised service dependably and accurately
- *Responsiveness*: the willingness of the IT organisation to help customers and provide prompt service
- *Assurance*: the knowledge and competence of IT specialists and their ability to inspire trust and confidence
- *Empathy*: the caring, courtesy and individualised attention the IT organisation gives to the customer.

It is important to note that service quality is not assessing user satisfaction with applications or systems, but the *service provided by the IT organisation.* This raises the question of roles as our preliminary research has suggested that at this level there can be significant disagreement with little convergence as to what the role and function of the IT organisation actually is.

Values and beliefs

The final dimension to the framework is concerned with the values and beliefs of organisational incumbents. Values and beliefs can significantly shape how attitudes and hence behaviour and practices. These beliefs are shaped throughout ones career based on the experiences which one has with IT. Previous experience both with IT and within the industry of the organisation is likely to also have a major influence.

Values and beliefs are a powerful force and should not be underestimated. For example, if business managers do not believe that IT is strategic this will reflect in how they manage and deal with IT and IT issues (Venkatraman, 1997). As well as the

baggage which employees bring with them from previous experience, their behaviour can also be shaped by myths, stories, rituals and routines which exist within the organisation (Johnson, 1992). Bashein and Markus (1997) have introduce the concept of credibility in relation to IT specialists. They contend that expertise does not inspire trust and credibility concluding the successful IT specialists work on their trustworthiness while at the same time build good relationships with clients.

These four dimensions are interdependent and cannot be looked upon in isolation (each is necessary but not sufficient). For example, inadequate structures and processes can impinge on the effective delivery of IT services even if there are congruent values and beliefs between the IT organisation and the rest of the business. This research is also seeking to establish the relationship between the these four dimensions in order to better understand the interaction between them.

The gap survey

The objective of our research was to use the framework as the lens with which to examine both the business and IT organisation in relation to all aspects of IT deployment and use in an organisation. The framework is used as a mechanism to diagnose and describe the 'gap' and following on from this to surface an agenda for dialogue and debate with an organisation

Instruments have been developed for user satisfaction surveys (Doll and Torkzadeh, 1988; Davis, 1989) but these seek to establish the satisfaction which uses have with applications developed by the IT organisation and to determine the factors of success. There are also IT service quality survey instruments (Kettinger and Lee, 1997; Pitt *et al.*, 1997; Pitt *et al.*, 1995; van Dyke *et al.*, 1997) accessing the extent to which the IT organisation is delivering a quality service. As outlined above, service delivery is just one aspect of the framework illustrated above.

In this regard we operationalised the framework in order to collect data and information relating to the dimensions, paying due regard to prior research. Items for inclusion on the data collection instruments were determined from the literature. Appendix A contains the list of items, categorised under the dimensions of the framework. It was not the objective to derive an individual metric for each of the four dimensions but to use the data collection instruments to provide data to construct as rich a picture as possible of the situation which exists. A mixture of questionnaires and interviews were used providing both qualitative and qualitative data (Gable, 1994; Kaplan and Duchon, 1988).

We also wished to address the fact even within the business there can also be gaps between organisational levels, for example there can be a gap between the CEO and the front-line staff (the actual business users), a situation which has been confirmed by Whyte *et al.* (1997). Therefore, rather than simply surveying a sample of personnel from 'the business' side and personnel from the IT organisation, we also wished to discriminate between the various 'levels' in each group. We believe that this is necessary as different levels in the organisations may have different views and

perceptions on questions related to the gap. This occurs for a number of reasons, including the position of the incumbent and role of IT in their day-to-day activities.

In this regard, we identified 6 distinct stakeholder groupings: CEO, senior business management, and users/ front-line staff on the business side and IT director, senior IT managers and development, analysts, development staff, other support and helpdesk staff. Business management could also be users, but we believe that it is necessary to include the business user category to include front-line staff. For this exploratory study, we decided to restrict the survey to CEO (or equivalent), business management, IT director and IT management. This was done for a number of reasons, including the complexity of organisation involvement; the risk of the research, particularly for the participating organisations. Figure 2 illustrates the structure of the survey instrument regarding key stakeholders.

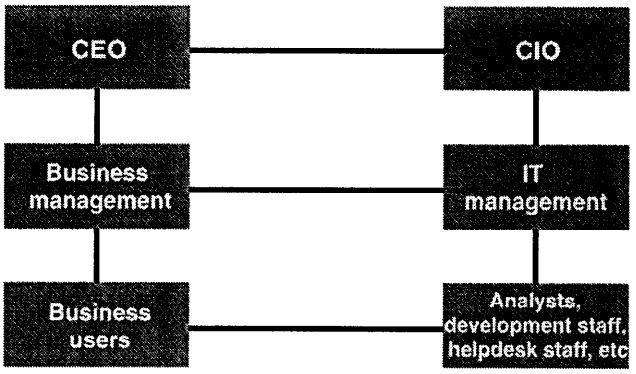

Figure 2 Structure of survey instrument: key stakeholders.

Different versions of the survey instruments were developed, each focusing on a particular stakeholder group. Questions were essentially similar but were phrased to recognise the peculiarities and sensitivities of incumbents' positions.

The questionnaires addressed the four dimensions of the framework plus some additional supplemental and additional questions:

- background personal information
- personal preferences (beliefs and values)
- views on IT in general
- views on how IT managed in respective organisation
- questions relating to role and function of IT organisation, role of IT director, relationship between CEO and IT director

The questionnaire was a mixture of statements to be ranked on 5-point Likert scales (for example, a scale ranging from strongly disagree to strongly agree) and open-ended questions. While the information to be collected from the four different groups was similar, the structure of the questionnaires were different to reflect the role, responsibility and position of the respondents. Appendix B contains a sample questionnaire. The questionnaires were piloted by a structured walk-through, with respondents talking through their understanding of the questions posed and illustrating

how they would respond to the questions. Any inconsistencies or ambiguities were subsequently addressed.

Interviews were also conducted in the survey organisations in order to gather further information, particularly contextual information, and also to elaborate on themes arising from the analysis of questionnaires. These interviews were conducted after the questionnaires had been administered.

