IT Strategy and Business Performance:

A Study of Industry and Company Size

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ABSTRACT

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The objective of this study is to explain the linkages between the strategic use of Information Technology (IT) and business performance. Numerous IT related strategies are discussed and researched. However, the strategies have generally been treated individually and examined specific uses of IT in areas such as operations, knowledge management or global IT strategy. This research paper incorporates a wide range of these strategies into a unified framework to derive an integrated perspective of IT strategy.

From this framework a survey instrument was developed and a web-based survey of upper level IT management was conducted. A total of 220 respondents completed the survey.

In the overall model IT strategy was positively linked with business performance. Further analysis revealed variations in the linkages depending on industry and company size. Companies in service industries and companies with between 100 and 500 employees stood out as those with the highest correlations between IT strategies and business performance. Companies in the manufacturing industry and companies with over 500 employees had the lowest correlations.

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INTRODUCTION

As new technologies emerge, companies need time to adjust their business practices to take full advantage of presented opportunities. The Internet is likely to resemble past technological revolutions similar to those of electricity, telephones and cars, where the full benefits were realized long after the introduction of the technology. Information Technology (IT) will be defined as all the forms of technology used to create, store, exchange, and use information in its various forms[1].

IBM defines e-business as the process of using Internet technologies to improve and transform key business processes[2]. Web sites have evolved into powerful tools facilitating complex interactions with customers (Wang et al., 2000). While the Business to Consumer market began as the primary focus of the Internet, there has been a much larger impact in the Business to Business market and throughout the value chain of companies (Sousa and Ebrahimpour, 2000).

As e-business has become essential in our economy, businesses are beginning to demand returns on their investments in new technologies (Damanpour and Damanpour, 2001). It is important for companies to allocate funds to IT projects which will result in the highest return on investment. This study focuses on management strategy pertaining to the use of IT throughout a company.

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[1] search390.com Definitions - http://search390.techtarget.com/
[2] IBM E-Business Glossary - http://www-3.ibm.com/e-business/glossary/

An extensive and diverse body of literature has been produced regarding e-business and information systems. Much of the research is theoretical and there is less consensus within the literature than in longer established fields of study such as organizational behavior or management science. Literature which addresses the strategic use of IT commonly only addresses individual areas of IT strategy (i.e. operational strategy, knowledge management strategy, global IT strategy, website strategy, and supply chain strategy). Few quantitative studies have been conducted in this area. While Venkatraman and Henderson (1999) stress the importance of the alignment of IT strategy and business strategy, their model does not operationalize IT strategy.

This research project examines generic IT strategies and creates a research instrument with which to measure IT strategies. In order for the full benefits of IT to be identified, analysis ought to take place at a level at which all IT strategies of a company can be examined. This research project takes into account a broad view of IT and investigates the linkage between IT strategies and business performance. The impact of company size and industry on this linkage will be emphasized.

CHAPTER I - LITERATURE REVIEW

The literature review will begin with a brief overview of business strategy, forming the groundwork for the discussion of IT strategy. The focus of the literature review will then turn to IT strategy where the constructs used in this research will be used to organize the literature. The final three sections will discuss business performance, the linkage between strategy and business performance, and the controlling variables employed in this research.

1. BUSINESS STRATEGY

Miller and Dess (1996) refer to strategy as "either the plans made, or the actions taken, in an effort to help an organization fulfill its intended purposes."[3]

Venkatraman (1985) provides an overview of previous research instruments which have been used for measuring business strategy. He discusses four issues which aid in classifying the domain of strategy constructs: "Means vs. Ends", Strategy level, Perspective, and "Intended vs. Realized". "Means vs. Ends" classifies a strategy as either a means (actions or resource deployment) or an end (goal, purpose or objective). The level of the strategy has three levels: corporate, business, and functional. The perspective of the strategy categorizes strategies as a specific part of an overall strategy

[3] Strategic Mangement 2nd Edition, Alex Miller and Gregory G. Dess, 1996 p.38

or holistic view of strategy. "Intended" vs. "realized" divides strategies into those which are proposed versus those which have been achieved.

Venkatraman (1985) outlines the process of the creation of his STROBE (Strategic Orientation of Business Enterprises) model to measure business strategy. A two part decision rule is used for the consideration of a strategy. The first states that it is in line with the prevalent view of strategic management. And second the author needs to argue that there is an underlying notion of strategy.

These classifications of business strategy and decision rules in traditional business strategy will form the foundation for the development of IT strategy, which is discussed in the next section.

2. IT STRATEGY

The term "IT strategy" will be defined as the strategic use of IT to enable companies to fulfill their intended purpose.

With the rush to Internet Technologies, a large body of e-business literature has been produced. Much of the e-business literature stems from previous and related areas of study that was brought into the electronic context. The previous literature often dates back up to 50 years. Since much of the literature regarding IT strategy lacks clear boundaries, this literature review has been organized according to the constructs used in this research.

Figure 1: Literature Sources on page 6, shows an overview of the bodies of literature of importance to this study. In the left column well established fields of literature are given, the next column shows more recent fields of literature associated with these established fields. In the third column the three proposed classifications for the constructs in this study are given: relational, operational and strategic planning.

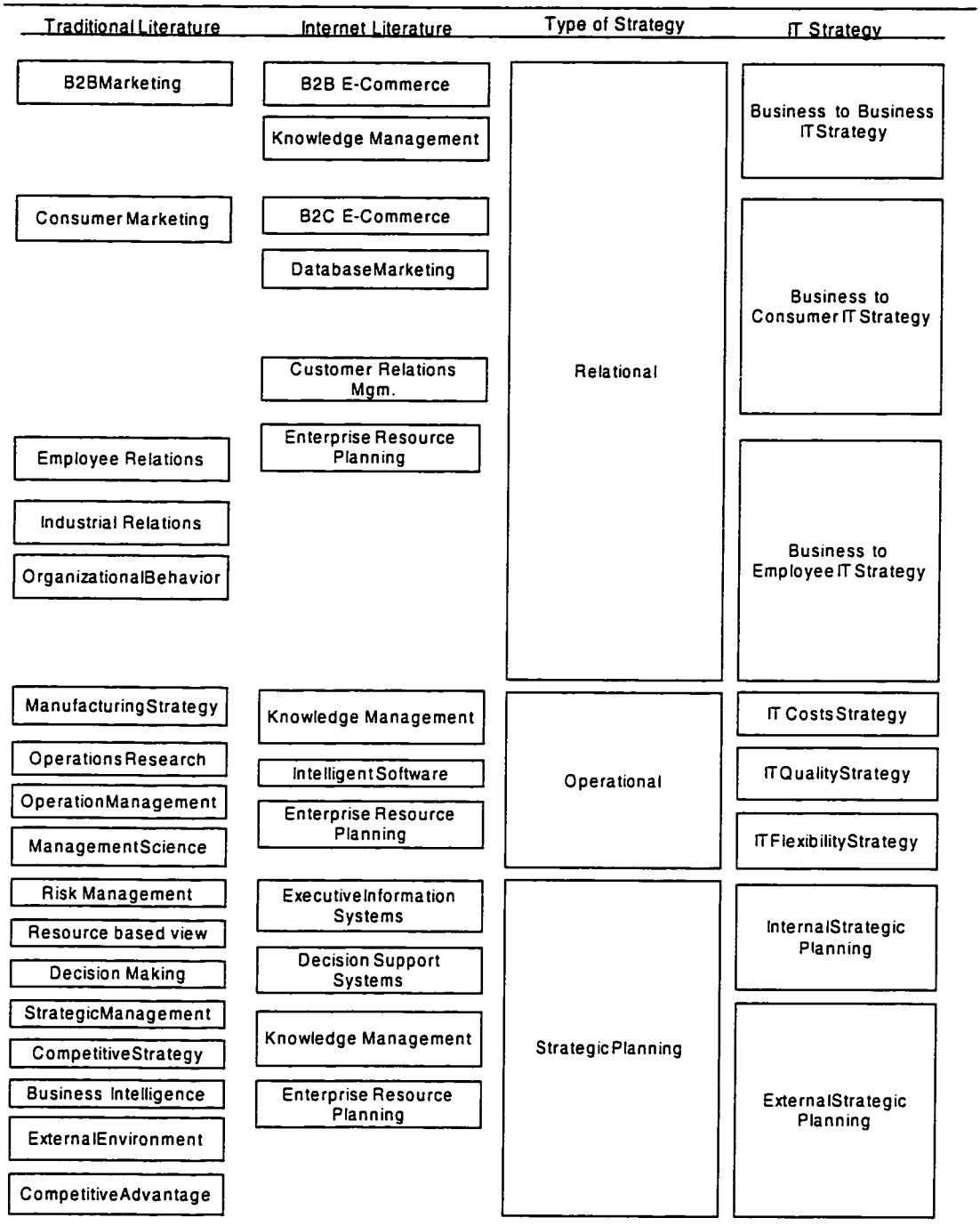

Figure 1: Literature Sources

The first classification, Relational on page 7, covers the relational aspects of IT, including Business-to-Business (B2B), Business-to-Consumer (B2C), and Business-to-Employee (B2E). The second classification Operational on page 12 covers the operational aspects of IT, including the use of IT to manage quality, costs and flexibility within a company's operation. The final classification Strategic Planning on page 15 covers the use of IT as a tool for strategic planning, and is divided into internal and external strategic planning.

Wherever possible empirical studies have been referred to, however, a lack of empirical research should be noted, especially with regards to the use of IT for relational strategies and strategic planning.

2.1 - Relational

In the IT context the term "Relational" will be defined as the way IT is being used to facilitate relationships. The relational aspects of IT have been divided into three sections that will cover relations with other businesses (B2B), customers (B2C), and employees (B2E). Murillo (2001) discusses the proliferation of the Internet and its ability to facilitate relations with other external entities such as governments and financial institutions. Traditionally, marketing literature differentiates between marketing to consumers and to businesses (Brierty et al., 1997). Coviello and Brodie (2001) discuss this differentiation in the e-business context, noting that B2C is more transactional, while the B2B is more relational.

In Figure 2 on page 8, Hooft and Stegwee (2001) attach supplier and customer life cycles to Porter's (1985) value chain. Porter's (1985) value chain views a company as an entity which transforms raw materials, through a value adding process, into a finished product or service. The supplier and customer life cycles, which are commonly referred to in the literature, outlines the process of interactions with suppliers and customers to buy raw materials and to sell finished goods. Both of these processes have been revolutionized by IT. The interactions with suppliers are commonly referred to as Business to Business (B2B) while the interactions with consumers are commonly referred to as Business to Consumer (B2C).

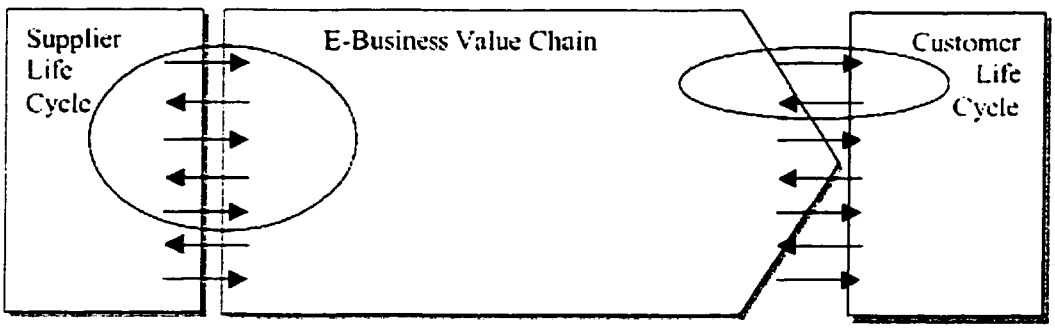

Figure 2: E-business value chain (Hooft and Stegwee, 2001)

The usage of IT to facilitate the relational aspects of this supplier life cycle will be covered by B2B IT strategy. The usage of IT to facilitate the relational aspects of the customer life cycle will be covered by B2C IT strategy.

Hooft and Stegwee (2001) suggest that a company's relations with employees are within the company's value chain. The usage of IT to facilitate the relations with and between employees has been covered by B2E IT strategy.

2.1a - Business to Business (B2B) IT Strategy

Business to Business (B2B) IT strategy refers to the utilization of IT to facilitate relationships with other businesses. Inter-organizational cooperation can assist companies in deriving a competitive advantage. The e-commerce procurement life cycle, an e-commerce adaptation of the supplier life cycle, outlines how IT has been important in facilitating relationships between businesses (Archer and Yuan, 2000). This e-commerce procurement life cycle has seven phases: information gathering, supplier contact, background review, negotiation, fulfillment, consumption, and renewal.

The strength of relationships between businesses is an important aspect of successful e-business initiatives (O'Keeffe, 2001; Galbraith and Merrill, 2001). Rokkan and Haugland (2002) discuss the concept of a relational exchange between two companies and the key aspects of such relationships. The strength of a relationship between two businesses consists of inter-firm trust, relationship commitment and the perceived value of the relationship (Hausman, 2001). This research found relationship strength to be correlated with relationship satisfaction and performance.

Communication and collaboration are important parts of developing relationships between businesses (Olesen and Myers, 1999; Olkkonen et al., 2000). Increased integration and communication can even enable supplier collaboration in developing products and specifications (Parker, 2000; Burgess et al., 1997).

2.1b - Business to Consumer (B2C) IT Strategy

Business to Consumer (B2C) IT strategy refers to the utilization of IT to facilitate relationships and transactions with the consumers of products or services. In the past, marketing was the main field of literature dealing with consumers. Aldridge et al. (1997) bring the basic marketing principles into an Internet context. This article is very important because it creates a link between traditional marketing principles and their application in an Internet context.

Web site strategies fit into two broad categories; Informational and Transactional (Wen et al., 2001). Informational web site strategy is viewed as a supplement to traditional marketing efforts. In addition to informing people about products and services, many other informational items could be provided, such as organization structure, company history, and financial information (Simeon, 1999).

Transactional strategy focuses on allowing customers to make transactions directly over the Internet (Wen et al., 2001). Easing the purchasing process for consumers with the use of IT can lead to increased sales and is thus a valuable asset to businesses (Lee, 2001; Bontis, 1998).

IT is also facilitating the process of building relationships with customers who shop over the Internet (Wang et al., 2000). IT can be used to customize communications and contents for specific customers, increasing the ability of companies to enhance customer relations (Jiang, 2000). Bontis (1998) refers to customer-capital as a company's knowledge of marketing channels and the customer relationships it has

developed. The analysis of consumer purchasing and browsing patterns can lead to a greater understanding of customers (Phau and Poon, 2000). Software agents and decision support systems can be employed to learn about and to serve customers better (Sproule and Archer, 2000). These two articles provide examples of how IT can be used to create customer-capital as discussed by Bontis (1998).

2.1c - Business to Employee (B2E) IT Strategy

Business to Employee (B2E) IT strategy refers to the utilization of IT to facilitate communication between employees and to help employees in carrying out their jobs. There is a large body of literature dealing with relations with employees in such fields as organizational behavior and employee relations. Many of these aspects have been enabled by IT. In addition, fields such as knowledge management have focused on many of the issues including how IT is facilitating employees in carrying out their jobs.

There is a linkage between the impact of management and employee relations on strategic integration (Gunnigle et al., 1998). IT can be used to facilitate the relations between management and employees (Kuei et al., 2001). Ang et al., (2000) address how IT has enabled the relationships with employees in their survey instrument as a section called human resources. Further results of their study are discussed on page 13 in the Quality IT strategy section.

IT can be used to enable employee development and training (Bontis, 1998; Kuei et al., 2001). There are many ways in which an employee's use of IT can increase their workplace productivity (Adeoti-Adekeye, 1997; Udo, 1998). IT has been

recommended as a tool to enable employee innovation (Maier and Remus, 2001), as well as a means to increase collaboration between employees (Cheng et al., 2001; Ang, et al., 2000).

IT can allow employees access to an increased amount of information (Ang et al., 2000). Knowledge Management Systems can help employees find information and people with expertise in specific areas (Maier and Remus, 2001). In addition, they note the use of IT to record or codify the knowledge of employees, allowing other employees to make use of it. Human capital is the knowledge which employees possess and the role IT plays in developing it (Bontis, 1998). In a proposed model there were indications of linkage between human capital and business performance

2.2 - Operational

The term "Operational" will be used to refer to the internal processes of a businesses supply chain, and how IT is being utilized to aid these processes. Adam and Swamidass (1989) conducted an extensive review of the literature surrounding operations management. From their literature review the authors note the core of operations strategy to include quality, cost, flexibility, and technology-process. Orr (1999) offers a review of 13 manufacturing strategy research articles from the early 1990's. He identifies the importance of quality, costs, flexibility, and dependability. White (1996) provides an overview of 125 measures of manufacturing performance, noting quality, costs and flexibility as the three most important. Fawcett et al., (1997) found that operational quality, delivery, flexibility, costs and innovation were linked

with logistic and operation performance. Noble, (1997) found that quality, dependability, costs, delivery, flexibility and innovation could be used to differentiate between low and high productivity companies. Boyer (1998) found four key competitive priorities (costs, flexibility, delivery and quality) to be associated with the operational aspects of a company. In these three recent survey instruments, quality, costs, flexibility, and delivery were components in each instrument.

Quality, costs and flexibility were used as the three components for the operational aspects of IT strategy because of their predominance in previous research. Although technological process, delivery and dependability were recurrent in the literature, they were not made into constructs in this research for the following reasons: Technology-process is already incorporated by the context of the survey. Delivery was closely related to the relational aspects. Dependability only appeared in earlier research and was not mentioned in the recent survey instruments.

2.2a - Quality IT Strategy

Operations quality strategy in the context of IT refers to the utilization of IT to monitor and maintain quality standards. Ang et al.'s (2000) survey instrument provided the basis for this section of the questionnaire. In Ang et al.'s (2000) study, output quality assurance and human resource utilization were the top two quality areas where IT was having the most pronounced impacted.

Measuring the quality of output involves both service quality and customer satisfaction (Ang et al., 2000). IT can be used to measure product quality and to test for

conformance against design specifications (Boyer, 1998). IT has also been recommended for the automation of inspection and to ensure consistent quality (Chow and Lui, 2001). Related to this is the use of IT in monitoring operations for waste and inefficiencies (Ang et al., 2000; Kuei et al., 2001; Grandzol and Gershon, 1998).

2.2b - Costs IT Strategy

Operations costs strategy in the context of IT refers to the utilization of IT to control expenditures. Process inputs and process outputs can be used to separate costs (White, 1996). Process inputs are those costs that are needed as prerequisites to begin operations, while process outputs are those costs occurring during the course of operation.

Some process input costs which IT has been able to reduce are the costs of staffing and capital (Sohal et al., 2001). Their research also indicated that much of the benefits from IT can be seen in internal cost reductions. IT can be used to reduce the costs of inbound logistics including purchasing and the delivery of supplies (Archer and Yuan, 2000). From a B2B e-business perspective IT can help lower the costs of transactions between businesses (Min and Galle, 1999).

Process output costs that IT has been able to reduce include; administration costs (Udo, 1998), production costs (Boyer, 1998) and inventory costs (Fawcett et al., 1997; Boyer, 1998; Sohal et al., 2001; Min and Galle, 1999).

Some of the survey instruments use more general measures. Bontis (1998) notes a reduction in the costs of transactions through the usage of IT. The ability of a business

to increase the utilization of its operations appeared in two survey instruments as a component of costs (Fawcett et al., 1997; Boyer, 1998).

2.2c - Flexibility IT Strategy

Operations flexibility strategy in the context of IT refers to the utilization of IT to increase the ability of a company to adapt to market demands. IT has been put forth as a mean for increasing a company's responsiveness to market needs (Sohal et al., 2001).

Another aspect of flexibility is a company's ability to adjust the production of goods and services and to adjust the mix of goods and services which are being produced (Boyer, 1998).

New product development is another component of flexibility (Noble, 1997). The ability to reduce the development time for new products and the ability to increase the frequency of introducing new products to the market are both aspects of new product development. In this study, flexibility was one of the key differentiators between low and high productivity firms. Variety of product offerings and an increased number of product features are two additional characteristics of businesses flexibility (Boyer, 1998).

2.3 - Strategic Planning

Strategic planning issues can be divided into those which are internal and those which are external to a business (Hooft and Stegwee, 2001). This breakdown can also be seen in the traditional SWOT Analysis which uses an external analysis of a

company's threats and opportunities and an internal analysis of a company's weaknesses and strengths (Coulter, 2002).

2.3a - Internal

Internal Strategic Planning refers to the utilization of IT to aid a business in its internal strategic decision-making process and implementation.

IT has been put forth as a mean to facilitate business decision making (Adeoti-Adekeye, 1997; Basu et al. 2000). IT can be used throughout the strategic planning process, beginning with identification of strategic issues through to the documentation of strategic plans (Ang et al., 2000). Sophisticated software can aid in the managerial decision-making process (Bose and Sugumaran, 1999).

IT can be used as a tool to implement strategy and aid in organizational coordination with far reaching affects into a company's business processes and business structures (Hasan and Tibbits, 2000; Davidson, 1999; Hammer, 1990). Small and Yasin (1997) found that IT plays an important role in implementing business strategy and that firms utilizing IT to back up their formal business plans were outperforming other firms. Business objectives can be backed up by IT infrastructure (Klouwenberg et al., 1995). IT can also enable geographic coordination (Davis and Dibrell, 2002; Ives and Jarvenpaa, 1991) as well as coordination between functional departments (Udo, 1998; Venkatraman, 1985). Moreover, organization change can be facilitated by IT (Sohal et al., 2001; Daniels, 1998; Gunnigle et al, 1998). IT has also been used as a tool to review how strategy has been implemented (Feurer et al., 1995). Feurer and

Chaharbaghi (1996) stressed the importance of being able to revise strategy or dynamically adapt strategic planning, especially in highly competitive environments.

2.3b - External

External Strategic Planning refers to a company's utilization of IT to derive advantage from its external environment.

Companies can derive a competitive advantage from their ability to deal with their external environment (Madhok 2001). Atkinson et al. (1997) discussed the development of organizational knowledge regarding the entities around a business. Tracking industry trends, gathering information from stakeholders, and forecasting potential opportunities are also important aspects of business strategy (Venkatraman, 1985).

IT has been noted as a strategic tool which can aid companies in staying ahead of the competition (Davis and Dibrell, 2002). IT can facilitate business relations with external entities (Hasan and Tibbits, 2000). Relations with governments, the general public, investors and associations have all been put forth as some of these external entities (Murillo, 2001). IT allows companies to discover and develop new and profitable global markets which were not previously accessible (Sakaguchi and Dibrell, 1998; Damanpour and Damanpour, 2001). Chae and Hill (2000) outlined how IT can be used as a marketing tool to reach global consumers and strategies for expanding a company's customer base. IT has been recommended as a tool for improving the corporate image of companies (Sohal et al., (2001). The Internet has also made new sources and

methods of financing available (Galbraith and Merrill, 2001). Kuei et al. (2001) discussed how IT can aid in finding a larger number of potential suppliers and in collecting important supplier information. Their research suggests that improved management of quality in the supply chain can lead to increase business performance.

3. BUSINESS PERFORMANCE

There are many difficulties with measuring success in the field of information systems and the employment of many different instruments has complicated the comparison between studies (DeLone and McLean, 1992). They noted six major constructs of IT value: System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organisational Impact. Davern and Kauffman (2000) proposed five levels of analysis for IT value: market, firm, work group, business process and individual user. The organization impact/firm level will be the level of interest for the present research and will be referred to as business performance. The dependence on secondary data for organizational IT value measurement as well as the cumulative practice of measurement in IT value highlights the need for proven organizational level measures utilizing primary data (Chan, 2000).

Composite measures are needed to address the multidimensional nature of business performance (Venkatraman and Ramanujam, 1986). Marketing and financial measures are the two most common measures for measuring business performance (Forker et al., 1996). This split into marketing and financial dimensions is consistent with strategic management research where market performance represents the long term-trends of a

company and financial performance which reflects a company's short-term position (Venkatraman, 1985).

The PIMS[4] database is commonly referred to for measures of market performance (Chang, 1997; Forker et al., 1996). In the PIMS database, market performance is discussed as a company's position relative to its competition and measures such as relative market share and market share rank are mentioned.

Financial performance addresses the question "How do we look to our shareholders?" (Kaplan and Norton, 1992). Financial performance is commonly defined in the context of financial accounting with measures such as return on investment and company profits (GAO, 1991; Kaplan and Norton, 1992).

4. IT ALIGNMENT AND BUSINESS PERFORMANCE

Henderson and Venkatraman (1999) proposed the Strategic Alignment Model presented in Figure 3 which provides an overview of the relationships between business strategy, IT strategy and the underlying infrastructure and processes. In the top right hand box, IT strategy, the focus of this study, can be seen in the context with other important components related to IT. This model will form the basis for the discussion of previous studies which examine the fit between strategies.

