

A study of subsidiaries views of information systems strategic planning in multinational organisations.

Mohdzaher Mohdzain
Lecturer in Information Systems
Faculty of Economics and Business
Universiti Kebangsaan Malaysia
43600 Bangi
Selangor
Malaysia
(zaher@pkrisc.cc.ukm.my)

John M. Ward
Professor of Strategic Information Systems
Cranfield School of Management
Cranfield University
Bedford, MK43 0AL
United Kingdom
(j.m.ward@cranfield.ac.uk)

Abstract

This research examines information systems strategic planning (ISSP) in multinationals from the perspective of the subsidiaries. The research was carried out through interviews with the IT and business managers in subsidiaries of nine large American, European, and Japanese multinationals. The evidence from this study reveals that, in the majority of these organisations, IS planning is either centralised or moving towards centralisation. The main focus of IS planning, in many of these organisations, is to control cost and achieve scale economies. As centralisation increases IT tends to control the planning process and, as a result IS planning becomes more tactical than strategic and is dominated by IT infrastructure planning. Project implementation was the main criterion used to measure IS planning success, but due to the dominant role of IT, the subsidiary business managers are often less satisfied with the IS planning approach compared with the subsidiary IT managers. The level of involvement of business managers and their satisfaction with ISSP was related to the degree of decentralisation of responsibility for IS planning.

1. Introduction

Even though the field of Information Systems Strategic Planning (ISSP) has attracted much research since the 1970s (Nolan, 1979; Sullivan, 1985; Galliers, 1991 and 1993; Earl, 1993; Segars and Grover, 1998; Doherty et al., 1999) few studies have focused on multinational organisations. Ives and Jarvenpaa (1991, p.34) noted that the IS research community “has generally neglected this important area” whereas Deans and Ricks (1993, p.16) stated that “until very recently there was a complete void in the available literature” pertaining to IS/IT in multinationals. Since 1993 a number of studies (Jarvenpaa and Ives, 1994; Ramarapu and Lado, 1995; Viitanen, 1995, Roche, 1996; King and Sethi, 1999; Manwani and O’Keefe, 2003) have considered the particular issues of ISSP in multinationals, but largely from the corporate perspective. Only the research by Mirchandani and Lederer (2004), has, to date, approached the subject of ISSP explicitly from the point of view of the subsidiaries.

The large number of empirical studies in multinationals, which relate to domains other than information systems, shows that it is increasingly important to conduct studies in multinationals, as entities distinct from single-nationals. For example, it was found that multinationals develop their business strategies based on either the different levels of global integration and local responsiveness faced by these organisations (Prahalad and Doz, 1987; Bartlett and Ghoshal, 1989), or on the global co-ordination and global configuration of different multinational units (Porter, 1985).

Although it can be argued that a multinational environment, from IS/IT standpoints, is purely an extension of a single-national environment, previous research has found that, for instance, the technical and managerial issues in relation to IS/IT faced by these organisations are not all the same (Tractinsky & Jarvenpaa, 1995). Deans and Ricks (1991, p.73) wrote, “the evidence clearly indicates that difficulties associated with international information systems go beyond those associated with distance alone”,

while according to Akmanligil and Palvia (2004), “classifying global system development projects as simply larger versions of their domestic counterparts is an oversimplification”. IT managers in single-nationals were found to put more emphasis on the interdependency and standardisation among different units whereas IT managers in multinationals emphasise the independence of different units in responding to their local environments (Tractinsky and Jarvenpaa, 1995).

Previous studies in multinationals have mainly focused on the multinational enterprise as the unit of analysis (Birkinshaw, 1994). However, not all subsidiaries in a given multinational enterprise behave uniformly (Harzing, 2000; Martinez and Jarillo, 1991; Ghoshal and Nohria, 1989). Martinez and Jarillo (1991) argued that as different subsidiaries play different roles within the same multinational, the headquarters would treat each subsidiary differently. Therefore, the authors noted, “the relationship between strategy and mechanisms of coordination must be studied at the subsidiary level” (p.433). Increasingly, research in multinationals is focusing on the subsidiaries (Birkinshaw, 1994; O’Donnell, 2000; Gupta and Govindarajan, 2000).

In addition to different political, legal, economic, social, cultural, and technological environments, the complexity and risks involved in planning for IS/IT in multinationals can also be caused by resistance from foreign subsidiaries and the disparity of available IT solutions across the different countries (Ives et al., 1993). The different stages of economic development of the countries in which the subsidiaries operate can create particular issues for both local and corporate IS/IT planning (Palvia et al., 2002).

The research described in this paper focused on ISSP from the perspective of multinational subsidiaries. The main objectives of the research were to examine the different approaches to ISSP, adopted by a range of multi-nationals and to understand the extent to which these approaches were perceived to be effective by the managers in those subsidiaries. The research involved interviews with the IT and business managers of nine large American, European and Japanese multinationals. The fieldwork for eight of the companies was conducted at their subsidiaries in Malaysia, the other at its subsidiary in the UK. In addition, managers from four corporate headquarters were interviewed in the USA, Switzerland, and The Netherlands.

The paper is divided into seven sections. Following this introduction, section 2 covers the review of the extant literature. Section 3 describes the research methodology and selection of companies. The evidence from cross-company analysis is summarised in section 4, and section 5 discusses the research findings and the implications before drawing overall conclusions from the study in section 6.

2. Literature Review

The literature review covers three main areas: IS strategic planning, IS planning in multinationals, and IS planning success.

Information Systems Strategic Planning

According to Boynton and Smud (1987, p.59), Information Systems Strategic Planning (ISSP) refers to the “activities directed toward (1) recognizing organizational opportunities for using information technology, (2) determining the resource requirements to exploit these opportunities, (3) and developing strategies and action plans for realizing these opportunities and for meeting the resource needs”. An IS strategic plan, according to Earl (1989), refers to the “long term, directional plan which decides what to do with IT” (p.67) that is concerned primarily with “aligning IS development with business needs and seeking advantage from IT” (p.63). As noted by Earl (1993, p.7), an ISSP is made up of elements such as “the underpinning philosophy, emphasis, and influence ... procedures, techniques, user-IS interactions, special analysis, and random discoveries”.

More recent conceptualisations of ISSP include “supporting and influencing the strategic direction of the firm through identification of value-adding computerized information systems, integrating and coordinating various organizational technologies through development of holistic information architectures, and developing general strategies for successful systems applications” (Segars et al. 1998, p.306) and “thinking strategically and planning for the effective long-term management and optimal impact of information in all its forms: information systems (IS) and information technology (IT) ...” (Ward and Peppard, 2002, p.118). With the increasing diffusion of Internet-based applications and inter-organisational systems, IS/IT decisions are not limited to the adopting organisations but are influenced by the actions of other organizations (Porter, 2001; Finnegan et al., 2003). To be able to plan in an environment which is increasingly influenced by the emergent nature of inter-organisational business, organisations need to deal with various factors such as the different priorities and power of external stakeholders (Finnegan et al., 2003). Galliers (1999) suggested that ISSP frameworks need to be extended to include not only inter-organisational systems and e-commerce, but also knowledge management.

Given that the research was to be conducted through interviews with business managers, the definition of ISSP had to be one that they could understand and relate to the visible role and contribution of IS/IT to their businesses. The first definition quoted above by Boynton and Zmud (1987) was found to match most closely the perceptions of practising business and IT managers about the deployment of and the value derived from IS/IT in their organisations.

An analysis of the literature suggests how approaches to ISSP have evolved over time as the role and impact of IS/IT has been extended and become increasingly integral not only to business operations but also to the development and implementation of organisational strategies.

When IT was first adopted during the 1960s and 1970s, the main purposes of investments were in improving clerical tasks and reducing administrative costs through batch processing and office automation. Given the relative expense of the technology, IS/IT planning was dominated by ensuring that efficiency gains would recover the costs of investments in infrastructure and application software (Nolan, 1979). Hence,

organisations sought better ways to systematically plan their investments in IS/IT, and methods for devising IS strategic plans by extending proven techniques for planning IS developments were adopted, such as Business Systems Planning (Zachman, 1982).