The survey organisations

The research was undertaken in three organisations and given the sensitive nature of the topic under study the confidentiality of the three organisations was assured. Questionnaires were first administered in each of the three organisations to the CEO (or equivalent), business management, the IT director and IT management. The completed questionnaires were sent directly by the respondents to the authors and all were anonymously answered. Once the questionnaires had been analysed interviews were conducted with key informants in order to determine contextual information and also to elaborate on some of the themes emerging from the analysis of the questionnaires..

The first company, to be known as Distribution, is a distributor of magazines and newspapers and employs 4,000 staff. The IT unit employs 90 people and is divided into three main areas: the planning area, responsible for the medium and long-term planning of IS/IT; the development area, where traditional software development takes place; support area, housing the LAN team, PC team and the help desk. The second company, to be known as Manufacturing, is one of the world's leading providers of communications equipment, semiconductors, and advanced electronic systems and services. It employs more than 2,000 staff, with 110 working directly in the IT organisation. The third company, operates in the financial services industry and is to be known as Finance. It is a leading global independent reinsurance intermediary, with representative offices throughout the world. 28 staff work directly in the IT organisation.

Analysis and interpretation of the data

The data collection instruments elicited both quantitative and qualitative responses. The analysis of this data is ground in the interpretative tradition (Burrell and Morgan, 1979) with the objective of our analysis understanding rather than prediction. We recognised that with the interpretative approach the researcher can never assume a value-neutral stance and is always implicated in the phenomena being studied (Orlikowski and Baroudi, 1991). In reality what we are presenting are interpretations of interpretations. Van Maanen (1979) refers to interviewee's constructions as 'first-order data' and the construction of the researcher as 'second order concepts'. Geertz (1973) wryly noted that '[w]hat we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to' (p. 9). We acknowledge that prior assumptions, beliefs values and interests always intervene to shape studies. However, we have tried to minimise such occurrence by utilising a

variety of data analysis techniques. We also present data in summary tables in order to enable the reader to judge the validity of our interpretations.

Individual organisation assessment

The first stage of the data analysis was to examine each organisation in isolation and attempt to diagnose and describe the gap between the IT organisation and the rest of the business. Table 1 presents some summary comparisons of the data from the three organisations.

Is the IT organisation delivering value to the business?

	Distribution	Manufacturing	Financial
CEO	3.0*	3.5	5.0
Business management	2.7	3.5	4.5
IT director	5.0	3.0	4.0
IT management	4.0	4.2	4.0

1 = not at all; 5 = to a large extent

Service provided by IT organisation

	Distribution	Manufacturing	Financial
CEO	3.0*	3.5	5.0
Business management	2.4	3.3	3.7

1 = very poor; 5 = excellent

Performance of IT organisation (versus competition)

	Distribution	Manufacturing	Financial
CEO	2.0*	3.0	3.0
Business management	1.8	2.0	3.0
IT management	2.8	2.0	3.0

1 = worse; 2 = same; 3 = better

Assessment of the systems and applications developed by the IT organisation

	Distribution	Manufacturing	Financial
CEO	4.0*	2.0	5.0
Business management	2.9	2.8	4.2

1 = very poor; 3 = satisfactory; 5 = excellent

Relationship between IT organisation and the business

	Distribution	Manufacturing	Financial
CEO	3.0*	2.5	5.0
Business management	3.1	3.0	3.7
IT director	2.0	3.0	4.0
IT management	3.0	3.5	4.0

1 = adversarial; 5 = harmonious

Mind the gap

Reputation of the IT organisation

	Distribution	Manufacturing	Financial
CEO	2.0*	2.0	5.0
Business management	1.7	2.3	3.7

1 = very poor; 5 = excellent

CEO support of IT initiatives

	Distribution	Manufacturing	Financial
IT director	3.0	3.0	5.0
IT management	2.9	4.0	4.5

1 = not at all supportive; 5 = very supportive

CEO support of the IT director

	Distribution	Manufacturing	Financial
IT director	4.0	3.6	4.5

1 = not at all supportive; 5 = very supportive

Service delivery: Distribution

	Reliability	Respon'ness	Assurance	Empathy
CEO	2.7*	3.0*	3.0*	4.0*
Business management	2.1	3.0	3.4	3.4
IT director	2.3	4.0	na	na
IT management	2.4	3.3	na	na

Service delivery: Manufacturing

	Reliability	Respon'ness	Assurance	Empathy
CEO	2.3	3.3	3.2	2.5
Business management	2.9	2.6	3.5	3.0
IT director	2.7	3.0	na	na
IT management	2.9	3.7	na	na

Service delivery: Financial

	Reliability	Respon'ness	Assurance	Empathy
CEO	4.0	4.7	5.0	5.0
Business management	2.9	3.3	3.7	3.4
IT director	2.0	3.0	na	na
IT management	2.9	3.5	na	na

*Data for the CEO from Distribution was provided by his Executive Assistant. The extent to which this reflects the views of the CEO is unclear.
Note: Scores are mean values.

Table 1 Summary comparisons between three survey organisations.

Distribution: the "disconnected" IT organisation

The overall assessment from analysing the questionnaires and interview data is that the IT organisation at Distribution is disconnected from the rest of the business. It is widely recognised and agreed among both business and IT management that IT offers tremendous opportunities but that the organisation is not good at capitalising on these. Furthermore, the role and function of the IT unit within the organisation is not clearly

shared between business management and IT management. The analysis suggest that the issues which need consideration include:

- business leadership
- structures and processes
- business management commitment and involvement

Summarising the overall results, the analysis suggests that 'the business' does not truly appreciate IT (2.0)[2] and gives little strategic guidance to the IT organisation (2.4). There us low understanding of IT among business managers (2.8) and low awareness of IT opportunities (2.6). The IT organisation scores high on *empathy* and *assurance* (i.e. 'nice guys') but not on *responsiveness* or *reliability*. It was revealing that the CEO did not personally complete the questionnaire and that both the IT director and IT management see the CEO as being less than supportive of IT initiatives.

On a more positive note, business managers believe that they should be more involved in IT decisions (4.9); that IT requirements should not be specified by IT (1.57); and that projects should not be managed by IT (2.29). Most see IT as an integral part of their job (3.4 but high standard deviation), that IT is central to the core business activities (4.7) and that IT offers potential but that the organisation is not good at exploiting these opportunities (4.3).