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[4] PIMS (Profit Impact of Market Strategy). The Strategic Planning Institute http://www.pimsonline.com/about_pims_db.htm

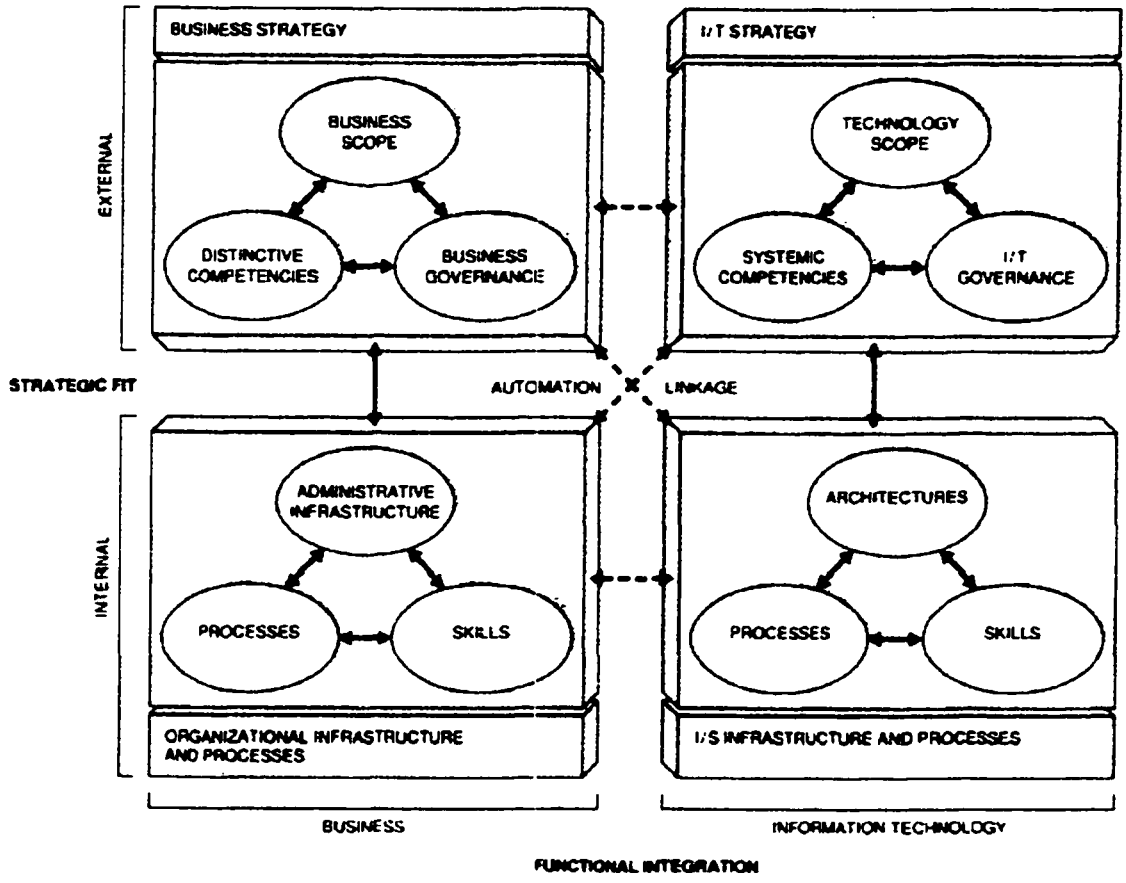

Figure 3: Strategic Alignment Model (Henderson and Venkatraman, 1999)

Croteau and Bergeron (2001) presented an empirical model to compare the alignment of business strategy and IT deployment. IT deployment is similar to the concept of IS Infrastructure and processes as discussed by Henderson and Venkatraman (1999). This research found that different business strategies were best supported with different IT deployments. Chan et al. (1997) proposed an alignment model between Venkatraman's (1985) STROBE model and a new model called STORIS (Strategic Orientation of Information Systems) which is a modification of the STROBE model in

which information systems have been considered. In the alignment model between the STROBE and STORIS a weak relationship was found with business performance. This research indicated the relationship between business strategy and IS strategy is having a positive impact on business performance.

Sakaguchi and Dibrell (1998) found an indication of a linkage between global IT strategy and their performance measures. However, their sample was not large enough to provide statistical significance. Davis et al. (2002) found a linkage between strategic IT usage and reductions in business cycle time. Both these studies note the importance of further empirical research into the linkage between IT strategy and business performance.

5. CONTROLLING VARIABLES

In Figure 4, Kettinger et al.'s (1994) Model of Sustainability highlights the factors which effect the realization of a sustained competitive advantage from IT. Industry and company size were chosen as the two controlling variables for this study, both because of their predominance in the IT value literature and their ease of measurement. McGahan and Porter (1997) found that 19% of the aggregate variance in company profitability was accounted for by industry while 32% of the variance was company specific. In most of the studies dealing with IT value, industry and size use secondary data for their analysis. Chan (2000) noted an increasing reliance on secondary data in measuring IT value. When industry and size are the objects of study obtaining a large dataset of primary data seems to be a difficulty.

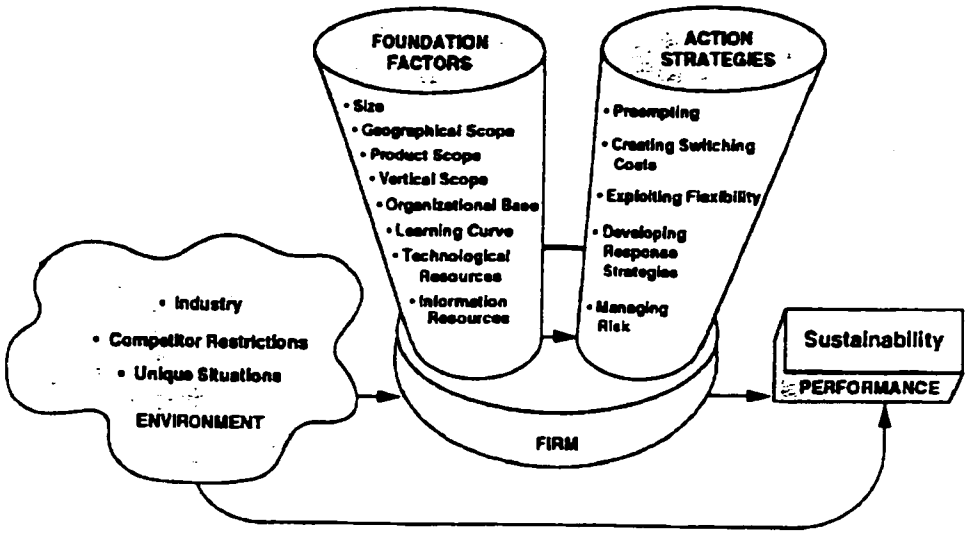

Figure 4: Model of Sustainability (Kettinger et al., 1994)

5.1 - Company Size

Brynjolfsson et al. (1994) used secondary data and found that investments in IT were more effective in with fewer employees. Im et al. (2001) present an event study, utilizing secondary data which showed that IT investment in smaller companies had a greater impact on market value than in larger companies. Rouse (2001) argued that the Internet has made IT much more effective, especially for small and medium sized companies.

5.2 - Industry

With the results of a survey, Sohal et al. (2001) found significant differences in the usage of IT between services and manufacturing companies. Their research noted that services industries used IT to enhance their products, improve productivity and reduce costs to a greater extent than within manufacturing companies. Sircar et al. (2000)

focused on the linkage between IT investment and business performance. Using secondary data they found significant differences in the correlations depending upon industry. In their event study, Im et al. (2001) found significantly higher returns on IT investment for companies in information-intensiveness industries. Analysis of specific website content for various industries found that hi-tech companies were adopting web innovations more quickly (Perry and Bodkin, 2000).

CHAPTER II - RESEARCH MODEL AND HYPOTHESES

This section begins by outlining the research model and research question. The hypotheses associated with the research model are then discussed.

1. RESEARCH MODEL

In this research the independent variables are the eight IT strategies and the dependent variable is business performance. Two controlling variables company size and industry are also included. The research model is associated with three major hypotheses. The first hypothesis (H1) examines the relationship between IT strategies and business performance. The second hypothesis (H2) introduces industry as a controlling variable. The third hypothesis (H3) introduces company size as another controlling variable. Figure 5: Research Model is the research model which this research will test. On the left hand side of the model each of the IT strategies is given. The arrows linking these IT strategies to business performance have been numbered .1 to .8 and the two components of business performance have been labeled "f" for financial and "m" for market. The boxes with H1, H2, and H3 indicate the three major hypotheses. The label for a specific hypothesis can be created by adjoining the IT strategy number (.1 to .8) and the measure of performance (f or m) to one of the three hypotheses.

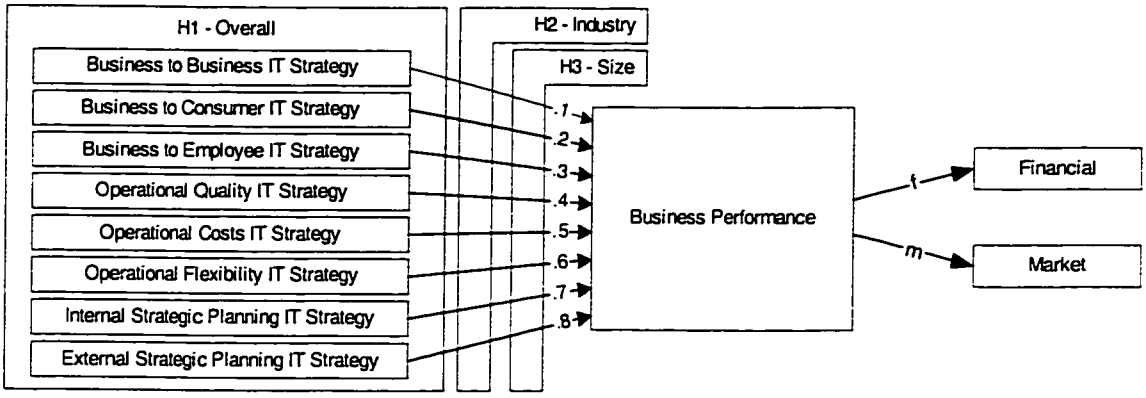

Figure 5: Research Model

The research question associated with the research model presented above is:

How does IT strategy affect business performance?

This research develops an IT strategy instrument to measure business level strategy toward IT. Each of these IT strategies will be examined as to how it relates to business performance. The controlling variables industry and company size have been included since previous research has indicated that they play a role in the value of IT.

2. HYPOTHESES

The hypotheses associated with the research question are arranged into 3 main hypotheses (H1 the overall relationship, H2 Industry specific, and H3 Company size specific). Each of these main hypotheses contains 16 sub-hypothesis which include the links between each IT strategy and each measure of business performance. It should be noted that this is a correlational field study and that no causal relationships are implied.

The first hypothesis (H1) covers the linkage between each of the IT strategies and business performance for the whole sample.

H1 - IT strategies are positively linked with business performance.

This hypothesis is broken down into eight sub hypothesis (.1 to .8) each with two components business performance, both financial performance (f) and market performance (m).

Hausman (2001) investigated the relationship strength between two businesses and found a positive impact on performance and satisfaction. By utilizing a B2B IT strategy, companies can benefit from a closer relationship with business partners leading to increase business performance. Thus the following hypotheses have been proposed:

H1.1f - Business to Business IT strategy is positively linked with financial performance.

H1.1m - Business to Business IT strategy is positively linked with market performance.

Bontis (1998) found a linkage between intellectual capital and business performance. As two components of his model, customer capital and human capital are similar to B2C and B2E IT strategies. By using IT to enhance relationships with customers and employees, companies can more effectively sell products and services as well as benefit from an informed and well coordinated workforce. The following hypotheses have been proposed:

H1.2f – Business to Consumer IT strategy is positively linked with financial performance.

H1.2m - Business to Consumer IT strategy is positively linked with market performance.

H1.3f – Business to Employee IT strategy is positively linked with financial performance.

H1.3m - Business to Employee IT strategy is positively linked with market performance.

Previous studies found linkages between operational components and business performance (Boyer, 1998; Sohal et al., 2001; Noble, 1997; Ang et al., 2000). With the use of IT to control quality, costs and flexibility, companies can benefit from the ability to assure quality, to reduce costs, and to adapt their production to meet market needs, thus increasing business performance. Based on the findings of these four articles the following hypotheses were proposed:

H1.4f - Operational quality IT strategy is positively linked with financial performance.

H1.4m - Operational quality IT strategy is positively linked with market performance.

H1.5f - Operational costs IT strategy is positively linked with financial performance.

H1.5m - Operational costs IT strategy is positively linked with market performance.

H1.6f - Operational flexibility IT strategy is positively linked with financial performance.

H1.6m - Operational flexibility IT strategy is positively linked with market performance.

Ang et al. (2000) found a linkage between the usage of IT in the strategic planning process and business performance. There were also empirical studies which indicated that IT increased business performance by enabling a business to derive advantage from its external environment (Davis and Dibrell, 2002; Sakaguchi and Dibrell, 1998). By

utilizing IT in the strategic planning process, companies can make and implement better strategic decisions enhancing their business performance. Based on the finding from these three articles the following hypotheses were proposed:

H1.7f - Internal strategic planning IT strategy is positively linked with market performance.

H1.7m - Internal strategic planning IT strategy is positively linked with financial performance.

H1.8f - External strategic planning IT strategy is positively linked with market performance.

H1.8m - External strategic planning IT strategy is positively linked with financial performance.

Sohal et al. (2001) found significant differences in the usage of IT between services and manufacturing companies. To begin with services and manufacturing industries will be used as the controlling variable <industry>. Later, if the size of the sample permits, industries such as primary and hi-tech will be added to the analysis. Hypothesis two has been noted with <industry> which will be replaced with the industry which will be analyzed. The eight IT strategies (.1 – B2B IT strategy to .8 External strategic planning) will be examined with each component of business performance, financial (f) and market (f) performance to make a total of 16 hypotheses for each industry. As industry seems to play a role in the usage and effectiveness of IT, the following hypothesis was proposed:

H2 - The effect of IT strategies varies according to industry.

H2<industry>(.1 to .8)(f and m)

(example: H2<Services>.1f - Business to Business IT strategy is positively linked with financial performance in the services industry.)

Brynjolfsson et al.'s (1994) findings suggest that IT investments are having a greater impact on companies with a lower number of employees. As the human component seems to be important in the effectiveness of IT, company size measured by the number of employees, was the basis for following hypothesis:

H3 - The effect of IT strategies varies according to company size.

H3<company size>(.1 to .8)(f and m)

(example: H3<Under 100 Employees>.2m - Business to Consumer IT strategy is positively linked with market performance for companies with under 100 employees.)

CHAPTER III - METHODOLOGY

This section will describe the operationalisation of the constructs in the research model. It will begin with an overview of the constructs in the model followed by a detailed description of the survey development process.

1. OPERATIONALIZATION OF THE CONSTRUCTS

The independent variables for IT strategy were developed based on previous research instruments and literature as presented in the literature review. Using Venkatraman (1985) classifications for strategy constructs, this IT strategy instrument would be defined as holistic perspective of the means employed to realize business level goals. The follow lists each construct and its associated operational definition:

Business to Business (B2B) IT Strategy refers to the utilization of IT to facilitate relationships between your business and other businesses.

Business to Consumer (B2C) IT Strategy refers to the utilization of IT to facilitate relationships and transactions with the consumers of your products or services.

Business to Employee (B2E) IT Strategy refers to the utilization of IT to facilitate communication between employees and to help employees in carrying out their jobs.

Operations Quality IT Strategy refers to the utilization of IT to monitor and maintain quality standards.

Operations Cost IT Strategy refers to the utilization of IT to control expenditures.

Operations Flexibility IT Strategy refers to the utilization of IT to increase the ability of your organization to adapt to market demands.

Internal Strategic Planning refers to the utilization of IT for organization's internal strategic decision-making and implementation.

External Strategic Planning refers to the utilization of IT to derive advantage from your organization's external environment.

The development process is outlined in the next section entitled Survey development Process. Here the process of finding and refining each of the items with which to measure each construct is described.

Industry and company size (measured by the number of employees) were used as controlling variables because of their predominance in the literature as well as their ease of measurement at an organizational level.

Venkatraman (1985) measure of business performance was used as the basis for the dependent variable. This measure has been tested and its reliability verified by Chan (1992) and Croteau and Bergeron (2001). Table 1: Components of performance shows the items included in each measure. Financial performance emphasizes the monetary measurements of performance whereas market performance is concerned with the size of a company's customer base.

Financial Performance	Market Performance
o Net profits o Return on sales o Return on investment o Net profits relative to the competition o Return on investment relative to the competition	o Market share o Sales growth rate o Revenue growth relative to competition o Market share gains relative to the competition

Table 1: Components of performance

Brynjolfsson et al.'s (1994) used number of employees as a measure of company size and this measure has been employed in this study. Sohal et al.'s (2001) classification of

companies in manufacturing industry and those in the service industry will be the basis for industry analysis.

2. SURVEY DEVELOPMENT PROCESS

The development of this survey instrument for IT strategy started with a literature search. In addition, about 100 authors who had published research regarding IT strategy were contacted via e-mail about suitable survey instruments. A suitable research instrument was not found through this process. A new instrument for IT strategy was therefore designed and tested based on the available literature. Venkatraman (1985) had developed a research instrument for business strategy which he named STROBE. The STROBE model was used as the basis for the present IT strategy instrument. The main modifications were in adapting it into an IT context and to add IT relevant items.

Clear constructs for IT Strategy were lacking at the beginning of the survey development. The items from Venkatraman's (1985) STROBE model, as well as the items from all the other available survey instruments, were analyzed. All of the items were classified and sub classified. In many cases, strategic issues in IT were not covered by any of the research instruments, but did exist in the literature. Therefore, many new items had to be created based on available literature. These items were all labeled "derived", as opposed to "adapted", meaning that only changes in wording and context were made from the original research instrument. The constructs discussed in the literature review emerged after sorting and re-classifying the items. Venkatraman

and Grant (1986) discuss the development of constructs and their guidelines were followed during the development process. One of the key points they highlight is to ensure the linkage between each measure and the underlying theory. The following eight tables Table 2: Business to Business IT Strategy Literature Sources to Table 9: External Strategic Planning Literature Sources show the literature sources for all the original items in the survey instrument. These original items were used as the input to the card-sorting procedure, presented on page 41, and were refined into the final research instrument presented in Appendix 10: Final Version.

	Item	Adapted Source	Derived Source
Business to Business IT Strategy	Develop closer relationships with suppliers		(Galbraith and Merrill, 2001)
	Develop long term relationships with suppliers		(Galbraith and Merrill, 2001)
	Increase supplier commitment		(Hausman, 2001)
	Increase supplier cooperation		(Hausman, 2001)
	Increase supplier trust		(Hausman, 2001)
	Assist the procurement of goods and services from suppliers		(Hooft and Stegwee, 2001); (Archer and Yuan, 2000)
	Enable price negotiation		(Simeon, 1999)
	Enable information sharing with suppliers		(Warkentin et al., 2001)
	Enable supplier collaboration in developing products and specifications		(H. Parker, 2000); (Burgess et al., 1997)

Table 2: Business to Business IT Strategy Literature Sources

	Item	Adapted Source	Derived Source
Business to Consumer IT Strategy	Provide customers with company specific information		(Wen, et al., 2001); (Perry and Bodkin, 2000)
	Provide customers with product and service information		(Wen et al., 2001); (Perry and Bodkin, 2000)
	Allow customers to make transactions electronically		(Wen et al., 2001); (Aldridge et al., 1997)
	Lower transactions costs to customers		(Wen et al., 2001); (Aldridge et al., 1997)
	Offer value-added services	(Bontis, 1998)	
	Reduce customer service response time	(Bontis, 1998)	
	Achieve a closer relationship with individual customers		(Wang et al., 2000)
	Build customer loyalty		(Lee, 2001)
	Create customer communities on the Internet		(Wen et al., 2001); (Simeon, 1999)
	Gain a better understanding of customers	(Bontis, 1998); (Ang et al., 2000)	(Sproule and Archer, 2000)

Table 3: Business to Consumer IT Strategy Literature Sources

	Item	Adapted Source	Derived Source
Business to Employee IT Strategy	Enable collaboration between employees		(Cheng et al., 2001)
	Facilitate team-working to solve problems	(Ang et al., 2000)	
	Improve communications between employees and management	(Kuei et al., 2001)	(Gunnigle et al., 1998)
	Enable innovation		(Maier and Remus, 2001)
	Enable employee development and training		(Bontis, 1998)
	Increase employee productivity		(Udo, 1998); (Sohal et al, 2001)
	Codify knowledge of employees		(Maier and Remus, 2001)
	Enable employees to find other employees with specific expertise		(Maier and Remus, 2001)
	Provide universal access to information	(Ang et al., 2000)	(Detlor 2001)

Table 4: Business to Employee IT Strategy Literature Sources

	Item	Adapted Source	Derived Source
Operational Quality IT Strategy	Automate inspection, review or checking of work	(Chow and Lui, 2001)	(Sohal et al., 2001)
	Ensure consistent and reliable product quality	(Boyer, 1998)	(Sohal et al., 2001)
	Facilitate inter-organizational cooperation for service quality	(Ang et al., 2000)	
	Improve conformance to design specification	(Boyer, 1998)	
	Improve information accuracy	(Ang et al., 2000)	
	Measure customer satisfaction	(Ang et al., 2000)	
	Measure service quality	(Ang et al., 2000)	(Sohal et al., 2001)
	Monitor for waste and inefficiencies	(Ang et al., 2000); (Grandzol and Gershon, 1998)	
	Monitor the quality of supplies	(Kuei et al., 2001)	(Sohal et al., 2001)
	Provide faster delivery times	(Boyer, 1998)	(Sohal et al., 2001)

Table 5: Operational Quality IT Strategy Literature Sources

	Item	Adapted Source	Derived Source
Operational Costs IT Strategy	Control capital costs	(Sohal et al., 2001)	
	Control staffing costs	(Sohal et al., 2001); (Fawcett et al., 1997)	
	Increase capacity utilization	(Boyer, 1998); (Fawcett et al., 1997)	(Sohal et al., 2001)
	Lower the cost per transaction	(Bontis, 1998)	
	Reduce administrative costs		(Udo, 1998)
	Reduce inventory costs	(Boyer, 1998); (Fawcett et al., 1997)	(Sohal et al., 2001)
	Reduce order cycle times		(Min and Galle, 1999)
	Reduce production costs	(Boyer, 1998)	
	Reduce the cost of inbound logistics		(Archer and Yuan, 2000)

Table 6: Operational Costs IT Strategy Literature Sources

	Item	Adapted Source	Derived Source
Operational Flexibility IT Strategy	Adjust capacity quickly	(Boyer, 1998)	
	Adjust product mix	(Boyer, 1998)	
	Increase responsiveness to market needs	(Sohal et al., 2001)	
	Enable rapid new product introduction	(Noble, 1997)	(Sohal et al., 2001)
	Increase the frequency of new product introduction	(Noble, 1997)	
	Offer a large degree of product variety	(Boyer, 1998)	(Sohal et al., 2001)
	Offer a large number of product features	(Boyer, 1998)	(Sohal et al., 2001)

Table 7: Operational Flexibility IT Strategy Literature Sources

	Item	Adapted Source	Derived Source
Internal Strategic Planning	Aid in implementing business strategy	(Small and Yasin, 1997)	(Klouwenberg et al., 1995)
	Analyze strategic issues	(Ang et al., 2000)	(Bose and Sugumaran, 1999)
	Develop long-term strategic planning	(Small and Yasin, 1997)	
	Document strategic planning	(Ang et al., 2000)	
	Enable dynamic strategy formation		(Feurer et al., 1995); (Feurer and Chaharbaghi, 1996)
	Formulate strategic plans	(Ang et al., 2000)	
	Support strategic decision making	(Ang et al., 2000)	
	Coordinate activities geographically	(Davis and Dibrell, 2002)	
	Emphasize effective coordination among different functional areas	(Venkatraman, 1985)	
	Facilitate organizational change	(Sohal et al., 2001)	
	Improve business unit integration		(Udo, 1998)

Table 8: Internal Strategic Planning Literature Sources

	Item	Adapted Source	Derived Source
External Strategic Planning	Aid in supplier selection	(Kuei et al, 2001)	
	Forecast potential opportunities	(Venkatraman, 1985)	
	Gather information from relevant stakeholders	(Venkatraman, 1985)	(Atkinson et al., 1997)
	Track significant industry trends	(Venkatraman, 1985)	
	Access new sources of financing		(Galbraith and Merrill, 2001)
	Discover and develop new and profitable global markets	(Sakaguchi and Dibrell, 1998)	
	Find new markets for products and services		(Damanpour and Damanpour, 2001)
	Generate new sources of revenue		(Damanpour and Damanpour, 2001)
	Help to stay ahead of competitors	(Davis and Dibrell, 2002)	
	Improve corporate image	(Sohal et al., 2001)	(Feurer and Chaharbaghi, 1996); (Klouwenberg et al., 1995)
	Overcome advantage of local firms in a host country	(Sakaguchi and Dibrell, 1998)	
	Facilitate benchmarking	(Ahmed et al., 1996)	

Table 9: External Strategic Planning Literature Sources

There has been a trend of insufficient validation of research instruments in the discipline of Management Information Systems (Boudreau et al., 2001). Specific attention was therefore devoted to the process of developing and validating this research instrument. Churchill (1979) discusses the development and testing of research instruments. One important point he makes is the generation of a large number of items and an iterative purification procedure in order to discover the items of most relevance to the constructs that are being created.

The development of the research instrument involved a card-sorting to ensure the validity of the items in each construct. Two pre-tests were performed with university professors and a final pretest was performed with practitioners. Appendix 1: Relational Modification, Appendix 2: Operational modifications, and Appendix 3: Strategic Planning Modifications contain an overview of the modifications made during each of the development stages.

3. CARD-SORTING

Moore and Benbasat (1991) used a card-sorting technique to ensure the validity of the constructs in their model. Respondents were asked to take each survey item and place it in the appropriate category or construct. Originally conducted with paper and envelopes, an on-line adaptation was created to assess the present research instrument. The definitions of the constructs were given in the top frame of the webpage while each item was listed in the lower frame with a selection box for the respondent to choose the

construct which they deemed appropriate. Appendix 4: Card-Sorting Screenshot contains a screen shot of the webpage which was used to conduct the card-sorting.