During the 1980s, organisations became aware of the importance of ensuring that the processes of IS/IT and business planning were aligned to achieve greater integration of IS/IT and business strategies. (King, 1978; Selig, 1982; Henderson and Sifonis, 1988; Henderson and Venkatraman, 1993; Das et al., 1991) McFarlan and McKenney (1983) were among the first to highlight the need to plan an IS portfolio based on its current and future strategic impact, while Porter and Millar (1985) showed how IS/IT could shape the overall business strategy and suggested steps that organisations could follow to maximise the strategic benefits achievable from IT. The main emphasis of this approach is a two-way strategic business-IS alignment, i.e. IS/IT shapes the business strategy as well as being shaped by the business strategy (Henderson and Venkatraman, 1993). IS planning methods which have been used to align business requirements with IS/IT development include Output-driven Planning (Li & Chen, 2001) and Triple Loop Learning (Finnegan et al., 2003).

More recently however, many studies have found that these approaches are insufficient in ensuring that IS/IT plans can adapt to the increasingly rapid changes in both the business environment and capabilities of the technology (Doherty et al., 1999; Grover and Segars, 2005). Earl (1993) and Ciborra (1994) argued that in order for business-IS integration to be effective, organisations need to employ less formal or less structured approaches to ISSP. Systematic, standardised, and structured ISSP approaches do not encourage innovation, learning or knowledge sharing and they are unable to deal with the grey zones of work practices, beliefs, values, routines and cultures that are important in formulating the IS strategy (Ciborra, 1994). Nor can they create IS capabilities that enable the development of new business strategies (Peppard and Ward, 2004). Segars et al. (1998) advocated a “rational adaptation” approach for ISSP combining the need to have a formal structure in IT planning with the need to adapt to change and learning.

The approaches to ISSP described by Earl (1993) and later re-examined and modified by Doherty et al. (1999), that summarise these different ways in which organisations formulate IS strategic plans, (Systematic, Administrative, Business-led and Organisation-led) were used in this research to categorise the ways in which ISSP was conducted in the multinational subsidiaries studied.

IS/IT Planning in Multinationals

As discussed in the introduction, there has been little empirical research studying IS planning in multinationals, particularly at the subsidiary level. For example, Selig (1982) investigated 25 US-based multinational headquarters, Jarvenpaa and Ives (1993) surveyed 109 US-based multinational headquarters, Viitanen (1995 and 1998) reported a study of a Japanese-based multinational headquarters, and King and Sethi (1999) surveyed 143 US-based and 138 non-US-based multinational headquarters. Also, the dimensions studied were essentially the IT configurations rather than the IS related strategic choices facing multinationals. A recent study by Mirchandani and Lederer (2004) considered a number of factors affecting the degree of ISSP autonomy in US

subsidiaries of multinationals, but none of the previous multinational IS/IT studies attempted to establish a link between IS/IT related strategic choices or orientations in different types of IS planning approaches, nor did they attempt to assess the actual or perceived success of the planning process.

Finnegan and Longaigh (2002), based on a review of the literature, discussed several operational and environmental factors that explain the need for different approaches to ISSP in multinationals compared with single-nationals [Table 1]. It is suggested that those factors in italics are particularly important when considering ISSP from the perspective of the subsidiaries, since they are those that are frequently mentioned in other studies of multinational subsidiaries (Ghoshal and Noria, 1989; Martinez and Jarillo, 1991; Harzing, 2000; Palvia et al., 2002).

Operational
<ul style="list-style-type: none"> • Numerous product lines being produced by complex processes • <i>Dispersed or concentrated value chain activities, with subsidiaries usually focusing on parts of the value chain</i> • <i>The agency problem of balancing multinational interests with subsidiary interests</i> • <i>Subsidiary unaware or unwilling to follow corporate objectives</i> • <i>Need to minimise undesired duplication and overlap</i> • <i>Incongruent mindsets in relation to work and expectations</i> • <i>Need to have continual rapid learning throughout the corporation applied to dispersed activities</i>
Environmental
<ul style="list-style-type: none"> • Increased global competition • <i>Geographical dispersion, linguistic differences and cultural diversity, which may shape subsidiary managers' decisions</i> • <i>Various host governments, inflicting different pressures</i> • Instability of the international financial system • <i>The need to be locally responsive and globally competitive</i> • <i>The need to be responsive to shifting comparative advantage</i>

Table 1: The operational and environmental factors of multinationals

In attempting to examine ISSP in multinational subsidiaries, there is a need to understand the dimensions that influence the relationship between a subsidiary and other units in the multinational. Following the work of Lawrence and Lorsch (1967), Porter (1986), Prahalad and Doz (1987), and Bartlett and Ghoshal (1989), much research in multinational subsidiaries has examined the extent of integration or co-ordination of global activities across subsidiaries (business interdependency) and degrees of localisation, differentiation, responsiveness and the configuration of different subsidiaries (business distinctiveness).

Business interdependency considers how dependent or interdependent are the main value-added activities of a particular subsidiary compared with the activities of the headquarters and other foreign units. *Business distinctiveness* considers how diverse are

the activities of the local units in a multinational (Dunning, 1995) or how unique (or similar) are the value-added activities of a given subsidiary compared with the activities of other subsidiaries of the same multinational. In previous research, both these dimensions have been studied in terms of organisational processes (Prahalad and Doz, 1987), cognitive frameworks (Bartlett and Ghoshal, 1989), flows of capital, products, and knowledge (Gupta and Govindarajan, 1991), subsidiary autonomy, (Edwards et al., 2002), and IS/IT configurations (Jarvenpaa and Ives, 1993; King and Sethi, 1999; Manwani and O'Keefe, 2003).

Based on the review of the literature, three aspects of the ISSP orientations of the subsidiaries seemed significant in terms of differentiating the nature of ISSP across subsidiaries with different business orientations and relationships and hence were used to structure the research: (1) responsibility for ISSP, (2) the focus of ISSP, and (3) the approach used for ISSP.

The *responsibility* for ISSP has been widely studied in the IS/IT literature (Boynton et al., 1992; Brown and Magill, 1994; Hodgkinson, 1996). Prior research has generally focused on the allocation of IS/IT decision rights between the IT function and the business units. Previous studies found that centralised IT decision-making negatively influenced the sharing of knowledge between the IT and business IT units (Ranganathan and Sethi, 2002) and that a combination of centralised and decentralised responsibilities is a better balanced approach (Hodgkinson, 1996; von Simson, 1990). In this research, responsibility for IS planning refers to the centralisation (headquarters-led) or decentralisation (subsidiary-led) of major IS/IT decisions and the roles of business and IT managers in those decisions. Interestingly, in their multinational strategy research, Ghoshal et al. (1994) found no relationship between decision centralisation-decentralisation and the quality of subsidiary-headquarters communication but Tsai (2002) identified that centralisation has a significant negative impact on knowledge sharing in multinationals.

In their survey of over 100 US based subsidiaries of multinationals, Mirchandani and Lederer (2004) tested nine hypotheses to explain the degree of ISSP autonomy (decentralisation) enjoyed by the subsidiaries. The only hypothesis that was supported by the evidence was the extent of inter-company purchasing, which reduced the ISSP autonomy of the subsidiaries. This is an aspect of business interdependency considered above. Two other hypotheses were contradicted by the evidence – both relate to the degree of business distinctiveness, which does not increase the subsidiary autonomy as might be expected. The six other hypotheses were not supported by the data.

The *focus* of ISSP refers to the driving forces that motivate a multinational to carry out the IS/IT planning and that shape the overall approach taken to ISSP. In the case of multinationals, examples of the motivation for ISSP include: to enable the transfer of IS/IT knowledge within the multinational group (Bresman, et al., 1999), to encourage the subsidiaries' initiatives (Birkinshaw, 1999), to achieve economies of scale throughout the multinational corporation, and to increase the co-operation and synergy between the different business units and the corporate headquarters. These factors may have not yet been empirically studied in the IS/IT field but are frequently discussed in the multinational strategy literature. Birkinshaw (1999), for example, found that

subsidiary initiative was increased by the existence of distinctive subsidiary capabilities and suppressed by decision centralisation and a low level of global co-ordination.

