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UNIVERSITY OF THE WITWATERSRAND

DIVISION OF INFORMATION SYSTEMS

SCHOOL OF ECONOMIC AND BUSINESS SCIENCES

Master of Commerce (Information Systems)

By Course Work

RESEARCH REPORT

The Effects of Customer Orientation on the Performance of Information Systems Departments

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Date Submitted:	22 October 2007

Abstract

This research report examines the effect of the customer orientation of an Information Systems (IS) department on its performance. Customer orientation has been cited as a contributor to and determinant of organisational performance in marketing literature. This study determined that this is applicable to the IS context. Customer orientation literature from the marketing context was examined and customer orientation measures from marketing adapted for the IS context. The key dimensions of customer orientation from marketing literature are communication, understanding, service delivery, service systems, skills, innovation, alignment and leadership support. Through a study of 98 South African organisations, this study found that there is a direct relationship between the customer orientation of IS departments and IS department performance. This study contributes towards encouraging customer orientation in IS departments and bringing to the forefront the value of customer orientation in Information Systems management.

(Keywords: customer orientation, information systems performance)

Declaration

I declare that this research report is my own unaided work, except to the extent indicated in the text, acknowledgements and reference matter. It is being submitted for the 50% research component of a Masters in Information Systems degree (by Research and Coursework).

It has not been submitted before for any other degree or examination in this or any other institution.

Nkae Setlogelo

22 October 2007

Dedication

This research report is dedicated to my grandmother, Mrs O. P Setlogelo.

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My gratitude goes to Dr Jason Cohen, my supervisor, under whose guidance this research report was carried out. With his knowledge, insight, perceptiveness and great efforts to explain things clearly and simply, he helped to make this report a reality. Many thanks also to the rest of the academic and support staff of the Division of Information Systems in the School of Economic and Business Sciences, University of the Witwatersrand.

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1 Chapter 1

1.1 Introduction

Numerous determinants of Information Systems (IS) performance have been identified through various studies. These include the quality of information outputs, IS staff competence and IS operational efficiency (Saunders and Jones, 1992; Singleton, Mclean and Altman, 1988; Jiang, Klein, Roan and Lin, 2001). This study explores an additional determinant, customer orientation, and its effect on IS performance. Marketing literature has cited customer orientation as a key determinant of business performance (Hennig-Thurau, 2004; Hajjat, 2002; Narver and Slater, 1990; Deshpande, Farley and Webster, 1993) and this study aims to examine the relevance and impact of IS department's customer orientation on IS performance. *IS customers are the users of the services provided by an IS department in an organisation.*

To become user or customer oriented is a fundamental principle that has dominated some of the current management trends, such as marketing or total quality; it is based on an organisation's commitment to design and develop products and services that meet its customer needs; the customer is at the centre of the organisation, the reason for its existence (Lozano, 2000; Appiah-Adu and Singh, 1998). The origins of customer orientation can be traced to the development of the marketing concept, which is basically a business philosophy or policy statement which holds that the ultimate goal of an organisation is to fulfil customer needs for the purpose of maximising business profits (Appiah-Adu and Singh, 1998).

1.2 Background

It is well established among marketing theorists that firms that focus their activities on the needs of their customers, i.e. behave in a customer-oriented way, perform better that those firms that do not (Hennig-Thurau, 2004; Donavan, Brown and Mowen, 2004; Nwankwo, 1995; Berthon, Hulbert and Pitt, 2004). The focus of this study is whether the same can be said for IS departments whose customers are internal users of IS services in organisations. For this study, the term Information Technology (IT) also refers to Information Systems (IS). These to terms are used interchangeably in literature.

In developing a model for Information Technology (IT) transformation, Earl and Sampler (1998) posit that there is a perception from IS customers that the IS department does not provide the kind of services they require. This in turn means that there is a need for greater customer centricity in the IS department. In developing guidelines for IT managers, Rockart, Earl and Ross (1996) stated that IT customer satisfaction no

longer meant just prompt courteous service but rather also meant designing products and services to meet individual user (customer) needs.

Rockart et al. (1996) stated eight imperatives for the IT organisation. Three of these apply directly to the need for customer orientation in the IS department. The first imperative is to align IT strategy with the organisation's business strategy and to ensure that investments in IT are targeted at strategic priorities; IT management must be knowledgeable about senior management's strategic and tactical thinking (Rockart et al., 1996). Secondly, Rockart et al. (1996) say that IT personnel at all levels must develop strong ongoing partnerships with line managers; only through these relationships can the necessary communication occur to ensure that both business and technology capabilities are integrated into effective solutions for the business. The third imperative from Rockart et al. (1996) is the importance of reskilling the IT organisation; as IT becomes ubiquitous in all organisations, most IT leaders have found that their staff are woefully lacking in business knowledge and skills. For the IS department to be customer oriented, IS staff must have the skills to communicate appropriately with the business.

In addition, Kettinger and Lee (1994) say that due to the growth in end-user computing, decentralisation and alternative sources of supply, an organisation's information services function is now faced with serving customers that possess substantial discretion in their use and purchase of IS services; this increasingly market-oriented environment demands sensitivity to IS customers expectations. From Rockart et al. (1996) and Kettinger and Lee (1994) it can be deduced that there is a need for customer orientation in IS departments.

In their study to adapt the SERVQUAL (an instrument used to measure service quality) measure from marketing to the IS context, Kettinger and Lee (1994) say that an important source of guidance in such an IS management environment (one that is increasingly market-oriented) is to look at marketing literature for frameworks that may permit the IS function to more effectively determine and convey the value of their services. Kettinger and Lee (1994), Kettinger and Lee (1997) and Pitt, Watson and Kayan (1995) focused on user satisfaction of the IS function from the customers perspective. This study will focus on the IS department's focus on it's customers i.e. it's customer orientation.

Given the distinct link between customer orientation and performance from marketing literature and the clear need for customer focus in IS departments from IS literature, it should be observed that those IS departments that have a customer orientation will outperform those that do not.

1.3 Statement of the Problem

IS departments have not traditionally been customer focused. There is a growing argument outlining the need for IS departments to become more customer oriented in order to improve IS performance. However the effect of customer orientation on IS department performance has not been explored explicitly in IS literature. This study aims to examine that relationship.

The **Research Questions** thus posed are: What are the underlying dimensions of customer orientation relevant in an IS context? What is their effect on the performance of IS departments?

1.4 Importance of the Research

The main aim of this research is to show the relevance and impact of the IS department's customer orientation on IS performance. This will be of use to IS managers, Chief Information Officers (CIO's) and IS practitioner's as it will help in directing their efforts in becoming customer oriented to improve IS department performance.

Information Systems managers are constantly seeking ways to improve the performance of their IS departments (Rockart et al., 1996; Drury and Farhoomand, 1998; Premkumar and King, 1992). In the same vein, organisations want to get the best out of their IS departments as this in turn contributes to the overall organisational performance. Given an environment of escalating IS expenditures, along with expanding dependence on IS for maintaining organisational performance, improving IS performance is important (Saunders and Jones, 1992).

This research will provide IS practitioners with knowledge on customer orientation characteristics, how they impact IS department performance and how they can be determined. This in turn will equip IS practitioners with yet another determinant of IS performance that needs to be taken into consideration to improve IS performance.

1.5 Structure of the Report

This chapter has provided a brief overview of customer orientation and its relationship to performance. The relevance specifically to IS performance has been established. This chapter has also discussed the specific research problem to be solved, the objectives and importance of the research and the envisaged contribution the research will be making.

The next chapter presents the literature review and this will highlight and explore significant prior research in customer orientation and performance. It will provide the theoretical foundations for the development of the research questions to be investigated in this study. Two areas are important in this regard, the measurement of customer orientation and its impact on IS performance.