Manufacturing: the "unloved" IT organisation

The overall assessment from analysing the questionnaires and interviews from Manufacturing is that the IT organisation feels undervalued and that it is not getting either business *commitment* or *involvement*. The IT organisation is treated as a support function and service provider and not seen as central to the business. The business feels that the IT organisation can solve their problems without them providing any input as to what those problems actually are. The result is that the IT organisation is developing systems which *it believes* the business requires and suffering the consequences and the resulting poor reputation. The analysis indicates that the issues which need consideration are

- service delivery
- working relationships
- structures and processes, particularly mechanisms to enable the business to articulate information requirements
- business management commitment and involvement

Summarising the overall results, the analysis indicates that business management are not giving strategic guidance (1.6) and there is a low level of business management commitment (2.7). IT management contend that the business in general has low awareness of IT and IT issues (2.3); business managers are somewhat neutral on whether IT is a strategic resource (3.25) and disagree that IT is a driver of future

[2] Figures in brackets refer to average on five-point Likert scale.

competitiveness (2.7). Business management feel somewhat uneasy dealing with IT (2.5 but high standard deviation); agree that they need to increase their knowledge of IT (4.3) and recognise that they are not proactive in relation to IT (2.5) but neutral on whether it is the responsibility of the IT organisation to specify IT requirements (3.0 but high standard deviation indicating disagreement within the management ranks).

Financial: the "high achieving" IT organisation

Financial stood out from the other two survey sites in that business management are more satisfied with the performance of the IT organisation than the IT organisation is of its own performance. A quick glance down the appropriate columns of table 1 clearly illustrates this. The IT organisation sees itself as a true "value-adder"; a partner in the business a view which is also shared by the business.

The analysis suggested that the following need consideration

- process to maximise benefits delivery
- possible complacency among business managers vis-à-vis IT organisation

The IT organisation has an high reputation among business management (4.4) and one that delivers what it promises (1.67, negative scale). IT management feel that the business truly appreciates IT (3.5), that senior managers are committed (3.5) but lack somewhat in the provision of strategic guidance (2.5). IT management have long experience of industry and all IT staff know the mission statement.

Business management feel that the are grasping all IT opportunities (1.5, negative scale), although IT organisation is not convinced in this matter (3.0), and that delivery of benefits is their responsibility (2.2, negative scale). However at present, not all IT projects are led by business managers (2.5). When business managers were asked to comment on how the service provided by the IT organisation could be improved, a number responded that it was already satisfactory and had no recommendations to make.

Cross case analysis

In this section we analyse the data across the three organisations for evidence which suggests why there are differences in the performance and contribution of the three IT organisations. We first examine the three study organisations under three of the four dimensions of the framework. Analysis under the dimension of service delivery is omitted as, given the nature of expectations and perceptions, it was deemed more appropriate to perform within a single case with a number of data points collected over a period of time.

We then explore other themes to emerge from the analysis of the data. Note that, rather than presenting an exhaustive description, themes appropriate and interesting to the objective of this paper are detailed. It is also worth noting that one of the unexpected situations from this research was an IT organisation which received high

praise from business management! This has provided us with a benchmark with which to compare the other two organisations against.

Leadership

Interestingly, all three IT directors were seen as exhibiting leadership qualities by both their IT management team and business managers. All three were highly competent and accomplished managers, and indeed their willingness to use this research as a mechanism to improve both the performance of the IT organisation and also the contribution of IT is illustrative of this. All had a deep understanding of both the business and industry having spent most, if not all, of their careers working in the industry. However, it is worth noting that the IT director at Distribution was the only non-IT "technical" specialist, had been recently appointed to job and it was felt that at this stage of his appointment his lack of technological competencies severely undermined his "credibility" among the ranks of IT management.

On examining the leadership support exhibited by the CEO in relation to IT and the IT director a somewhat different picture emerges The non-response of the CEO of Distribution has already been noted and was seen by both business management and IT management as indicative of his view on IT and related matters. Indeed, at the monthly board meeting the current Warehouse project has been the last item on the agenda and due to lack of time it is usually carried over to the subsequent meeting. "This system is underlying the core operations of the business!" The CEO is supportive of the IT director in the sense that he lets him get on with the business of running IT the IT organisation and does not wish to get involved in IT matters it's "just not his job".

At Manufacturing, the CEO is generally seen as supportive of both the IT director and IT initiatives, however this support is not translated into active involvement with IT matters. The CEO and IT director meet regularly to discuss IT, meetings which are viewed very positively by the IT director. This vision and commitment, however, is not communicated by him to the business management team.

The support of the CEO at Financial is very visible. Both the CEO and IT director have attended IT conferences and courses together and on a recent presentation to a Canadian client, the CEO brought along the business applications manager to demonstrate the organisation's recently completed Extranet.

Structures and processes

If we look at the reporting structure of the three companies, we see that only in Financial is the IT director is a member of the executive board. Indeed, his title is Director of IT and Operations, reflects the close link between IT and the nature of the business. He is also a member of the "inner sanctum" and is directly involved in the business strategy formulation process. However, the company has no formal IS strategy but "IS strategy pillars" which give guidance to the overall direction of IT spend but "do not constrain opportunities".

Table 3 summarises selected aspects of structure and processes. One of the interesting features in comparing the three organisations was the *ad hoc* nature of the co-ordination mechanisms at Distribution and Manufacturing. While all three had formal strategic IS/IT planning processes and prescribed project management methodologies, the nature of mechanisms such as steering committees, IT policy committees, etc. was different.

Selected aspects of structures and processes	Distribution	Manufacturing	Financial
Location of IT budget	**IT department**	**IT department**	**Business**
Policies and procedures?	**None**	**Some technical policies**	**Technical policies**
Co-ordinating mechanisms	**Business systems managers for each business area**	**ad hoc and informal committees** **Project-based committees for specific projects**	**IS policy committee** **All IT staff are "relationship builders"** **No Technical IT staff**
Service level agreements?	**None**	**For major business systems and desktop**	**None**

Table 2 Summary of selected aspects of structure and processes.

Given that all technical aspects of IT was outsourced at Financial, the IT unit could not concern itself with delivery of the technology and had to focus on "information" and "relationships". The IT organisations exists to help the business and there has been an active attempt to create a culture of "we help you to help yourselves". Hence there are no service level agreements. There are, however, service level agreements at Manufacturing for major business systems and for the desktop.

At manufacturing there were irregular "informal" meetings between the CEO and the IT director where both decisions on how IT would support the business and budgetary spend was determined. As already mentioned, this 'vision' was not communicated to senior business management.