Emails were sent to 150 professors at North American universities. 31 were returned to sender and 12 replied with automated out-of-the-office responses, giving a total sample size of 107. 21 professors completed the card sorting exercise. Of the 21 respondents, two had not completed the survey correctly and four had not selected categorizations for a sufficient number of items. The remaining 15 respondents were used in the card sorting analysis. The results are contained in Appendix 5: Card-Sorting Relational Results, Appendix 6: Card-Sorting Operational Results and Appendix 7: Card-Sorting Strategic Planning Results. The percentages of people who classified items according to the predefined constructs are given on the right column of the table. The percentage of correct placements for each respondent is given along the bottom row.

As a rule all of the items below 40% agreement were taken out of the survey. The two exceptions were "Coordinating the company's geographically" and "Improve corporate image" which were kept because of their appearance in multiple pieces of literature.

4. DESIGN AND PRETESTING

The survey instrument was pre-tested on-line three times. The items as well as the web-design were modified after each pre-test. Many web-design issues were raised, such as fonts, logos, colors, and spacing. The survey was done page by page in order to

avoid scrolling. Each page contains a definition of the strategy which was going to be covered. A short sentence was used above each of the list of items to prefix each item. The phrase "Information Systems are allowing my firm to:" preceded the items. A five-point scale was originally used with five anchors ranging from "no extent" to "very great extent", which was taken from Sakaguchi and Dibrell (1998). The prefixes for the items as well as the scale were both changed in later stages of pre-testing.

4.1 - 1st Academic Pretest

The first pretest was conducted with 6 university professors and used the design shown in Appendix 8: Pre-test First Version. The wording in many sections was modified following this pre-test. The definitions for each section were changed to read "your company", instead of "a company". In addition, the words "firm", and "organization" were replaced with "company". Company was chosen as it appeared to be the least ambiguous and best suited for North American respondents.

After the first pre-test some web design changes were made. There were significant comments on the colors and the lack of a progress indicator. A web designer was consulted to help make cosmetic changes to the survey. The size of the page was also set to 640 pixels by 480 pixels to ensure that the survey would be viewed the same on different monitors. In addition, some major design changes were made to the layout and the colors.

4.2 - 2nd Academic Pre-test

Five university professors completed the second pre-test. The design is given in Appendix 9: Pre-test Second Version. Some minor wording changes in a few of the items were made after this pretest, while the design was kept the same. Some concerns, regarding the scales arose during this pretest but the original scale was retained for the next pre-test.

4.3 - Practioners Pre-test

The final pre-test was completed by 8 practitioners. A screenshot of the design is given in Appendix 9: Pre-test Second Version.

Posts on yahoo groups on the Internet were used to recruit pre-testers. Eight people replied to the Internet posting and all eight completed the pre-test. Three pre-testers were in upper management, four in lower management and one was a consultant. Comments were received about the scale being unusual.

Some refinements to the design were also made after this pre-test. The definition and items which were originally placed horizontally in two tables were moved to align vertically. In addition, further improvements were made to the progress bar by adding a progress indicator.

The use of an "extent" scale was unusual for the respondents. In addition, a more positive linkage to the effectiveness of the IT was desired. Several drafts of the questionnaire were posted on-line using different scales and wording. Questions were asked by email to some of the pre-testers as well as the authors who had conducted a

survey using the "extent" scale. The agreement was unanimous to switch to the "satisfaction" scale. From a theoretical standpoint it was felt that the "satisfaction" scale was a richer measure, because it included information about how well IT was working, not just the extent to which it was being used. Davern and Kauffman (2000) discuss the potential and realized value of IT. While the extent scale probably more closely measures the potential value of IT, using the satisfaction scale is more synonymous with realized value.

5. FINAL QUESTIONNAIRE

In the final version of the questionnaire, a five point likert scale with three anchors and a not applicable (n/a) option was used. Each page of the survey asked questions regarding one of the eight IT strategies, and the definition for the strategy was given at the top of each page. Before the items were listed, the phrase "Please indicate your level of satisfaction with your company's current usage of IT in the following areas:" was used as a prefix for each of the items. Each item was constructed to use a verb in the continuous form which was followed by an object. Screenshots of the final survey are contained in Appendix 10: Final Version.

CHAPTER IV - WEB RESEARCH SAMPLE

Obtaining potential survey respondents to conduct a web survey was challenging. There were two options for developing a survey list. The first was to use an email list provider. The second was to collect the email addresses directly from the Internet.

Searches on the Internet did not bring up any databases with email lists. Some commercial email list providers offered a one time use of such databases. However, none offered adequate assurance of the quality of their lists. Two studies used CIO Canada's[5] email list to conduct on-line surveys (UVIC and Magazine, 2001; Carr, 2002). Both these surveys had low response rates and reached people with a more technical background. In addition, there was no control over which company a respondent worked for. Two people from the same company could have easily complete the survey. Two other downfalls of this method was a lack of control over the sending process and the inability to send reminder emails.

Girlea (2001) conducted a hybrid survey utilizing both web and paper. Emails were gathered from Industry Canada's Company Directory[6] strategis.gc.ca website for the survey. The response rate was good, but the sample of emails was small.

[5] CIO Canada Online - http://www.itworldcanada.com/cio/
[6] Industry Canada - Company Directories - http://strategis.ic.gc.ca/

1. DEVELOPING AN EMAIL LIST

Since having a list of emails is very important to control the sample, the second route was chosen, allowing the survey emails to be personalized. This also allowed a reminder email to be sent.

The process of gathering the email addresses was automated using Software Agent Technology. The agent was programmed to collect email addresses from stock market data providers using company ticker symbols. Addresses were collected from the American Stock Exchange, the Dow Jones, the Nasdaq, and the Toronto Stock Exchange. Email addresses were obtained for a total of 4538 companies in the United States and 1593 companies in Canada. Most of the addresses were for investor relations, while some were for information or for personal contacts within the company.

2. EMAIL SOLICITATION

The head of Information Technology Strategy was the target of this survey. Recipients were asked to forward the survey invitation to this person. Emails were addressed individually and the name of the company was added in the text as presented in Appendix 11: Contact Email. A week later a reminder email was sent to those who had not yet completed the survey as in Appendix 12: Reminder Email.

CHAPTER V - DATA ANALYSIS

This section contains a description of the data analysis that was performed. Response rates and demographics of the respondents are discussed first, followed by an overview of the responses for the items. This section also contains a description of the factor analysis and reliability analysis which was performed prior to the creation of the constructs in the research model. The final section describes the correlation analysis which was used to test the hypothesis presented in the methodology section.

1. RESPONSE RATES

A total of 6131 survey invitation emails were sent. 1059 were undelivered, leaving 5072 delivered emails. 220 people completed the survey, resulting in an overall response rate of 4.34%. In the United States, a total of 4538 companies were contacted. 711 emails were undeliverable. 3827 emails were delivered and 121 people completed the survey. The response rate in the US was 3.21%. 1593 Canadian companies were contacted. 348 emails were undeliverable. 1245 emails were delivered and 99 people completed survey. The response rate in Canada was 7.95%.

2. DEMOGRAPHIC STATISTICS

Of the 220 respondents 99 were from Canada and 121 were from the United States. Table 10: Industry Demographics shows the breakdown of the respondents selection of industry classification. Manufacturing (33%), Services (14%) and Communications (9%) were the top three industries. Table 11: Job Position Demographics shows the

occupation of respondents. The top three job titles were IT/IS Manager (20%), Director IT/IS (16%), and CIO (14%).

Industry	Percentage
Manufacturing	33%
Services	14%
Communications	9%
Finance, insurance and real-estate	8%
Health	7%
Mining	6%
Transports	3%
Retail trade	3%
Wholesale	2%
Agriculture, forests and fisheries	1%
Construction	1%
Not Specified	14%

Table 10: Industry Demographics (n=220)

Job Title	Percentage
IT/IS Manager	20%
Director IT/IS	16%
CIO	14%
VP IT/IS	11%
VP Other	7%
Administator	5%
President	4%
Manager Other	4%
Other	3%
Director Other	3%
CEO	2%
CTO	2%
Other IT related	2%
Unspecified	7%

Table 11: Job Position Demographics (n=220)

The respondents had an average of 4.7 years in their current position and 7.9 years with their company. The average percentage of budget allocated to IT was 8.99. Of this budget 50% was allocated to computer capital while 49% was allocated to non-computer capital.

Three t-tests were performed to test for significant differences in responses between respondents. The first t-test was between executive level and managerial level and the second t-test was between IT/IS related and non-IT/IS related. Both t-tests showed no significant differences at a 5% level. In addition, a t-test was conducted between Canadian and US respondents, which again showed no significant differences at a 5% level between the respondents from the two countries. These t-tests were conducted to test for other variables to which differences in responses could be attributed. From the

results of the t-tests discussed above, it is unlikely that managerial level, IT relatedness or country of location have affected the responses.

3. DESCRIPTIVE STATISTICS

The data was first assessed for normality. Appendix 13: Business to Business Item Descriptive Statistics to Appendix 20: External Strategic Planning Descriptive Statistics show a bar chart of the responses for each variable along with a normal curve. Near zero skewness values and a visual analysis it indicated that the responses followed a normal distribution. Since respondents were given a not applicable option, this was coded as a missing value. There were only 2 missing values (0.91% missing responses per respondent) in the dataset which changed to not applicable.

4. FACTOR ANALYSIS

Factor analysis can be used to assess the degree to which items are measuring the same concepts or variables (Bryman and Cramer, 1997). Confirmatory factor analysis was run to ensure that the groups of items for each construct where measuring that construct and that the constructs could be distinguished from one and other. Venkatraman and Grant (1986) note this method in testing for convergent validity within the constructs. Principal components extraction was used with varimax rotation and pair wise deletion. The extraction was set to extract eight factors which accounted for 68% of the variance. Appendix 21: Factor Analysis presents more detailed statistics.

There were 5 items which were not included in the factor analysis and the following will explain the reasoning behind each exclusion. In the Business to Business construct

item 4 (Assisting the procurement of goods and services from suppliers) also loaded on the internal strategic planning construct and was thus excluded. Quality construct item number 4 (Monitoring for product waste) had a multiple loading on costs and was therefore deleted. In the internal strategic planning construct item 7 (Improve geographic integration) was deleted due to low loading. It should also be noted that this item was kept after having a score of below 40% in the card sorting. This could be evidence showing the effectiveness of the card-sorting. External strategic planning, item 2 (Helping to maintain a competitive advantage) was removed because it did not load on any factors. Item 4 (Accessing new sources of capital) was removed because it loaded on multiple constructs.

5. RELIABILITY ANALYSIS

Reliability analysis can be used to test the internal reliability of multiple-item scales. This is done by testing to see that the items which make up the scale are all measuring a single idea (Bryman and Cramer, 1997). Reliability analysis was conducted on each of the constructs with the items remaining after the factor analysis Appendix 22: Reliability Analysis. All of the constructs were deemed reliable at 84%. Table 12: Reliability Analysis Summary contains the alpha values for each construct as well as the number of initial and final items.

Construct	Initial # of Items	Final # of Items	Alpha
B2B IT Strategy	6	5	0.8555
B2C IT Strategy	8	8	0.8887
B2E IT Strategy	7	7	0.8895
Quality IT Strategy	6	5	0.8662
Costs IT Strategy	6	6	0.9323
Flexibility IT Strategy	5	5	0.8898
Internal Strategic Planning	7	6	0.9375
External Strategic Planning	7	5	0.8469
Market Performance	4	4	0.9298
Financial Performance	5	5	0.8790

Table 12: Reliability Analysis Summary (n=220)

6. CONSTRUCTS

The reduced set of items for each IT strategy was used to create constructs. An average of the responses to each set of items was used to create a construct for each IT strategy. If a respondent selected all not applicable responses for the items in a construct, an average was not calculated. In this case a missing value was given for the construct, meaning that the respondent's company did not have this particular IT strategy. In some cases respondents gave a mix of not applicable and satisfaction responses. Missing values were given up until the respondent gave 60% of the responses for the construct as satisfaction responses. At this point and above, an average was used to create a construct which measured the degree to which their company was using IT for a particular strategy. Appendix 23: Descriptive Statistics for Constructs shows bar graphs and normality curves for each of the constructs which were used in the model.

7. CORRELATION ANALYSIS

Correlation analysis and Person's Correlation Coefficient can be used to judge the strength of the relationship between two variables (Bryman and Cramer, 1997). Correlation analysis was used to test the hypotheses of the research model. As each hypothesis identifies the positive linkage between each IT strategy and performance measure 1 tailed tests were employed.

Cohen and Holliday (1982) put forth some rules of thumb for various values of the correlation coefficient as shown in Table 13: Correlation Coefficient Guidelines (Cohen and Holliday, 1982). The highest correlation coefficient in this research was 0.628.

Correlation Coefficient	Relationship
0 – 0.19	Very low
0.20 – 0.39	Low
0.40 – 0.69	Modest
0.70 – 0.89	High
0.90 – 1	Very High

Table 13: Correlation Coefficient Guidelines (Cohen and Holliday, 1982)

Hypothesis one (H1) was tested by correlation analysis performed between each of the IT strategy constructs and both financial and market performance measures. Hypothesis two (H2) was tested by running the same correlation analysis with the dataset subdivided into industries. Hypothesis three (H3) was tested by running the same analysis with the dataset split according the number of employees.

Hypothesis one (H1) was tested with the correlations between each IT strategy (.1 to .8) and both financial (f) and market (m) performance measures. Appendix 25: Hypothesis One Tests (n=220) shows the results for all of the sub-hypotheses covered

by hypothesis one, beginning with H1.1f (B2B IT Strategy and financial performance), with a correlation coefficient of 0.350 and was significant at a 1% level, and finishing with H1.8m (External Strategic Planning and market performance), which had a correlation coefficient of 0.150 and was significant at a 1.8% level. When the box for any hypothesis is shaded it means that the hypotheses were supported. All of the hypotheses associated with hypothesis one were supported. Figure 6: Overall IT Strategy Correlations (n=220) gives an overview of the correlations covered by hypothesis one.

Diagrams were used to illustrate the correlations between IT strategy and business performance. On the left and right side of these diagrams, the 8 IT strategies are shown in boxes. Lines from these boxes to the middle box indicate correlations between the IT strategy and business performance, financial performance on the left and market performance on the right. No line indicates that there is no significant correlation. The stars beside each number indicate the significance level of a one-tailed correlation. Please refer to Table 13 on page 53 for some rules of them for accessing the strength of correlation coefficients.

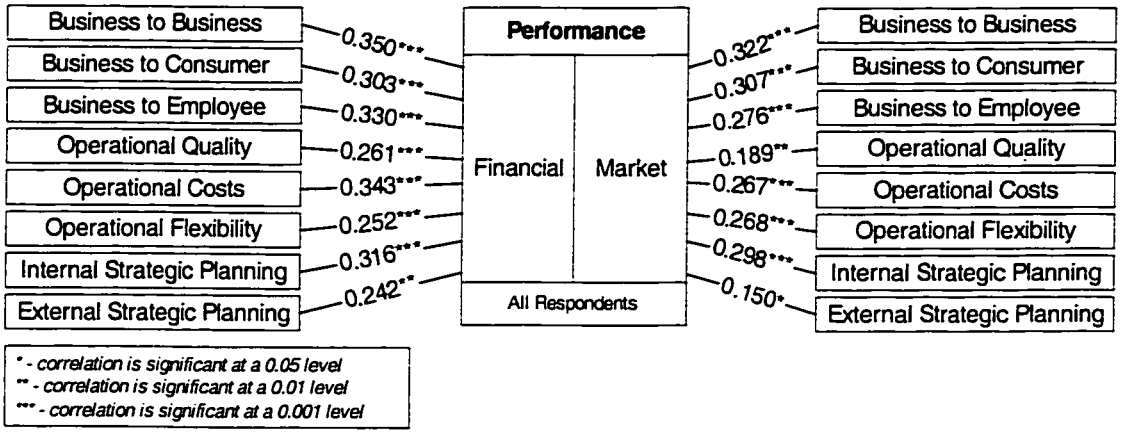

Figure 6: Overall IT Strategy Correlations (n=220)

Given the sample size, it was practical to subdivide the sample into 4 major industrial sectors; Services, Manufacturing, Primary and Hi-Tech. The Primary sector[7] was those industries dealing with natural resources. The Hi-Tech sector[8] was those companies where technology was a key part of their business processes. The decisions for industry were made on the basis of the respondent's answer, in addition to Standard Industry Classification (SIC) and Global Industry Classification Standard (GICS) codes. Table 14: Industry Analysis Sectors shows how the industry classifications were made.

[7] Statistics Canada - http://www.statcan.ca/english/Pgdb/Economy/primar.htm
[8] Advancing the Business of Technology - http://www.aeanet.org/Publications/IDMK_definition.asp

Industry	Sub-industries included
Services	Finance, insurance and real-estate Services Communications Transports Health Wholesale Retail trade Construction
Manufacturing	Manufacturing
Primary	Agriculture, forests and fisheries Mining Utilities
Hi-Tech	Software development Research and development Health & Medical Technology Biotechnology Manufacturing (hi-tech)

Table 14: Industry Analysis Sectors

Hypothesis two (H2) was tested by correlating the IT strategies and performance measures for each industry subset. In the hi-tech industry B2C IT strategy was correlated with both performance measures. There were more correlations between IT strategies and financial performance than with market performance. In the services industry all but one of the hypothesis were supported. In the manufacturing industrial sector B2C IT strategy correlated with both performance measures. B2B IT strategy correlated only with market performance and costs IT strategy only with financial performance. In the primary industries correlations were significant between each of B2E, quality, flexibility, and internal strategic planning IT strategies and both performance measures. Appendix 26: Hypothesis Two Tests presented each of the

correlations where shaded boxes indicate a supported hypothesis. Figure 7: Primary Industries IT Strategy. Correlations (n=29) to Figure 10: Hi-tech IT Strategy Correlations (n=41) show a graphical representation of the correlations covered by hypothesis two.

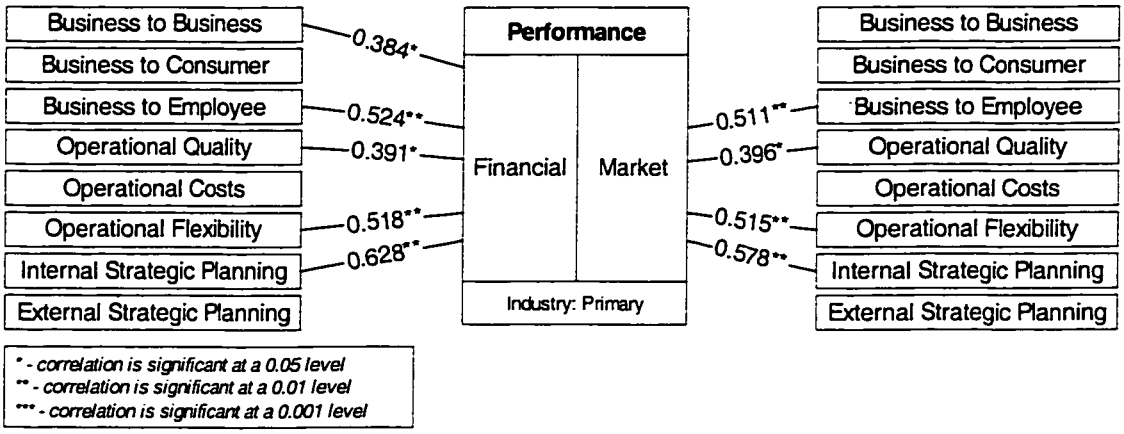

Figure 7: Primary Industries IT Strategy Correlations (n=29)

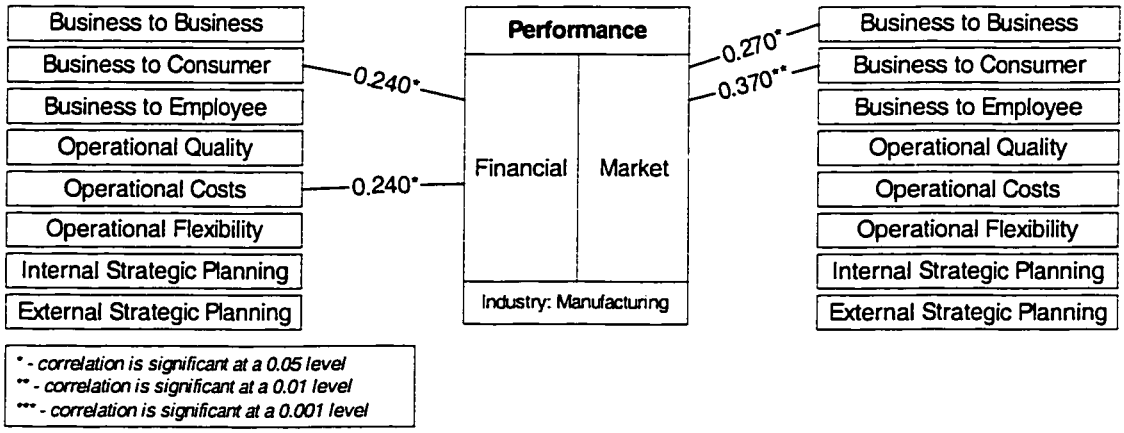

Figure 8: Manufacturing IT Strategy Correlations (n=57)

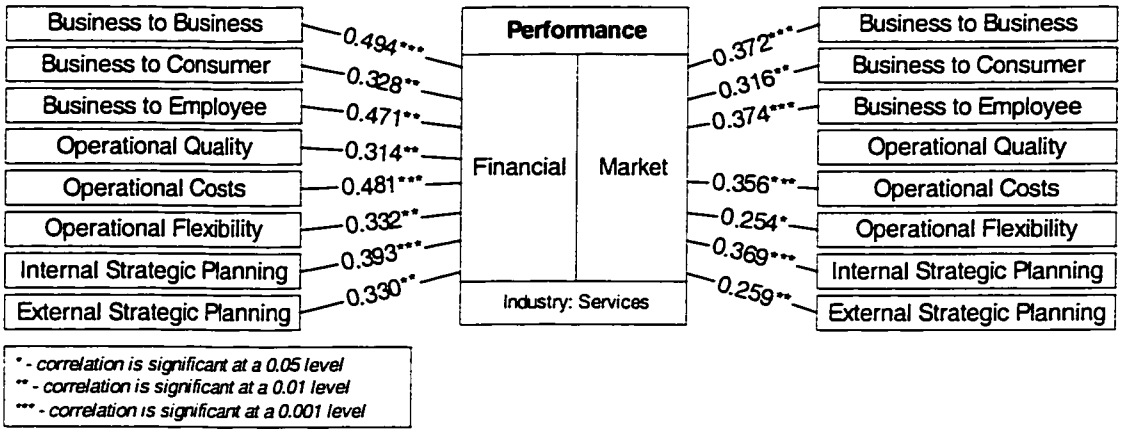

Figure 9: Services IT Strategy Correlations (n=92)

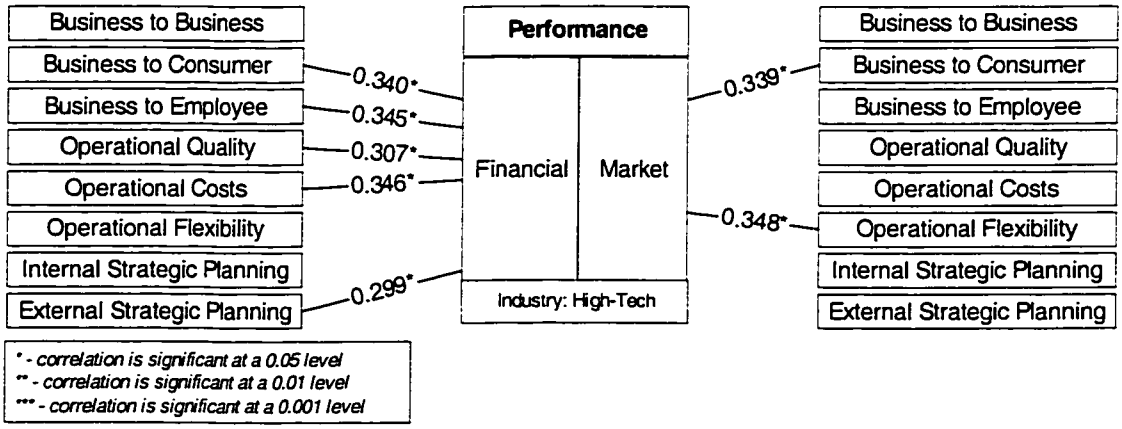

Figure 10: Hi-tech IT Strategy Correlations (n=41)

Hypothesis three (H3) was tested by correlating the IT strategies and performance measures while the sample was divided according to company size. Number of employees was used as a measure of company size. Three classifications were used, companies with fewer than 100 employees, companies with 100 to 500 employees and those with over 500 employees. The sample was divided according to each of these classifications and a separate correlation analysis was conducted for each subset. For companies with fewer than 100 employees quality IT strategy and external strategic

planning did not correlate with either performance measure. B2E IT Strategy only correlated with financial performance. All of the other IT strategies had significant correlations with business performance. For companies with between 100 and 500 employees all of the hypotheses were supported. In the companies with over 500 employees there were fewer significant correlations and the magnitude of the correlations was much weaker. Only B2E IT strategy and internal strategic planning correlated with both performance measures. Appendix 27: Hypothesis Three Tests shows the correlations for IT strategy and performance based on the number of employees. Figure 11: Under 100 employees IT Strategy Correlations (n=47) to Figure 13: Over 500 employees IT Strategy Correlations (n=117) display the correlations covered by hypothesis three.