Following the literature review is the research methodology, chapter 3. This chapter will discuss the framework within which the research will be conducted. This includes the conducting of surveys. The method of data collection and data analysis will also be discussed.

Chapter 4 will report on the research findings.

Chapter 5 will summarise the results of the survey. The results will be analysed with reference to the literature reviews in Chapter 2 and interpreted in terms of the research questions posed in Chapter 3.

Chapter 6 will summarise the findings on the relationship between customer orientation and IS performance. It will also show how this study contributes to the body of established research on IS performance. It will discuss whether the research has met its objectives as well as provide recommendations for IS departments based on the survey results. The limitations of the research as well as future areas of research will be addressed.

2 Chapter 2 – Literature Review

2.1 Introduction

This chapter provides a detailed review of the dimensions of customer orientation and discusses the link between customer orientation and performance in the marketing context. This discussion provides a basis for exploring a link between customer orientation and performance in the IS context. The chapter concludes by presenting eight hypotheses which will be empirically tested.

2.2 Understanding the Concept of Customer Orientation

2.2.1 Definition

Customer orientation is a concept originating in the marketing literature. It has been defined as *an integral component of a general, underlying organisational culture where attention to information about customers' needs should be considered alongside the basic set of values and beliefs that are likely to reinforce a customer focus and permeate the firm; customer orientation involves cultural attitudes which are concerned with developing and enhancing value to customers (*Appiah-Adu and Singh, 1998).

Other terms used to refer to customer orientation include market orientation (Shapiro, 1988; Narver and Slater, 1990), customer focus, customer driven and user focus. Shapiro (1988) contends that the terms market orientation, marketing orientation, customer orientation, "to be close to the customer", are so similar in meaning that there is hardly any basis to distinguish them. These terms are often used interchangeably in literature and therefore for the purposes of this research, customer orientation is adopted as the preferred term to describe the notion of focusing on the customer and being driven by the customer's requirements. In order to respond to customer needs, firms need information about the needs and preferences of customers and an understanding of their entire value-chain, not only today but as it evolves over time (Agarwal, Erramilli, and Dev, 2003). This information must be disseminated horizontally and vertically within the organisation, i.e. there must be an understanding of this information across various departments in the organisation and the various departments must engage in activities designed to meet select customer needs (Kohli and Jaworski, 1990; Balabanis, Stables and Phillips, 1997).

The following section discusses the link between customer orientation and performance in the marketing context.

2.2.2 Customer Orientation and Performance – A Marketing Perspective

The linkage between customer orientation and performance has been studied extensively in the marketing arena. In the marketing context, performance refers to the performance of organisations reflected either through profits or through market share. Kohli and Jaworski (1990) found profitability to be a consequence of a customer orientation.

The goal of all organisations is to boost market share and profitability; in this vein, it is important for organisations to be customer oriented because this provides a unifying focus for the efforts and projects of individuals and departments within the organisation, thereby leading to superior performance (Agarwal et al., 2003). Moreover, customers are becoming better organised, are well informed and are, on the whole, more demanding, calling for a greater customer orientation within organisations (Appiah-Adu and Singh, 1998).

In their empirical investigation into corporate culture, customer orientation and innovativeness and their relationship to performance, Deshpande et al. (1993) similarly concluded that customer orientation was positively associated with performance. For a company to achieve continuous above-average performance it must create a sustainable superior value for its customers; this drive enables the company to develop a customer orientation culture, which enables it to acquire the behaviours required for providing superior value to customers and ultimately sustainable superior performance (Appiah-Adu and Singh, 1998).

In their study to assess the applicability of MARKOR (an instrument developed by Kohli, Jaworski, and Kumar (1993) for the measurement of market orientation) and to investigate specifically the market orientation-business performance link, Pitt, Caruana and Berthon (1996) again confirmed that market orientation contributed positively to business performance, although market orientation was not necessarily the only factor contributing to business performance. Pitt et al. (1996) suggested that previous studies investigating the relationship between customer orientation and performance were based in the US and Japan and that this was not sufficient to necessarily conclude that customer orientation had a positive effect on business performance. Pitt et al. (1996) study was based in Europe and they came to the same conclusions as Jaworski and Kohli (1993), Narver and Slater (1990) and Guo (2002) that there is a positive link between customer orientation and business performance.

Sharing in the views of Pitt et al. (1996) that previous studies in market orientation and performance were based on western countries, Sin, Tse, Yau, Chow and Lee (2003) based their study on China and Hong Kong, to examine how country/economic context affects both the level of market orientation and the strength of linkages between market orientation and performance. They were seeking to prove the generalisability of the

market orientation model. Sin et al. (2003) determined that market orientation has a significant and positive impact on the performance of firms operating in mainland China and Hong Kong; this finding provides further support for the notion that a firm's market orientation is related positively to business performance, irrespective of cultural context and level of economic development.

In studying the linkage between customer orientation and performance, some authors suggest that there are some mediating variables to this relationship. For instance, Agarwal et al., (2003) and Appiah-Adu and Singh, (1998) suggest that innovation in firms acts as a mediator in the relationship between customer orientation and performance. Their studies suggest that organisations that are less customer oriented are less likely to consider innovation which in turn would lead to declining performance. Another variable that affects customer orientation is competitive intensity; Appiah-Adu and Singh (1998) suggest that in highly competitive environments, customers tend to be faced with several different options to satisfy their needs thus a business that is not customer oriented is in peril of losing customers to the competition, causing customer orientation to become a more important determinant of performance in fiercely competitive markets.

From the findings of the studies above, it is possible to deduce that customer orientation leads to improved business performance. The following sub-section examines the dimensions of customer orientation in greater detail.

2.2.3 Dimensions of Customer Orientation

Gray, Matear, Boshoff and Matheson (1998) say that the primary aim of customer orientation is to enable the firm to create greater customer value through operationalising an organisational philosophy which is primarily concerned with developing long-term customer relations. This section reviews the studies of Egan and Shipley (1995), Adebanjo and Kehoe (2001), Rockart et al. (1996), Hajjat (2002), Kohli and Jaworski (1990) and Gray et al. (1998) and identifies eight dimensions of customer orientation which will form the basis of its operationalisation.

2.2.3.1 Communication

Communication refers to the ability to communicate with the customer (Egan and Shipley, 1995). In a study to determine the nature of customer service expectations, Parasuraman, Berry and Zeithaml (1991) say that customers generally want to be 'relationship customers'; they want ongoing personalised relationships where the customer representative contacts them and maintains communication and not the other way around.

Genuine customer relationships are built on the foundation of fairness, sincere efforts to help the customer and ongoing and personalised communications (Parasuraman et al., 1991).

2.2.3.2 Understanding

Understanding refers to a comprehension of the success factors and imperatives that the customers are striving for in their work. Kohli and Jaworski (1990) refer to the notion of intelligence generation which refers to the understanding of the customer's needs beyond those that the customer verbalises. It includes an analysis of exogenous factors that influence the needs and preferences of customers; this includes monitoring factors such as government regulations and competition influence (Kohli and Jaworski, 1990). The question to be asked is what does the customer need in order to perform well in their work and this can be answered by understanding what it is that impacts on their work. In his development of the CUSTOR scale to assess organisation's customer orientation, Hajjat (2002) emphasises that employees must understand what product attributes customers value the most. This focuses on the importance of understanding what matters most to the customer. Day (2003) emphasises the importance of focusing on helping customers improve their productivity.