At Distribution, each of the business areas had a "business systems manager" whose role is to act as the interface between the business and IT function. These managers work with the business areas in help them articulate their IS requirements. However, at the time of data collection most resources were devoted to the Warehouse project as well as Year 2000 and EMU projects. One Business Systems Manager referred to his role as that of a "referee" rather than someone who is actively trying to "build bridges".

The IT organisation at Distribution has its own budget with the IT director having complete discretion on spending. While this had also been the situation at Manufacturing, this had recently changed with the budget for IT spend now being part of the business budget. At Financial, there is an IT budget but because it is managed by both the business and IT, it can be topped up during the budgeting year.

While the research did not delve into the detail design of processes, it is worth noting that only at Financial did both business managers and IT managers reveal an understanding of the organisation's business processes. At Manufacturing there is

poor understanding of business processes and a general acceptance that these processes are a poor fit to current business needs; yet no one was prepared to do anything about this situation. At the time of data collection Distribution has just initiated a business process re-engineering project.

Values and beliefs

If we contrast the values and beliefs of the three organisations we can begin to see some interesting differences across these three organisations. Table 3 summarises the mean scores for the values and beliefs of the three organisations.

Beliefs about whether or not IT is an expense to be managed also surfaced some interesting observations. There is disagreement across the cases as to whether or not IT is an expense to be managed. Surprisingly, at Financial, there is strong agreement that IT is an expense to be managed, however, this represents the predominant view that the technology is an enabler of the strategy and processes of the organisation. Both management camps are adamant that the management of IT is something which the organisation will never relinquish. It should also be remembered that all IT requirements are outsourced.

At Manufacturing, the IT organisation was very much seen as peripheral to the business. Business management would rather adopt a hands off approach to IT and believe that IT projects should be managed by IT specialists. One business manager commented that the IT organisation should be "more proactive in IT projects. IT should drive all IT projects...[and] not put responsibility on area owners."

Dimensions of values and beliefs	Distribution		Manufacturing		Financial	
	BM	IT	BM	IT	BM	IT
IT is an integral part of job	3.43		3.50		3.33	
Uneasy dealing with IT	1.71		2.25		2.17	
Need to increase knowledge of IT	2.86		4.25		4.00	
Prefer to let IT deal with IT issues	3.43		2.50		3.17	
IT presents a level of complexity	2.29		3.00		2.50	
Working with most up-to-date IT		3.80		3.67		4.00
Unease with soft side of IT implementation		2.60		1.67		2.00
Need to increase knowledge of business		3.40		3.67		3.00
Difficulty with users who are not IT literate		2.20		1.50		2.00
IT an expense to be managed	3.43**	1.40**	3.75	3.33	3.00**	4.50**
IT is best outsourced	3.29	1.40**	1.75	2.00	3.17	4.00
Business management should be involved in IT	4.86	3.80	4.25	4.17	4.50	4.00
IT is a strategic resource	4.00	4.40	4.00	3.17	3.00	4.00
IT investment should be driven by IT advances	2.14	3.40	3.25**	2.83**	3.50	3.00
IT projects should be managed by IT specialists	2.29	2.80	3.00	3.00	2.50	2.50
Delivery of benefits IT's responsibility	1.43**	2.80**	2.25	2.00	1.83	1.50
IT organisation should specify IT requirements	1.57**	3.60**	3.00	2.00	1.67	2.50
IT should be aligned with business	5.00	4.60	4.75	4.83	4.50	4.50
Business management should understand IT	4.00	4.20	4.25	3.83	4.67	4.50

Mean scores based on 5 point Likert scales; 1 = strongly disagree, 5 = strongly agree
**Significant at p = .005

Table 3 Values and beliefs for business management and IT management.

There was somewhat uniformity in the belief among IT management across all three organisations of their need to increase their knowledge of the business. On the dimension relating to the need to increase knowledge of IT we find that only the

business management at Distribution tend to disagree (2.86). While and business management at both Manufacturing and Financial both feel that they need to increase their knowledge of IT, on deeper examination this is for two different reasons. At Manufacturing business management felt that they didn't know enough, even at a basic level. At Financial there was a significant understanding of IT but business management felt that they required even more both to keep abreast with the latest developments and also if they were to make a contribution to the application of IT in the organisation.

In relation to the outsourcing of IT the scores reflect current practices and experiences in the three organisations. At distribution there is a significant difference between the views of business management and IT management. This is undoubtedly a reflection of recent experiences which this organisation has had with a large IT project which at the time of data collection was in danger of floundering, while at the same time the considerable success had been experienced in outsourcing the network and allied services. At Financial it reflects current practice where there is total outsourcing on the hardware and software side.

Role and function of the IT organisation

Both business management and IT management in the three organisations were asked to outline what they saw as being the role and function of their respective IT organisation. The underlying premise for this questions is that beliefs about the role and function of the IT organisation defines expectations. If both business and IT management do not agree on this aspect then is may be a reason for the dissatisfaction with the performance and contribution of the IT organisation. Both are working from different agendas. Table 4 summarises the responses from business management across the three case sites.[3]

The overall view of business management in Manufacturing is that the IT organisation is a service provider, supporting the business. This is probably a reflection in the fact that they don't see IT as a driver of future competitive advantage or as being strategic. The predominant responses of business management themselves would seem to mirror this view, and words like 'to assist as requested', 'to provide expertise', 'to deliver cost effective solutions' and 'to advise on new technology' would seem to capture this mentality.

[3] Note that in the tables that follow some of the text is in categories while others are actual quotes from interviews or questionnaires where they succinctly capture a category.

Distribution	Manufacturing	Financial
• to provide tools to enable enhanced processes • provide systems meeting business needs - "support delivery of business objectives and strategic imperatives" - "to keep the business running" • to ensure that "IT solutions are appropriately delivered to quality, timescales and cost • "to provide vision of IT direction"	• service provider - assisting as requested - centre of expertise for all IT - "to provide the technical skills ... to improve processes" - "basic provider of systems to support the business processes" • help achieve competitive advantage for the business	• to support the business and operations of the company and customers - to work in tandem with the business users to achieve common goals • to investigate and evaluate advances in technology • to encourage and lead business managers to take advantage of IT • service delivery - seamless service to our customers - to provide IT solutions for the business and customers - to "provide the best possible IT that our budget can reasonably support" • to give us a competitive edge

Table 4 Role and function of IT organisation: summary of business management responses.