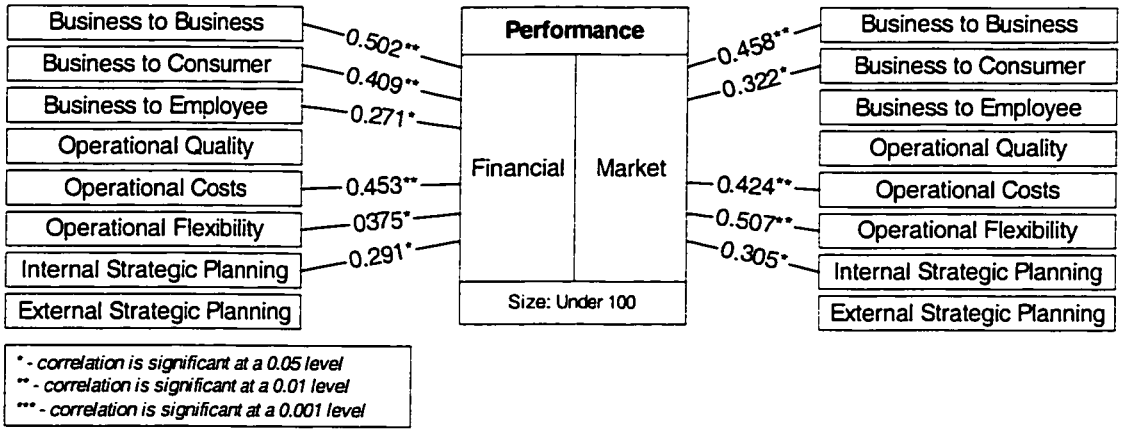

Figure 11: Under 100 employees IT Strategy Correlations (n=47)

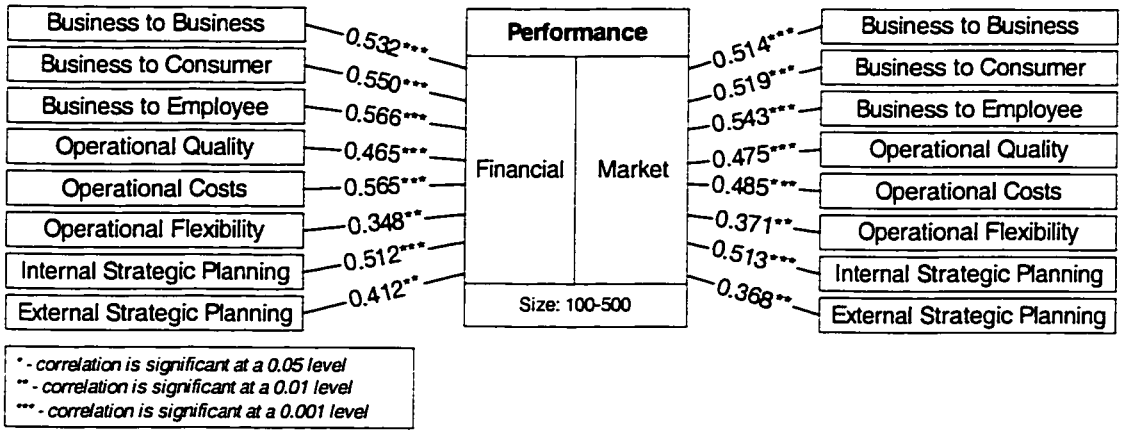

Figure 12: 100 to 500 employees IT Strategy Correlations (n=55)

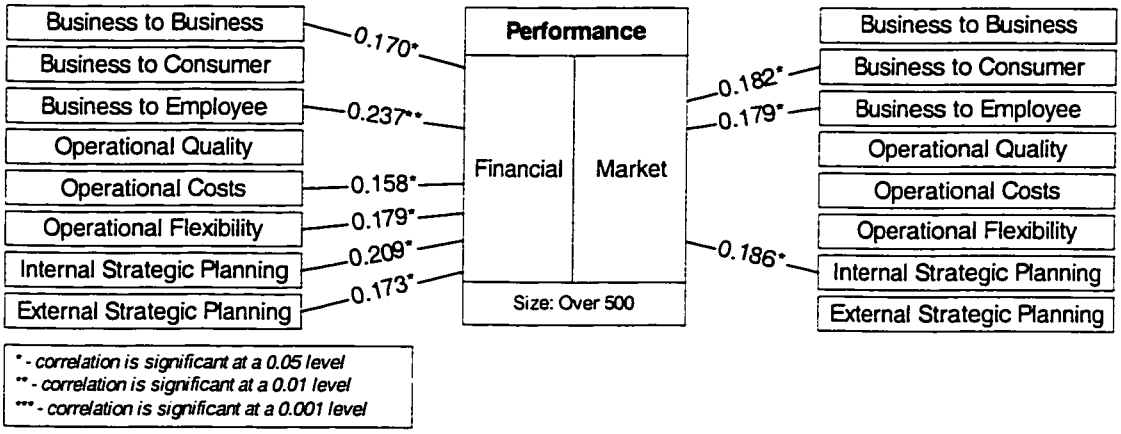

Figure 13: Over 500 employees IT Strategy Correlations (n=117)

CHAPTER VI - DISCUSSION

Significant correlations between IT strategies and business performance were observed. Further analysis reveals that the correlations were different depending on industry and company size.

1. OVERALL

The correlations between IT strategies and business performance for the whole dataset are show in Figure 6: Overall IT Strategy Correlations on page 55.

All of the linkages between IT strategies and business performance were highly significant. However, the magnitudes of the correlations were all quite low. The highest correlation was between Business to Business IT strategy and performance. This could be due to general success of Business to Business IT strategies for companies in general. Low overall correlations could be explained by differences between types of companies and their use of IT, which is not revealed in the overall analysis. Further analysis revealed higher correlations between IT strategies and business performance when the sample was analyzed according to industry and company size.

2. INDUSTRY ANALYSIS

Each of the four industrial sectors chosen in thus study has different characteristics which are likely to influence the effectiveness of IT. The four following sections begin with a generic description of the industry sector, followed by a figure showing the correlations, and an interpretation of IT strategy effectiveness for the sector.

2.1 - Primary Industries

The primary industrial sector includes companies at the beginning of the value chain, and such companies are likely to be operating in mature industries. Companies operating in mature industries normally produce standardized products where little product differentiation exists, and competition is likely to be based on price (Porter, 1980). Figure 7 on page 57 shows the correlations for those companies in the primary industries.

Being at the beginning of the value chain may explain the absence of correlations between B2C IT strategy and performance. Companies in the primary industrial sector may deal with processes that are difficult to standardize, especially with the uncertainties involved in the natural environment and resource extraction. In such cases, companies are likely to depend more on individuals to make decisions. This reliance on employees could account for the modest correlation between B2E IT strategy and performance.

Flexibility may be a more important IT strategy for primary industries because of needs to adapt to market demand. Although quality only has a low correlation, there are probably many applications for IT. For example, saw mill computers calculate how to cuts logs based on potential values of each log for various products, which has normally already been included in previous IT systems.

The coordination of exploration work with extraction plans is likely to depend on internal strategic planning. The use of expensive machinery and the expenses involved in operations make the need to organize and effectively allocate internal resources a key in effective operations. This could account for the modest correlations between the use of IT in internal strategic planning and business performance.

2.2 - Manufacturing Industries

Companies that process raw materials into finished products have been categorized as manufacturing. Companies involved in any type of high technology manufacturing or the manufacturing of pharmaceuticals or computer equipment have been included in

the hi-tech sector instead. This industrial sector is probably best described as a mature industry, where growth is slow, competition for market share is high, and costs are of greater emphasis (Porter, 1980).

In this industry sector, there were only four significant correlations as seen in Figure 8 on page 57. Only one of these linkages was significant at more than a 5% level, and all were of low magnitude. B2C IT strategy is the only IT strategy which correlated with both performance measures. This could be due to present efforts to bypass middlemen and to sell products directly to consumers. Berghel (2000) labels this concept as disintermediation, which occurs as attempts are made to bypass intermediaries. The linkage of B2B IT strategy with market performance could be explained by the use of IT to gain market share by increasing sales to other companies.

Operational costs IT strategy was the only operational strategy to correlate with any performance measure. Rembold et al. (1985) discuss the usage of advanced computing systems in manufacturing in the early 1980's. It is possible that gains which IT offered in the manufacturing industry were felt at an earlier time and that the state of IT in manufacturing has not been improved much since that point in time. Culley (1998) discusses the implementation of ISO standards and quality standards which have been implemented. If all the companies in the industry are utilizing IT to meet these standards it is possible that IT would not create competitive advantage.

2.3 - Services Industries

Porter (1980) describes the services industry as a fragmented industry. Some characteristics of fragmented industries are high inventory costs, erratic sales, low entry barriers, diverse market needs, and often diseconomies of scale. In addition, the services industries are transactional by nature.

All of the IT strategies were significantly correlated with performance except for operational quality as seen in Figure 9 on page 58. It seems logical that effective B2B, B2C, and B2E IT strategies are correlated with increased performance, as the importance to maintaining relationships in the services industry is crucial.

Correlations between operational strategies and performance in service industries and manufacturing industries revealed interesting differences. Very few correlations were found in manufacturing industries. All but one of the strategies correlated in the services industry. This could be because quality in services is not very easily monitored and not always mandated by standards. IT might enable companies to control the operational aspects of their businesses. Trites (2000) discusses how enterprise resource planning (ERP) systems may enable, and are affecting all aspects of business operations. IT enabled coordination has allowed service industries to take advantage of IT integration which was not available before the introduction of the Internet.

2.4 - Hi-Tech Industries

The Hi-Tech industrial sector is likely to be classified as an emerging industry. Emerging industries are characterized by uncertainty, high costs, and confused customers (Porter, 1980).

B2C IT strategy was correlated with both performance measures as seen in Figure 10 on page 58. Simango (2000) notes that in the pharmaceutical industry, companies are dependent on a global market share. Porter (1980) notes customer loyalty as key in emerging industries and the use of IT might be facilitating such loyalty.

Simango (2000) notes quality as a source of competitive advantage in the pharmaceutical industry. Lau (2002) found quality and costs to be the most important competitive factors within US computer and electronics companies. In the present study, quality and costs IT strategies had low correlations with financial performance at a 5% level. This result shows support for the previous research.

While there were many significant correlations for the companies in this sector, more would have been suspected, as these companies deal with technologies and are likely to be more knowledge intensive.

3. COMPANY SIZE ANALYSIS

The sample was divided into companies of three different sizes, under 100 employees, 100-500 employees, and over 500 employees.

3.1 - Under 100 employees

Figure 11 on page 59 displays the correlations of IT strategies and business performance for companies with fewer than 100 employees.

Modest correlations of performance with B2B and B2C IT strategies could be due to the Internet enabling relationships which might not have previously been possible. Low correlation with B2E IT strategy might be due to easier face-to-face communication and IT might not have enabled these issues.

Because these companies are quite small and dealing with their external environment might not be critical. This could account for the lack of external strategic planning strategy. The lack of quality IT strategy correlations could be explained by the ease of manual quality checks.

3.2 - 100-500 employees

Figure 12 on page 60 displays the correlations for companies with between 100 and 500 employees. The correlations were all highly significant and all but three were of modest intensity.

The modest significant correlations of IT strategy and business performance suggest that companies with 100 to 500 employees are using IT effectively. These companies have probably reached the point where face-to-face communications have become impractical and a B2E IT strategy might be enabling communication. The presence of correlations with the external strategic planning strategy could indicate that the

company's external environment is more complex and that their size is increasing their number of competitors.

3.3 - Over 500 employees

Figure 13 on page 6 displays the correlations for companies with over 500 employees. There were fewer significant correlations compared with smaller companies. The correlations that were significant were very low.

It seems that IT in large companies is not as related to business performance as much as in smaller ones. One could speculate that large companies have previously implemented IT (ie. legacy systems) which was not as commonly used in smaller companies. Thus the implementation of new technologies is probably more difficult for larger companies and the benefits are not likely to be as obvious.

CHAPTER VII - CONCLUSIONS

This section includes some of the implications of this research, both from an academic and a practitioner perspective. The limitations of the research are discussed; follow by some suggestions for further research.

1. IMPLICATION FOR RESEARCH

From an academic standpoint, this research offers both a new research instrument and a new survey technique. The survey instrument which was developed combines a wide range of IT strategies into one instrument. Testing of this instrument showed high construct validity and reliability. This research instrument could be used in further research to assess IT strategy and business strategy alignment models. The development of the instrument, as well as the survey itself, was conducted via the Internet. Conducting the survey in this manner had many advantages. First a larger audience could be easily reached at a fraction of the cost. Secondly, responses are normally collected within a one to two day period.

2. IMPLICATIONS FOR PRACTICE

This research offers practitioners an overview of how companies can use IT to gain strategic advantage. In addition, specific analysis and discussion focuses on industry and company size. As an added benefit to the participants in the survey, personalized feedback reports were generated. These reports showed how a participant's IT strategies related to averages of other groups of companies.

3. LIMITATIONS

This section outlines some of the limitations inherent in this research.

3.1 - Threats to Internal Validity

There are many other variables which could also have impacted the linkage between IT strategies and business performance, including economic factors, regional differences, government regulations, market specific variations, as well as many others. Such limitations are inherent in correlational field studies of this type.

3.2 - Threats to External Validity

External validity deals with the generalisability of research findings. In this case, the aim was to study a broad range of companies and design a research instrument which is applicable to all industries. Coviello and Brodie (2001) found that B2C and B2B marketing practices were very similar across industries. This might not be the case with the other IT strategies. An interesting note in the results was the correlations between operational strategies and performance in the services industry and not in the manufacturing, where much of the operations literature is based.

3.3 - Measurement Issues

Using only the business performance scale has many downfalls. It depends on the respondent having a good perception regarding overall business performance. The questions regarding IT strategy assume that the respondent has a good idea of how IT is actually working in their firm. Chircu and Kauffman (2000) discuss different levels at which the value of IT can appear. While the performance variables in this study are at

a company and market level analysis, IT impact at a process, group or individual level is unaccounted for. Many IT strategies might be affecting employee productivity or customer satisfaction, neither of which has been captured in this study.

4. FUTURE RESEARCH

This research was done at an abstract level and leaves out many of the IT implementation issues. Further research could incorporate IT implementation issues, such as the various technologies involved. Kappos (2000) conducting a survey which collected a lot of information regarding software implementation of ERP systems. Combining such information with IT strategies might yield some interesting results.

It would be of interest to study and relate IT management with IT strategies. Some basic questions were included in this survey, such as percentage of IT budget, and its allocations to computer hardware and software or management and operations. The responses to these questions were unclear. Further analysis of such issues might provide some insights into the effective management of IT systems.

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Appendix 1: Relational Modifications

	Original Item	CS	Deletions CS	1st	2nd	3rd	#	Final Item
Business to Business	Develop longer term relationships with suppliers	100%					1	Developing closer relationships with business partners.
	Enable supplier collaboration in developing products and specifications	93%					2	Enabling inter-organizational collaboration in developing products and specifications
	Enable information sharing with suppliers	93%					3	Enabling information sharing with business partners.
	Assist the procurement of goods and services from suppliers	80%					4	Assisting the procurement of goods and services from suppliers
	Enable price negotiation using auctions	53%					5	Enabling negotiations.
	Increase supplier trust	100%					6	Increase business partner trust
	Develop closer relationships with suppliers	93%		X				
	Increase supplier commitment	100%		X				
	Increase supplier cooperation	100%				X		
Business to Consumer	Gain a better understanding of customers	93%					1	Gaining a better understanding of customers
	Reduce customer service response time	100%					2	Reducing customer service response time
	Provide consumers with product and service information	93%					3	Providing consumers with product and service information
	Allow customers to make transactions electronically	93%					4	Allowing customers to make online transactions
	Achieve closer relationship with individual customers	100%					5	Achieving a closer relationship with individual customers
	Provide consumers with firm specific information	100%					6	Providing consumers with company specific information.
	Measure customer satisfaction	80%					7	Measuring customer satisfaction
	Build customer loyalty	93%					8	Building customer loyalty
	Create customer communities on the Internet	73%		X				
	Lower transactions costs to customers	40%	X					
	Offer value-added services	60%		X				
Business to Employee	Enable collaboration between employees	67%					1	Enabling collaboration between employees
	Enable employee development and training	80%					2	Enabling training of employees
	Enable employees to find other employees with specific expertise	80%					3	Enabling employees to find other employees with specific expertise
	Improve communications between employees and management	100%					4	Improving communications between employees and management
	Codify knowledge of employees	80%					5	Documenting knowledge of employees
	Provide universal access to information	60%					6	Providing universal access to information
	Increase employee productivity	53%					7	Increasing employee's productivity
	Enable innovation	0%	X					
	Facilitate team-working to solve problems	60%		X				

Appendix 2: Operational modifications

	Original Item	CS	Deletions CS	1st	2nd	3rd	#	Final Item
Operational Quality	Measure service quality	100%					1	Measuring service quality
	Ensure consistent and reliable product quality	100%					2	Ensuring consistent product quality
	Automate inspection, review or checking of work	100%					3	Automating inspection, review or checking of work
	Monitor for waste and inefficiencies	40%					4	Monitoring for product waste
							6	Monitoring for process inefficiencies
	Improve conformance to design specification	87%					5	Improving conformance to design specification
	Facilitate inter-organizational co-operation for service quality	47%	X					
	Improve information accuracy	27%	X					
	Monitor the quality of suppliers products	60%			X			
	Provide faster delivery times	13%	X					
Operational Costs	Reduce administrative costs	73%					1	Reducing administrative costs
	Control staffing costs	60%					2	Controlling staffing costs
	Reduce production costs	80%					3	Reducing production costs
	Reduce inventory costs	60%					4	Reducing inventory costs
	Lower the cost per transaction	87%					5	Lowering transaction costs
	Control capital costs	73%					6	Controlling capital costs
	Increase capacity utilization	40%	X					
	Reduce order cycle times	13%	X					
	Reduce the cost of inbound logistics	40%	X					
Operational Flexibility	Adjust capacity quickly	87%					1	Adjusting capacity quickly
	Enable rapid new product introduction	80%					2	Decreasing time to market of new products/services
	Adjust product mix	80%					3	Adjusting product mix
	Increase the frequency of new product introduction	73%					4	Increasing the frequency of new products/services introduction
	Increase responsiveness to market needs	53%					5	Increasing responsiveness to market needs
	Offer a large degree of product variety	40%	X					
	Offer a large number of product features	40%	X					

Appendix 3: Strategic Planning Modifications

	Original Item	CS	Deletions CS	1st	2nd	3rd	#	Final Item
Internal Strategic Planning	Make strategic decisions	73%					1	Making strategic decisions.
	Improve business unit integration	73%					2	Improving business unit integration.
	Facilitate organizational change	67%					3	Facilitating organizational change.
	Aid in implementing business strategy	80%					4	Helping to implement business strategy.
	Enable dynamic strategy formation	58%					5	Enabling dynamic strategy planning.
	Analyze strategic issues	90%					6	Analyzing strategic issues.
	Coordinate the company's activities geographically	33%					7	Improve geographic integration.
	Develop long-term strategic planning	67%			X			
	Document strategic planning	87%			X			
	Emphasize effective coordination among different functional areas	53%		X				
	Formulate strategic plans	86%				X		
External Strategic Planning	Generate new sources of revenue	80%					1	Generating new sources of revenue.
	Help to make preemptive strikes against competitors	80%					2	Helping to maintain a competitive advantage.
	Track significant industry trends	87%					3	Tracking significant industry trends.
	Access new sources of capital	87%					4	Accessing new sources of capital.
	Find new markets for products and services	87%					5	Finding new markets for products and services.
	Overcome advantage of local firms in a host country	71%					6	Overcoming the advantage of local firms in a host country.
	Improve corporate image	33%					7	Improving corporate image.
	Aid in supplier selection	7%	X					
	Discover and develop new and profitable global markets	93%			X			
	Facilitate benchmarking	33%	X					
	Forecast potential opportunities	60%				X		
	Gather information from relevant stakeholders	42%	X					

Appendix 4: Card-Sorting Screenshot

Business to Business Strategy - The degree to which Information Systems are being used to facilitate relationships with suppliers.

Business to Employee Strategy - The degree to which Information Systems are being used to facilitate communication between employees and aiding employees in carrying out their jobs.

Business to Consumer Strategy - The degree to which Information Systems are used to facilitate the relationships and transactions between a company and the consumers of their products.

Operations Cost Strategy - The degree to which Information Systems are used to control expenditures.

Operations Quality Strategy - The degree to which Information Systems are being used to enhance a firm's ability to monitor and maintain quality standards.

Operations Flexibility Strategy - The degree to which Information Systems are being used to increase a firm's ability to adapt to market demands.

External Strategic Planning - The degree to which Information Systems are being used to derive advantage from the firm's external environment.

Internal Strategic Planning - The degree to which Information Systems are being used in the internal decision making and implementation process.

1. Provide faster delivery times — Please Select a Category

Comments:

2. To enable interfirm collaboration — Please Select a Category

Comments:

3. Reduce administrative costs — Please Select a Category

Comments:

4. Control staffing costs — Please Select a Category

Comments:

	Item	Respondent 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Business to Business	Assist the procurement of goods and services from suppliers	B2B	F	B2B	B2B	B2B	F	B2B	B2B	B2B	B2B	B2B	B2B	F	B2B	B2B	80%
	Develop closer relationships with suppliers	B2B	Ext	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	93%
	Develop longer term relationships with suppliers	Blk	Blk	B2B	B2B	Blk	B2B	B2B	B2B	Blk	B2B	B2B	Blk	B2B	B2B	B2B	100%
	Enable information sharing with suppliers	B2B	B2C	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	93%
	Enable price negotiation using auctions	B2B	B2E	B2B	F	C	B2B	B2B	F	B2B	B2C	B2C	B2B	B2B	B2B	B2C	53%
	Enable supplier collaboration in developing products and specifications	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	NR	93%
	Increase supplier commitment	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	100%
	Increase supplier cooperation	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	100%
	Increase supplier trust	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	100%
Business to Consumer	Achieve closer relationship with individual customers	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	100%
	Allow customers to make transactions electronically	B2C	Int	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	93%
	Build customer loyalty	B2C	B2B	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	93%
	Create customer communities on the Internet	B2C	F	B2C	B2C	NR	NR	B2C	B2C	B2C	B2C	B2C	B2C	NR	B2C	B2C	73%
	Gain a better understanding of customers	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	NR	93%
	Lower transactions costs to customers	B2C	B2C	NR	C	B2C	C	NR	C	B2C	C	C	B2C	C	B2C	C	40%
	Offer value-added services	B2C	B2E	NR	B2C	B2C	B2C	NR	B2C	B2C	NR	NR	B2C	B2C	Int	B2C	60%
	Provide consumers with firm specific information	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	100%
	Provide consumers with product and service information	B2C	Q	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	93%
	Reduce customer service response time	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	100%
Business to Employee	Codify knowledge of employees	B2E	B2E	B2E	B2E	Int	NR	B2E	B2E	B2E	B2E	B2E	B2E	NR	B2E	B2E	80%
	Enable collaboration between employees	B2E	B2E	B2E	B2E	B2E	Int	B2E	B2E	B2E	B2C	B2C	Int	Int	B2E	B2E	67%
	Enable employee development and training	B2E	B2B	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	Int	B2E	B2E	Int	80%
	Enable employees to find other employees with specific expertise	B2E	Ext	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	Int	B2E	B2E	NR	80%
	Enable innovation	F	F	NR	F	F	Int	NR	F	Ext	B2B	B2B	Int	Int	Int	F	0%
	Facilitate team-working to solve problems	B2E	Q	B2E	B2E	Int	NR	B2E	B2E	B2E	B2E	B2E	Int	NR	B2E	Q	60%
	Improve communications between employees and management	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	B2E	100%
	Increase employee productivity	B2E	Int	NR	B2E	C	B2E	NR	B2E	Int	B2E	B2E	Int	B2E	B2E	C	53%
	Provide universal access to information	Blk	B2E	NR	Int	Blk	B2E	NR	Int	B2E	B2E	B2E	Blk	B2E	NR	NR	60%
	% Correct Answers	89%	46%	82%	86%	71%	75%	82%	86%	89%	82%	82%	71%	75%	89%	64%	

Appendix 6: Card-Sorting Operational Results

	Item	Respondent															Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Operational Quality	Automate inspection, review or checking of work	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	100%
	Ensure consistent and reliable product quality	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	100%
	Facilitate inter-organizational co-operation for service	Q	B2B	Q	B2B	Ext	Q	Q	B2B	Q	B2B	B2B	B2B	Q	Q	B2B	47%
	Improve conformance to design specification	Q	B2C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	NR	87%
	Improve information accuracy	NR	F	NR	Int	Q	Int	NR	Int	Int	Q	Q	Int	Int	Q	NR	27%
	Measure customer satisfaction	Q	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	B2C	Ext	B2C	B2C	NR	7%
	Measure service quality	Blk	Blk	Q	Q	Blk	Q	Q	Q	Blk	Q	Q	Blk	Q	Q	Q	100%
	Monitor for waste and inefficiencies	C	Ext	C	Q	Q	Q	C	Q	C	C	C	C	Q	C	Q	40%
	Monitor the quality of suppliers products	Q	B2B	NR	Q	Q	Q	NR	Q	Q	B2B	B2B	B2B	Q	Q	Q	80%
	Provide faster delivery times	B2C	Q	B2C	B2E	B2C	F	B2C	B2E	B2C	B2C	B2C	Q	F	B2B	B2B	13%
Operational Costs	Control capital costs	C	Blk	C	C	Blk	C	C	C	Blk	Ext	Ext	Blk	C	C	NR	73%
	Control staffing costs	C	C	C	C	C	B2E	C	C	C	Ext	Ext	C	B2E	B2E	NR	80%
	Increase capacity utilization	C	F	C	F	C	F	C	F	F	B2C	B2C	C	F	F	C	40%
	Lower the cost per transaction	C	C	C	C	B2C	C	C	C	C	C	C	C	C	B2C	C	87%
	Reduce administrative costs	C	B2E	C	C	C	B2E	C	C	C	C	C	C	B2E	C	B2B	73%
	Reduce inventory costs	C	Ext	C	C	C	F	C	C	C	B2B	B2B	C	F	C	B2B	60%
	Reduce order cycle times	F	B2C	F	C	B2C	F	F	C	B2C	B2B	B2B	Q	F	F	B2B	13%
	Reduce production costs	C	Q	C	C	C	C	C	C	C	Q	Q	C	C	C	C	80%
	Reduce the cost of inbound logistics	B2B	B2B	B2B	C	C	C	B2B	C	B2B	B2B	B2B	C	C	B2B	B2B	40%
Operational Flexibility	Adjust capacity quickly	F	C	F	F	F	F	F	F	F	F	F	F	F	F	Q	87%
	Adjust product mix	F	Ext	F	F	F	F	F	F	F	F	F	NR	F	Int	F	80%
	Enable rapid new product introduction	Blk	Blk	F	F	Blk	F	F	F	Blk	B2C	B2C	Blk	F	F	F	80%
	Increase responsiveness to market needs	Ext	B2C	F	F	F	Q	F	F	Ext	F	F	B2C	Q	F	Ext	53%
	Increase the frequency of new product introduction	F	F	F	F	Ext	Int	F	F	F	F	F	NR	Int	F	F	73%
	Offer a large degree of product variety	B2C	B2C	B2C	F	B2C	B2C	B2C	F	B2C	F	F	F	B2C	F	B2C	40%
	Offer a large number of product features	F	B2C	B2C	F	B2C	Int	B2C	F	B2C	B2B	B2B	F	Int	F	F	40%
	% Correct Answers	65%	23%	65%	81%	58%	54%	65%	81%	50%	46%	46%	54%	54%	65%	46%	