2.2.3.3 Service Delivery

Service Delivery refers to the ability to accurately meet the stated requirements of customers; the method through which the service is delivered to the customer; the ability to meet the customer's requirements on time and the amount of 'customisation' of services offered (Egan and Shipley, 1995). In their study to show how customer orientation can be implemented, Kennedy, Goolsby and Arnould (2003) emphasise the centrality of focusing on customer requirements and the method through which those requirements are met. Jiang, Klein, Tesch and Chen (2003) posit that users (customers) evaluate performance in terms of how well their needs are satisfied. Service delivery requires a development and execution of a strategy to meet the customer's requirements.

2.2.3.4 Service Systems

Service Systems refers to back-up service that is offered to the customer; the way customer enquiries are handled; the way customer complaints are handled; the systems set up to deal with customer service; understanding the reasons why the customer requires the service; and identifying the decision maker who is buying the service (Egan and Shipley, 1995). Service Systems refer to whether customer satisfaction is measured on a regular basis and whether there are systems in place to measure customer satisfaction (Gray et al., 1998). To improve service, companies must use multiple systems among different customer groups to

ensure that they are hearing what customers are saying and responding to their suggestions (Berry and Parasuraman, 1997).

In their study to discuss the concept of service quality information systems, Berry and Parasuraman (1997) argue that companies need to establish ongoing listening systems using multiple methods among different customer groups to systematically capture, organise and disseminate service-quality information.

Berry and Parasuraman (1997) say that continuous data collection and dissemination informs and educates decision makers about the patterns of change – for example, customer's shifting service priorities. Service systems teach decision makers which attributes are important to customers and prospect what parts of the firm's service systems are working well or breaking down (Berry and Parasuraman, 1997). They also reflect which service investments are paying off. A quality service system helps to focus service improvement planning and resource allocation (Berry and Parasuraman, 1997).

Berry and Parasuraman (1997), highlight the various systems and approaches to better provide service to the customer. These include:

- **Transactional Surveys** - Service satisfaction surveys of customers following a service encounter;
- **New, declining and lost customer surveys** - Surveys to determine why customers select the firm, reduce their buying or leave the firm;
- **Focus group interviews** - Provide a forum for participants to suggest service improvement ideas; offer fast informal feedback on service issues;
- **Customer advisory panels** - A group of customers recruited to periodically provide the firm with feedback and advice on service performance and other issues. Data are obtained in meetings, over the telephone, through mail questionnaires or via other means. Employee panels can also be formed;
- **Service reviews** - Periodic visits with customers to discuss and assess the service relationship. Should be a formal process with a common set of questions, capture responses in a database and follow-up communication with customers;
- **Customer complaint, comment and inquiry capture** - System to retain, categorise, track and distribute customer complains and other communications to the company; and
- **Total market surveys** - Surveys that measure customers' overall assessment of company's service. Research includes both external customers and competitor's customers, i.e. total market.

The nature of the service, the firm's service strategy and the needs of the users determine which service approach to use.

A well designed and implemented service system raises the probability that a company will invest service improvement money in ways that actually improve service to the customer (Berry and Parasuraman, 1997). As a result of delivering quality service, the company's bottom line is improved (Berry and Parasuraman, 1997). Accumulating evidence suggests that excellent service enables a firm to strengthen customer loyalty and increase market share (Berry and Parasuraman, 1997). Firms can also directly estimate the profit impact of service recovery by measuring complaining customers' satisfaction with the handling of their complaints and their 'repurchase' intentions (Berry and Parasuraman, 1997).

2.2.3.5 Skills

Skills refer to the skills possessed by the employees who are in close contact with the customer (Egan and Shipley, 1995). Achievement of customer orientation is impossible if employees of an organisation do not perceive themselves as being there to serve the customer (Judd, 2003). Judd (2003) differentiates between the various degrees of customer contact that employees may have with the customer. Judd (2003) emphasises that it is the responsibility of the organisation to ensure that those in contact with the customer are well trained and motivated to serve customers in a responsive manner and to reinforce a favourable image of the organisation (Judd, 2003).

Customer oriented training augments employee's sensitivity to customer needs, thus stimulating actions that are consistent with the requirements of customer orientation (Kirca, Jayachandran and Bearden, 2005).

2.2.3.6 Innovation

Innovation refers to constantly looking for creative ways to fulfil the customer's needs. It refers to the notion of continuously investigating ways to create customer value in the product or service offered (Gray et al., 1998). To be customer oriented, an organisation must be innovative because innovativeness drives a continuous and proactive disposition toward meeting customer needs and it emphasises greater information use (Kirca et al., 2005).

2.2.3.7 Alignment

Alignment can be referred to as inter-functional coordination which Gray et al. (1998) defines as how well information is shared between departments, whether all departments are involved in preparing business plans and strategies and the integration of activities between departments. In this regard, Shapiro (1988) says that three characteristics make a company customer driven: (i) information on all buying influences permeates

every corporate function, (ii) strategic and tactical decisions are made inter-functionally and inter-divisionally, (iii) divisions and functions make well coordinated decisions and execute them with a sense of commitment. This means that to be customer oriented, different departments within an organisation must be working closely together in order to achieve the best for the customer.

2.2.3.8 Leadership Support

For its success, customer orientation requires the commitment and power of those at the top (Shapiro, 1988). Kennedy et al. (2003) refers to three pillars of customer orientation, one of which is senior leadership. Without senior leadership support, a customer orientation is unlikely to take root; customer oriented values and beliefs are uniquely the responsibility of top management and senior leaders must articulate organisational aims in terms that are harmonious with customer satisfaction drivers (Kennedy et al, 2003).

The following section discusses customer orientation from the information systems (IS) perspective.

2.3 Customer Orientation in IS

The IS department in an organisation is that function that provides information systems and technology services to the rest of the organisation; it is sometimes referred to as the IS function (Saunders and Jones, 1992). In marketing literature, the customer is considered to be external to the organisation and buys/uses the products or services of the organisation. This would be the customer targeted for marketing initiatives. In the IS context, the customer referred to is the internal organisational user of IS services provided by the internal IS department. With this in mind, the dynamics of customer orientation initiatives and how those are executed might differ slightly from those in the marketing context. However, despite any potential differences in the environments, the fundamental customer orientation principles still apply to the IS context. That is, for the IS department to make a valuable contribution to the business, its services and products must be centred on the internal organisational user's (IS customers) requirements.

IS literature (Saunders and Jones, 1992; Rockart et al., 1996; Nelson and Cooprider, 1996; Smart and Whiting, 2001; Al-Karaghouli , Alshawi and Fitzgerald, 2005) has long recognised the need for a user focus which is considered important to organisational IS success although it hasn't integrated the ideas into a single customer orientation concept. The following sub-sections discuss the dimensions of customer orientation to show their relevance to the IS concept.

2.3.1 Communication

Communication is defined as a process in which individuals share and create information; through frequent communication they develop common definitions of situations and develop consensus (Johnson and Lederer, 2003). Frequent communication is important in IS management; it helps IS personnel to determine how IS can be used to support business functions (Johnson and Lederer, 2003).

The IS department needs to continually communicate with the customer. IS personnel must develop strong, ongoing partnerships with business managers; only through these relationships can the necessary communication occur to ensure that both business and technology are integrated into effective solutions for each level of business (Rockart et al., 1996). Rockart et al. (1996) say that many IS executives are assigning high-level "account managers" to focus specifically on IS-business communication.

2.3.2 Understanding

In the IS context, understanding, as a dimension of customer orientation, refers to the IS department's understanding of what the objectives and needs of the business are and how IS contributes to meeting those objectives and needs. The IS department has to be in a position of understanding the customer's needs beyond those that the customer verbalises. The IS department must understand what customers value the most and how the IS department can help them realise that which they value.