Contrast this with the tone of the responses at Financial. Business management see a much more proactive role for the IT organisation. Responses like "investigate and evaluate advances in technology" and "to encourage and lead business managers to take advantage of IT" capture the fact that business management expect IT leadership from the IT organisation. As has been previously mentioned, this happens in an environment where IT is outsourced. Distribution is somewhere in the middle ground, with the tone of responses spread between a reactive role, i.e. "define systems which meet defined business needs" to a small few who see a more proactive role, i.e., "to provide a vision of IT direction". This is reflected in the IT director's continual battle with the business to get business management involvement and commitment. There is not unanimous agreement that IT is important, in fact most see it as a hindrance.

Table 5 summarises IT management's responses of the same question. Again the tone of the responses across the three organisations is different. What is interesting from these responses is that in general the three IT organisations see themselves as having a more proactive role in the activities and strategies of the business than do the responses from business managers. This is then reflected the frustration which is felt by IT management in their dealings with business management particularly in gaining their commitment and involvement. This may be a reflection of the fact that some IT specialists realise that IT in central to business today and that they need to take the lead. However, many in Distribution and Manufacturing still project a traditional role focusing on developing and maintaining applications. Equally, business managers are afraid of taking on too much responsibility for IT, perhaps due to previous failures.

Distribution	Manufacturing	Financial
• "develop effective and useable business solutions" • "develop new programmes" - "support an maintenance of programmes" - "continually seek improvements in hardware and software" • to exploit business opportunities • "cutting cost" • improver of "customer service" • "add value in all interactions with the business - "working with the business to achieve business strategy" • "development of quality systems to agreed timescales"	• to deliver cost effective solutions • "to provide business partners to the core business functions" • to improve performance/business processes/profitability • to mentor users in technology • to provide high levels of support • to provide expertise • to advise on new technology	• to assist in streamlining business processes via IT • provide competitive edge through strategic developments - underpinning/enhancing strategic business goals • managing suppliers • deliver effective business systems • customer support • "user training and awareness through business/IT alignment" • introduction and leadership [of] new IT/IS developments • maximising operational efficiencies

Table 5 Function and role of IT organisation: summary of IT management responses.

When we compare the IT and business management responses within each of the three organisations the consistency in the tone and content of those from Financial is evident. There is a strong element of congruence between what business management and IT management see as being the role and function of the IT organisation.

Criteria used to assess the performance of IT organisation

The survey also sought to compare the criteria which IT management perceive that are used by the business in assessing their performance with the actual criteria used by business management. Table 5 illustrates the contrasting responses of the three organisations.

Distribution	Manufacturing	Financial
• delivery to deadlines • meeting development specifications - including quality - fit for purpose • "number of faults received when live" • "ability to respond to ad hoc developments/fault fixing" • "delivering quality systems to the business" • "developments meet business requirements"	• availability of systems • response to problems • if they help me "their ability to help and assist *my problems*" "do they support me in reacting *my goals*" • "good applications which find general take up".	• "that the IT team keep up to date on new systems available" • "confidence and contentment of team members" "the feedback from my team, who are the users" "feedback of external customers" • Service delivery "delivering applications on time" "quality of the delivery" "lack of downtime of PC or other systems"

Table 6 Criteria used to judge the success of the IT organisation: summary of business management responses.

The tone of the responses from both Distribution and Manufacturing are reactive, confirming the view that the IT organisation is viewed by business management as a support centre focused on delivering technology. The expectation is that the IT unit will *respond* or *support* the business, and this is the criteria against which

performance is judged. It is perhaps also worth noting the responses which refer to 'my problems' and 'my goals' at Manufacturing is a reflection of the culture of the organisation. One manager referred to the culture as a "results driven" one. Technical criteria also dominate the responses, for example, delivery to deadlines, number of faults.

Contrast this with the responses from Financial. Here, business management are looking to the IT organisation for leadership, particularly in exploiting IS/IT opportunities. Note also the 'softer' less technical criteria which dominate the responses: "confidence and contentment of team members", "the feedback from my team, who are the users", and "feedback of external customers".

Table 7 summarises the responses of IT management to the same question, i.e. the criteria which they perceive that business management use to assess the success of the IT unit.

Distribution	Manufacturing	Financial
• "delivery of projects to timescales" • "speed of delivery" • "speed of support" - "fault resolution response" • "number of faults" • "fit for purpose systems"	• delivery of applications - time, cost, quality • speed of response to user queries/operational issues • system response times • provide support infrastructure	• speed of performance • effectiveness of solutions • level of support • ability to develop quality software on time • ability to understand business requirements • "making their jobs easier!"

Table 7 Criteria used by business management to judge the success of the IT organisation: summary of IT management responses.

IT management at Manufacturing sees themselves being judged on technical issues, such and system response time and meeting project management criteria (time, cost and quality of applications developed). There is a similar thrust at Distribution. Again, contrast this with responses from Financial where the criteria are more business focused, for example, "ability to understand business requirements", "effectiveness of solutions", and "speed of performance".

What is interesting here is the contrast between the criteria used by both business management and IT management in assessing performance. In Distribution and Manufacturing the measures being used are different and this might explain both behaviour and differing expectations. For example, business management don't expect to be actively involved in IT projects and don't believe that the delivery of benefits is their responsibility.

Issues and concerns which IT management have with the management of the business

IT management were asked to outline and elaborate on the top three issues which they have with the business. At Distribution and Manufacturing IT management repeatedly noted the allocation and "commitment of resources" (finance, people and time), "unclear project goals", the inability of users to specify requirements and changing specification after working has begun. This is capped with "unrealistic expectations

of IT". At Financial, however, the issues and concerns of IT management were more fundamental and of a macro nature. They were critical of "data quality in certain areas of the business" and castigated business managers for "spending unnecessarily on key operational software". Interestingly, there was also a feeling that the business was not sufficiently aware of "changing business practice" and that they were not aware of and didn't appreciate the "importance of current technologies" particularly the likely impact on the business.