The *approach* to ISSP can be considered in terms of the relationship with business planning, the use of the specific IS planning techniques, and the role of managerial control and organisational co-ordination mechanisms. These factors have been studied before in single-national organisations and typologies identified, but they have not previously been adopted in studies of multinationals. The four different approaches identified by Doherty et al. (1999), in an extensive survey, which built on the earlier empirically derived classification by Earl (1993), were used in this research to describe the different approaches encountered in the organisations studied. The *systematic* approach emphasises the use of planning methodologies and the production of models; the *administrative* approach focuses on financial and resource planning and allocation; the *business-led* approach is based on creating explicit links between ISSP and corporate plans and business initiatives and the *organisational* approach emphasises the importance of achieving a consensus on future plans through processes of socialisation and learning.

IS Planning Success

Although considerable research has been conducted on the topic of the success or effectiveness of IS/IT implementation (DeLone and McLean, 1992; Miller and Doyle, 1987; Srinivasan, 1985), there has been far less research undertaken to examine the success or effectiveness of IS/IT planning. According to Fitzgerald (1993, p.337), “justification for evaluating the effectiveness of ISSP is noticeably absent in the IS planning literature; however, it is addressed in the corporate planning literature”. Nevertheless the literature suggests several ways in which the measurement of ISSP success could be operationalised. King (1988) proposed that ISSP success should be measured from a multi-dimensional, multi-stakeholder perspective, using a combination of internal and external ‘benchmarks’, and be based on both judgmental and objective criteria.

Based on the literature, the ways of measuring planning success can be classified into three broader dimensions: planning efficiency, planning enrichment, and planning effectiveness.

Planning efficiency is input or resource-oriented and refers to the efficient use and management of resources required for the IS/IT planning process itself and the accurate forecasting of future IT resource requirements (King, 1988; Raghunathan and Raghunathan, 1989; Segars et al., 1998).

Planning enrichment is process-oriented and refers to the improvement, enhancement and fortification of the ISSP process, enabling it to be responsive to continuous changes in the business and IT environments, leading to the identification of innovative uses of IS/IT and strategic applications (Lederer and Sethi, 1996; Doherty, et al., 1999; Raghunathan and Raghunathan, 1990; Ramanujam and Venkatraman, 1987; Reich and Benbasat, 1996; Segars and Grover, 1998; Segars et al., 1998). To achieve ongoing alignment and synchronisation with the evolving business strategy, the planning process

needs to emphasise the involvement of users and explicitly recognise the need for organisational learning (Reich and Benbasat, 2000).

Planning effectiveness refers to the assessment of the ISSP approach in meeting the intended goals for both the deployment of IS/IT and the role of the IS/IT function in the organisation (Doherty, et al., 1999; Ramanujam and Venkatraman, 1987; Reich and Benbasat 1996; Segars and Grover, 1998). According to the literature, intended ISSP goals can include systems and infrastructure capability and reliability, payback or contribution from IS/IT investments, user satisfaction, and the degree of strategic alignment.

3. Methodology

The research was conducted using field study methods (Galliers, 1992; Finnegan and Longaigh, 2002) and the main instrument used for collecting the evidence was semi-structured interviews. The strength of this approach is that it focuses directly on the research topic, provides perceived causal inferences (Yin, 1994), and allows the researchers to probe deeply to uncover new dimensions based on respondents' personal experience (Burgess, 1982). With prior consent from the interviewees, all the interviews were tape recorded, the tapes were transcribed and the texts transferred to QSR NVivo software for analysis. In addition to the interviews and documents pertaining to the companies' background, few other corroborative documents were obtained from the companies, as most interviewees were concerned about corporate confidentiality.

Structured interview guides were used to ensure that all the important issues and dimensions were covered during the interviews as well as to increase consistency across different companies and interviewees. The same interview guides were used for both the subsidiaries and the corporate headquarters. However, even though some background information of the IS/IT and business operations of the headquarters were discussed during the interviews with the headquarters, the focus of the interviews was more on the ISSP related to foreign subsidiaries in general. The corporate interviewees were also asked to explain if and why their responses would be different for the subsidiaries studied than other subsidiaries in general. Originally it was intended to interview managers at all the headquarters, but this was not able to be achieved within the timescale available for the research.

Overall, the interviews included the following areas:

1. Background (Personal, Business, and IS/IT)
2. Business Orientation (Interdependency and Distinctiveness)
3. IS/IT Orientation (Responsibility for IS/IT and Strategic Focus of IS/IT)
4. ISSP Approach (ISSP Objectives, ISSP Process, and ISSP Success Criteria)
5. Perceived Success of ISSP

Access for the first company was obtained through the researchers' personal contacts with the senior management of the company. This company was initially intended to be a pilot case, to test and refine the research instrument. However, since no major change was needed to the research instrument tested in the pilot study, other than some very

minor cosmetic changes, data from this company was included as part of the main study. The methodology used in this company was exactly the same as in the other companies. For access to other companies, an initial list of potential cases was obtained from the Malaysian Industrial Development Authority (MIDA): the Malaysian government's principal agency for the promotion and co-ordination of foreign investments in the country. These companies were chosen based on their levels of interdependency and distinctiveness, from information obtained from annual reports and information on the Internet.

Altogether, nine companies were included in the study: four European (from the UK, The Netherlands, France, and Switzerland), three US and two Japanese companies. Three of the companies operate in the electronics industry, two in the food and beverages, and one each in machinery and equipment, financial, chemicals, and apparel and textiles. Four of the companies have a total group turnover for 2002 between US\$1 billion and US\$10 billion, two between US\$10 billion and US\$50 billion, and three between US\$50 billion and US\$100 billion. In terms of total group numbers of employees for 2002, five companies have between 4,000 and 100,000 employees, two between 100,000 and 200,000, and two between 200,000 and 300,000. Table 2 provides basic information about these companies and Appendix A contains a more detailed summary of the business activities of the companies and their corresponding subsidiaries.

The criteria adopted for selecting the interviewees included their roles in ISSP, their knowledge about the deployment of IS/IT in the organisation, and their willingness to participate in the research. The interviewees were selected among the managers of the subsidiary business units, such as the IT Directors, Managing Directors, Financial Controllers, and senior Operations Managers. In addition to the fieldwork performed at the nine subsidiaries, managers at four corporate headquarters were also interviewed, not for the purpose of data collection as this would result in bias, but to provide views from the corporate headquarters to corroborate or otherwise the data collected in the subsidiaries. Whenever there were variations between the views of the subsidiaries and the headquarters, the views of the subsidiaries were used in the analysis and the different views from the corporate headquarters noted and explained along side.

For confidentiality reasons, information that could lead to the identity of the interviewees and their companies is not disclosed in this paper. The companies are identified as Companies 1, 2, 3, etc. As also shown in Table 2, the study involved 37 interviewees representing the Subsidiary IT Unit (SIU), Subsidiary Business Unit (SBU), Headquarters IT Unit (HIU), and Headquarters Business Unit (HBU).

Company	Home Country	Subsidiary Visited	Primary Industry	Interviewees				
				SIU	SBU	HIU	HBU	Total
C1	Switzerland	UK	Machinery & Equipment	1	1	1	2	5

C2	USA	Malaysia	Financial	1	2	1	-	4
C3	USA	Malaysia	Electronics	1	2	3	-	6
C4	Netherlands	Malaysia	Chemicals	1	2	3	-	6
C5	Japan	Malaysia	Electronics	1	3	-	-	4
C6	UK	Malaysia	Food and Beverages	1	2	-	-	3
C7	Japan	Malaysia	Apparel and Textiles	1	2	-	-	3
C8	France	Malaysia	Electronics	1	2	-	-	3
C9	USA	Malaysia	Food and Beverages	1	2	-	-	3
Total				9	18	8	2	37

Table 2: Overview of the companies

Analysis was performed using thematic content analysis, to identify the dimensions or issues that were most frequently cited and heavily stressed by the interviewees. Weber (1990, p.9) defined content analysis as “a research methodology that utilizes a set of procedures to make valid inferences from text” and Patton (1990, p.391) defined it as “the process of identifying, coding, and categorizing the primary patterns in the data”. Other than content analysis, the current research also used typology (Patton, 1990) and thematic conceptual matrix (Miles and Huberman, 1994) to analyse the evidence.

The analysis was carried out using the QSR NVivo software, which is designed to aid researchers in analysing qualitative evidence through the processes of indexing, searching, and theorising (Richards, 1999). Words and phrases that could be attached to a particular topic, theme, or code were retrieved, brought together, and displayed in a tabular format. This enabled the evidence to be analysed in a more structured way and analyses to be performed, first across all the interviewees for each company and later across the different companies.