The IS group's ability to effectively work with functional (business) groups can be a major factor in IS performance (Nelson and Cooprider, 1996). A primary responsibility of IS groups is to deliver information technology based on the needs of the organisation (Nelson and Cooprider, 1996). This implies the need for an understanding of the business in order for the IS department to meet those requirements. Nelson and Cooprider (1996) suggest that the degree to which the IS department believes it understands the business can impact its ability to successfully perform. Nelson and Cooprider (1996) also suggest that IS managers must develop an appreciation and understanding of the business environment rather than merely sharing information and translating technical and procedural terms. The relationship between IS and business managers, and as a result the relationship between the IS department and the business, has to be one of mutual understanding – not of the details of each other's knowledge and skill bases, but of the other's needs, constraints and contribution to an organisational venture partnership; a lack of this organisational and cross-functional knowledge may result in losses of IS performance (Nelson and Cooprider, 1996).

2.3.3 Service Delivery

Smart and Whiting (2001) posit that there has been a degree of customer focus in some organisations with regards to systems design. Smart and Whiting (2001) say that user-centred design has become a business strategy that many companies use to gain competitive advantage and maintain economic viability. The increasing complexity of technology and of products requires a corresponding increase in awareness of customer requirements and how humans interact with systems (Smart and Whiting, 2001). At the heart of customer orientation is focusing on the customer and having the right mechanisms in place to meet customer requirements. To respond to this challenge, IS departments use mechanisms such as "time-box" approaches which require the delivery of usable system components at regular intervals thus forcing IS staff and their business partners to focus on functionality and avoiding over-engineered solutions and unnecessary delays, Rockart et al. (1996).

The quality of the IS department's service, as perceived by its users, is a key indicator of IS success (Pitt et al., 1995). The IS department must have strategies, methodologies and mechanisms that allow them to accurately meet the requirements of its customers. Pitt et al. (1995) cite the following as some of the elements that determine the quality of service and the ability to deliver a service: the IS department having up-to-date hardware and software, delivering at the promised time, showing sincere interest in solving the customer's problems and having operating hours convenient to all users.

Through having the appropriate tools, methodologies and mechanisms that are reliable and equip the IS department with the ability to respond to its customers, the IS department becomes more customer oriented.

2.3.4 Service Systems

Studies in IS service quality emphasise the importance of having the right systems in place in order to understand and deliver customer's requirements. Without appropriate feedback mechanisms, IS departments may misunderstand their customers' service requests and be unable to meet customer expectations (Jiang et al., 2003).

Beise (1994) says that responsiveness to requests for service is used as an indicator of service interface quality and is measured in terms of time required to acknowledge and respond to requests. It is imperative that the IS department provides the systems and mechanisms through which customers can make requests to the IS department, to provide feedback and to receive feedback from the IS department.

2.3.5 Skills

Over and above their specialised IS skills, IS department staff who are in contact with the customer must possess knowledge about the organisation which they serve and the appropriate interpersonal skills to interact with the organisation.

- Organisation specific knowledge refers to the knowledge of IS professionals of the specific organisational context in which information technologies are deployed and the connections between IS and business (Bassellier and Benbasat, 2004).
- Interpersonal skills refers to the ability of IS professionals to interact with and manage others (Bassellier and Benbasat, 2004). These skills include interpersonal skills, that is, team orientation of IS professionals and their ability to develop and maintain relationships with others, (Bassellier and Benbasat, 2004).

Bassellier and Benbasat (2004) suggest that these skills are instrumental in increasing the intentions of IS professionals to develop and strengthen the relationship with their clients. Rockart et al. (1996) emphasise the need for interpersonal skills in IS professionals, such as, active listening, negotiation skills and team building. IS skills must go beyond technology skills to business skills (Rockart et al., 1996).

Thus, the profile of the IS professional is changing from one in which technical skills are paramount to one in which the ability to form business relationships is important (Bassellier and Benbasat, 2004). Broader business knowledge is essential if IS people are to create linkages with other organisational units and have a wider perspective about business objectives (Bassellier and Benbasat, 2004). Organisations have started responding to this challenge by demanding more business acumen in their IS staff (Bassellier and Benbasat, 2004).

2.3.6 Innovation

Bassellier and Benbasat (2004) posit that business innovation relies strongly on IS. In this day and age when advances in technology can revolutionalise the way businesses operate, it is imperative for the IS department to be constantly seeking ways to be innovative in the way they enable their customers. The IS function must promote an innovative climate that encourages its staff and organisational users to capitalise on new technologies (Saunders and Jones, 1992).

2.3.7 Alignment

In the IS context, alignment refers to the alignment between the IS department and the rest of the organisation in terms of preparing business and IS plans and strategies. Joint opportunity analysis in which functional and divisional people share ideas and discuss alternative solutions and approaches leverages the different strengths

of each party making alignment stronger (Shapiro, 1988). In their study to analyse the impact of the integration of IS planning (ISP) with business planning (BP) on organisational performance, Teo and King (1999) say that BP-ISP integration involves the coordination of BP and ISP activities so that IS strategies are aligned with business goals and business strategies; if there is no coordination between BP and ISP, it would be very difficult for the IS function to adequately support business objectives and strategies or to contribute to achievement of competitive advantage. Therefore it is important that IS departments show the alignment dimension of customer orientation.

There has been extensive research in the area of alignment in IS literature from various other authors including Rathnam, Johnsen and Wen (2004), Reich and Benbasat (1996), Rockart et al. (1996) and Papp (1999). In their study to determine if alignment gaps exist between IS strategy and business strategy, Rathnam et al. (2004) established that there is often an alignment gap between business strategy and IT strategy. This means that the IS department's strategy is not aligned to that of its customers.

Rockart et al. (1996) emphasise the importance if aligning the IT strategy to business strategy. To ensure that investments in IT are targeted at strategic business priorities, IT management should contribute more positively to management thinking by identifying the business threats and opportunities that IT poses (Rockart et al., 1996). It is evident that technology influences strategy and vice versa (Rockart et al., 1996). Various other studies have cited alignment as important for IS departments (Niederman, Brancheau and Wetherbe, 1991; Brancheau and Wetherbe, 1987; Gottschalk, 2000; Caudle, Gorr and Newcomer, 1991; Moynihan, 1990; Pervan, 1998). The effectiveness with which IS can support the enterprise's information needs is dependent on the alignment between the business and IS strategies (Brancheau and Wetherbe, 1987).

2.3.8 Leadership Support

It was earlier stated that the success of customer orientation requires commitment from senior leadership. Leadership in the IS department is represented by senior managers in the IS department and the CIO (Chief Information Officer). Reich and Nelson (2003) suggest that the CIO's influence is growing and that the role has an unprecedented opportunity to provide leadership and company-wide vision for the use of technology and information. Kennedy et al. (2003) posit that customer oriented values and beliefs are uniquely the responsibility of top management. Through being an advocate for customer oriented behaviour, IS leadership demonstrates customer orientation.

The following section introduces the concept of IS performance and reflects a link between customer orientation and IS performance.

2.4 Information Systems Performance – The Concept

Nelson and Cooprider (1996) define IS performance as the quality of the IS department's work product, the ability of the IS department to meet its organisational commitments and the ability of the IS department to meet its goals. Supporting this definition, Saunders and Jones (1992) say that an effective IS function enhances the organisation's competitive position through the development of new systems and the maintenance of systems that support overall organisational goals.

Various other authors have explored the concept of IS performance including Delone and Mclean (1992), Delone and Mclean (2003), Larsen (2003), Rai, Lang and Welker (2002), and Heo and Han (2003) and they all confirm the definitions above by Saunders and Jones (1992) and Nelson and Cooprider (1996). IS literature does not focus on the link between customer orientation and IS performance. This is discussed in the next section.