Conclusions and further research directions

In this paper we have attempted to progress beyond merely using the label "culture gap" in describing the gap which exists between the IT organisation and the rest of the business and explore in detail its nature and context. We have taken the view that culture is a convenient description of the symptoms but not an explicit cause of the gap. From a substantial review of the research literature an initial framework to aid in diagnosing and describing the gap has been developed. We have operationalised this framework, constructing research instruments which we administered in three organisations. Both quantitative and qualitative data were collected from a mixture of questionnaires and interviews.

Our analysis of the data from the organisations has enabled us to begin to develop a typology of IT organisations based around the relationship which it has with the business derived from understand both business and IT management viewpoints. We have characterised these as the "disconnected", "unloved" and "high achieving" IT organisations. Our study was obviously limited to three organisations but it is likely that with a larger sample a more complete typology could be developed.

Each organisation agreed the characterisation and valued the detailed analysis and diagnosis for the apparent existence of a 'gap' between the business and IT organisation. Indeed, the three organisations took a significant risk in taking part in such exploratory research. While the results were not what Distribution and Manufacturing had hoped for, both have used the analysis from the research to construct an agenda to bring together both the business and IT organisation as a first step toward bridging the gap. Financial has recently acquired an organisation with an extremely poor IT record and is using the framework and results of the survey to guide in the integration of the IT units of both organisations. We would also hope to reassess these organisations at a future date to understand the effects of actions taken.

In analysing the data it was apparent that while the framework was robust in the sense that it did help in diagnosing the nature of the gap it was incomplete. Significantly, there was a clear gap in the lower performing IT organisations in relation to views of the role and function of the IT organisation. The tone of the responses were also interesting. The IT management of the low performing organisations emphasised technical matters, focus on both the provision of a service and the delivery of technology. Within Financial, however, IT management saw their role as being proactive and not just to support the business but to actively drive strategy in relation to IT. The IT director and senior IT management are involved in the business strategy

process and all IT management know the mission statement, which was not the case with the other two organisations.

The disparity of views, not only between the business and IT management but also among the IT management team itself, suggests that this is an area which should be made explicit in the framework. Mis-alignment at this level translates into neither business management nor IT management agreeing as to what exactly is the role of the of the IT organisation; "both are singing off different hymn sheets". Figure 3 illustrates the revised framework for identifying the issues to be managed in relation to the IT/business gap.

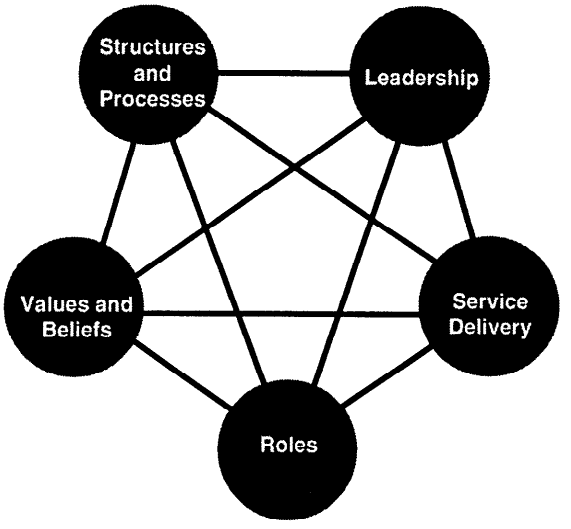

Figure 3 A framework for managing the relationship between the IT organisation and the rest of the business.

One of the startling differences between the three research sites is the existence of what Davenport (1997) has referred to as an "information ecology" in Financial. Business management focus not so much on the technology but on information and the management of information. Information is seen as central to the competitiveness of the organisation. Indeed, at Financial all IT activities are outsourced, with the IT specialists managing a portfolio of relationships as defined by Venkatraman and Loh (1994). A recent recruit to the IT unit of Financial commented that the organisation focuses on the "value-added nature of information". Business management recognise the opportunities which technology offers in relation to managing this information and expect the IT organisation to evaluate new technologies with this in mind.

More traditional research tends to focus on only one of the five dimensions of our framework. We have attempted to provide a more holistic perspective. For example, the is research exploring the role of the IT director (Earl and Feeney, 1994) and we have attempted to integrate this within the our overall framework. Further, surveys, particularly in the area of service delivery treat the "customer" as a single homogeneous group. We believe that such approaches are inadequate since they do not recognise the complex, multi-layered nature of the IT/business relationship nor do they discriminate amongst the different groupings of business and IT people involved and interacting in the relationship.

An obvious limitation of our research to date is that although we identify 6 stakeholder groupings, we have only investigated 4 of these. The next stage is to refine the data collection instruments and develop an effective sampling process to enable all stakeholder groups to be incorporated coherently. Following that, we will carry out further surveys in a range of organisations in an attempt to develop the typologies and provide comparative assessment, "relationship benchmarks", which organisations can use to take action to address gaps and ultimately improve the value they derive from IT.

Many organisations are attempting to transform their IT organisations and create a high performance IT unit. However, we believe that this is addressing the wrong question. This question is how can high performance be derived from IT. This is a fundamentally different question and provides a different way of looking at the issues and consequently a different answer.

Each of the five dimensions of the framework are necessary but certainly not sufficient. For example, the IT director at Manufacturing is highly regarded and respected and provides leadership to the IT unit. He has assembled a strong IT unit which is highly skilled and technically very competent, yet the IT organisation has a poor reputation and is not seen as delivering value. This irony cannot also be lost on Distribution, where, despite a similarly skilled and competent division, there is a similar manifestation.

The exploitation of IT for business benefits and value is not just about the optimum configuration of activities in the IT organisation. Rather, it is an organisational wide issue requiring an organisational wide response. Responsibility for IT success cannot be delegated to the IT organisation. Our framework captures the critical dimensions which should be addressed to maximise the value-added contribution of IT in an organisation.

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Appendix A

This appendix lists out the questionnaire and interview items together with the relevant literature references and sources. These items are grouped under the four dimensions of the framework outlined in the paper. It also highlights the organisational groupings from whom information and data in relation to the items was elicited from.