The data gathered from each interview were summarised according to the structure of the interview guide and then these summaries consolidated for each company to elicit initial findings, each of which was cross-referenced to the relevant evidence from each of the interviews. These initial findings were compared across the cases, for each of the main research topic areas (ISSP responsibility, focus, objectives, process, success etc), to identify and synthesise those findings which were common across three or more of the companies and which were based on supporting evidence from the majority, if not all interviewees in each company. Both stages of the analysis were first carried out independently by both researchers, followed by rigorous comparative analysis of the separate findings, when differences were reconciled, in an attempt to increase reliability.

4. The analysis of the evidence from the companies

As shown in Table 3, the companies could be classified into four groups, initially on the balance of centralisation-decentralisation of IS planning, based on the degree of the subsidiaries' autonomy in deciding the overall IS/IT strategy, IS applications, IT infrastructure, and IS/IT budget. In centralised planning, all infrastructure and applications planning is done by the corporate headquarters while the subsidiaries only implement these decisions. In the fairly centralised situation, although the decisions concerning infrastructure and applications are made by the headquarters, these are generally made after consultation with the subsidiaries; fairly decentralised means that major decisions, especially those concerning applications, are made by the subsidiaries after consultation with the headquarters. In decentralised planning, all investment decisions are made by the subsidiaries and the corporate headquarters act as advisors.

Company	Subsidiaries' Business Orientation		Responsibility for IS Planning	Focus of IS Planning	IS Planning Approach	Perceived Success	
	Interdependency	Distinctiveness				Subsidiary IT	Subsidiary Business
C1	Low	Low	Decentralised	Subsidiary Initiative	Organisational	Successful	Successful
C7	Low	High	Decentralised	Subsidiary Initiative	Organisational	Successful	More than satisfactory
C6	High	Low	Fairly Decentralised	Global Co-ordination	Business	Successful	More than satisfactory
C2	High	Low	Fairly Centralised	Scale Economies	Administrative	More than satisfactory	Satisfactory
C3	High	Low	Fairly Centralised	Scale Economies	Administrative	More than satisfactory	Satisfactory
C5	High	Low	Fairly Centralised	Scale Economies	Administrative	Satisfactory	Satisfactory
C8	High	Low	Centralised	Scale Economies	Administrative	Less than satisfactory	Less than satisfactory
C9	Low	Low	Centralised	Scale Economies	Administrative	Less than satisfactory	Less than satisfactory
C4	High	High	Centralised	Scale Economies	Administrative	Less than satisfactory	Less than satisfactory

Table 3: Summary of cross-company analysis

Table 3 also includes an assessment of the degrees of subsidiary interdependency and distinctiveness based on the agreed views of the subsidiary interviewees. This differed from the initial impression the researchers obtained from published information. In reality more of the subsidiaries proved to be lower in terms of distinctiveness and higher in terms of interdependency, but examples of the full range of options were still evident. Even though in this study we examined the relationship between each subsidiary's business orientation (interdependency and distinctiveness) and IS/IT planning, with such a small and biased sample, the evidence would not be sufficient to draw any conclusions about the relationship. The details are however included in the table to show that in some cases the degree of centralisation of IS/IT planning does not follow 'logically' from either dimension of the subsidiary's business orientation. Some inferences that can be drawn from the relationships about the orientations and the ISSP approaches are discussed later in the paper.

In each group there is a relatively consistent pattern of relationships across the IS planning responsibility, focus and approaches, rather than consistency across the types of subsidiary. The characteristics of the groups that emerged from this study are summarised in Table 4. It is also clear from the pattern across all the subsidiaries that the level of subsidiary management satisfaction with the results of IS planning are related to the extent to which it is decentralised.

Group 1 – Companies 1 and 7
In Company 1 and Company 7, IS planning is decentralised. The IT units for both subsidiaries report directly to the subsidiaries’ Managing Directors. Both subsidiaries follow the Organisational approach while IS planning focuses mainly on allowing the subsidiaries to be independent and innovative in planning and implementing the IS/IT. Compared with most of the other companies included in this study, IS planning in Companies 1 and 7 was perceived by the subsidiaries’ interviewees to be the most successful.
Group 2 – Company 6
IS planning in Company 6 is fairly decentralised. Of all the nine companies studied, Company 6 is the only subsidiary that follows the Business approach. The subsidiary IT unit reports directly to the Senior Manager of Operations. The main focus of IS planning is to improve global co-operation. IS planning in Company 6 was perceived as successful by the subsidiary’s IS Manager and more than satisfactory by the subsidiary’s business interviewees.
Group 3 – Companies 2, 3 and 5
IS planning in all the companies in this group is fairly centralised. The IT Manager for Company 2 reports directly to manager of the business’s service functions, Company 3 to the subsidiary’s Managing Director, and Company 5 to the subsidiary’s Financial Controller. IS planning in all the three companies follows the Administrative approach and the main focus of IS planning is to control costs and streamline global activities through scale economies. Even though IS planning in these subsidiaries was perceived by the interviewees as satisfactory, the evidence also shows that, comparatively, interviewees from Company 2 were more satisfied with the current approach, followed by Companies 3 and 5, in turn.
Group 4 – Companies 4, 8 and 9
In Company 4, 8, and 9, IS planning is highly centralised. The IT units in these subsidiaries report directly to the subsidiaries’ financial controllers. IS planning in all the three companies is highly centralised and strictly follows the Administrative approach. The main focus of IS planning in these companies is to save costs through scale economies. IS planning was perceived by the subsidiaries’ IT and business interviewees as less than satisfactory.

Table 4: Summary of the characteristics of the four groups

The discussion of the findings from the analysis of the evidence from the interviews is considered below under the main literature headings that were used to inform the study: responsibility, focus and approach to ISSP.

Responsibility for ISSP

a) Increasing centralisation is the main trend in all the companies

Only two companies, Companies 1 and 7, have highly decentralised IS planning while Company 6 is fairly decentralised. This would be expected in Company 7, which is high on distinctiveness and low on interdependency but less so in the other two, especially Company 6, which is now a marketing and distribution business only, but historically it also manufactured products and enjoyed greater planning independence. This still exists to a degree, compared with other subsidiaries of the company. Similarly, Company 1 is the largest and most profitable subsidiary and has been given more freedom to make its own IS/IT investments than others. All the other companies are centralised at varying degrees either at the corporate headquarters or regional offices.

In most of the companies, the current trend is towards more centralised IS planning. For example, according to the subsidiary IT manager of Company 2, *“I think we are going towards more centralisation”* and to the corporate IT manager of Company 3, *“Now we have more centralised policies. By gathering input from everybody around the world then you can get a centralised policy, that’s what we have been doing.”* Similarly, IS planning in Company 1, a decentralised Swiss organisation, is also moving towards more centralised IS planning. The corporate CIO of Company 1 said, *“It will change. It has been decentralised ... It is going the other way now, centralisation... sooner or later they will join us”*. This is happening due to the manufacturing rationalisation programme and through the implementation of standard packaged software across the corporation to integrate supply chains, i.e. it is largely for business reasons rather than IT.

Also, the trend to regionalise the IS planning in some of the organisations could mean more decentralisation from the headquarters point of view, but more centralisation as far as the subsidiaries are concerned.

b) There is little involvement of the local business management unless the responsibility is decentralised.

There are generally three main types of co-ordination involved in a multinational IS planning process: (1) vertical co-ordination from the subsidiaries to HQ, (2) horizontal co-ordination across the subsidiaries, and (3) cross domain co-ordination between IT and the business. In the 6 companies in Groups 3 and 4, co-ordination in relation to IS planning is mainly between the subsidiaries’ IT and corporate IT management. There are a lack of mechanisms to co-ordinate the IS plan across the subsidiaries’ businesses, even though most of them are high on business interdependence and low on distinctiveness. The study has also shown that in these companies there is very little co-ordination between the corporate business and subsidiary business with regard to IS/IT or IS/IT planning. For example, as explained by the subsidiary IT Manager of Company 8, *“The worst part is that when the global business plan is done, the business and IT people who sit inside the global planning committee may be depending on the other to inform those who report to them functionally through the dotted line. The business planner would assume that IT has already informed the local subsidiary IT what to do. At the same time the global IT would assume that the business people have already told*

the local subsidiary what to do. And then at the end they will come up with a very, very sophisticated plan that nobody knows how to do”.