2.5 Information Systems Performance and Customer Orientation – The Link

The following sub-sections hypothesise the effect of each dimension of customer orientation on IS performance.

2.5.1 Communication

The IS department needs to have the right communication channels in place to ensure that the customer can communicate their needs to the IS department. Quality interaction, by way of communication and information exchange is considered a key success factor in IS efforts (Ramakrishna and Lin, 1999). As the line between the IS function and user functional areas becomes increasingly blurred due to end-user computing and the deeper integration of IS with organisational operations, the quality of the interface between IS and the organisation consists of communication linkages between the IS function and other organisational units and IS effectiveness is affected by the quality of this interface (Beise, 1994).

In any business, effective IS solutions require detailed and specific requirements that need to be achieved through intensive and rich communications between the different stakeholders, the IS department and business users (Al-Karaghouli et al, 2005). Communication is a vital thread that brings the IS department closer to its customers and therefore, as a dimension of customer orientation, communication contributes to IS performance. Repeated and frequent communications contribute to IS performance (Nelson and Cooprider, 1996). Nelson and Cooprider (1996) say that as IS and line groups (the business) move beyond simple

communication to appreciating the expectations, realities and methods of each other, the benefits are seen in IS performance.

It is hypothesised that:

H1. *The greater the communication between the IS department and the business, the greater will be IS performance.*

2.5.2 Understanding

The IS department exists in an organisation to support the business and enable the business to achieve its imperatives. The ability of the IS department to meet the needs of its customers is a reflection on the performance of the IS department. One way to meet these needs is through the understanding, on the part of the IS department, of what is important to the customer. The question to be asked by the IS department is "what is it that will make my customers successful and what can the IS department do to make this a reality?" Implementing successful technology solutions requires a thorough understanding of the organisational context, such as the organisation's structure, work and employees (Al-Karaghouli et al., 2005).

Nelson and Cooprider (1996) say that IS managers are frequently consumed with keeping pace with rapidly changing technologies and IS processes and can be far removed from the business functions that their systems support. They often seek information about the technologies and methods of other functional operations only in response to the IS requirements for a specific support or design request; the day to day problems and opportunities of these supported operations are often unfamiliar to them (Nelson and Cooprider, 1996). If an IS department does not have an understanding of the business imperatives, IS performance will be poor.

Therefore it is hypothesised that:

H2. *The greater the IS department's understanding of the business needs, the greater will be IS performance.*

2.5.3 Service Delivery

Service Delivery refers to the ability to accurately meet the stated requirements of customers. The IS department needs to have strategies, tools and methodologies in place on how to meet the requirements of customers. Having these strategies, tools and methodologies in place is an indication of the IS department being customer oriented in terms of being able to deliver on the service required from the business. Hirschheim, Porra and Parks (2003) say that for IS to create a strategic advantage for the business it must develop the ability to deliver systems when needed and to affect business objectives through IT implementation. The IS department should have the ability to react quickly to business needs; it's

responsiveness to the business and the contribution it makes to the business' success is important for IS performance (Nelson and Cooprider, 1996). Nelson and Cooprider (1996) also say that as computers become more a part of daily business cycle, system availability, reliability and responsiveness of hardware and software become critical. An IS function is more effective if it promotes an organised approach to system design, development and documentation throughout the organisation (Saunders and Jones, 1992).

It is hypothesised that:

H3. *The greater the ability of the IS department to deliver service, the greater will be IS performance.*

2.5.4 Service Systems

Service Systems refers to whether customer satisfaction is measured on a regular basis and whether there are systems in place to measure customer satisfaction (Gray et al., 1998). In order to be more effective in serving the business, the IS department must have the right systems in place to capture, monitor and measure the requirements of the user and the effectiveness of the service being provided. This may be in the form of customer satisfaction surveys, focus groups, account managers whose primary function is to capture the requirements of the user, monitor satisfaction etc. Service Systems are about being in touch with the user, being customer oriented and this is an imperative for IS performance.

It is hypothesised that:

H4. *The greater the quality of service systems and feedback mechanisms, the greater will be IS performance.*

2.5.5 Skills

Reich and Nelson (2003) say that the skills of IS people need to continually evolve to meet the challenges of the future and that training and education are the key solutions to the need for up-skilled people. IS personnel need to develop strong teamwork and collaboration skills to function in diverse environments (Reich and Nelson, 2003). The most important skills Chief Information Officers (CIO's) feel their senior people need are influencing and negotiating skills; these skills are necessary if the IS department is to fulfil its role within the organisation (Reich and Nelson, 2003). Reich and Nelson (2003) suggest that a lack of business skills and domain knowledge in IS personnel may be hindering IS's leadership ability and the ability of the IS department to be seen as business partners, enabling the business. This in turn affects the performance of the IS department. An IS department without strong business knowledge cannot be successful (Reich and Nelson, 2003). An effective IS function is able to interface successfully with users and management throughout the organisation (Saunders and Jones, 1992).

IS staff skills are therefore an imperative for IS performance. It is hypothesised that:

H5. *The greater the organisational and interpersonal skills of IS staff, the greater will be IS performance.*

2.5.6 Innovation

In the constantly evolving world of business, the IS function needs to be at the pulse of innovation in order to continuously improve. Innovation also suggests seeking ways to do things better and the IS department needs to be constantly seeking ways to provide a more effective service to the customer. Innovation, which is a dimension of customer orientation, leads to a more effective IS department which in turn means better IS performance. The IS function must promote an innovative climate that encourages its staff and organisational users to capitalise on new technologies (Saunders and Jones, 1992).

It is hypothesised that:

H6. *The greater the innovation in IS departments, the greater will be IS performance.*

2.5.7 Alignment

One of the dimensions of customer orientation is alignment, and in the context of IS, it refers to the alignment of IS and the business. In their study to show the impact of the integration of IS planning and business planning, Teo and King (1999) say that problems associated with the IS planning process concern the suitability of inputs as well as the involvement of non-IS staff; they include the lack of user or business involvement and the failure to take organisational goals and strategies into account. Failing in the ability to align IS strategies with business strategies affects IS performance. To promote the achievement of organisational goals, IS planning must be tied to organisational planning (Saunders and Jones, 1992). Alignment is critical to the exploitation of information technology and predicts both improved IT and business performance (Johnson and Lederer, 2003).

It is hypothesised that:

H7. *The greater the alignment between IS and business strategies and plans, the greater will be IS performance.*

2.5.8 Leadership Support

Armstrong and Sambamurthy (1999) suggest that IS success generally reflects an effective relationship between IS managers and their staff where there is dialogue from IS managers to IS staff regarding IS business priorities. Armstrong and Sambamurthy (1999) say that this contributes to IS assimilation in the organisation.

This contributes to better IS performance. When CIO's are able to provide informed leadership and direction to IS staff, this leads to better customer orientation.

It is hypothesised that:

H8. *The more IS leadership shows support for customer orientation, the greater will be IS performance.*

2.6 Summary

This chapter has reviewed literature defining the concept of customer orientation in the marketing context. The relationship between customer orientation and performance from the marketing perspective, where it was popularised has also been reviewed. Literature was also reviewed to explore and define customer orientation from the IS perspective and the possibility of a link between IS performance and customer orientation was also established. The next chapter presents the research methods aimed at testing the eight hypotheses that state a relationship between IS performance and customer orientation.

3 Chapter 3 - Research Methodology

3.1 Introduction

The aim of this study is to determine the effect of customer orientation on IS department performance. This chapter describes the methodology that was applied for this purpose and the rationale behind it. The data collection strategy is also discussed and this includes questionnaire construction, sampling and administration. The strategy for data analysis is also presented.