Appendix 7: Card-Sorting Strategic Planning Results

	Item	Respondent 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Strategic Planning Internal	Aid in implementing business strategy	Blk	Blk	Int	Int	Blk	F	Int	Int	Blk	Int	Int	Blk	F	Int	Int	80%
	Analyze strategic issues	Blk	Blk	Int	Int	Blk	Int	Int	Int	Blk	Int	Int	Blk	Int	Int	Ext	90%
	Coordinate the company's activities geographically	F	Ext	Int	F	Int	F	Int	F	F	B2E	B2E	Int	F	Int	NR	33%
	Develop long-term strategic planning	Int	B2C	Int	Int	NR	Int	Int	Int	Ext	Ext	Ext	Int	Int	Int	Int	67%
	Document strategic planning	Int	Int	Q	Int	Int	Int	Q	Int	Int	Int	Int	Int	Int	Int	Int	87%
	Emphasize effective coordination among different	Int	C	Int	Int	B2E	Int	Int	Int	B2E	B2E	B2E	B2E	Int	Int	Q	53%
	Enable dynamic strategy formation	Ext	Blk	Int	Int	Blk	Int	Int	Int	Ext	F	F	Blk	Int	Int	NR	58%
	Facilitate organizational change	Int	Ext	F	Int	Int	Int	F	Int	Int	B2E	B2E	Int	Int	Int	Int	67%
	Formulate strategic plans	Int	Int	Int	Int	Blk	Int	Int	Int	Int	Ext	Ext	Int	Int	Int	Int	86%
	Improve business unit integration	Int	Ext	Int	Int	Int	Int	Int	Int	B2E	B2E	B2E	Int	Int	Int	Int	73%
	Make strategic decisions	Int	Int	Int	Int	Ext	Int	Int	Int	Int	Ext	Ext	Int	Int	Int	NR	73%
Strategic Planning External	Access new sources of capital	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	B2B	Ext	Ext	Ext	Ext	Ext	NR	87%
	Aid in supplier selection	B2B	B2B	B2B	B2B	Ext	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	B2B	7%
	Discover and develop new and profitable global markets	Ext	Ext	Ext	Ext	B2C	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	93%
	Facilitate benchmarking	Q	Q	Ext	Q	Q	Ext	Ext	Q	Q	Q	Q	Q	Ext	Q	Ext	33%
	Find new markets for products and services	Ext	C	Ext	Ext	Ext	Ext	Ext	Ext	NR	Ext	Ext	Ext	Ext	Ext	Ext	87%
	Forecast potential opportunities	Ext	NR	Ext	Ext	Int	Int	Ext	Ext	NR	Ext	Ext	Int	Int	Ext	Ext	60%
	Gather information from relevant stakeholders	Ext	Blk	Int	Ext	Blk	Int	Int	Ext	Ext	B2B	B2B	Blk	Int	NR	Ext	42%
	Generate new sources of revenue	Ext	B2B	Ext	Ext	Ext	B2B	Ext	Ext	Ext	Ext	Ext	Ext	B2B	Ext	Ext	80%
	Help to make preemptive strikes against competitors	Ext	Ext	Ext	Ext	Ext	B2B	Ext	Ext	Ext	Ext	Ext	Ext	B2B	Int	Ext	80%
	Improve corporate image	Ext	C	NR	B2C	Ext	Ext	NR	B2C	B2C	Q	Q	Ext	Ext	Int	NR	33%
	Overcome advantage of local firms in a host country	Ext	B2E	Ext	Ext	Blk	Ext	Ext	Ext	Ext	B2C	B2C	Ext	Ext	Ext	NR	71%
	Track significant industry trends	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	Ext	F	F	Ext	Ext	Ext	Ext	87%
	% Correct Answers	74%	30%	78%	83%	46%	70%	78%	83%	43%	39%	39%	65%	70%	78%	61%	

Appendix 8: Pre-test First Version

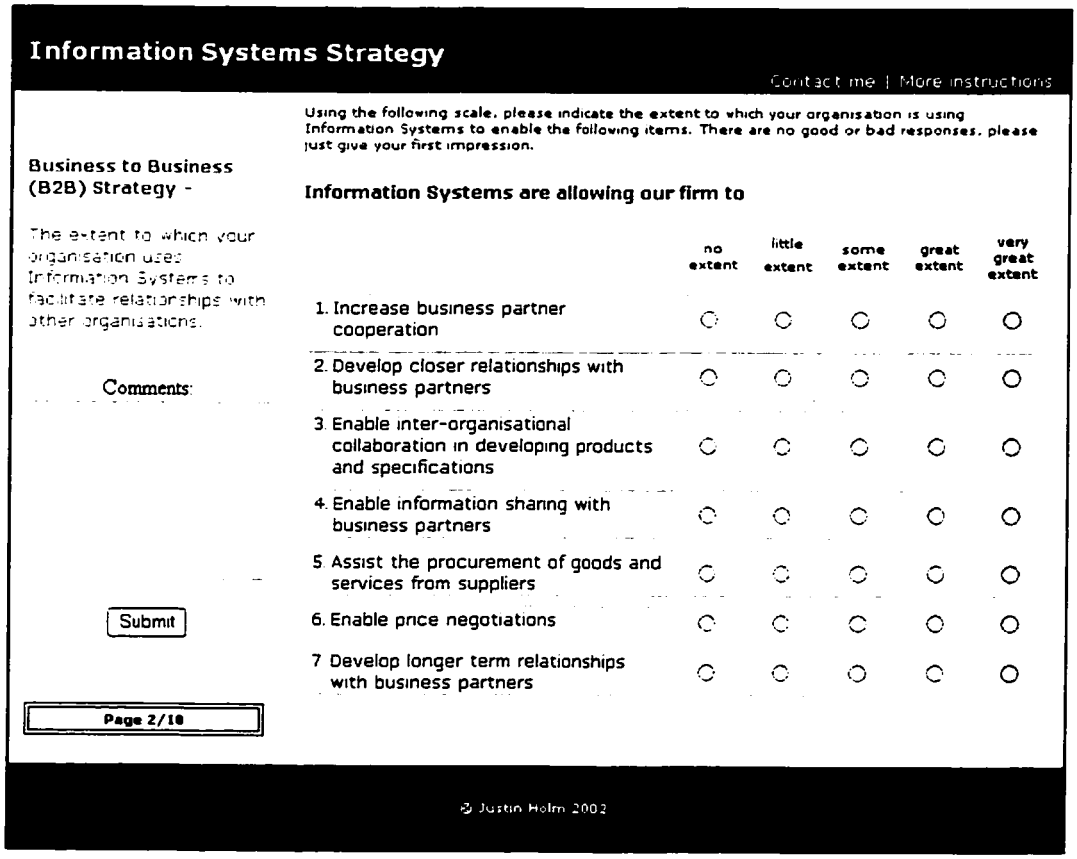
Please indicate the extent to which your organisation is using information Systems to enable the following items. There are no good or bad responses, please give your first impression.

Business to Consumer Strategy is the degree to which Information Systems are used to facilitate the relationships and transactions between a company and the consumers of their products.

Comments on definition:

Information Systems are allowing our firm to:	No Extent	Little Extent	Some Extent	Great Extent	
Achieve a closer relationship with individual customers Comments:	⊙	○	○	○	●
Provide customers with company specific information Comments:	○	○	○	○	●
Provide customers with product and service information Comments:	○	○	○	○	●
Allow customers to make transactions electronically Comments:	○	○	○	○	●
Create customer communities on the internet Comments:	○	○	○	○	●
Lower transactions costs to customers Comments:	○	○	○	○	●
Reduce customer service response time Comments:	○	○	○	○	●
Gain a better understanding of customers Comments:	○	○	○	○	●

Appendix 9: Pre-test Second Version



Information Systems Strategy

Contact me | More instructions

Business to Business (B2B) Strategy -

The extent to which your organisation uses Information Systems to facilitate relationships with other organisations.

Comments:

Submit

Page 2/18

Using the following scale, please indicate the extent to which your organisation is using Information Systems to enable the following items. There are no good or bad responses, please just give your first impression.

Information Systems are allowing our firm to

	no extent	little extent	some extent	great extent	very great extent
1. Increase business partner cooperation	○	○	○	○	○
2. Develop closer relationships with business partners	○	○	○	○	○
3. Enable inter-organisational collaboration in developing products and specifications	○	○	○	○	○
4. Enable information sharing with business partners	○	○	○	○	○
5. Assist the procurement of goods and services from suppliers	○	○	○	○	○
6. Enable price negotiations	○	○	○	○	○
7. Develop longer term relationships with business partners	○	○	○	○	○

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Appendix 10: Final Version

Information Technology Strategy Survey

This survey will examine the linkage between Information Technology (IT) Strategies and Business Performance. The survey should take **no more than 15 minutes** of your time. In return for your participation you will receive a personalised copy of the research findings, which will benchmark your organization against others in the same industry (view example).

Main sections

- **Relational aspects of IT** (B2B, B2C, and B2E)
- **Operational aspects of IT** (Quality, Costs, and Flexibility)
- **IT as a tool in strategy formation**
- **Business performance and IT usage**
- **Background information**

Instructions

1. Please respond to each question keeping in mind the strategy definition given on the top of each page.
2. If the question does not apply to your organization check n/a for "not applicable".
3. There are no good or bad answers. Please just give your first impression.

All responses will remain strictly confidential and only analysed on an aggregate level.

Justin Holm, M.Sc. Student
Supervised by Anne-Marie Croteau, Ph.D.
John Molson School of Business
Concordia University

Begin Survey

Business to Business (B2B) IT Strategy

Contact me

Business to Business (B2B) IT Strategy refers to the utilization of IT to facilitate relationships between your business and other businesses.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	
1. Developing closer relationships with business partners.	○	○	○	○	○	
2. Enabling inter-organizational collaboration in developing products and specifications.	○	○	○	○	○	
3. Enabling information sharing with business partners.	○	○	○	○	○	
4. Assisting the procurement of goods and services from suppliers.	○	○	○	○	○	
5. Enabling negotiations.	○	○	○	○	○	
6. Increase business partner trust.	○	○	○	○	○	

Proceed to next section

Progress 9%

Business to Consumer (B2C) IT Strategy

Contact me

Business to Consumer (B2C) IT Strategy refers to the utilization of IT to facilitate relationships and transactions with the consumers of your products or services.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	
1. Gaining a better understanding of customers.	○	○	○	○	○	
2. Reducing customer service response time.	○	○	○	○	○	
3. Providing consumers with product and service information.	○	○	○	○	○	
4. Allowing customers to make online transactions.	○	○	○	○	○	
5. Achieving a closer relationship with individual customers.	○	○	○	○	○	
6. Providing consumers with company specific information.	○	○	○	○	○	
7. Measuring customer satisfaction.	○	○	○	○	○	
8. Building customer loyalty.	○	○	○	○	○	

Proceed to next section

Progress 18%

Business to Employee (B2E) IT Strategy

Contact me

Business to Employee (B2E) IT Strategy refers to the utilization of IT to facilitate communication between employees and to help employees in carrying out their jobs.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	N/C
1. Enabling collaboration between employees.	○	○	○	○	○	○
2. Enabling training of employees.	○	○	○	○	○	○
3. Enabling employees to find other employees with specific expertise.	○	○	○	○	○	○
4. Improving communications between employees and management.	○	○	○	○	○	○
5. Documenting knowledge of employees.	○	○	○	○	○	○
6. Providing universal access to information.	○	○	○	○	○	○
7. Increasing employee's productivity.	○	○	○	○	○	○

Proceed to next section

Progress 27%

Operations Quality IT Strategy

Contact me

Operations Quality IT Strategy refers to the utilization of IT to monitor and maintain quality standards.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	N/C
1. Measuring service quality.	○	○	○	○	○	○
2. Ensuring consistent product quality.	○	○	○	○	○	○
3. Automating inspection, review or checking of work.	○	○	○	○	○	○
4. Monitoring for product waste.	○	○	○	○	○	○
5. Improving conformance to design specification.	○	○	○	○	○	○
6. Monitoring for process inefficiencies.	○	○	○	○	○	○

Proceed to next section

Progress 36%

Operations Cost IT Strategy

Contact me

Operations Cost IT Strategy refers to the utilization of IT to control expenditures.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	N/A
1. Reducing administrative costs.	○	○	○	○	○	○
2. Controlling staffing costs.	○	○	○	○	○	○
3. Reducing production costs.	○	○	○	○	○	○
4. Reducing inventory costs.	○	○	○	○	○	○
5. Lowering transaction costs.	○	○	○	○	○	○
6. Controlling capital costs.	○	○	○	○	○	○

Proceed to next section

Progress 45%

Operations Flexibility IT Strategy

Contact me

Operations Flexibility IT Strategy refers to the utilization of IT to increase the ability of your organization to adapt to market demands.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	N/A
1. Adjusting capacity quickly.	○	○	○	○	○	○
2. Decreasing time to market of new products/services.	○	○	○	○	○	○
3. Adjusting product mix.	○	○	○	○	○	○
4. Increasing the frequency of new products/services introduction.	○	○	○	○	○	○
5. Increasing responsiveness to market needs.	○	○	○	○	○	○

Proceed to next section

Progress 54%

Internal Strategic Planning

Contact me

Internal Strategic Planning refers to the utilization of IT for organization's internal strategic decision-making and implementation.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	
1. Making strategic decisions.	○	○	○	○	○	
2. Improving business unit integration.	○	○	○	○	○	
3. Facilitating organizational change.	○	○	○	○	○	
4. Helping to implement business strategy.	○	○	○	○	○	
5. Enabling dynamic strategy planning.	○	○	○	○	○	
6. Analyzing strategic issues.	○	○	○	○	○	
7. Improve geographic integration.	○	○	○	○	○	

Proceed to next section

Progress 63%

External Strategic Planning

Contact me

External Strategic Planning refers to the utilization of IT to derive advantage from your organization's external environment.

Please indicate your level of satisfaction with your company's *current* usage of IT in the following areas:

	highly unsatisfied		neutral		highly satisfied	
1. Generating new sources of revenue.	○	○	○	○	○	
2. Helping to maintain a competitive advantage.	○	○	○	○	○	
3. Tracking significant industry trends.	○	○	○	○	○	
4. Accessing new sources of capital.	○	○	○	○	○	
5. Finding new markets for products and services.	○	○	○	○	○	
6. Overcoming the advantage of local firms in a host country.	○	○	○	○	○	
7. Improving corporate image.	○	○	○	○	○	

Proceed to next section

Progress 72%

Business Performance

Contact me

Business Performance refers to how your organization is performing on an overall *non-IT specific* level.

Please indicate the extent to which you are *currently* satisfied with your organisation's achievement in each of the following areas.

	highly unsatisfied		neutral		highly satisfied
1. Market Share	○	○	○	○	○
2. Sales Growth Rate	○	○	○	○	○
3. Net Profits	○	○	○	○	○
4. Return on sales (Net Profit Margin)	○	○	○	○	○
5. Return on investment	○	○	○	○	○
6. Revenue growth relative to the competition	○	○	○	○	○
7. Market share gains relative to the competition	○	○	○	○	○
8. Net Profits relative to the competition	○	○	○	○	○
9. Return on investment relative to the competition	○	○	○	○	○

Proceed to next section

Progress 81%

Overview of IT Usage

Contact me

Please indicate the level of IT presently used within your company to facilitate the following strategies.

To remind you of each IT strategy, click on the ⓘ for the definition of each strategy.

Please indicate the present usage of IT for the following:	no usage		moderate usage		extensive usage
1. Business to Business (B2B) IT Strategy ⓘ	○	○	○	○	○
2. Business to Consumer (B2C) IT Strategy ⓘ	○	○	○	○	○
3. Business to Employee (B2E) IT Strategy ⓘ	○	○	○	○	○
4. Operations Quality IT Strategy ⓘ	○	○	○	○	○
5. Operations Cost IT Strategy ⓘ	○	○	○	○	○
6. Operations Flexibility IT Strategy ⓘ	○	○	○	○	○
7. Internal Strategic Planning ⓘ	○	○	○	○	○
8. External Strategic Planning ⓘ	○	○	○	○	○

Proceed to next section

Progress 90%

Background Information

Contact me

This information will be used for demographic purposes only.

Budget

What is the percentage of your annual budget dedicated to IT? _____ %

Percentage of budget for computer capital (hardware and software) _____ %

Percentage of budget for non-computer capital (personnel and training) _____ %

Firm Information

What is the primary industry of your firm? Please Select An Industry

Other (please specify):

How many employees work for your organisation?

How many employees work in the IS department?

What is the annual revenue of your firm? (in $US)

Personal Information

What is your current title?

How many years have you occupied this postion? years

How many years have you been working for your current firm? years

Submit

Progress 100%

Thank you

Contact me

Thank you very much for completing the survey.

To receive a personalised report please enter you email address.

Email:

If you wish to share any comments and/or suggestions please do so here:

Submit

Appendix 11: Contact Email

Please forward this email to the Head of the IT/IS department at <company name>.

Dear IT Leader,

I am part of a research team at Concordia University, conducting a web-based survey, investigating Information Technology strategy and its link to Business Performance.

As a person in charge of your company's IT strategy, your views on this topic are of great interest. I would like to invite you to participate in this survey, which will take no more than 10 to 15 minutes of your time.

In return for your participation, I will provide you with a personalized copy of the research findings, which will benchmark your organization against your industry. An example of such a report is available on the survey website. I would appreciate receiving your answers by June 24th. The report will be sent to you by the end of the August.

The information that you provide will be kept strictly confidential and only used for academic purposes. If you have any comments or questions, please feel free to contact me.

To access the survey please follow this link:
www.is-strategy.com/IT_survey.asp?SSL=<url parameter>

Thank you for your time and consideration.

Sincerely,

Justin Holm, M.Sc. Student
Supervised by Anne-Marie Croteau, Ph.D.
John Molson School of Business
Concordia University, Montreal
jt_holm@jmsb.concordia.ca
(514)932-2632

Appendix 12: Reminder Email

Please forward to the head of IT/IS department at <company name>.

Dear IT Leader,

About a week ago, you received an e-mail inviting you to participate in a web-based questionnaire investigating the link between IT strategy and business performance. As a person in charge of your company's IT strategy, your views on this topic are of great interest and crucial to the success of this study. The questionnaire will take no more than 10 to 15 minutes of your time.

In return for your participation, you will receive a personalized report which will include a summary of the results as well as an assessment of your strategic IT position within your industry. I would appreciate if you could fill out the questionnaire by Friday June 21. Please inform me if for any reason you require more time.

Let me reassure you that all your responses will be kept strictly confidential. If you require further information, please feel free to contact me.

The following link will take you to the survey website (an example of the personalised report is available):

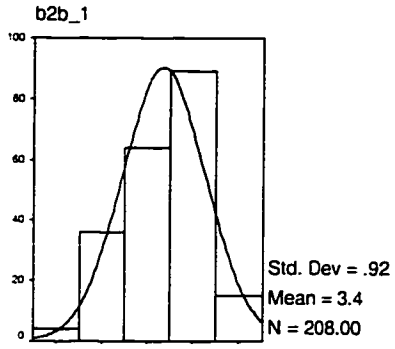
http://www.is-strategy.com/it_survey.asp?ssl=<url parameter>

Thank you for your time and consideration.

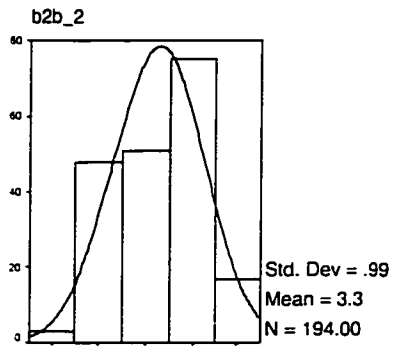
Sincerely,

Justin Holm, M.Sc. Student
Supervised by Anne-Marie Croteau, Ph.D.
Department of Decision Sciences and MIS
John Molson School of Business
Concordia University, Montreal, Canada

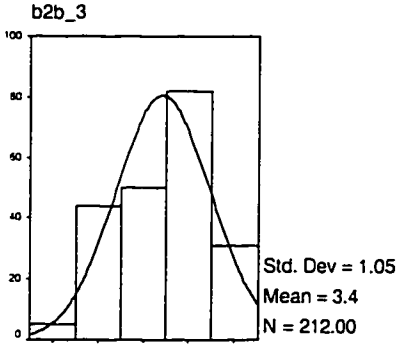
Appendix 13: Business to Business Item Descriptive Statistics



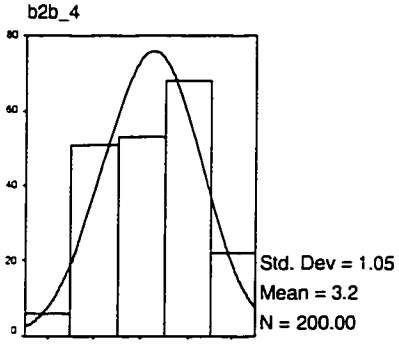
Developing closer relationships with business partners.



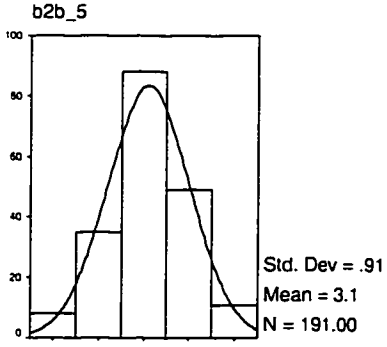
Enabling inter-organizational collaboration in developing products and specifications.



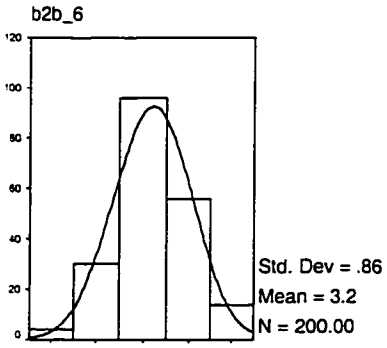
Enabling information sharing with business partners.



Assisting the procurement of goods and services from suppliers.

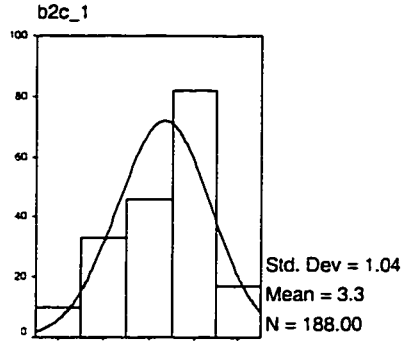


Enabling negotiations.

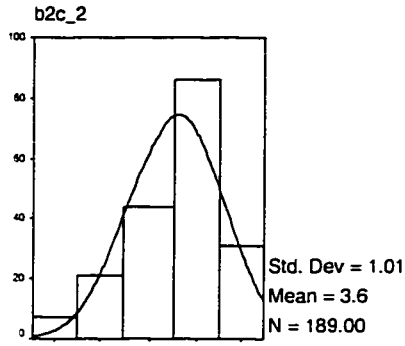


Increase business partner trust.

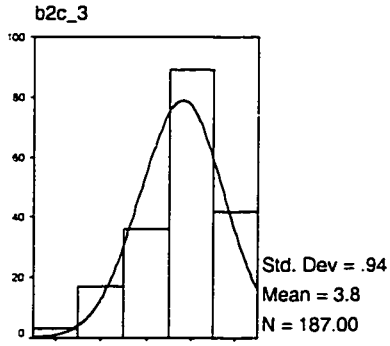
Appendix 14: Business to Consumer Descriptive Statistics



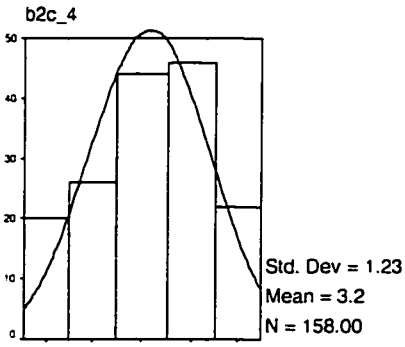
Gaining a better understanding of customers.



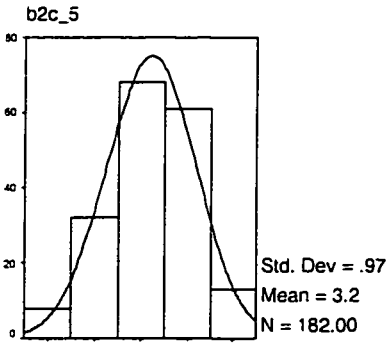
Reducing customer service response time.