In contrast, according to the logistics manager of Company 7, where ISSP is highly decentralised, *“I am involved in the project for the e-Business ... I am totally involved in the e-business design”*. The situation is similar in Companies 1 and 6, where in the past they have been able to choose, customise or develop software that meets local market place conditions. For example, Company 1 was the first in the group to implement internet-based trading and CRM systems for its UK customers, and in the process increase its market share and reduce its customer acquisition costs. Company 6 has been very innovative in IS/IT developments, leading to awards and funding from the Malaysian government as well as adoption of the systems by other group subsidiaries in the region.

c) IS planning is dominated by IT in all but three of the companies – the more centralised planning becomes the more IT dominates the process.

Other than in the companies in Group 1 and 2, IS planning is mainly dominated by IT, the supply side, rather than IS, the demand side. This finding relates closely with the previous one in terms of the involvement of business managers. The focus is more on what kind of IT the corporate headquarters would offer rather than the IS the local business really needs. The emphasis is more on how to control IT costs and reduce problems due to the lack of systems integration or duplication than aligning the IS with the business requirements in order to gain and sustain competitive advantage.

The study has shown that in all nine companies, the subsidiaries’ autonomy has always been lower in terms of determining the IT architecture compared with IS applications. The focus on IT in the planning was clearly evident from responses received during the interviews. In fact, in almost all of the subsidiaries, particularly those with a higher degree of centralisation, IS/IT planning largely revolves around planning for the IT infrastructure. According to the subsidiary IT manager of Company 2, *“I would not be able to say that there is a company-wide, strategic, long-term plan for systems, at least not on the applications. But for the infrastructure, our long-term plan is to come up with a common infrastructure platform and global products that we use, as far as possible, to leverage on the support.”* In Company 8, there was expressed concern by all interviewees that the systems ‘imposed’ from the centre were not only failing to meet the local business needs and but were also adding unnecessary costs to the business.

In contrast, according to the IS manager of Company 1, *“For information systems planning, I have the full responsibility of making the recommendations to the top management of directions ... my responsibility is to make sure that information systems are kept up to date, well maintained, to make sure that they are even able to create new business.”* In Company 7 there is considerable financial discretion to invest in IS/IT – it only has to obtain corporate approval for investments over £200,000.

In summary, the evidence from these companies shows that the location of responsibility for ISSP has a significant influence on the extent to which subsidiaries' business managers become involved and this in turn affects the ability of the subsidiary to match its IS to the local business situation or use IT innovatively. The overall trend to greater centralisation suggests that this discretion is likely to reduce in future. Given the different levels of subsidiary management satisfaction expressed, it would be expected that they will become less satisfied if this trend continues.

Focus of ISSP

The literature suggests that the focus of IS planning can emphasise maximising scale economies, encouraging subsidiaries' initiatives, improving global co-operation, and transferring IS/IT knowledge.

a) The focus in the majority of companies is on cost control and scale economies

The study has revealed that, for companies in Groups 3 and 4, the main focus or motivation for IS planning is largely to control costs through scale economies. In most cases, the main objective of IS plans for the subsidiary IT unit is to obtain the financial budget or to prioritise IT projects. Time and again the IT interviewees raised the issue of maximising scale economies and reducing IT costs as the main focus of IS planning and IS/IT function. For example, when asked what influences the IS planning most, the subsidiary financial controller of Company 9 simply replied, "*Money*", and the subsidiary IT manager of Company 5 replied, "*Budget*".

Out of the nine companies studied, six companies (Companies 2, 3, 4, 5, 8, and 9) have maximising scale economies as the main focus of IS planning, leaving only Companies 1 and 7, which focused on subsidiary initiatives, and Company 6, on global co-operation. Not unexpectedly, the more decentralised subsidiaries tend to focus on subsidiary initiatives while the more centralised organisations focus on scale economies. For example, as commented by the corporate IT manager of company 3, "*Managing cost is a priority with us all the time. Regardless of what it is, we have to keep our costs under control and drop the cost down*" and by the subsidiary maintenance manager of Company 4, "*We want to do a lot of things but are constrained on money, so there has to be a balance. At the end of the day we have to look at our pockets.*"

In contrast, according to the IT manager of Company 6, "*I estimated that the system would cost me RM300000 over. I can justify it. If you put in an accountant they will be chucked out. But I would take a very strategic view of what I want to do, and I have a company which is going to listen to me and agree that it is a strategy and let's go and do it.*"

b) There is almost no focus on promoting knowledge transfer in any of the companies

Innovation, learning, and adaptation are among the potential strategic objectives of multinationals whereas shared learning across organisational components in different products, markets, or business is one of the potential sources of competitive advantage

for these companies (Ghoshal, 1987). However, the study has indicated that IS planning in all of these companies has very little concern with these capabilities: for example according to the subsidiary IT Director of Company 2, *“with the centralization basically there is no need for in-depth knowledge transfer”* and according to the IT Manager of Company 5, *“If you are referring to technical knowledge, it is not important”*.

Even though many of the other subsidiary interviewees acknowledged the potential benefits of transferring knowledge within the group, this has not been the focus of the current IS/IT planning. Knowledge transfer is not something that is actually planned but is an outcome of the planning process. According to the IT manager of Company 8, *“I would say transfer of knowledge is very important to me but the people who implement the project [the central IT] sometimes think otherwise ... Of course at our end we definitely want them to transfer the knowledge because once we know everything the company [the subsidiary] doesn't have to spend so much money to engage these people.”*

It would appear that greater centralisation of ISSP would facilitate knowledge transfer, both across the IT staff and potentially across the businesses. However there is no evidence from these companies that this happens, perhaps due the very strong emphasis on scale economies rather than strategic uses of IS/IT.

In summary, the focus of ISSP seems to be determined more by the way in which IS/IT is structured in the organisation and the resulting responsibility for ISSP, in terms of centralisation or decentralisation, rather than by the business demand for investment in IS/IT to achieve business advantages within and across subsidiaries.

IS Planning Approaches

As discussed earlier, for the purposes of this research these were classified based on the work of Earl (1993) and Doherty et al. (1999) into four distinct types: Administrative, Business, Organisational, and Systematic. As shown in Table 3, six subsidiaries follow the Administrative approach, two the Organisational approach, and only one the Business approach.

a) Alignment between IS and business strategy is related to the balance of centralisation –decentralisation of IS planning

None of the companies uses a specific methodology to link the business strategy with the IS and IT strategies. However according to a study by Chan (2002), IS/IT and business strategy alignment is as dependent on the ‘informal’ relationships between business and IT managers as on formal processes and organisation structures. In companies in Groups 1 and 2 (see Table 4) business managers are involved in IS planning in the subsidiary. For example, according to the managing director of Company 1, *“The basic strategy is using IT in the marketing way to integrate ourselves*

and the customers ... IT has been used in that particular aspect as a tool to make sure that we can complete the business plan”.

In contrast, in Group 3 and 4 companies, not only is there little involvement of business managers in ISSP, as discussed earlier, none of the subsidiary IT managers of companies in Groups 3 and 4 is involved in the development or formulation of the business strategy and some of them even have no access to such plans. According to the production planning manager of Company 9, *“The way that we are handling or using the software planned by our corporate headquarters ... we need to suit our requirements with the available systems, not the other way around”*. Similarly managers in company 3 were concerned that the enforced adoption of global systems meant their local business needs were being ignored. As discussed earlier, in many of these companies, there is no mechanism that links the subsidiary and corporate business management with regard to ISSP.

As would be expected the more decentralised subsidiaries tend to follow the Organisational or Business approaches, which as prior research suggests should lead to greater alignment. This was the case. All the more centralised subsidiaries follow the Administrative approach, where ensuring adequate financial control of subsidiaries’ investments is the main purpose of planning in order to achieve overall economies of scale for the corporation. In four of the six companies following the Administrative approach, IT reported to the Financial Controller in the subsidiary. In three of these the business and IT managers both described the outcome regarding ISSP as unsatisfactory.

b) IS planning is more tactical than strategic in all the companies studied

Even though previous surveys (Galliers et al., 1994; Brancheau et al., 1996; Watson et al., 1997) have indicated that IS strategic planning has been one of the most important issues facing practitioners, there was very little evidence the way IS planning is carried out in these particular companies is strategic. For example, according to the subsidiary financial controller of Company 8, *“We don’t have people doing either strategic planning or IT planning”*. Also, according to the subsidiary IT Director of company 2, *“I would not be able to say that there is a strategic long term plan for systems, at least not on the applications”* and according to the corporate VP of IT Services of Company 3, *“that is probably one of the weaknesses of our process because most of our planning is fairly tactical”*.