Note:
CEO = CEO or equivalent
BM = business management
ITD = IT director
ITM = IT management

Leadership

Questionnaire and interview items	Literature reference	Elicited from			
		CEO	BM	ITD	ITM
Involvement of business management in IS/IT strategy process	Dutta, 1996; Earl, 1989; HBR, 1995; Ward and Griffiths, 1996	*	*	*	*
Involvement of IT management in the business strategy formulation process	Enns and Huff, 1997	*	*	*	*
Ownership of IS/IT strategy	Bowman and Kakabadse, 1997	*	*	*	*
Responsibility for delivering benefits and value from IT	Farbey *et al.*, 191993; Ward *et al.*, 1996;	*	*	*	*
Peer acceptance of IT director	Stephens *at al.*, 1992; Feeney *et al.*, 1993	*	*		
IT director as part of senior management team	Stephens *et al.*, 1992; Feeney *et al.*, 1993; Earl, 1996	*	*		
Leadership creating a learning culture in IT organisation	Agarwal *et al.*, 1997	*		*	
Support from CEO of IT director	Earl and Feeney, 1994		*		*
Support from CEO of IT initiatives	Earl and Feeney, 1994		*		*
Experience in senior management positions	Korac Kakabadse, 1997	*		*	
Role of IT director	Stephens *et al.*, 1992; Venkatraman and Loh, 1994	*		*	
CEO attitude towards IT	Feeney *et al.*, 1993		*	*	*
Business perspective, experience of IT director	Applegate and Elam, 1992			*	
Support and commitment of business management	Ward and Griffiths, 1996			*	*
% of career in an IT related job	Applegate and Elam, 1992,	*	*	*	*

Structures and processes

Questionnaire and interview items	Literature reference	Elicited from CEO	BM	ITD	ITM
Responsibility for delivering benefits and value from IT	Farbey *et al.*, 1993; Ward *et al.*, 1996;	*	*	*	*
Role of IT organisation	Ward and Peppard, 1996; Hodgkinson, 1996; Feeney and Willcocks, 1997	*	*	*	*
Relationship between IT organisation and the rest of the business	Rockart *et al.*, 1996; Ross *et al.*, 1996; Venkatraman, 1997; Venkatraman and Loh, 1994; Ward and Peppard, 1996	*	*	*	*
Control structures between IT and the business	Hodgkinson, 1996; Von Simson, 1990			*	
Integrating mechanisms (committees, meetings, liaison personnel)	Blanton *et al.*, 1992	*	*	*	*
Governance structures	Venkatraman, 1997	*		*	
Configuration of IT organisation	Hodgkinson, 1996; Earl *et al.*, 1996			*	
Reporting of IT director	Applegate and Elam, 1992	*	*	*	*
Allocation of IT responsibilities among business and IT management	Boynton *et al.*, 1992	*	*	*	*
Diffusing IT throughout the organisation	Boynton *et al*, 1992	*	*	*	*
Scanning technology	Boynton *et al.*, 1992	*	*	*	*
Delivery and implementation of new systems	Rockart and Hofman, 1992; Rockart *et al.*, 1996	*	*	*	*

Service delivery

Questionnaire and interview items	Literature reference	Elicited from CEO	BM	ITD	ITM
Responsibility for delivering benefits and value from IT	Farbey *et al.*, 1993; Ward *et al.*, 1996;	*	*	*	*
Credibility of IT specialists	Bashein and Markus, 1997	*	*		
Role of IT organisation	Venkatraman and Loh, 1994; Ward and Peppard, 1996	*	*	*	*
Relationship between IT organisation and the rest of the business	Earl *et al.*, 1996; Grindley, 1991; Ross *et al.*, 1996; Schein, 1992; Venkatraman, 1997; Venkatraman and Loh, 1994; Ward and Peppard, 1996	*	*	*	*
Delivery of service quality	Kettinger and Lee, 1997; van Dyke *et al.*, 1997; Whyte *et al.*, 1997; Zeithamal *et al.*, 1990; Grover *et al.*, 1996	*	*	*	*
Existence of service level agreements	Lacity *et al.*, 1996	*	*	*	*
Reliability	Kettinger and Lee, 1997; Pitt *et al.*, 1995; van Dyke *et al.*, 1997; Zeithamal *et al.*, 1990	*	*	*	*
Responsiveness	Kettinger and Lee, 1997; Pitt *et al.*, 1995; van Dyke *et al.*, 1997; Zeithamal *et al.*, 1990	*	*	*	*
Assurance	Kettinger and Lee, 1997; Pitt *et al.*, 1995; van Dyke *et al.*, 1997; Zeithamal *et al.*, 1990	*	*		
Empathy	Kettinger and Lee, 1997; Pitt *et al.*, 1995; van Dyke *et al.*, 1997; Zeithamal *et al.*, 1990	*	*		
Managing outsourcing vendors	Lacity and Hirschheim, 1995; Lacity *et al.*,	*	*	*	*

	1996; McFarlan *et al.*, 1995				

Values and beliefs

Questionnaire and interview items	Literature reference	Elicited from			
		CEO	BM	ITD	ITM
[Business] attitude towards IT	Grindley, 1992, 1995	*	*		
Responsibility for delivering benefits and value from IT	Farbey *et al.*, 1993; Ward *et al.*, 1996;	*	*	*	*
Role of IT organisation	Ward and Peppard, 1996	*	*	*	*
Contribution of IT organisation		*	*	*	*
Strategic importance of IT		*	*	*	*
Business perspective	Applegate and Elam, 1992	*	*	*	*

Appendix B
Questionnaire instrument for business management

Organisation number _____

The IT/Business Gap Survey

This survey is being administered by the Information Systems Research Centre at the Cranfield School of Management in order to examine different perceptions of the importance and contribution of information technology (IT) to the goals and objectives of the business; to determine your view on the role and function of the IT unit; and to capture your assessment of the service provided by the IT unit. The IT unit refers to the group of people within your company who provide IT resources and services. This group has different titles, depending on the company, and would include IT Departments, IS Services, DP Departments, MIS Departments, etc. The 'Business' refers to all other functional areas such as Sales, Marketing, Administration, Finance, Production, Logistics.

Please answer as honestly as possible. All responses will be treated in the strictest of confidence and will only be used in aggregate form.

1. Background information

1.1 Brief description of your role/position

.....

1.2 Whom do you report to?

.....

1.3 What is your age?

Less than 25 [ ]
26-35 [ ]
36-45 [ ]
46-55 [ ]
56-65 [ ]
Over 65 [ ]

1.4 Educational/professional qualifications

A Level [ ]
HND [ ]
BA, BSc [ ]
MA, MSc [ ]
MBA [ ]
PhD [ ]
Professional qualification(s) [ ]
(please specify)
.....
.....