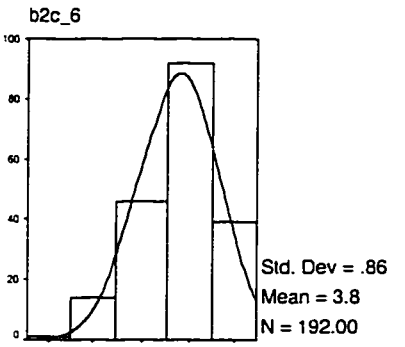
Providing consumers with product and service information.



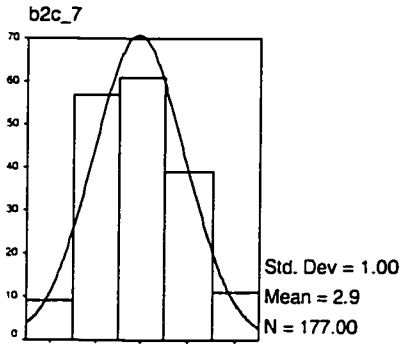
Allowing customers to make online transactions.

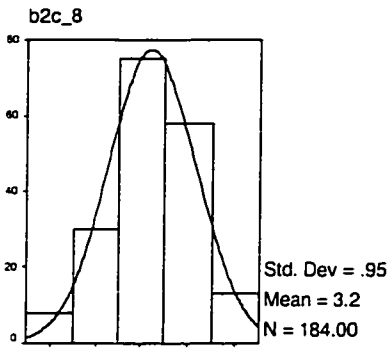


Achieving a closer relationship with individual customers.

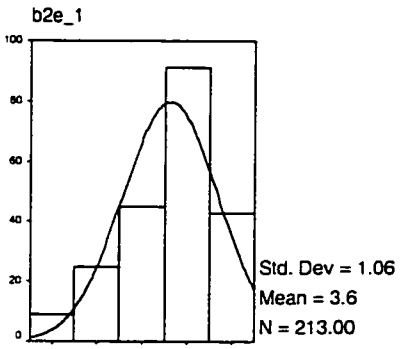


Providing consumers with company specific information.

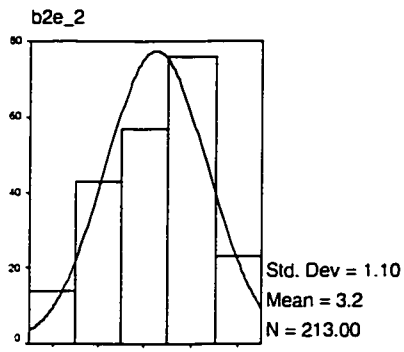

b2c_7
70
60
50
40
30
20
10
0
Std. Dev = 1.00
Mean = 2.9
N = 177.00


b2c_8
80
60
40
20
0
Std. Dev = .95
Mean = 3.2
N = 184.00

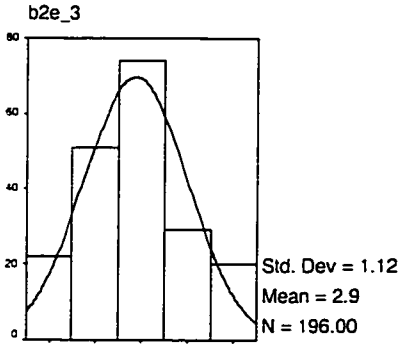
Appendix 15: Business to Business Descriptive Statistics



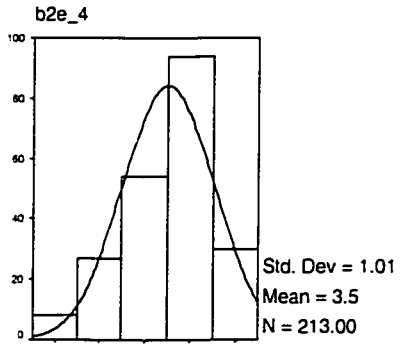
Enabling collaboration between employees.



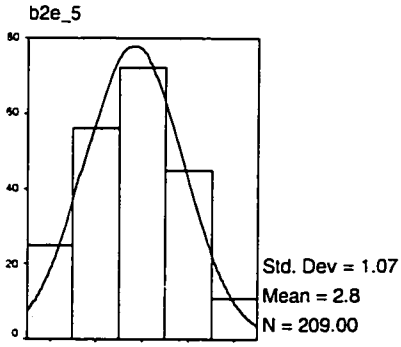
Enabling training of employees.



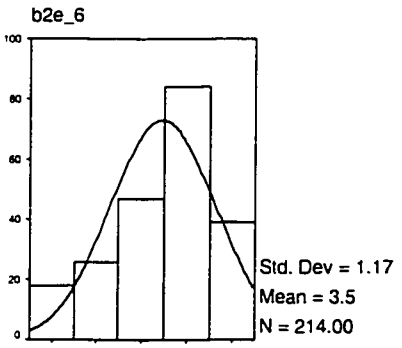
Enabling employees to find other employees with specific expertise.



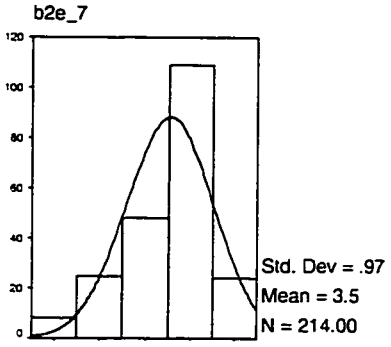
Improving communications between employees and management.



Documenting knowledge of employees.

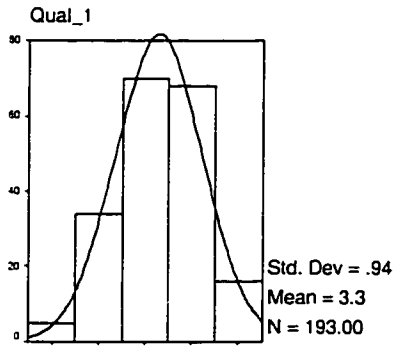


Providing universal access to information.

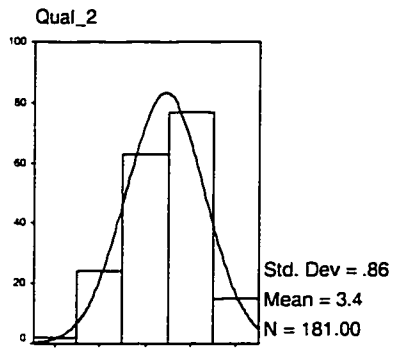


Increasing employee's productivity.

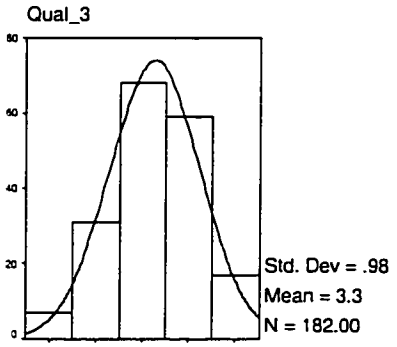
Appendix 16: Operations Quality Descriptive Statistics



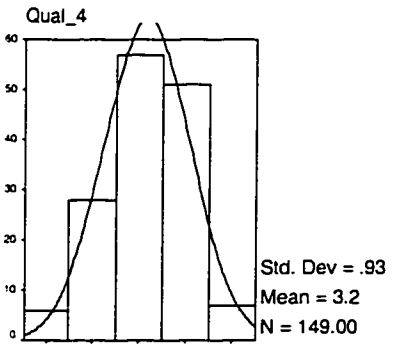
Measuring service quality.



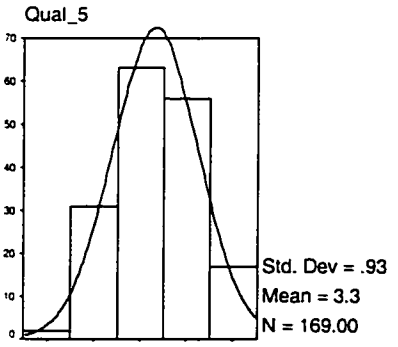
Ensuring consistent product quality.



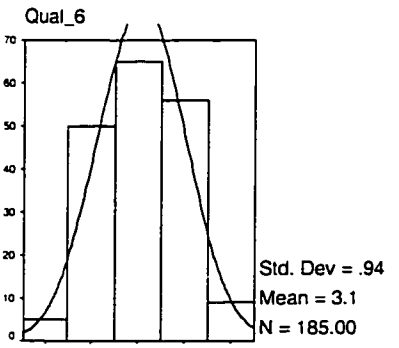
Automating inspection, review or checking of work.



Monitoring for product waste.

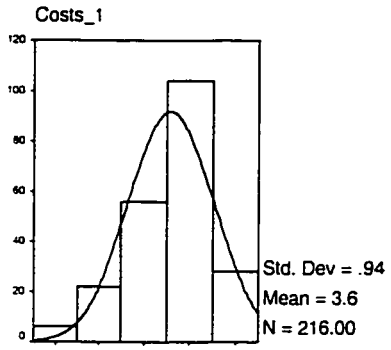


Improving conformance to design specification.

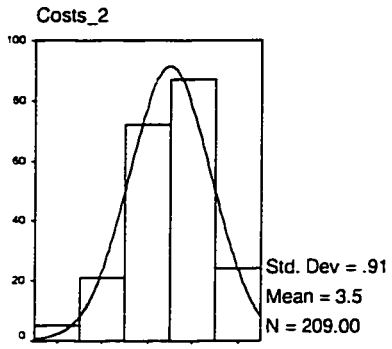


Monitoring for process inefficiencies.

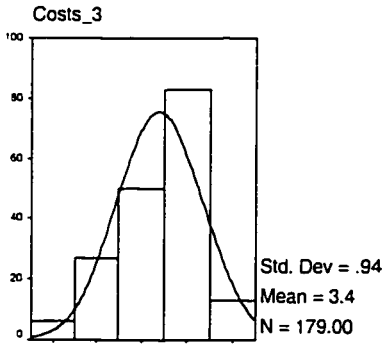
Appendix 17: Operations Costs Descriptive Statistics



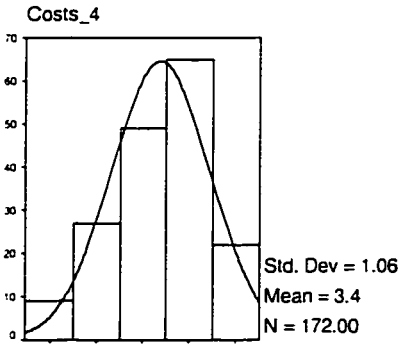
Reducing administrative costs.



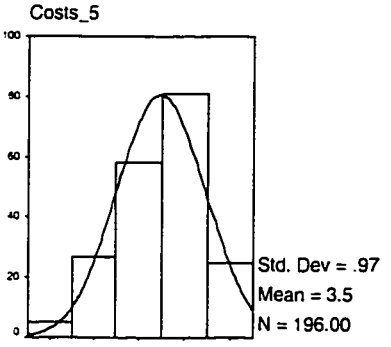
Controlling staffing costs.



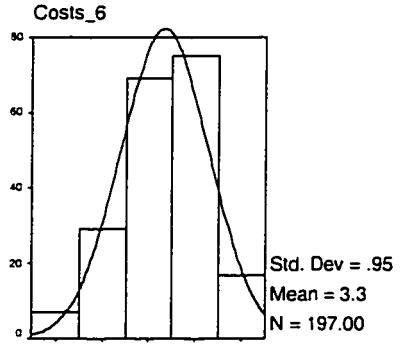
Reducing production costs.



Reducing inventory costs.

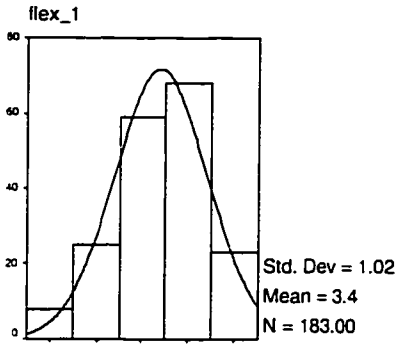


Lowering transaction costs.

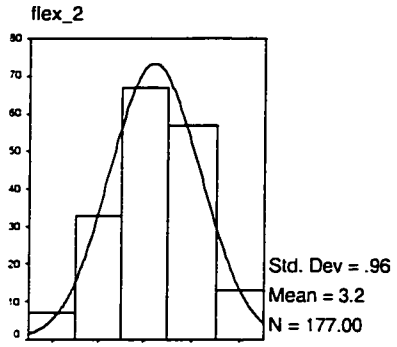


Controlling capital costs.

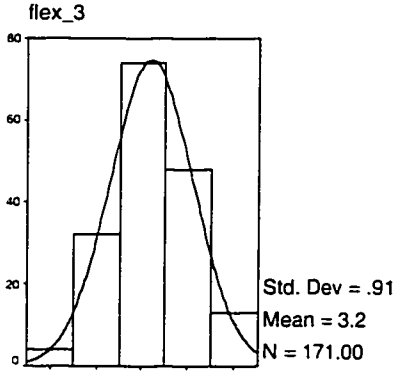
Appendix 18: Operations Flexibility Descriptive Statistics



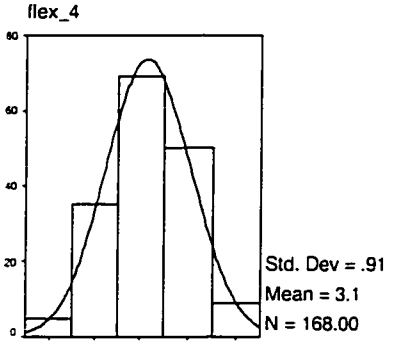
Adjusting capacity quickly.



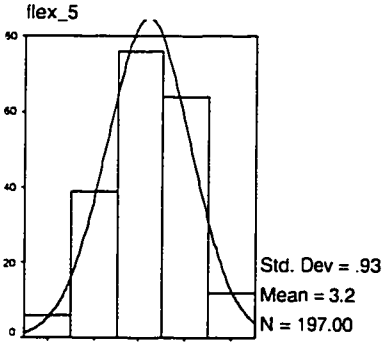
Decreasing time to market of new products/services.



Adjusting product mix.

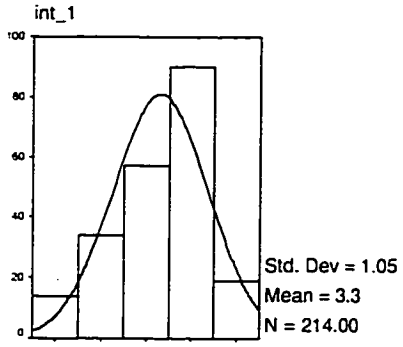


Increasing the frequency of new products/services introduction.

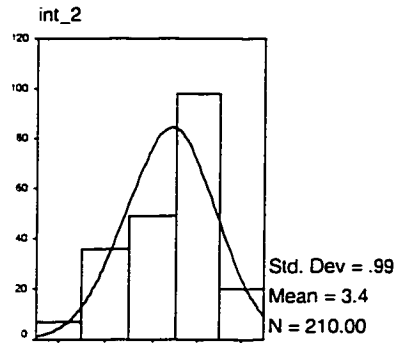


Increasing responsiveness to market needs.

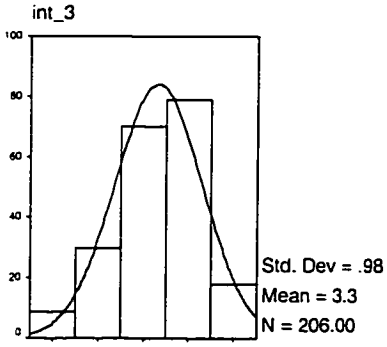
Appendix 19: Internal Strategic Planning Descriptive Statistics



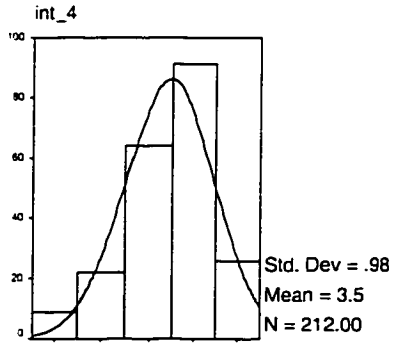
Making strategic decisions.



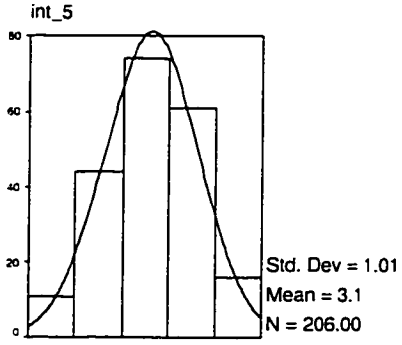
Improving business unit integration.



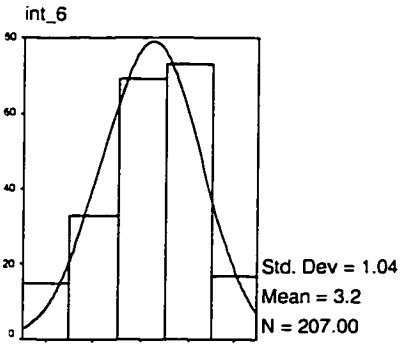
Facilitating organizational change.



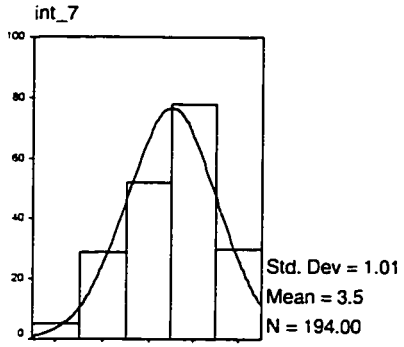
Helping to implement business strategy.



Enabling dynamic strategy planning.

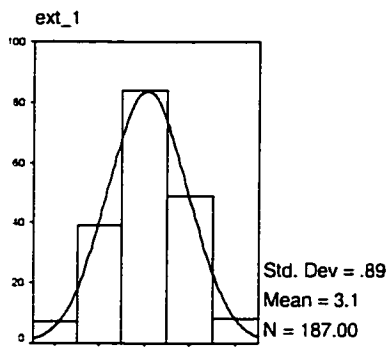


Analyzing strategic issues.

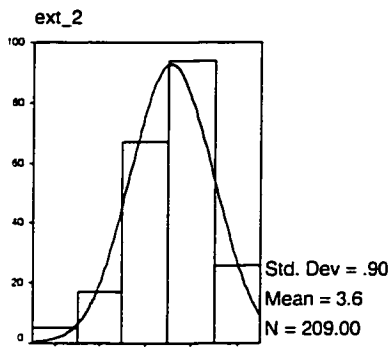


Improve geographic integration.

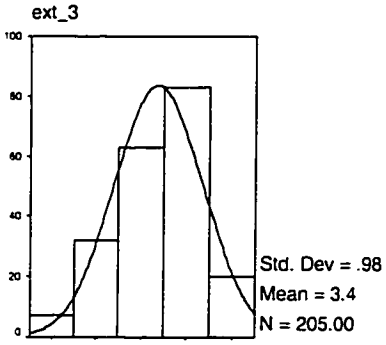
Appendix 20: External Strategic Planning Descriptive Statistics



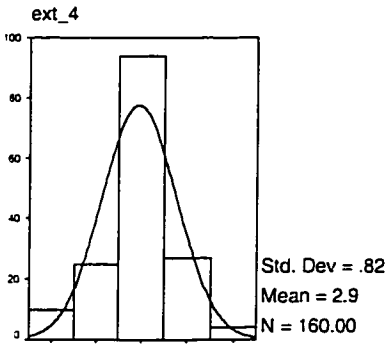
Generating new sources of revenue.



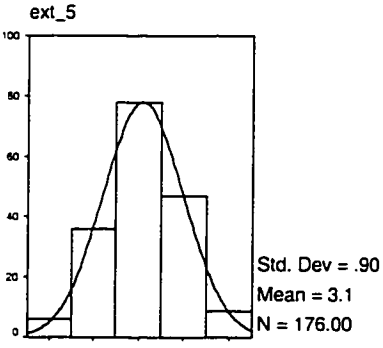
Helping to maintain a competitive advantage.



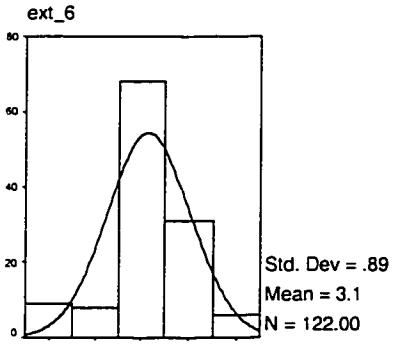
Tracking significant industry trends.



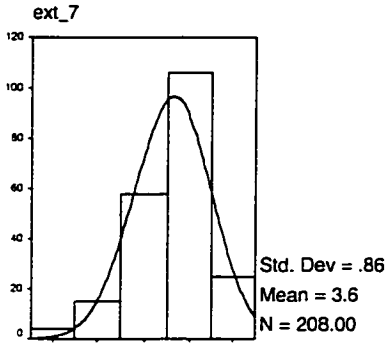
Helping to implement business strategy.



Enabling dynamic strategy planning.



Analyzing strategic issues.



Improve geographic integration.

Appendix 21: Factor Analysis

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.238	40.932	40.932	4.857	10.333	10.333
2	2.693	5.731	46.663	4.689	9.977	20.310
3	2.266	4.822	51.485	4.666	9.927	30.236
4	2.024	4.307	55.792	4.559	9.699	39.936
5	1.792	3.813	59.606	3.729	7.934	47.870
6	1.629	3.466	63.072	3.685	7.840	55.710
7	1.322	2.813	65.884	3.457	7.354	63.064
8	1.110	2.361	68.245	2.435	5.181	68.245
9	1.070	2.276	70.522			
10	.907	1.930	72.452			
11	.815	1.735	74.187			
12	.778	1.655	75.842			
13	.725	1.542	77.383			
14	.697	1.483	78.866			
15	.684	1.455	80.322			
16	.641	1.365	81.686			
17	.591	1.257	82.943			
18	.581	1.236	84.178			
19	.543	1.156	85.334			
20	.493	1.049	86.383			
21	.479	1.018	87.401			
22	.466	.992	88.393			
23	.428	.911	89.304			
24	.398	.847	90.151			
25	.392	.835	90.986			
26	.375	.798	91.784			
27	.350	.746	92.530			
28	.333	.708	93.238			
29	.314	.668	93.906			
30	.292	.621	94.526			
31	.279	.594	95.120			
32	.259	.550	95.671			
33	.238	.506	96.177			
34	.223	.475	96.652			
35	.212	.452	97.104			
36	.202	.430	97.533			
37	.184	.391	97.925			
38	.154	.327	98.252			
39	.151	.320	98.573			
40	.142	.301	98.874			
41	.118	.250	99.124			
42	.107	.229	99.353			
43	9.490E-02	.202	99.555			
44	8.988E-02	.191	99.746			
45	6.272E-02	.133	99.879			
46	3.869E-02	8.233E-02	99.962			
47	1.800E-02	3.829E-02	100.000			

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
b2b_1								.436
b2b_2								.508
b2b_3								.563
b2b_5								.717
b2b_6								.633
b2c_1	.643							
b2c_2	.524							
b2c_3	.668							
b2c_4	.649							
b2c_5	.696							
b2c_6	.556							
b2c_7	.630							
b2c_8	.724							
b2e_1				.703				
b2e_2				.577				
b2e_3				.610				
b2e_4				.587				
b2e_5				.652				
b2e_6				.683				
b2e_7				.649				
Qual_1						.628		
Qual_2						.740		
Qual_3						.658		
Qual_5						.734		
Qual_6						.713		
Costs_1		.756						
Costs_2		.696						
Costs_3		.680						
Costs_4		.762						
Costs_5		.672						
Costs_6		.648						
flex_1					.595			
flex_2					.679			
flex_3					.762			
flex_4					.811			
flex_5					.713			
int_1			.777					
int_2			.674					
int_3			.678					
int_4			.689					
int_5			.744					
int_6			.829					
ext_1							.680	
ext_3							.612	
ext_5							.787	
ext_6							.633	
ext_7							.578	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Appendix 22: Reliability Analysis

B2B RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	B2B_1	3.3771	0.9132	175
2	B2B_2	3.2629	0.9882	175
3	B2B_3	3.4286	1.0473	175
4	B2B_5	3.1086	0.9252	175
5	B2B_6	3.2686	0.8455	175

N of Cases = 175.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
16.4457	14.122	3.7579	5

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.2891	3.1086	3.4286	0.32	1.1029	0.0152

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
0.8956	0.7148	1.0969	0.3821	1.5345	0.0213

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
B2B_1	13.0686	9.6045	0.6508	0.49	0.8274
B2B_2	13.1829	9.0928	0.68	0.5152	0.8199
B2B_3	13.0171	8.7756	0.6849	0.5305	0.8196
B2B_5	13.3371	9.6615	0.6267	0.5711	0.8335
B2B_6	13.1771	9.7098	0.7017	0.6096	0.8166

Reliability Coefficients 5 items

Alpha = .8536 Standardized item alpha = .8555

B2C RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	B2C_1	3.3358	1.0451	137
2	B2C_2	3.5693	0.9533	137
3	B2C_3	3.7883	0.9658	137
4	B2C_4	3.1825	1.232	137
5	B2C_5	3.1533	0.9918	137
6	B2C_6	3.7664	0.8683	137
7	B2C_7	2.9051	0.9918	137
8	B2C_8	3.1971	0.9765	137

N of Cases = 137.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
26.8978	36.0924	6.0077	8

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.3622	2.9051	3.7883	0.8832	1.304	0.1001

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
1.0158	0.7539	1.5179	0.7641	2.0135	0.0501