The fact that IS planning in these subsidiaries is more tactical, more short-term, and more internally oriented is evident from the main responsibilities of the local IT managers and the nature of the planning they carry out at the subsidiaries. According to the subsidiary IT manager of Company 8, *“Most of the projects are driven down from the corporate head office. Basically our responsibility as the project manager is to try to push the project and implement it successfully in the subsidiary”*. Corporate interviewees also noted that subsidiaries are only responsible for IT operations rather than IS planning. According to the corporate CIO of Company 4, *“Site IT managers are just running the operation. There are no development activities at sites ... sites are not autonomous, they just execute”*.

In summary, for the majority of the companies studied it appears that strategic alignment or competitive use of IS/IT was less important than controlling costs and the approach adopted emphasised this priority. However it can be also argued that the way that IT is structured and organised in these organisations, places the emphasis on managing supply rather than on responding to business priorities or creating business advantages from IS/IT. This causes the more tactical planning emphasis even in subsidiaries that have greater autonomy in other business planning, due to their levels of distinctiveness and interdependence.

Perceived Success of IS Planning

The levels of IS planning success, as perceived by the subsidiaries were classified as: successful, more than satisfactory, satisfactory, and less than satisfactory, based on criteria previously used by Caldeira and Ward (2003), derived from the earlier work of Earl (1993). The study found that none of the companies used any formal criteria to measure IS planning success. However, using generic criteria from the literature, the study found that IS planning is perceived by the IT management in the subsidiary as successful by three subsidiaries, more than satisfactory by two subsidiaries, satisfactory by one subsidiary and less than satisfactory by three subsidiaries.

Business managers in general agreed with the IT management, but where they differed, they always rated the success to be lower, even in the two of the companies where ISSP was relatively decentralised. For example, in Company 2, the subsidiary IT manager believed the approach of IS planning was more than satisfactory when she said, *“Most of the pre-plan things we do meet the target, we keep to it, we deliver”*, but according to the subsidiary e-Business Manager, *“I guess I would say satisfactory. It could be improved”*. Similarly, in Company 7, the subsidiary IT manager believed it was successful but, as said by the subsidiary logistics manager, *“I wouldn’t rate it as successful. In a way it was successful but it was not implemented within the timeframe”*. Overall both IT and business managers judged IS planning to be more successful in the companies where planning and decision making were decentralised or fairly decentralised.

a) Project implementation is the main criterion used to assess IS planning success in all the companies

Most of the interviewees indicated that they informally used planning effectiveness, such as successful implementation, performance of the systems, user acceptance and satisfaction, meeting project deadlines, and meeting allocated budget, to measure the success of IS planning. For example, according to the subsidiary IT manager of Company 1, *“We don’t measure what criteria we will use to view ourselves as successful against. We don’t formally do it ... In terms of the major system migrations, if 80% of its main business processes are functioning, then that is a reasonably successful project.”* Even though several interviewees indicated that the strategic focus of IS planning is to improve co-operation and synergy between different global units, i.e. planning enrichment, this is not an important criterion for judging the success or failure of the planning. Planning enrichment as a criterion was quoted by the subsidiary IT Manager of Company 5, *“Achievement ... Effort, because the benefit is not so big but*

you have to put in a lot of effort to make this. So, at least you encourage some to challenge the new things. Some is technically very difficult. I think they need to keep on challenging the new things". This is consistent with the findings of the study by Newkirk et al. (2003), who noted "the failure to implement is common and the lack of implementation often leaves firms very dissatisfied with their SISP [Strategic Information Systems Planning] efforts" (p.222).

In summary, it is not surprising that in those subsidiaries where business managers were involved in ISSP, they deemed it to be more successful. In the others there were frequently raised concerns that the systems they had to use did not meet the local business needs, even if they were successfully implemented. Often the high costs of the corporate solutions increased this dissatisfaction, many interviewees felt they could implement better systems at lower cost, given more autonomy in IS/IT decisions. This seems to be a contradictory outcome of the focus in all these companies of achieving scale economies through centralised ISSP and strict financial control of investments.

Appendix B summarises these aspects of IS planning in each of the companies.

5. Discussion of the findings

The findings indicate that the business orientation of the subsidiary, as defined by its distinctiveness and interdependency, does influence both the responsibility for and focus of IS planning. However, with a sample of only nine cases, which is also not a balanced sample across the four different types and in four of which the ISSP approach was inconsistent with the business orientation, it is not possible to conclude that business orientation is the most important influence on ISSP. It could be predicted from previous research that four out of five subsidiaries that have a high degree of interdependency but low distinctiveness (Companies 2, 3, 5, 8) follow a more centralised approach of ISSP and focus on scale economies. Equally, Company 7, with high distinctiveness and low interdependency could be expected to have decentralised ISSP. This supports earlier findings by King and Sethi (1999). The same relationship between high interdependency and low levels of subsidiary autonomy was also found in a study of Malaysian subsidiaries by Edwards et al. (2002). However, they found that a high degree of business distinctiveness is not related to a high degree of business autonomy, unlike the situation in company 7.

In each of the four companies that do not fit the predicted pattern, this can at least in part be explained by reasons that are not specifically related to business or IS strategy.

Company 6, which also has high business interdependency and low business distinctiveness, follows a fairly decentralised approach of ISSP. Unlike other subsidiaries mentioned above, Company 6 had, in the past, been acknowledged for success in developing innovative IT products and won several awards from the government for its IT innovations. Also, Company 4, which has high interdependency and high distinctiveness, though predicted to follow a fairly decentralised ISSP, follows a centralised ISSP approach. Based on the evidence gathered from the corporate headquarters, it was found that the company follows a centralised ISSP approach for all small subsidiaries including Company 4, which is one of the smallest subsidiaries

within the group. This is also the case in Company 9, which again is one of the smaller subsidiaries and, although it has low interdependency, it has no discretion concerning its IS applications. It has to adopt the corporate standard applications, even though these are expensive and add cost to the business. In Companies 4 and 9 both IT and business managers believe their information systems do not meet their business needs and are not satisfactory. Conversely Company 1 is the largest, and most profitable, subsidiary in the corporation outside Switzerland and hence it enjoys degrees of autonomy in ISSP, not shared by other subsidiaries.

IS planning in the majority of multinationals studied was found to be focused more on planning for a tactical short-term IT as a utility rather than a long-term strategic IS as a source of competitive advantage. IT is viewed as a utility that is necessary in order to enable each individual unit to conduct its business effectively and for the whole enterprise to integrate the global activities efficiently. As a utility, IT is seen as a cost or a necessary expenditure to be controlled, rather than as a strategic investment. As Lai (2001) wrote, “technical issues are more important determinants of IS decisions than are management issues ... IT infrastructure, information architecture, data utilization and technology integration are significant IIM [International Information Management] issues at all three decision levels [operational, tactical, and strategic levels]” (p.263). This is reflected in six of the companies studied, where in reality there is little IS planning at the subsidiary level and planning is largely dominated by the corporate IT organisation, which would explain the focus of planning on achieving scale economies.

IS planning in these companies is becoming increasingly centralised with more decisions made by the corporate headquarters or regional offices. Even in subsidiaries where IS planning is currently decentralised, i.e. Companies 1, 6 and 7, there is a steady attempt from the corporate headquarters to recentralise it. In the literature, Jarvenpaa and Ives (1993, p.568) wrote, “decentralised firms will tend towards more centralised IT when facing pressures for economies of scale in IT”. Also, as noted by Peppard (1999), advantages of the “headquarters-driven global IS/IT” structure include the ability to maximise scale economies and to control standards. While this argument appears to justify central planning of infrastructure, it is also being used to increase the central planning of applications, in spite of the expressed dissatisfaction of many of the subsidiaries with the outcome. The evidence from these companies is that, although centralised IS planning may increase efficiency and scale economies it reduces the levels of subsidiary initiatives, as would be expected, and also knowledge transfer. These it can be argued provide at least a partial explanation of why the level of satisfaction with IS in the subsidiaries studied is inversely correlated with the degree of centralisation.