1.5 Where do you work?

Corporate headquarters [ ]
Divisional headquarters [ ]
Subsidiary company [ ]
Other [ ]
(please specify)
.....

1.6 Number of years with this organisation?

Under 1 year [ ]
1-3 years [ ]
4-6 years [ ]
7-10 years [ ]
over 10 years [ ]

1.7 Number of years in your present job

Under 1 year [ ]
1-3 years [ ]
3-6 years [ ]
6-10 years [ ]
over 10 years [ ]

1.8 How long have you been working in the *industry* of this organisation?

Under 1 year [ ]
1-2 years [ ]
3-4 years [ ]
over 5 years [ ]

1.9 Have you ever worked in an IT role or for the IT function? Yes [ ] No [ ]
If yes,
For how long? _____ years _____ months

What was your role/position? .....

1.10 How would you describe your understanding of information technology (IT) and IT issues?

Little or no understanding of IT		Cursory knowledge		Deep understanding of IT
1	2	3	4	5

1.11 Is there an IS/IT strategy? Yes [ ] No [ ] Not sure [ ]
If yes, were you involved in its development? Yes[ ] No [ ]

2. **This question is attempting to determine your personal preferences in relation to your job. Please rate the statements, i.e. indicate the extent to which you agree/disagree, based on these preferences. There are no right or wrong answers - all we are interested in is a number that truly reflects you feelings.**

	Strongly disagree				Strongly agree
I consider managing IS/IT as an integral part of my job	1	2	3	4	5
I am uneasy dealing with IT and IT related matters	1	2	3	4	5
I need to increase my knowledge and understanding of IT	1	2	3	4	5
I prefer to let the IT professionals and those working in the IT unit deal with IT issues	1	2	3	4	5
In my job, IT presents me with a level of complexity which I could do without	1	2	3	4	5

3. **This question attempts to determine your views in relation to information technology (IT) in general. Please rate the statements, by circulating the appropriate number, based on your experience as a user of information technology and of IT services and of your belief as to the importance or otherwise of IT. Your views will have been formed over your career and will not necessarily be based entirely on your experience in this organisation. There are no right or wrong answers - all we are interested in is a number that truly reflects you feelings regarding information technology.**

	Strongly disagree				Strongly agree
IT is an expense to be managed	1	2	3	4	5
IT services are best provided by an outside provider (i.e. outsourced)	1	2	3	4	5
Business management should be involved in decisions regarding IT	1	2	3	4	5
IT is a strategic resource to be leveraged	1	2	3	4	5
IT investment should be driven by technological developments and advances	1	2	3	4	5
All IT projects should be managed by IT staff	1	2	3	4	5
The delivery of business benefits from IT is the responsibility of the IT unit	1	2	3	4	5
It is the responsibility of the IT unit to specify the organisation's IT requirements	1	2	3	4	5
It is important for IT investment to be aligned with business objectives	1	2	3	4	5
It is important for all business managers to have some understanding and knowledge of IT	1	2	3	4	5

4. **This question attempts to capture your views on IT and how it is applied and managed in this company. Please rate the following statements, by circling the appropriate number, based on your experience working *specifically in this organisation*.**

	Strongly disagree				Strongly agree
IT is central to our business and we cannot succeed without it	1	2	3	4	5
Our organisation treats IT as an expense to be managed	1	2	3	4	5
The IT unit promises much but rarely delivers	1	2	3	4	5

	Strongly disagree				Strongly agree
The business is proactive in specifying IT requirements	1	2	3	4	5
IT is a fundamental driver of future business activity	1	2	3	4	5
IT offers great potential in our industry but we are not very good at exploiting such opportunities	1	2	3	4	5
Our organisation views IT as a strategic resource	1	2	3	4	5
All IT projects are led by business managers	1	2	3	4	5
The delivery of business benefits from IT is the responsibility of IT management	1	2	3	4	5
There is an explicit 'benefits delivery' process ensuring benefits from IT investments are achieved	1	2	3	4	5

5. What do *you* see as being the role and function of the IT unit in your company?

.....

.....

.....

6. To what extent do you feel the IT unit is delivering value to the business?

Not at all				To a large extent
1	2	3	4	5

Can you elaborate on this view, for example is your assessment based on metrics or of a more subjective nature?

.....

.....

.....

7. The question is attempting to capture your perceptions in relation to the service provided by the IT organisation. Please rate the following statements, by circling the appropriate number, to indicate the extent to which you agree or disagree with each statement.

	Strongly disagree				Strongly agree
When our IT unit promises to do something by a certain time, it does so	1	2	3	4	5
Our IT unit performs the required service right the first time	1	2	3	4	5
Our IT unit provides its services at the time it promises to do so	1	2	3	4	5
Employees in our IT unit give you prompt service	1	2	3	4	5
Employees in our IT unit are always willing to help you	1	2	3	4	5

	Strongly disagree				Strongly agree
Employees in our IT unit are never too busy to respond to your requests	1	2	3	4	5
The behaviour of employees in our IT unit instils confidence in you	1	2	3	4	5
Employees in our IT unit are consistently courteous with you	1	2	3	4	5
Employees in our IT unit have the knowledge to answer your questions	1	2	3	4	5
Our IT unit gives you individual attention	1	2	3	4	5
Our IT unit has employees who explain IT issues in a language which I understand	1	2	3	4	5
Our IT unit understands business priorities and issues	1	2	3	4	5

8. How would you rate the overall *service* provided by the IT unit?

Very poor		Satisfactory		Excellent
1	2	3	4	5

9. How would you rate the *systems and applications* developed by the IT unit?

Very poor		Satisfactory		Excellent
1	2	3	4	5

10. What criteria do *you* use to judge the success or otherwise of the IT unit?

.....

.....

.....

11. How would you describe the *reputation* of the IT unit in this company?

Very poor				Excellent
1	2	3	4	5

12. How would you describe the *relationship* between the IT unit and the business?

Adversarial				Harmonious
1	2	3	4	5

13. Compared to other companies in your industry, how do you rate the performance of your IT unit?

Worse	Similar	Better	Not sure
1	2	3	4

14. How do you feel the service could be improved?

.....

.....

.....

15. Are there any other comments which you would like to make in relation to any of the issues raised in this questionnaire?

.....

.....

.....

Thank you for your assistance.

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