3.2 Research Model

This study hypothesises that there is a link between customer orientation and IS performance. Eight dimensions of customer orientation have been defined and it is hypothesised that these dimensions have a direct effect on IS performance.

Figure 1: Research Model

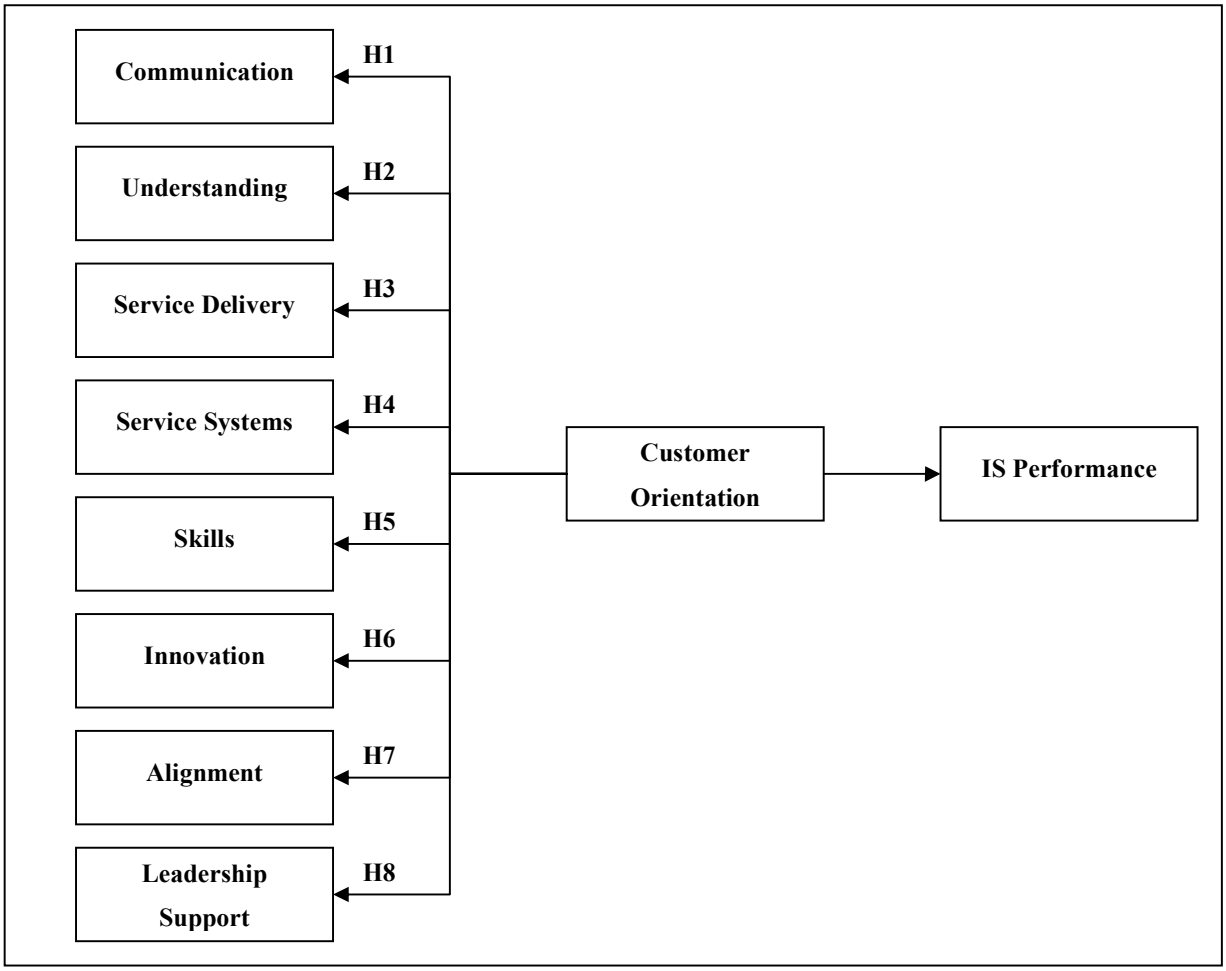


Figure 1 depicts the research model of this study and the following hypotheses, described in Chapter 2, are presented:

H1. *The greater the communication between the IS department and the business, the greater will be IS performance.*

H2. *The greater the IS department's understanding of the business needs, the greater will be IS performance.*

H3. *The greater the ability of the IS department to deliver service, the greater will be IS performance.*

H4. *The greater the quality of service systems and feedback mechanisms, the greater will be IS performance.*

H5. *The greater the organisational and interpersonal skills of IS staff, the greater will be IS performance.*

H6. *The greater the innovation in IS departments, the greater will be IS performance.*

H7. *The greater the alignment between IS and business strategies and plans, the greater will be IS performance.*

H8. *The more IS leadership shows support for customer orientation, the greater will be IS performance.*

3.3 Research Methodology

Different types of research approaches have their advantages and disadvantages. This research adopts a quantitative approach. In quantitative analysis primary data is collected in numeric form for the purpose of improving the understanding of the nature of relationships between different variables (Hussey and Hussey, 1997). An alternative to the quantitative approach is the qualitative approach where the research is descriptive or explanatory.

The general methodology employed in this study is presented in the figure below (adapted from Hussey and Hussey, 1997):