Previous research has produced conflicting views about the influence of centralisation on both the degree of subsidiary initiative and the extent of transfer of knowledge that results.

As would be expected, the evidence revealed that the focus on subsidiary initiatives is low in centralised companies and high in decentralised companies. This is consistent with the findings from the studies conducted by Birkinshaw (1997) and Birkinshaw et al. (1998). Birkinshaw (1997) wrote that, “the importance of autonomy was underlined

by one company in which the subsidiary had achieved great success in building a viable international business, but where the parent company had then curtailed its autonomy because corporate difficulties - pursuing initiatives suddenly became a time-consuming and frustrating process” (p.219). However, earlier, Ghoshal and Bartlett (1988) found that there was no relationship between subsidiary autonomy and subsidiary innovation.

Little emphasis was given to enabling global transfer of knowledge (Ghoshal, 1987) in any of the companies studied, even in Company 6, where the focus of ISSP was on global co-ordination. In a study involving European and US companies, Ruggles (1998) found that only 13% of the respondents rated the ability to transfer knowledge within their organisations as good or excellent. Ranganathan and Sethi (2002) and Tsai (2002), found that a centralised IT structure negatively influenced the sharing of knowledge between the business and IT units and between the multinational headquarters and subsidiaries. Quite the opposite, Gupta and Govindarajan (2000) found that knowledge inflows are higher in the case of “subsidiaries that are integrated more tightly with the rest of the corporation through formal mechanisms” (p.488).

6. Summary and Conclusions

The objectives of this research were to examine the different approaches to ISSP, adopted by different types of multinational subsidiary and understand the extent to which these approaches were perceived to be effective.

The research shows that it is possible to distinguish different ISSP orientations in terms of strategic focus, responsibility and approaches to ISSP and that in many instances these are primarily influenced by the business orientation. The main conclusions that can be drawn from evidence gathered from the companies studied in this research are:

1. Responsibility for ISSP is increasingly being centralised even in subsidiaries that have traditionally enjoyed greater autonomy in ISSP and continue to have more autonomy in other areas of business planning. As responsibility is centralised, the involvement of subsidiary business managers in ISSP reduces and planning either focuses on IT alone or IT management increasingly determine the IS plans. The outcome of this, as evident from this study, is that local business requirements are not being adequately addressed. This is the main reason why, in five of the companies, the subsidiary business managers interviewed were less satisfied with the IS planning approach compared with their IT colleagues.

2. The focus of ISSP in the majority of the companies studied was on controlling costs and achieving scale economies. Only in three companies was there agreed to be close alignment between business and IS/IT strategy at the subsidiary level. In these companies, the focus was on subsidiary initiative or global co-ordination and responsibility for ISSP was relatively decentralised. Subsidiary business managers were involved in the process of planning, and in these three companies ISSP was judged to be more than satisfactory or successful, by both business and IT managers.

3. The approaches to ISSP are influenced more by the degree of organisational centralisation of IS/IT planning and control, rather than the needs of the subsidiary in terms of its distinctiveness or level of interdependency, or the opportunities for utilising IS/IT to achieve an improved competitive position for the subsidiary in its environment.

4. Given that 'project implementation' was the main success criteria used, in all the companies, the assessment of planning success is likely to have been significantly influenced by the success or otherwise of systems implementations. The consistency of the evidence from these companies suggests that a lack of IS/IT and business strategy alignment at the subsidiary level is a cause of the dissatisfaction at the implementation stage.

The findings from this research, suggest that in many multinationals, including all those in this study, the conceptualisation of ISSP is often defined more by the operational than the environmental factors identified by Finnegan and Longaigh (2002) and shown in Table 1. For example, at the subsidiary level the emphasis on the need to be responsive and competitive within the local market is important to local management, but is often of secondary importance to the multinational's global business and IS/IT priorities and the corporate desire to minimise the costs associated with duplication and overlap. Again, ensuring that the subsidiary is efficient in carrying out its value chain activities is usually seen as more important than dealing with aspects associated with geographical dispersion.

The main findings from this work are also likely to be seen as relevant and useful by practitioners, especially IS/IT managers in both multinational subsidiaries and corporate headquarters. They provide some explanations of the factors influencing the scope and degrees of discretion that different types of subsidiary have regarding ISSP and the implications for the business satisfaction with IS/IT. In turn this may enable managers to change some aspects of the approach to ISSP to improve the subsidiaries' satisfaction with the outcome. Some suggestions that would appear relevant to many organisations are:

1. Even if centralisation yields significant corporate benefits and reduced costs, it does not imply that business managers in the subsidiaries should not be actively engaged in IS planning, both to input their needs and to have some influence over decisions that could affect their subsidiary's performance. Increasing centralisation of IS/IT should not result in subsidiaries becoming less competitive, especially when initiatives by subsidiary managers to increase competitiveness are expected in other activities, such as marketing or service development.

2. Equally the adverse perceptions of IS planning by subsidiary business managers could impede the implementation of global strategies. Earlier and more consistent involvement of local business and IS/IT management in the planning of global projects might increase the commitment to successful implementation in the subsidiaries.

3. The perceived benefits of IS in the most of the subsidiaries result from operational improvements, yet there seems little encouragement and few mechanisms to share IS/IT knowledge across subsidiaries in most of the organisations studied. Facilitating

managers to learn how those benefits can be achieved from colleagues in other subsidiaries might enable benefits to be replicated and also avoid costs being duplicated, which are two of the reasons often given to justify greater centralisation.

Research Limitations

The difficulty in generalising the findings has been one of the criticisms of case study research, compared with quantitative studies. According to Yin (1994), generalisation in the case study research is achieved through analytical generalisation rather than statistical generalisation. Analytical generalisation is context-specific. The evidence gathered in this research may be biased towards small subsidiaries of large multinationals. However, by including the business orientation framework, which has previously been used in quantitative studies in different contexts, it is possible to build on the findings from prior work, either to support those conclusions or develop further insights into aspects of multinational strategies not previously studied. By applying the framework to the IS/IT domain, this research shows that although the planning of IS/IT is influenced by the business orientation, it is not sufficient to explain the ISSP orientation in many of the companies studied.

While maintaining the level of rigour necessary in conducting this research, another important aim was to ensure that the outcome of this research is relevant to practice. Relevance implies “demonstrating a meaningfulness regarding its application to the significant problems and opportunities being faced by today's organizations and their members” (Zmud, 1996, p.xxxvii). Relevance was enhanced in this research by the use of interviews, which gave the interviewees opportunities to describe the IS planning issues and approaches openly and not be restricted by structured questionnaires.

Opportunities for Further Research

We attempted to examine the relationship between subsidiary business interdependency and distinctiveness and ISSP approach. However, since we had only nine cases and five of these cases were concentrated in one particular category (high business interdependency and low business distinctiveness), we could not draw firm conclusions based on this categorisation. More cases or samples need to be included in future research to examine this interesting relationship between business orientation and ISSP.

The evidence gathered from the corporate interviewees revealed that the corporate headquarters do treat their subsidiaries in different ways. For example, the corporate CIO of Company 4 quoted that even though IS planning in its Malaysian subsidiary is highly centralised, IS planning in its US subsidiary is decentralised. The reason given was that the US subsidiary is the biggest subsidiary within the group. Future research can examine IS planning in different multinational subsidiaries belonging to a particular multinational in order to examine the effect of subsidiary size or other characteristics on the IS planning approach. (It should be noted that the survey by Mirchandani and Lederer (2004) found no correlation between subsidiary size and the subsidiaries' degrees of ISSP autonomy.)

Even though the issues related to different national cultures were explored during this research, none of the respondents believed them to be important. Furthermore, it was not the aim of this research to focus on national cultures as almost all the subsidiaries operate in the same country. In a more diverse sample, culture might well emerge as an influencing factor. Also different corporate cultures could potentially affect both the nature of the approach to ISSP and the corporate-subsidiary management relationships, but these were not studied in this research. The lack of comments on cultural issues may also, in part, be explained by the predominantly operational and technical rather than strategic focus of ISSP in the organisations studied. However, if future research conducted in subsidiaries could specifically explore this issue, it would further our understanding of the IS planning and management in multinationals, since culture has been found to affect other business domains of multinationals, such as research and development (Jones and Teegen, 2001), human resources performance measurement (Lindholm, 2000), and financial performance (Newman and Nollen, 1996).