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
B2C_1	23.562	27.9833	0.6346	0.4569	0.8734
B2C_2	23.3285	28.7222	0.6324	0.4736	0.8735
B2C_3	23.1095	28.2159	0.6767	0.5102	0.8692
B2C_4	23.7153	26.9404	0.5969	0.4065	0.8805
B2C_5	23.7445	27.8387	0.6946	0.5092	0.8673
B2C_6	23.1314	29.2326	0.6503	0.481	0.8724
B2C_7	23.9927	28.1102	0.6655	0.5674	0.8702
B2C_8	23.7007	27.6377	0.7306	0.6116	0.8639

Reliability Coefficients 8 items
Alpha = .8855 Standardized item alpha = .8887

B2ERELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	B2E_1	3.5907	1.0574	193
2	B2E_2	3.2124	1.0808	193
3	B2E_3	2.8601	1.1069	193
4	B2E_4	3.5233	0.9952	193
5	B2E_5	2.8083	1.0506	193
6	B2E_6	3.4767	1.146	193
7	B2E_7	3.5492	0.9404	193

N of Cases = 193.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
23.0207	32.7392	5.7218	7

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.2887	2.8083	3.5907	0.7824	1.2786	0.1116

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
1.1147	0.8843	1.3133	0.429	1.4851	0.0205

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
B2E_1	19.4301	24.2881	0.7036	0.54	0.8697
B2E_2	19.8083	24.3745	0.6743	0.4983	0.8734
B2E_3	20.1606	23.9793	0.6951	0.5452	0.8708
B2E_4	19.4974	25.3659	0.6368	0.4199	0.8777
B2E_5	20.2124	24.564	0.6791	0.5261	0.8727
B2E_6	19.544	23.8014	0.6819	0.5157	0.8728
B2E_7	19.4715	25.1255	0.7138	0.568	0.8696

Reliability Coefficients 7 items
Alpha = .8886 Standardized item alpha = .8895

Operational Quality RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	QUAL_1	3.3056	0.9028	144
2	QUAL_2	3.4514	0.8596	144
3	QUAL_3	3.3194	0.9286	144
4	QUAL_5	3.3542	0.9422	144
5	QUAL_6	3.1875	0.8926	144

N of Cases = 144.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
16.6181	13.3286	3.6508	5

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.3236	3.1875	3.4514	0.2639	1.0828	0.009

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
0.8201	0.7389	0.8877	0.1488	1.2014	0.0034

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
QUAL_1	13.3125	9.0835	0.6303	0.4845	0.8511
QUAL_2	13.1667	8.7413	0.7572	0.6226	0.8205
QUAL_3	13.2986	8.7843	0.6689	0.4788	0.8418
QUAL_5	13.2639	8.5872	0.6979	0.578	0.8345
QUAL_6	13.4306	8.8902	0.6841	0.5648	0.8378

Reliability Coefficients 5 items
Alpha = .8654 Standardized item alpha = .8662

Operational Costs RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	COSTS_1	3.6138	0.9873	145
2	COSTS_2	3.4759	0.9652	145
3	COSTS_3	3.3862	0.9442	145
4	COSTS_4	3.3655	1.0789	145
5	COSTS_5	3.3793	0.9865	145
6	COSTS_6	3.2759	0.9824	145

N of Cases = 145.0

Statistics for Scale

Mean	Variance	Std Dev	Variables
20.4966	26.4045	5.1385	6

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.4161	3.2759	3.6138	0.3379	1.1032	0.0134

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
0.9834	0.8915	1.1641	0.2726	1.3058	0.0089

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
COSTS_1	16.8828	18.257	0.8501	0.7604	0.9128
COSTS_2	17.0207	18.8676	0.7877	0.6853	0.9208
COSTS_3	17.1103	18.7933	0.8209	0.6817	0.9168
COSTS_4	17.131	17.9341	0.7995	0.6613	0.9199
COSTS_5	17.1172	18.7153	0.7868	0.632	0.9209
COSTS_6	17.2207	18.951	0.7586	0.5815	0.9245

Reliability Coefficients 6 items

Alpha = .9319 Standardized item alpha = .9323

Operational Flexibility R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

		Mean	Std Dev	Cases
1	FLEX_1	3.3169	1.0201	142
2	FLEX_2	3.2324	0.9724	142
3	FLEX_3	3.2254	0.9332	142
4	FLEX_4	3.1831	0.9196	142
5	FLEX_5	3.2254	0.9631	142

N of Cases = 142.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
16.1831	16.0088	4.0011	5

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.2366	3.1831	3.3169	0.1338	1.042	0.0024

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
0.9261	0.8457	1.0407	0.195	1.2306	0.0058

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
FLEX_1	12.8662	10.599	0.6578	0.5159	0.8818
FLEX_2	12.9507	10.7422	0.6779	0.5028	0.876
FLEX_3	12.9577	10.4237	0.7823	0.6524	0.8524
FLEX_4	13	10.5674	0.7687	0.639	0.8558
FLEX_5	12.9577	10.3244	0.7686	0.6238	0.8551

Reliability Coefficients 5 items

Alpha = .8884 Standardized item alpha = .8898

Internal Strategic Planning RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	INT_1	3.2857	1.0683	189
2	INT_2	3.4444	0.9964	189
3	INT_3	3.2963	0.9931	189
4	INT_4	3.4868	0.9926	189
5	INT_5	3.127	1.0025	189
6	INT_6	3.2011	1.0477	189

N of Cases = 189.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
19.8413	28.3683	5.3262	6

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.3069	3.127	3.4868	0.3598	1.1151	0.0191

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
1.0347	0.9852	1.1413	0.1561	1.1585	0.0046

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
INT_1	16.5556	19.5248	0.8158	0.7	0.9256
INT_2	16.3968	20.2619	0.793	0.6993	0.9282
INT_3	16.545	20.1748	0.8079	0.6842	0.9264
INT_4	16.3545	20.1343	0.8138	0.6881	0.9257
INT_5	16.7143	20.0137	0.8194	0.7416	0.925
INT_6	16.6402	19.572	0.8305	0.7491	0.9236

Reliability Coefficients 6 items
Alpha = .9374 Standardized item alpha = .9375

External Strategic Planning RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	EXT_1	3.1	0.9182	110
2	EXT_3	3.3727	0.9848	110
3	EXT_5	3.1636	0.924	110
4	EXT_6	3.1091	0.8815	110
5	EXT_7	3.6455	0.8943	110

N of Cases = 110.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
16.3909	13.1027	3.6198	5

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.2782	3.1	3.6455	0.5455	1.176	0.0543

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
0.8487	0.777	0.9699	0.1929	1.2483	0.0056

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
EXT_1	13.2909	8.8871	0.616	0.4197	0.8232
EXT_3	13.0182	8.9354	0.543	0.3623	0.8449
EXT_5	13.2273	8.1038	0.788	0.6328	0.7756
EXT_6	13.2818	8.6813	0.7016	0.5358	0.8009
EXT_7	12.7455	8.9438	0.628	0.446	0.8199

Reliability Coefficients 5 items
Alpha = .8452 Standardized item alpha = .8469

Financial Performance RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1	PERF_3	3.0417	1.0968	216
2	PERF_4	3.0463	1.0945	216
3	PERF_5	3.0787	1.0646	216
4	PERF_8	3.3194	1.0045	216
5	PERF_9	3.2454	0.9351	216

N of Cases = 216.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
15.7315	21.0997	4.5934	5

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.1463	3.0417	3.3194	0.2778	1.0913	0.0163

Item Variances

Mean	Minimum	Maximum	Range	Max/Min	Variance
1.0835	0.8744	1.2029	0.3285	1.3757	0.0198

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PERF_3	12.6898	13.3219	0.8212	0.7468	0.9115
PERF_4	12.6852	13.3237	0.8233	0.7498	0.9111
PERF_5	12.6528	13.3905	0.844	0.7558	0.9067
PERF_8	12.412	14.1876	0.78	0.792	0.919
PERF_9	12.4861	14.4928	0.8052	0.8183	0.9154

Reliability Coefficients 5 items

Alpha = .9290 Standardized item alpha = .9298

Market Performance R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

		Mean	Std Dev	Cases
1	PERF_1	3.293	0.9966	215
2	PERF_2	3.0326	1.0249	215
3	PERF_6	3.3767	1.0423	215
4	PERF_7	3.3116	1.0142	215

N of Cases = 215.0

Statistics for Scale

Mean	Variance	Std Dev	N of Variables
13.014	12.2101	3.4943	4

Item Means

Mean	Minimum	Maximum	Range	Max/Min	Variance
3.2535	3.0326	3.3767	0.3442	1.1135	0.023

Item Variances

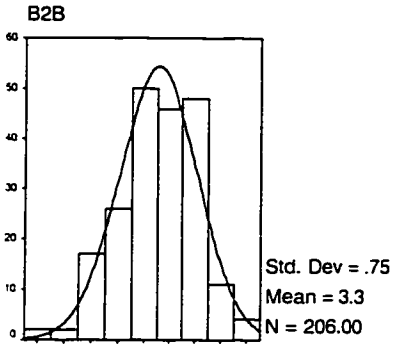
Mean	Minimum	Maximum	Range	Max/Min	Variance
1.0396	0.9932	1.0864	0.0932	1.0938	0.0015

Item-total Statistics

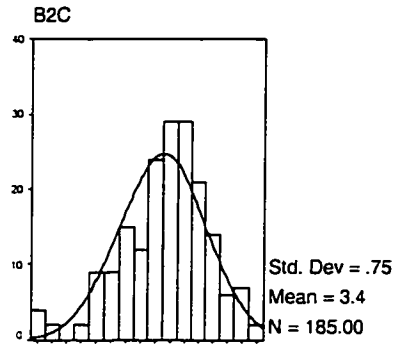
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PERF_1	9.7209	7.4918	0.6828	0.495	0.8662
PERF_2	9.9814	7.3922	0.6761	0.4844	0.8693
PERF_6	9.6372	6.7556	0.8062	0.7963	0.8179
PERF_7	9.7023	6.939	0.794	0.7886	0.8234

Reliability Coefficients 4 items
Alpha = .8792 Standardized item alpha = .8790

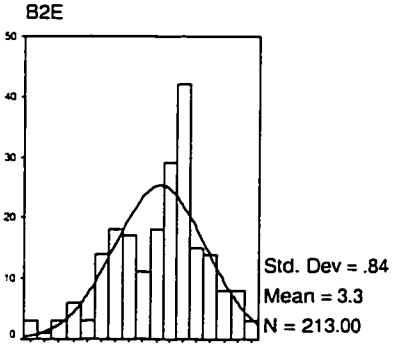
Appendix 23: Descriptive Statistics for Constructs



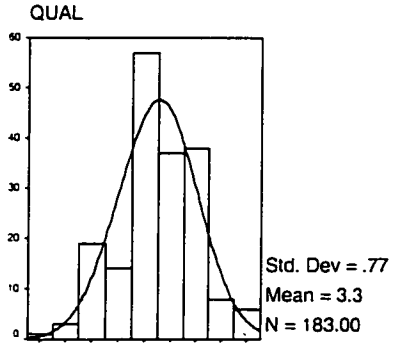
Business to Business (B2B) ID Strategy



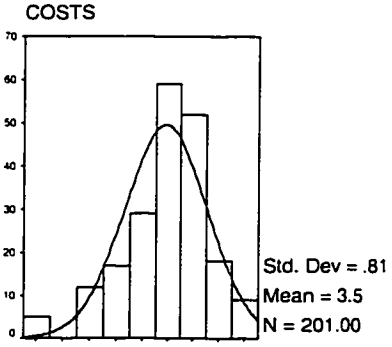
Business to Consumer (B2C) IT Strategy



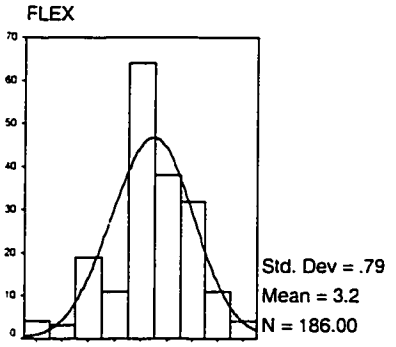
Business to Employee (B2E) IT Strategy



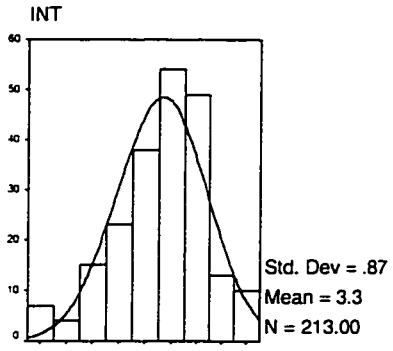
Operations Quality IT Strategy



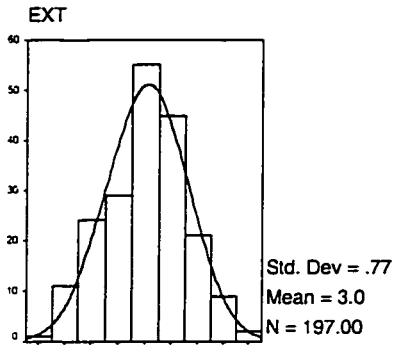
Operations Cost IT Strategy



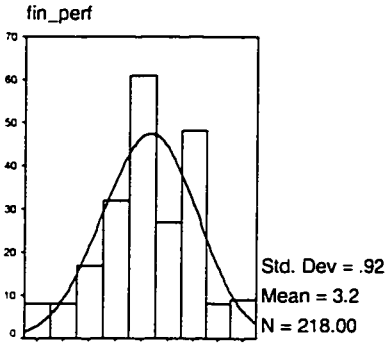
Operations Flexibility IT Strategy



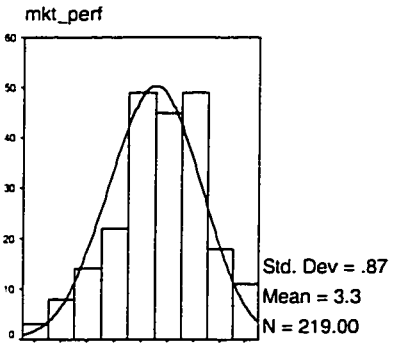
Internal Strategic Planning



External Strategic Planning



Financial Performance



Market Performance

Appendix 24: Correlation Matrices

Overall Correlations

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Financi	Market	Overall
B2B	Pearson Correlation	1	.662(**)	.664(**)	.640(**)	.629(**)	.522(**)	.641(**)	.483(**)	.350(**)	.322(**)	.355(**)
	Sig. (1-tailed)	.	0	0	0	0	0	0	0	0	0	0
	N	206	178	200	173	190	178	200	188	204	205	205
B2C	Pearson Correlation	.662(**)	1	.590(**)	.578(**)	.607(**)	.535(**)	.543(**)	.406(**)	.303(**)	.307(**)	.320(**)
	Sig. (1-tailed)	0	.	0	0	0	0	0	0	0	0	0
	N	178	185	180	160	174	166	180	170	184	184	184
B2E	Pearson Correlation	.664(**)	.590(**)	1	.594(**)	.603(**)	.530(**)	.650(**)	.488(**)	.330(**)	.276(**)	.323(**)
	Sig. (1-tailed)	0	0	.	0	0	0	0	0	0	0	0
	N	200	180	213	181	196	181	210	192	211	212	212
QUAL	Pearson Correlation	.640(**)	.578(**)	.594(**)	1	.588(**)	.522(**)	.536(**)	.449(**)	.261(**)	.189(**)	.240(**)
	Sig. (1-tailed)	0	0	0	.	0	0	0	0	0	0.005	0.001
	N	173	160	181	183	175	169	181	169	182	182	182
COSTS	Pearson Correlation	.629(**)	.607(**)	.603(**)	.588(**)	1	.571(**)	.574(**)	.520(**)	.343(**)	.267(**)	.327(**)
	Sig. (1-tailed)	0	0	0	0	.	0	0	0	0	0	0
	N	190	174	196	175	201	178	198	184	199	200	200
FLEX	Pearson Correlation	.522(**)	.535(**)	.530(**)	.522(**)	.571(**)	1	.496(**)	.388(**)	.252(**)	.268(**)	.273(**)
	Sig. (1-tailed)	0	0	0	0	0	.	0	0	0	0	0
	N	178	166	181	169	178	186	183	175	185	185	185
INT	Pearson Correlation	.641(**)	.543(**)	.650(**)	.536(**)	.574(**)	.496(**)	1	.549(**)	.316(**)	.298(**)	.324(**)
	Sig. (1-tailed)	0	0	0	0	0	0	.	0	0	0	0
	N	200	180	210	181	198	183	213	192	211	212	212
EXT	Pearson Correlation	.483(**)	.406(**)	.488(**)	.449(**)	.520(**)	.388(**)	549(**)	1	.242(**)	150(*)	.210(**)
	Sig. (1-tailed)	0	0	0	0	0	0	0	.	0	0.018	0.002
	N	188	170	192	169	184	175	192	197	195	196	196
Financial	Pearson Correlation	.350(**)	.303(**)	.330(**)	.261(**)	.343(**)	.252(**)	.316(**)	.242(**)	1	.828(**)	968(**)
	Sig. (1-tailed)	0	0	0	0	0	0	0	0	.	0	0
	N	204	184	211	182	199	185	211	195	218	218	218
Market	Pearson Correlation	.322(**)	.307(**)	.276(**)	.189(**)	.267(**)	.268(**)	.298(**)	.150(*)	.828(**)	1	.943(**)
	Sig. (1-tailed)	0	0	0	0.005	0	0	0	0.018	0	.	0
	N	205	184	212	182	200	185	212	196	218	219	219
Overall	Pearson Correlation	.355(**)	.320(**)	.323(**)	240(**)	.327(**)	.273(**)	.324(**)	.210(**)	.968(**)	.943(**)	1
	Sig. (1-tailed)	0	0	0	0.001	0	0	0	0.002	0	0	.
	N	205	184	212	182	200	185	212	196	218	219	219

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Primary Industry Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Financi	Market	Overall
B2B	Pearson Correlation	1	.720(**)	.761(**)	0.292	.404(*)	0.219	.505(**)	0.233	.384(*)	0.209	.342(*)
	Sig. (1-tailed)		0	0	0.1	0.02	0.17	0.003	0.136	0.024	0.143	0.038
	N	28	22	28	21	26	21	28	24	27	28	28
B2C	Pearson Correlation	.720(**)	1	.453(*)	0.284	.401(*)	0.244	.466(*)	0.359	0.272	0.067	0.208
	Sig. (1-tailed)	0	.	0.017	0.119	0.036	0.157	0.014	0.066	0.11	0.384	0.177
	N	22	22	22	19	21	19	22	19	22	22	22
B2E	Pearson Correlation	.761(**)	.453(*)	1	.389(*)	.415(*)	0.243	.592(**)	0.182	.524(**)	.511(**)	.543(**)
	Sig. (1-tailed)	0	0.017	.	0.041	0.016	0.144	0	0.198	0.002	0.002	0.001
	N	28	22	29	21	27	21	29	24	28	29	29
QUAL	Pearson Correlation	0.292	0.284	.389(*)	1	-0.141	.720(**)	0.266	-0.169	.391(*)	.396(*)	.408(*)
	Sig. (1-tailed)	0.1	0.119	0.041	.	0.277	0	0.122	0.245	0.04	0.038	0.033
	N	21	19	21	21	20	19	21	19	21	21	21
COSTS	Pearson Correlation	.404(*)	.401(*)	.415(*)	-0.141	1	-.380(*)	0.247	0.342	0.066	-0.049	0.044
	Sig. (1-tailed)	0.02	0.036	0.016	0.277	.	0.049	0.107	0.055	0.375	0.405	0.415
	N	26	21	27	20	27	20	27	23	26	27	27
FLEX	Pearson Correlation	0.219	0.244	0.243	.720(**)	-.380(*)	1	0.335	-0.22	.518(**)	.515(**)	.540(**)
	Sig. (1-tailed)	0.17	0.157	0.144	0	0.049	.	0.069	0.182	0.008	0.008	0.006
	N	21	19	21	19	20	21	21	19	21	21	21
INT	Pearson Correlation	.505(**)	.466(*)	.592(**)	0.266	0.247	0.335	1	0.278	.628(**)	.578(**)	.637(**)
	Sig. (1-tailed)	0.003	0.014	0	0.122	0.107	0.069	.	0.094	0	0.001	0
	N	28	22	29	21	27	21	29	24	28	29	29
EXT	Pearson Correlation	0.233	0.359	0.182	-0.169	0.342	-0.22	0.278	1	0.335	0.097	0.217
	Sig. (1-tailed)	0.136	0.066	0.198	0.245	0.055	0.182	0.094	.	0.059	0.326	0.154
	N	24	19	24	19	23	19	24	24	23	24	24
Financial	Pearson Correlation	.384(*)	0.272	.524(**)	.391(*)	0.066	.518(**)	.628(**)	0.335	1	.830(**)	.976(**)
	Sig. (1-tailed)	0.024	0.11	0.002	0.04	0.375	0.008	0	0.059	.	0	0
	N	27	22	28	21	26	21	28	23	28	28	28
Market	Pearson Correlation	0.209	0.067	.511(**)	.396(*)	-0.049	.515(**)	.578(**)	0.097	.830(**)	1	.931(**)
	Sig. (1-tailed)	0.143	0.384	0.002	0.038	0.405	0.008	0.001	0.326	0	.	0
	N	28	22	29	21	27	21	29	24	28	29	29
Overall	Pearson Correlation	.342(*)	0.208	.543(**)	.408(*)	0.044	.540(**)	.637(**)	0.217	.976(**)	.931(**)	1
	Sig. (1-tailed)	0.038	0.177	0.001	0.033	0.415	0.006	0	0.154	0	0	.
	N	28	22	29	21	27	21	29	24	28	29	29

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a Industry = Primary

Manufacturing Industry Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Fin.	Market	Overall
B2B	Pearson Correlation	1	.796(**)	.694(**)	.657(**)	.555(**)	.477(**)	.629(**)	.449(**)	0.137	.270(*)	0.202
	Sig. (1-tailed)		0	0	0	0	0	0	0	0.16	0.023	0.07
	N	55	48	53	50	53	55	53	53	55	55	55
B2C	Pearson Correlation	.796(**)	1	.631(**)	.647(**)	.560(**)	.590(**)	.637(**)	.406(**)	.240(*)	.370(**)	.308(*)
	Sig. (1-tailed)	0	.	0	0	0	0	0	0.003	0.05	0.005	0.017
	N	48	48	47	43	46	48	46	46	48	48	48
B2E	Pearson Correlation	.694(**)	.631(**)	1	.628(**)	.596(**)	.579(**)	.781(**)	.438(**)	0.037	0.087	0.061
	Sig. (1-tailed)	0	0	.	0	0	0	0	0.001	0.393	0.263	0.33
	N	53	47	55	50	54	55	54	53	55	55	55
QUAL	Pearson Correlation	.657(**)	.647(**)	.628(**)	1	.547(**)	.534(**)	.540(**)	.589(**)	0.132	0.131	0.135
	Sig. (1-tailed)	0	0	0	.	0	0	0	0	0.177	0.18	0.172
	N	50	43	50	51	51	51	50	50	51	51	51
COSTS	Pearson Correlation	.555(**)	.560(**)	.596(**)	.547(**)	1	.630(**)	.612(**)	.550(**)	.240(*)	0.18	0.223
	Sig. (1-tailed)	0	0	0	0	.	0	0	0	0.039	0.094	0.051
	N	53	46	54	51	55	55	54	53	55	55	55
FLEX	Pearson Correlation	.477(**)	.590(**)	.579(**)	.534(**)	.630(**)	1	.590(**)	.428(**)	0.144	0.196	0.173
	Sig. (1-tailed)	0	0	0	0	0	.	0	0.001	0.142	0.072	0.099
	N	55	48	55	51	55	57	55	55	57	57	57
INT	Pearson Correlation	.629(**)	.637(**)	.781(**)	.540(**)	.612(**)	.590(**)	1	.556(**)	0.121	0.14	0.134
	Sig. (1-tailed)	0	0	0	0	0	0	.	0	0.19	0.154	0.164
	N	53	46	54	50	54	55	55	53	55	55	55
EXT	Pearson Correlation	.449(**)	.406(**)	.438(**)	.589(**)	.550(**)	.428(**)	.556(**)	1	0.058	0.034	0.051
	Sig. (1-tailed)	0	0.003	0.001	0	0	0.001	0	.	0.337	0.403	0.356
	N	53	46	53	50	53	55	53	55	55	55	55
Financial	Pearson Correlation	0.137	.240(*)	0.037	0.132	.240(*)	0.144	0.121	0.058	1	.830(**)	.969(**)
	Sig. (1-tailed)	0.16	0.05	0.393	0.177	0.039	0.142	0.19	0.337	.	0	0
	N	55	48	55	51	55	57	55	55	57	57	57
Market	Pearson Correlation	.270(*)	.370(**)	0.087	0.131	0.18	0.196	0.14	0.034	.830(**)	1	.942(**)
	Sig. (1-tailed)	0.023	0.005	0.263	0.18	0.094	0.072	0.154	0.403	0	.	0
	N	55	48	55	51	55	57	55	55	57	57	57
Overall	Pearson Correlation	0.202	.308(*)	0.061	0.135	0.223	0.173	0.134	0.051	.969(**)	.942(**)	1
	Sig. (1-tailed)	0.07	0.017	0.33	0.172	0.051	0.099	0.164	0.356	0	0	.
	N	55	48	55	51	55	57	55	55	57	57	57