Figure 2: Graphical representation of the research methodology

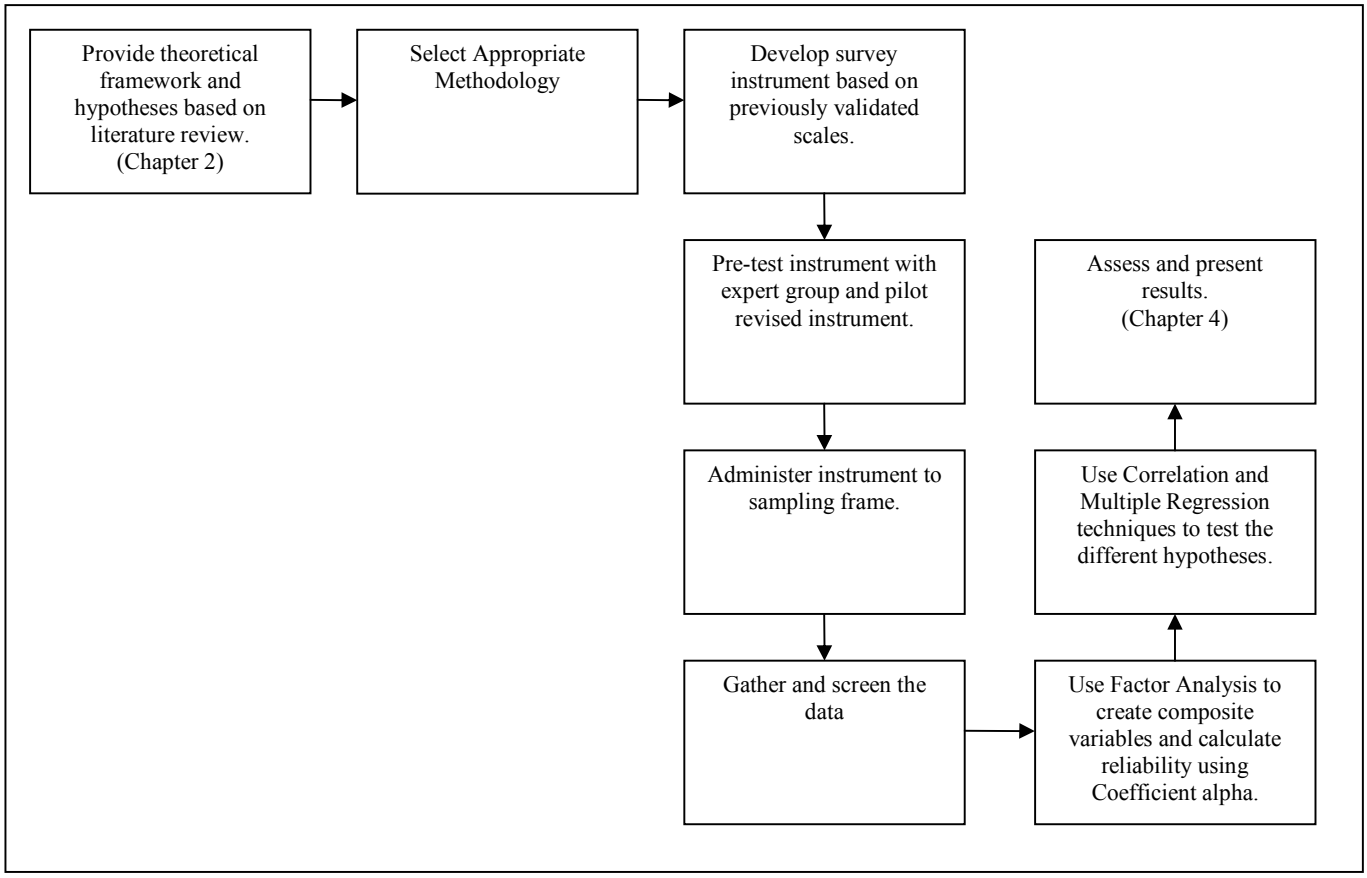


Figure 2 shows the first phase in this research which was to use secondary data from academic journals to provide a framework for defining customer orientation dimensions and IS performance. The synthesis of the literature review in the preceding chapter provided support for hypothesising the relationship between customer orientation and IS performance. The remainder of this chapter describes the other blocks in Figure 2.

Firstly, this study uses a survey methodology. A survey is a methodology whereby a sample of subjects is drawn from a population and studied to make inferences about the population (Hussey and Hussey, 1997). A survey approach is particularly suitable for this study because it allows for determining the actual values of variables under study, and the strengths of relationships among them. Furthermore, a number of past studies in marketing, considered in the literature review chapter, adopted a survey approach in studying the effect of customer orientation on organisational performance.

Using a survey approach offers the following strengths (http://www.isworld.org/surveyinstruments):

- "Surveys are simple to score and code".
- "Surveys determine the values and relations of variables and constructs".
- "Responses can be generalised to other members of the population studied and often to other similar populations".
- "Surveys can be reused easily, and provide an objective way of comparing responses over different groups, times, and places".
- "Surveys can be used to predict behaviour".
- "Specific theoretical propositions can be tested in an objective fashion".
- "Surveys can help confirm and quantify the findings of qualitative research".

Surveys also have a number of weaknesses and these include:

- "Surveys are just a snapshot of behaviour at one place and time".
- "One must be careful about assuming they are valid in different contexts".
- "They do not provide as rich or "thick" description of a situation as a case study".
- "They do not provide as strong evidence for causality between surveyed constructs as a well designed experiment".

The limitations of this approach are recognised and will influence the interpretation of results in subsequent chapters.

3.4 Data Collection Strategy

3.4.1 Instrument Construction

Consistent with the chosen methodology, a structured questionnaire (5 point Likert Scale) was used as the data collection instrument. The questionnaire (Appendix A) was constructed in order to assess top level executives in the IS department's perceptions of the IS department's customer orientation and performance. The survey instrument was drafted using literature pertaining to the constructs. The process included a review of literature to derive multi-item scales for the constructs. Two constructs are measured in this study: customer orientation (construct and dimensions) and IS performance. To maintain overall consistency, they will be measured using multiple-item, five point Likert scales ranging from "strongly agree" to "strongly disagree".

The following tables reflect the operational definitions of the constructs and their dimensions:

Customer Orientation (CO):

Table 1: Operational Definitions of Customer Orientation Dimensions

CO Dimension	Operationalisation	Source
Communication	Frequent meetings are held between IS staff and IS users. (com_FreqMeet)	Beise (1994) Johnson and Lederer (2003)
	A customer representative from the IS department contacts and maintains frequent communication with IS users. (com_CustRepContact)	Parasuraman et al. (1991)
	The IS department frequently exchanges information with IS users. (com_FreqExchInfo)	Ramakrishna and Lin (1999)
	The IS department has assigned "managers" to focus specifically on IS-business communication. (com_AssigMngrComm)	Rockart et al. (1996) Beise (1994)
Understanding	The IS department understands what attributes of its service IS users value the most. (und_ServiceAttr)	Hajjat (2002) Nelson and Cooprider (1996)
	The IS department monitors exogenous factors that influence the needs and preferences of the business such as government regulations and competitors actions. (und_MonitExFactors)	Kohli and Jaworski (1990)
	IS initiatives are based on the understanding of the business needs as provided by IS users. (und_InitBasedOnUnd)	Rockart et al. (1996)

CO Dimension	Operationalisation	Source
Service Delivery	The IS department has the appropriate tools and methodologies to meet IS user needs. (servdel_ApprTools)	Smart and Whiting (2001) Rockart et al. (1996)
	When users have a problem, the IS department shows a sincere interest in solving it. (servdel_SincInt)	Pitt et al. (1995) Jiang et al. (2003)
	The IS department has operating hours convenient to all its users. (servdel_Ophours)	Pitt et al. (1995) Jiang et al. (2003)
	The IS department is well equipped with the right hardware and software most useful for IS user needs. (servdel_WellEquip)	Nelson and Cooprider (1996)
Service Systems	The IS department uses methods such as customer surveys, focus group interviews and customer advisory panels to keep in touch with IS user needs. (servsys_CustSurvey)	Berry and Parasuraman (1997) Egan and Shipley (1995)
	It is easy for IS users to contact the IS department. (servsys_EasyContact)	Lozano (2000) Shapiro (1988) Nwankwo (1995)
	The IS department continuously collects and analyzes data to observe any changes in the business' service priorities. (servsys_CollectAnalyData)	Berry and Parasuraman (1997) Gray et al. (1998)
	IS user satisfaction with IS service is measured on a regular basis. (servsys_MeasSatis)	Gray et al. (1998)
Skills	The IS department selects staff with the appropriate interpersonal skills to interface with IS users. (skills_SlctApprStaff)	Lozano (2000)
	The IS department thoroughly trains the staff members who must interface with IS users on issues such as interpersonal communication skills. (skills_Trains)	Lozano (2000) Kirca et al. (2005) Bassellier and Benbasat (2004) Rockart et al. (1996)
	IS staff perceive themselves as having the ability to serve IS users. (skills_Perception)	Judd (2003)
	IS staff receive training on the organisation's business such as its business unit processes and organisational challenges. (skills_OrgTraining)	Bassellier and Benbasat (2004) Reich and Nelson (2003)