Finally, further studies which were able to specifically compare and contrast organisations where similar global IS/IT strategies resulted in different levels of success both corporately and across different subsidiaries, would confirm or otherwise the practical value of our suggestions, at the end of the previous section, for achieving more effective IS/IT management in a multinational environment.

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APPENDIX A: Business Background

<p>COMPANY 1</p> <p>Company 1 is a large Swiss multinational operating in the machinery and equipment industry. The major business activities of the subsidiary include manufacturing, sales and marketing of piping systems. The study was focused on its subsidiary in the UK but interviews and sites visited also covered the HQ in Switzerland.</p>	<p>COMPANY 2</p> <p>Company 2 is a US-based multinational classified under the financial industry. The study was focused on its subsidiary in Malaysia but a telephone interview was also held with its CIO in the USA. The main activities of the subsidiary involve commercial and investment banking activities.</p>	<p>COMPANY 3</p> <p>Company 3 is a US-based multinational classified in the electronics industry. The study was focused on its subsidiary in Malaysia but interviews and site visits also covered three senior IT interviewees in its headquarters in the USA. The main business activities of the subsidiary involve assembly and testing of semiconductor components produced by other subsidiaries of the multinational.</p>
<p>COMPANY 4</p> <p>Company 4 is a large multinational based in The Netherlands. The company is classified under the chemicals industry. The study was focused on its subsidiary in Malaysia but also involved a site visit and interview with its corporate CIO in The Netherlands. The main activities of the subsidiary involve manufacturing of soap noodles using oleo-chemicals.</p>	<p>COMPANY 5</p> <p>Company 5 is a Japanese multinational and one of the largest companies classified under the electronics industry. The study was focused on one of its subsidiaries in Malaysia, which is also one of the major subsidiaries of the group. The business operations of the subsidiary involve manufacturing of videos and colour televisions. Most of the products are exported through the company's sales distributor</p>	<p>COMPANY 6</p> <p>Company 6 is a large UK-based multinational classified under the food and beverages industry. Its principal activities include manufacture and supply of foods, household care, and personal products. The study was focused on its subsidiary in Malaysia. Since the subsidiary phased out its manufacturing activities a few years ago, its main activities now involve sales and distribution of products manufactured by other sister companies.</p>
<p>COMPANY 7</p> <p>Company 7 is a large and diversified Japanese multinational classified under the apparel and textiles industry. The company started its operations in Malaysia in the early 1970s and now is made up of seven companies. The main activities of the Malaysian group include production of polyester staple fibre, polyester film, ABS resins, and electronic products but mainly finished fabric, yarn, and grey fabric.</p>	<p>COMPANY 8</p> <p>Company 8 is a large French-based multinational classified under the telecommunications industry. The study was focused on its subsidiary in Malaysia. The main business activities of the subsidiary involve distribution of telecommunications equipment and manufacturing of power supply products.</p>	<p>COMPANY 9</p> <p>Company 9 is a large US-based multinational operating in the food and beverages industry. The group carries some of the most known brands in the worldwide market. The study was focused on its subsidiary in Malaysia. The main business activities of the subsidiary are sales and marketing of global beverage products.</p>

APPENDIX B: Summary of IS Planning

<p>COMPANY 1</p> <p>IS planning in the UK subsidiary 1 is decentralised, while in other subsidiaries it is centralised. The corporate interviewees explained that this is due to the subsidiary being the most profitable within the group. The subsidiary noted that IS planning enables them to focus on being innovative in IS/IT. No major issues were raised by the subsidiary interviewees. The IS planning in the subsidiary follows the <i>Organisational</i> approach and IS/IT is planned through informal meetings and discussions with the business managers. Both the subsidiary IT and business interviewees believe the approach they follow has been <u>successful</u>.</p>	<p>COMPANY 2</p> <p>IS planning in the Malaysian subsidiary is fairly centralised with directions for IS/IT applications coming from the regional office in Singapore, business group headquarters in the UK, and corporate headquarters in the USA. To control cost and streamline processes, the main focus of IS planning is to maximise scale economies through standardisation and use of regional systems and global infrastructure. Being a small subsidiary, the subsidiary believes that their specific business needs get little priority in the central/regional IS/IT plan. The subsidiary felt that the <i>Administrative</i> approach they follow has been <u>satisfactory</u>.</p>	<p>COMPANY 3</p> <p>IS planning in the Malaysian subsidiary has been fairly centralised. In order to control costs, maximising scale economies is clearly the main focus of IS planning. Even though the Company is trying to shift from the Technology –led approach to the Business-led approach, the current IS planning is clearly following the <i>Administrative</i> approach. The subsidiary interviewees are concerned about their specific business needs not adequately addressed by the global systems they were asked to adopt. Overall, the subsidiary felt that the current IS planning approach is <u>satisfactory</u>.</p>
<p>COMPANY 4</p> <p>IS planning in the Malaysian subsidiary is highly centralised. With the group's poor business performance and problems integrating different systems worldwide, controlling costs and streamlining business processes receive the highest attention by the new corporate CIO. The focus of IS planning is clearly to maximise scale economies and the IS planning approach is <i>Administrative</i>. With only one person in charge of IS/IT in the subsidiary, many issues were raised by the subsidiary interviewees. The subsidiary felt that the current IS planning approach is <u>less than satisfactory</u>.</p>	<p>COMPANY 5</p> <p>IS planning in the Malaysian subsidiary is fairly centralised, with directions coming from four headquarters (for four different business units), all based in Japan. Focus of IS planning is to maximise scale economies through global systems and infrastructure. The subsidiary IT interviewee cited problems with high costs and difficulties in getting local experts for global systems, and that the systems do not meet local requirements. The subsidiary business interviewees cited the problems with the main network hub in Japan. Overall, the subsidiary interviewees rated the <i>Administrative</i> approach they follow as <u>satisfactory</u>.</p>	<p>COMPANY 6</p> <p>IS planning in the Malaysian subsidiary is fairly decentralised. Even with directives coming from the headquarters and region, particularly on infrastructure, the subsidiary is very much involved in IS/IT planning. Many IS developments were done and initiated by the subsidiary. The systems they developed won an award from the Malaysian government. These systems are not only used by the subsidiary but also by others in the region. Issues raised by the subsidiary include high IT cost of standard hardware and some implementation problems. The subsidiary felt that the <i>Business-led</i> approach they follow is <u>more than satisfactory</u>.</p>
<p>COMPANY 7</p> <p>IS planning in the Malaysian subsidiary is well decentralised. The subsidiary decides almost everything related to the business and IS/IT matters, apart from projects exceeding RM1 million (\$US 300,000). Being on its own, the focus of IS planning is initiative and innovation. No issues were raised by the subsidiary IT Manager but the subsidiary business interviewees cited their concerns about long lead-times of IT projects and some miscellaneous technical issues. The subsidiary follows the <i>Organisational</i> approach for IS planning and rated this approach as <u>more than satisfactory</u>.</p>	<p>COMPANY 8</p> <p>IS planning in the Malaysian subsidiary is highly centralised. Directions come from the corporate headquarters in France, corporate regional office in China, and IT regional office in Australia. The focus of IS planning is to maximise scale economies through standard systems and infrastructure. Many issues were raised by the subsidiary, which include systems that do not match business needs, high cost of global systems, difficult to get local support for global systems, and some technical issues with the global systems. The approach of IS planning is evidently <i>Administrative</i> and to the subsidiary this approach is <u>less than satisfactory</u>.</p>	<p>COMPANY 9</p> <p>IS planning in the Malaysian subsidiary is highly centralised with directions coming from the corporate headquarters in the USA and the corporate regional office in Thailand. The IS Specialist, the only IT staff in the subsidiary, reports to the subsidiary Financial Controller. The focus of IS planning is to maximise scale economies. Many issues were raised by the subsidiary interviewees that include lack of authority to decide on IS/IT, difficulties in getting budget, high expectation of local users, and technical issues. The approach of IS planning is plainly <i>Administrative</i> and the subsidiary views the approach as <u>less than satisfactory</u>.</p>