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a Industry = Manufacturing

Services Industry Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Financi	Market	Overall
B2B	Pearson Correlation	1	.648(**)	.652(**)	.709(**)	.713(**)	.553(**)	.685(**)	.562(**)	.494(**)	.372(**)	.457(**)
	Sig. (1-tailed)	.	0	0	0	0	0	0	0	0	0	0
	N	90	83	86	73	83	75	87	83	90	90	90
B2C	Pearson Correlation	.648(**)	1	.592(**)	.640(**)	.658(**)	.564(**)	.542(**)	.436(**)	.328(**)	.316(**)	.336(**)
	Sig. (1-tailed)	0	.	0	0	0	0	0	0	0.001	0.001	0.001
	N	83	86	82	71	80	73	83	78	86	86	86
B2E	Pearson Correlation	.652(**)	.592(**)	1	.575(**)	.567(**)	.522(**)	.557(**)	.512(**)	.471(**)	.374(**)	.445(**)
	Sig. (1-tailed)	0	0	.	0	0	0	0	0	0	0	0
	N	86	82	90	75	82	74	89	82	90	90	90
QUAL	Pearson Correlation	.709(**)	.640(**)	.575(**)	1	.706(**)	.481(**)	.525(**)	.384(**)	.314(**)	0.178	.264(*)
	Sig. (1-tailed)	0	0	0	.	0	0	0	0.001	0.003	0.064	0.011
	N	73	71	75	75	71	69	75	70	75	75	75
COSTS	Pearson Correlation	.713(**)	.658(**)	.567(**)	.706(**)	1	.613(**)	.602(**)	.464(**)	.481(**)	.365(**)	.448(**)
	Sig. (1-tailed)	0	0	0	0	.	0	0	0	0	0	0
	N	83	80	82	71	85	73	84	79	85	85	85
FLEX	Pearson Correlation	.553(**)	.564(**)	.522(**)	.481(**)	.613(**)	1	.451(**)	.417(**)	.332(**)	.254(*)	.311(**)
	Sig. (1-tailed)	0	0	0	0	0	.	0	0	0.002	0.013	0.003
	N	75	73	74	69	73	77	76	72	77	77	77
INT	Pearson Correlation	.685(**)	.542(**)	.557(**)	.525(**)	.602(**)	.451(**)	1	.542(**)	.393(**)	.369(**)	.397(**)
	Sig. (1-tailed)	0	0	0	0	0	0	.	0	0	0	0
	N	87	83	89	75	84	76	91	83	91	91	91
EXT	Pearson Correlation	.562(**)	.436(**)	.512(**)	.384(**)	.464(**)	.417(**)	.542(**)	1	.330(**)	.259(**)	.312(**)
	Sig. (1-tailed)	0	0	0	0.001	0	0	0	.	0.001	0.008	0.002
	N	83	78	82	70	79	72	83	85	85	85	85
Financial	Pearson Correlation	.494(**)	.328(**)	.471(**)	.314(**)	.481(**)	.332(**)	.393(**)	.330(**)	1	.861(**)	.973(**)
	Sig. (1-tailed)	0	0.001	0	0.003	0	0.002	0	0.001	.	0	0
	N	90	86	90	75	85	77	91	85	94	94	94
Market	Pearson Correlation	.372(**)	.316(**)	.374(**)	0.178	.365(**)	.254(*)	.369(**)	.259(**)	.861(**)	1	.955(**)
	Sig. (1-tailed)	0	0.001	0	0.064	0	0.013	0	0.008	0	.	0
	N	90	86	90	75	85	77	91	85	94	94	94
Overall	Pearson Correlation	.457(**)	.336(**)	.445(**)	.264(*)	.448(**)	.311(**)	.397(**)	.312(**)	.973(**)	.955(**)	1
	Sig. (1-tailed)	0	0.001	0	0.011	0	0.003	0	0.002	0	0	.
	N	90	86	90	75	85	77	91	85	94	94	94

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a Industry = Services

Hi-tech Industry Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Fin.	Market	Overall
B2B	Pearson Correlation	1	.574(**)	.585(**)	.564(**)	.669(**)	.631(**)	.602(**)	.398(*)	0.285	0.292	.307(*)
	Sig. (1-tailed)	.	0.001	0	0.001	0	0	0	0.018	0.057	0.052	
	N	33	25	33	29	28	27	32	28	32	32	32
B2C	Pearson Correlation	.574(**)	1	.658(**)	.506(**)	.757(**)	.552(**)	.478(**)	.342(*)	.340(*)	.339(*)	.364(*)
	Sig. (1-tailed)	0.001	.	0	0.004	0	0.002	0.004	0.04	0.038	0.039	0.028
	N	25	29	29	27	27	26	29	27	28	28	28
B2E	Pearson Correlation	.585(**)	.658(**)	1	.681(**)	.786(**)	.556(**)	.655(**)	.622(**)	.345(*)	0.182	.295(*)
	Sig. (1-tailed)	0	0	.	0	0	0.001	0	0	0.017	0.137	0.036
	N	33	29	39	35	33	31	38	33	38	38	38
QUAL	Pearson Correlation	.564(**)	.506(**)	.681(**)	1	.666(**)	.508(**)	.683(**)	.599(**)	.307(*)	0.223	.296(*)
	Sig. (1-tailed)	0.001	0.004	0	.	0	0.002	0	0	0.036	0.099	0.042
	N	29	27	35	36	33	30	35	30	35	35	35
COSTS	Pearson Correlation	.669(**)	.757(**)	.786(**)	.666(**)	1	.651(**)	.653(**)	.708(**)	.346(*)	0.274	.341(*)
	Sig. (1-tailed)	0	0	0	0	.	0	0	0	0.024	0.061	0.026
	N	28	27	33	33	34	30	33	29	33	33	33
FLEX	Pearson Correlation	.631(**)	.552(**)	.556(**)	.508(**)	.651(**)	1	.480(**)	.431(**)	0.168	.348(*)	0.274
	Sig. (1-tailed)	0	0.002	0.001	0.002	0	.	0.003	0.01	0.188	0.03	0.072
	N	27	26	31	30	30	31	31	29	30	30	30
INT	Pearson Correlation	.602(**)	.478(**)	.655(**)	.683(**)	.653(**)	.480(**)	1	.694(**)	0.264	0.21	0.262
	Sig. (1-tailed)	0	0.004	0	0	0	0.003	.	0	0.057	0.106	0.059
	N	32	29	38	35	33	31	38	32	37	37	37
EXT	Pearson Correlation	.398(*)	.342(*)	.622(**)	.599(**)	.708(**)	.431(**)	.694(**)	1	.299(*)	0.117	0.237
	Sig. (1-tailed)	0.018	0.04	0	0	0	0.01	0	.	0.048	0.261	0.096
	N	28	27	33	30	29	29	32	33	32	32	32
fian	Pearson Correlation	0.285	.340(*)	.345(*)	.307(*)	.346(*)	0.168	0.264	.299(*)	1	.742(**)	.950(**)
	Sig. (1-tailed)	0.057	0.038	0.017	0.036	0.024	0.188	0.057	0.048	.	0	0
	N	32	28	38	35	33	30	37	32	39	39	39
Market	Pearson Correlation	0.292	.339(*)	0.182	0.223	0.274	.348(*)	0.21	0.117	.742(**)	1	.914(**)
	Sig. (1-tailed)	0.052	0.039	0.137	0.099	0.061	0.03	0.106	0.261	0	.	0
	N	32	28	38	35	33	30	37	32	39	39	39
Overall	Pearson Correlation	.307(*)	.364(*)	.295(*)	.296(*)	.341(*)	0.274	0.262	0.237	.950(**)	.914(**)	1
	Sig. (1-tailed)	0.044	0.028	0.036	0.042	0.026	0.072	0.059	0.096	0	0	.
	N	32	28	38	35	33	30	37	32	39	39	39

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a Industry = Hi-Tech

Less Than 100 Employees Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Financi	Market	Overall
B2B	Pearson Correlation	1	.736(**)	.811(**)	.694(**)	.735(**)	.572(**)	.710(**)	.517(**)	.502(**)	.458(**)	.503(**)
	Sig. (1-tailed)	.	0	0	0	0	0.002	0	0.001	0.001	0.002	0.001
	N	39	31	35	25	33	24	36	34	38	39	39
B2C	Pearson Correlation	.736(**)	1	.714(**)	.647(**)	.626(**)	.447(*)	.609(**)	.478(**)	.409(**)	.322(*)	.382(*)
	Sig. (1-tailed)	0	.	0	0	0	0.011	0	0.003	0.008	0.032	0.013
	N	31	34	30	25	29	26	31	31	34	34	34
B2E	Pearson Correlation	811(**)	.714(**)	1	.669(**)	702(**)	.345(*)	.709(**)	.457(**)	.271(*)	0.224	.265(*)
	Sig. (1-tailed)	0	0	.	0	0	0.042	0	0.003	0.043	0.077	0.045
	N	35	30	42	30	37	26	42	36	41	42	42
QUAL	Pearson Correlation	.694(**)	.647(**)	.669(**)	1	.576(**)	0.24	.558(**)	.535(**)	0.265	0.211	0.247
	Sig. (1-tailed)	0	0	0	.	0.001	0.135	0.001	0.002	0.075	0.127	0.09
	N	25	25	30	31	29	23	30	26	31	31	31
COSTS	Pearson Correlation	.735(**)	.626(**)	.702(**)	.576(**)	1	.641(**)	.697(**)	.424(**)	.453(**)	.424(**)	.455(**)
	Sig. (1-tailed)	0	0	0	0.001	.	0	0	0.006	0.002	0.003	0.002
	N	33	29	37	29	40	26	38	34	39	40	40
FLEX	Pearson Correlation	.572(**)	.447(*)	.345(*)	0.24	.641(**)	1	.364(*)	0.142	.375(*)	.507(**)	.450(**)
	Sig. (1-tailed)	0.002	0.011	0.042	0.135	0	.	0.031	0.236	0.023	0.003	0.007
	N	24	26	26	23	26	29	27	28	29	29	29
INT	Pearson Correlation	.710(**)	.609(**)	.709(**)	.558(**)	.697(**)	.364(*)	1	.614(**)	.291(*)	.305(*)	.312(*)
	Sig. (1-tailed)	0	0	0	0.001	0	0.031	.	0	0.031	0.023	0.021
	N	36	31	42	30	38	27	43	37	42	43	43
EXT	Pearson Correlation	.517(**)	.478(**)	.457(**)	.535(**)	.424(**)	0.142	.614(**)	1	0.189	0.101	0.145
	Sig. (1-tailed)	0.001	0.003	0.003	0.002	0.006	0.236	0	.	0.128	0.27	0.189
	N	34	31	36	26	34	28	37	39	38	39	39
Financial	Pearson Correlation	.502(**)	.409(**)	.271(*)	0.265	.453(**)	.375(*)	.291(*)	0.189	1	.865(**)	.972(**)
	Sig. (1-tailed)	0.001	0.008	0.043	0.075	0.002	0.023	0.031	0.128	.	0	0
	N	38	34	41	31	39	29	42	38	46	46	46
Market	Pearson Correlation	.458(**)	.322(*)	0.224	0.211	.424(**)	.507(**)	.305(*)	0.101	.865(**)	1	.959(**)
	Sig. (1-tailed)	0.002	0.032	0.077	0.127	0.003	0.003	0.023	0.27	0	.	0
	N	39	34	42	31	40	29	43	39	46	47	47
Overall	Pearson Correlation	.503(**)	.382(*)	265(*)	0.247	.455(**)	.450(**)	.312(*)	0.145	.972(**)	.959(**)	1
	Sig. (1-tailed)	0.001	0.013	0.045	0.09	0.002	0.007	0.021	0.189	0	0	.
	N	39	34	42	31	40	29	43	39	46	47	47

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a E_GROUP = less than 100

Between 100 and 500 Employees Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Financi	Market	Overall
B2B	Pearson Correlation	1	.723(**)	.728(**)	.745(**)	.804(**)	.688(**)	.776(**)	.453(**)	.532(**)	.514(**)	.541(**)
	Sig. (1-tailed)		0	0	0	0	0	0	0.001	0	0	0
	N	53	44	53	49	47	47	52	48	52	52	52
B2C	Pearson Correlation	.723(**)	1	.673(**)	.565(**)	.765(**)	.662(**)	.610(**)	.324(*)	.550(**)	.519(**)	.557(**)
	Sig. (1-tailed)	0	.	0	0	0	0	0	0.018	0	0	0
	N	44	46	46	44	44	42	46	42	45	45	45
B2E	Pearson Correlation	.728(**)	.673(**)	1	.690(**)	.789(**)	.574(**)	.794(**)	.479(**)	.566(**)	.543(**)	.574(**)
	Sig. (1-tailed)	0	0	.	0	0	0	0	0	0	0	0
	N	53	46	55	51	49	48	54	50	54	54	54
QUAL	Pearson Correlation	.745(**)	.565(**)	.690(**)	1	.707(**)	.656(**)	.687(**)	.333(*)	.465(**)	.475(**)	.486(**)
	Sig. (1-tailed)	0	0	0	.	0	0	0	0.011	0	0	0
	N	49	44	51	51	48	47	51	47	50	50	50
COSTS	Pearson Correlation	.804(**)	.765(**)	.789(**)	.707(**)	1	.686(**)	.797(**)	.453(**)	.565(**)	.485(**)	.553(**)
	Sig. (1-tailed)	0	0	0	0	.	0	0	0.001	0	0	0
	N	47	44	49	48	49	45	49	46	48	48	48
FLEX	Pearson Correlation	.688(**)	.662(**)	.574(**)	.656(**)	.686(**)	1	.631(**)	.385(**)	.348(**)	.371(**)	.373(**)
	Sig. (1-tailed)	0	0	0	0	0	.	0	0.005	0.008	0.005	0.005
	N	47	42	48	47	45	48	48	45	47	47	47
INT	Pearson Correlation	.776(**)	.610(**)	.794(**)	.687(**)	.797(**)	.631(**)	1	.621(**)	.512(**)	.513(**)	.529(**)
	Sig. (1-tailed)	0	0	0	0	0	0	.	0	0	0	0
	N	52	46	54	51	49	48	54	49	53	53	53
EXT	Pearson Correlation	.453(**)	.324(*)	.479(**)	.333(*)	.453(**)	.385(**)	.621(**)	1	.412(**)	.368(**)	.408(**)
	Sig. (1-tailed)	0.001	0.018	0	0.011	0.001	0.005	0	.	0.002	0.005	0.002
	N	48	42	50	47	46	45	49	50	49	49	49
Financial	Pearson Correlation	.532(**)	.550(**)	.566(**)	.465(**)	.565(**)	.348(**)	.512(**)	.412(**)	1	.891(**)	.981(**)
	Sig. (1-tailed)	0	0	0	0	0	0.008	0	0.002	.	0	0
	N	52	45	54	50	48	47	53	49	54	54	54
Market	Pearson Correlation	.514(**)	.519(**)	.543(**)	.475(**)	.485(**)	.371(**)	.513(**)	.368(**)	.891(**)	1	.961(**)
	Sig. (1-tailed)	0	0	0	0	0	0.005	0	0.005	0	.	0
	N	52	45	54	50	48	47	53	49	54	54	54
Overall	Pearson Correlation	.541(**)	.557(**)	.574(**)	.486(**)	.553(**)	.373(**)	.529(**)	.408(**)	.981(**)	.961(**)	1
	Sig. (1-tailed)	0	0	0	0	0	0.005	0	0.002	0	0	.
	N	52	45	54	50	48	47	53	49	54	54	54

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a E_GROUP = 100 to 500

Greater Than 500 Employees Correlations(a)

		B2B	B2C	B2E	QUAL	COSTS	FLEX	INT	EXT	Financi	Market	Overall
B2B	Pearson Correlation	1	.595(**)	.586(**)	.573(**)	.512(**)	.426(**)	.558(**)	.554(**)	.170(*)	0.133	.163(*)
	Sig. (1-tailed)	.	0	0	0	0	0	0	0	0.038	0.083	0.044
	N	110	100	108	96	108	104	108	103	110	110	110
B2C	Pearson Correlation	.595(**)	1	.525(**)	.561(**)	.520(**)	.497(**)	.500(**)	.447(**)	0.125	.182(*)	0.158
	Sig. (1-tailed)	0	.	0	0	0	0	0	0	0.105	0.033	0.056
	N	100	102	101	88	99	95	100	94	102	102	102
B2E	Pearson Correlation	.586(**)	.525(**)	1	.538(**)	.505(**)	.564(**)	.521(**)	.550(**)	.237(**)	.179(*)	.226(**)
	Sig. (1-tailed)	0	0	.	0	0	0	0	0	0.006	0.029	0.008
	N	108	101	112	97	108	104	110	103	112	112	112
QUAL	Pearson Correlation	.573(**)	.561(**)	.538(**)	1	.537(**)	.518(**)	.459(**)	.493(**)	0.141	0.028	0.097
	Sig. (1-tailed)	0	0	0	.	0	0	0	0	0.083	0.394	0.172
	N	96	88	97	98	96	96	97	93	98	98	98
COSTS	Pearson Correlation	.512(**)	.520(**)	.505(**)	.537(**)	1	.510(**)	.442(**)	.628(**)	.158(*)	0.052	0.12
	Sig. (1-tailed)	0	0	0	0	.	0	0	0	0.049	0.295	0.106
	N	108	99	108	96	110	105	109	102	110	110	110
FLEX	Pearson Correlation	.426(**)	.497(**)	.564(**)	.518(**)	.510(**)	1	.464(**)	.469(**)	.179(*)	0.16	.181(*)
	Sig. (1-tailed)	0	0	0	0	0	.	0	0	0.033	0.051	0.031
	N	104	95	104	96	105	106	105	99	106	106	106
INT	Pearson Correlation	.558(**)	.500(**)	.521(**)	.459(**)	.442(**)	.464(**)	1	.535(**)	.209(*)	.186(*)	.212(*)
	Sig. (1-tailed)	0	0	0	0	0	0	.	0	0.014	0.025	0.013
	N	108	100	110	97	109	105	112	103	112	112	112
EXT	Pearson Correlation	.554(**)	.447(**)	.550(**)	.493(**)	.628(**)	.469(**)	.535(**)	1	173(*)	0.054	0.13
	Sig. (1-tailed)	0	0	0	0	0	0	0	.	0.039	0.29	0.094
	N	103	94	103	93	102	99	103	105	105	105	105
Financial	Pearson Correlation	.170(*)	0.125	.237(**)	0.141	.158(*)	.179(*)	.209(*)	.173(*)	1	.770(**)	.957(**)
	Sig. (1-tailed)	0.038	0.105	0.006	0.083	0.049	0.033	0.014	0.039	.	0	0
	N	110	102	112	98	110	106	112	105	114	114	114
Market	Pearson Correlation	0.133	.182(*)	.179(*)	0.028	0.052	0.16	.186(*)	0.054	.770(**)	1	.922(**)
	Sig. (1-tailed)	0.083	0.033	0.029	0.394	0.295	0.051	0.025	0.29	0	.	0
	N	110	102	112	98	110	106	112	105	114	114	114
Overall	Pearson Correlation	.163(*)	0.158	.226(**)	0.097	0.12	.181(*)	.212(*)	0.13	.957(**)	.922(**)	1
	Sig. (1-tailed)	0.044	0.056	0.008	0.172	0.106	0.031	0.013	0.094	0	0	.
	N	110	102	112	98	110	106	112	105	114	114	114

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

a E_GROUP = greater than 500

Appendix 25: Hypothesis One Tests (n=220)

IT Strategy		H1	
		Financial (f)	Market (m)
Business to Business IT Strategy (B2B)	**Pearson Correlation**	**.350(**)**	**.322(**)**
Sub hyothesis .1	Sig. (1-tailed)	0	0
	N	204	205
Business to Consumber IT Strategy (B2C)	**Pearson Correlation**	**.303(**)**	**.307(**)**
Sub hyothesis .2	Sig. (1-tailed)	0	0
	N	184	184
Business to Employee IT Strategy (B2E)	**Pearson Correlation**	**.330(**)**	**.276(**)**
Sub hyothesis .3	Sig. (1-tailed)	0	0
	N	211	212
Operations Quality IT Strategy (Quality)	**Pearson Correlation**	**.261(**)**	**.189(**)**
Sub hyothesis .4	Sig. (1-tailed)	0	0.005
	N	182	182
Operational Costs IT Strategy (Costs)	**Pearson Correlation**	**.343(**)**	**.267(**)**
Sub hyothesis .5	Sig. (1-tailed)	0	0
	N	199	200
Operational Flexibility IT Strategy (Flexibility)	**Pearson Correlation**	**.252(**)**	**.268(**)**
Sub hyothesis .6	Sig. (1-tailed)	0	0
	N	185	185
Internal Strategic Planning (Internal)	**Pearson Correlation**	**.316(**)**	**.298(**)**
Sub hyothesis .7	Sig. (1-tailed)	0	0
	N	211	212
External Strategic Planning (External)	**Pearson Correlation**	**.242(**)**	**.150(*)**
Sub hyothesis .8	Sig. (1-tailed)	0	0.018
	N	195	196

** Correlationelation is significant at the 0.01 level (1-tailed).

* Correlationelation is significant at the 0.05 level (1-tailed).

Appendix 26: Hypothesis Two Tests

		H2							
		<Hi-tech>		<Services>		<Manufacturing>		<Primary>	
IT Strategy		Financial (f)	Market (m)	Financial (f)	Market (m)	Financial (f)	Market (m)	Financial (f)	Market (m)
B2B	Pearson Corr	0.285	0.292	.494(**)	.372(**)	0.137	.270(*)	.384(*)	0.209
.1	Sig. (1-tailed)	0.057	0.052	0	0	0.16	0.023	0.024	0.143
	N	32	32	90	90	55	55	27	28
B2C	Pearson Corr	.340(*)	.339(*)	.328(**)	.316(**)	.240(*)	.370(**)	0.272	0.067
.2	Sig. (1-tailed)	0.038	0.039	0.001	0.001	0.05	0.005	0.11	0.384
	N	28	28	86	86	48	48	22	22
B2E	Pearson Corr	.345(*)	0.182	.471(**)	.374(**)	0.037	0.087	.524(**)	.511(**)
.3	Sig. (1-tailed)	0.017	0.137	0	0	0.393	0.263	0.002	0.002
	N	38	38	90	90	55	55	28	29
Quality	Pearson Corr	.307(*)	0.223	.314(**)	0.178	0.132	0.131	.391(*)	.396(*)
.4	Sig. (1-tailed)	0.036	0.099	0.003	0.064	0.177	0.18	0.04	0.038
	N	35	35	75	75	51	51	21	21
Costs	Pearson Corr	.346(*)	0.274	.481(**)	.365(**)	.240(*)	0.18	0.066	-0.049
.5	Sig. (1-tailed)	0.024	0.061	0	0	0.039	0.094	0.375	0.405
	N	33	33	85	85	55	55	26	27
Flexibility	Pearson Corr	0.168	.348(*)	.332(**)	.254(*)	0.144	0.196	.518(**)	.515(**)
.6	Sig. (1-tailed)	0.188	0.03	0.002	0.013	0.142	0.072	0.008	0.008
	N	30	30	77	77	57	57	21	21
Internal	Pearson Corr	0.264	0.21	.393(**)	.369(**)	0.121	0.14	.628(**)	.578(**)
.7	Sig. (1-tailed)	0.057	0.106	0	0	0.19	0.154	0	0.001
	N	37	37	91	91	55	55	28	29
External	Pearson Corr	.299(*)	0.117	.330(**)	.259(**)	0.058	0.034	0.335	0.097
.8	Sig. (1-tailed)	0.048	0.261	0.001	0.008	0.337	0.403	0.059	0.326
	N	32	32	85	85	55	55	23	24

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Appendix 27: Hypothesis Three Tests

		H3					
		<Under 100>		<100-500>		<Over 500>	
IT Strategy		Financial (f)	Market (m)	Financial (f)	Market (m)	Financial (f)	Market (m)
B2B	**Pearson Corr**	**.502(**)**	**.458(**)**	**.532(**)**	**.514(**)**	**.170(*)**	**0.133**
.1	Sig. (1-tailed)	0.001	0.002	0	0	0.038	0.083
	N	38	39	52	52	110	110
B2C	**Pearson Corr**	**.409(**)**	**.322(*)**	**.550(**)**	**.519(**)**	**0.125**	**.182(*)**
.2	Sig. (1-tailed)	0.008	0.032	0	0	0.105	0.033
	N	34	34	45	45	102	102
B2E	**Pearson Corr**	**.271(*)**	**0.224**	**.566(**)**	**.543(**)**	**.237(**)**	**.179(*)**
.3	Sig. (1-tailed)	0.043	0.077	0	0	0.006	0.029
	N	41	42	54	54	112	112
Quality	**Pearson Corr**	**0.265**	**0.211**	**.465(**)**	**.475(**)**	**0.141**	**0.028**
.4	Sig. (1-tailed)	0.075	0.127	0	0	0.083	0.394
	N	31	31	50	50	98	98
Costs	**Pearson Corr**	**.453(**)**	**.424(**)**	**.565(**)**	**.485(**)**	**.158(*)**	**0.052**
.5	Sig. (1-tailed)	0.002	0.003	0	0	0.049	0.295
	N	39	40	48	48	110	110
Flexibility	**Pearson Corr**	**.375(*)**	**.507(**)**	**.348(**)**	**.371(**)**	**.179(*)**	**0.16**
.6	Sig. (1-tailed)	0.023	0.003	0.008	0.005	0.033	0.051
	N	29	29	47	47	106	106
Internal	**Pearson Corr**	**.291(*)**	**.305(*)**	**.512(**)**	**.513(**)**	**.209(*)**	**.186(*)**
.7	Sig. (1-tailed)	0.031	0.023	0	0	0.014	0.025
	N	42	43	53	53	112	112
External	**Pearson Corr**	**0.189**	**0.101**	**.412(**)**	**.368(**)**	**.173(*)**	**0.054**
.8	Sig. (1-tailed)	0.128	0.27	0.002	0.005	0.039	0.29
	N	38	39	49	49	105	105

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).