CO Dimension	Operationalisation	Source
Innovation	The IS department encourages IS users to capitalise on new technologies. (innov_CapitaliseNewTech)	Saunders and Jones (1992)
	The IS department encourages the introduction of new technologies into the organisation. (innov_IntroNewTech)	Saunders and Jones (1992)
	IS staff are continuously investigating ways to create business value in services offered without a specific request from IS users. (innov_ContInvestigate)	Gray et al. (1998)
	IS staff take on roles that are more entrepreneurial in nature and focus on innovation through IS. (innov_EntrepRoles)	Bassellier and Benbasat (2004)
Alignment	The IS department creates joint opportunity analysis forums where IS and organisational divisions share ideas and discuss alternative solutions. (align_JointOppForum)	Shapiro (1988)
	Business and IS plans are jointly developed. (align_BusISPlans)	Rockart et al. (1996) Teo and King (1999) Saunders and Jones (1992)
	The IS strategy makes specific reference to the business strategy and objectives. (align_StratRef)	Rathnam et al. (2004) Teo and King (1999) Rockart et al. (1996)
	IS investments are always targeted at strategic business priorities. (align_ISInvestments)	Rathnam et al. (2004) Rockart et al. (1996)
Leadership Support	The CIO / IT Manager shares a company wide vision for the role of technology and information with IS staff. (lead_CompWideVision)	Reich and Nelson (2003)
	Senior IS managers regularly articulate business satisfaction drivers to IS staff. (lead_ArtBusSatis)	Kennedy et al. (2003)
	Senior IS managers regularly articulate to IS staff customer oriented values. (lead_ArtCustOrientVal)	Kennedy et al. (2003)

IS Performance

Table 2: Operational Definitions of IS Performance

IS Performance Measure	Source
IS contributes to overall organisational effectiveness. (ISPerf_OrgEffectiveness)	Saunders and Jones (1992)
IS contributes to overall organisational efficiency. (ISPerf_OrgEfficiency)	Saunders and Jones (1992) Singleton and McLean (1988)
IS contributes to organisational financial performance. (ISPerf_FinPerf)	Saunders and Jones (1992)
IS contributes to improved organisational competitiveness. (ISPerf_OrgCompetitiveness)	Saunders and Jones (1992)
IS projects are always delivered on time. (ISPerf_ProjOnTime)	Saunders and Jones (1992)
IS projects are always delivered on budget. (ISPerf_ProjOnBudget)	Saunders and Jones (1992)
The IS department has in place planning strategies for all implementations undertaken i.e. project implementations involve checks and approvals. (ISPerf_PlanForImpl)	Saunders and Jones (1992)
IS operational efficiency is satisfactory (e.g. system availability, reliability and responsiveness). (ISPerf_OpEfficiency)	Saunders and Jones (1992)

3.4.2 Sampling

The unit of analysis in this study is the IS department since the intent of the study is to determine the effect of a customer-oriented IS department on IS performance.

The population from which the study's sample was collected consisted of the IS departments of organisations listed on the Johannesburg Stock Exchange and those of other convenient organisations. The companies were chosen primarily for their large size which implied a more diversified user base for IS department services. 157 organisations were targeted for this study. The firms whose IS departments will be studied are generally medium to large in size and are therefore, more likely to have experience in IS.

3.4.3 Characteristics of Respondents

Because IS departments are not individuals, the actual informants to this study are CIO's (Chief Information Officers), IS directors, IS managers and heads of IS departments. These are the managers responsible for the delivery of IS services to their respective organisations and are in a position to talk about all aspects of their respective IS departments.

Customer orientation was measured by asking the respondents to indicate the extent to which their IS departments display certain qualities and characteristics that have been identified as being reflective of the dimensions of customer orientation. IS department performance was measured by asking the respondents to indicate the extent to which their IS departments meet identified IS performance dimensions.

3.4.4 Pre-test and Pilot Study

Since most of the constructs of the instrument have only been used primarily in the marketing arena it was necessary to ensure that the instrument was pre-tested for content validity by academics and senior managers in IS departments. Thus, to pilot the instrument, a convenience sample of three IS managers completed the instrument. Four academics also pre-tested the instrument. This was to determine whether the targeted respondents understood the questions and that the full spectrum of the scale was used. Only minor changes to the questionnaire were made. These were:

- Reducing the number of items used to measure the dimensions of customer orientation to a more succinct list.
- Rewording the term "business" to "IS users" to be more clear on who the customer being referred to is.
- Double-barrelled items were split into single-idea items.
- Items that were laden with obvious "socially acceptable" answers were revised.
- An additional four items measuring IS performance were added to the four that were already in the questionnaire.

As a result of rigorous editing, only thirty items to measure customer orientation were retained and eight items to measure IS performance. The questionnaire was administered by e-mail to the relevant respondents. Using e-mail was considered to be appropriate because it is believed that it would be possible to get a reasonable sample size in a shorter time frame and at a lower cost. A copy of the final questionnaire appears in Appendix A.

3.5 Data Analysis Strategy

Data analysis for this study will be performed using Statistical Package for the Social Sciences (SPSS) for windows, which analyses data in numerical form (Hussey and Hussey, 1997). Data analysis will be performed in three steps:

- Data screening
- Check for validity and reliability
- Hypothesis testing

3.5.1 Data Screening

To screen the data the following will be done:

- Handle missing values.
- Test assumptions of normality.
- Identify outliers.

3.5.2 Validity and Reliability

A measure is valid when the differences in observed scores reflect true differences on the characteristic that one is attempting to measure and nothing else (Churchill, 1979). For this study, construct validity for each scale will be assessed using Principal Components Factor Analysis (Hussey and Hussey, 1997).

A measure is reliable to the extent that independent but comparable measures of the same trait or construct of a given object agree (Churchill, 1979). Following the factor analysis, each factor will be tested for reliability using Chronbach's Alpha (Hussey and Hussey, 1997).

After reliability testing, only the descriptive statistics of the composite variables will be presented.

3.5.3 Hypotheses Testing

Correlation and Multiple Regression techniques will be used to test the different hypotheses.

Hypothesis one to hypothesis eight (H1 – H8) will be examined independently for a relationship to IS performance using Correlation Analysis. The size of the value of the correlation indicates the strength of the relationships between two variables. The direction of the relationship is indicated by a negative sign for a negative correlation while a positive sign indicates a positive correlation.

The combined effects of customer orientation dimensions on IS performance will also be assessed using Multiple Regression. Where the customer orientation dimensions are found to be highly collinear, one or more of the offending variables will be eliminated from the Multiple Regression analysis.

3.6 Limitations

One of the limitations of the chosen methodology is that it does not include responses from users of IS services and gives only a perspective from the IS department point of view. Moreover, completing the questionnaire is to the discretion of the respondent, therefore it is possible that only a narrow segment may participate in the survey leading to a lack of representation.

3.7 Summary

This chapter presented the methodology and approach followed in this empirical study. The objective of this study is to assess the influence of customer orientation on IS performance. The general methodology was presented. The data collection strategy was described. Finally descriptions of the data analysis strategy were given. Results of the survey and analysis will be presented and discussed in the next chapter.

4 Chapter 4 - Research Findings

4.1 Introduction

The purpose of this chapter is to present the results of the analysis performed on the data gathered through the questionnaire. The initial sections provide a brief description of the demographics of the respondents; the response rate and the results of the data screening are presented. Following this, the results of the hypothesis testing are presented and the findings are discussed. Finally a summary of the chapter is provided.

4.2 Response Rate

Of the 157 questionnaires distributed, a total of 99 responses were received over a period of 12 weeks. This resulted in a response rate of 63%. Of the 99 responses, 71 were from companies listed on the Johannesburg Stock Exchange (JSE) and 28 were part of a selected list of companies (see Chapter 3 for the explanation of the sampling approach).

The Table 3 below describes the respondents categorised by industry.

Table 3: Respondents Categorised by Industry

Industry Type	# of Respondents
Financial Services	27
Manufacturing	14
Retail	13
Mining, Oil and Gas	6
Media, Entertainment and Leisure	6
Supply Chain, Transport and Logistics	6
Government	5
Telecommunications	5
Construction and Engineering	3
*Other	14
Total	**99**

*Other consisted of Agriculture, Fast Moving Consumer Goods (FMCG), Legal, Outsourcing and Property Management.

The results show that the majority of respondents are from Financial Services. This is not surprising given their high information intensity and the importance of the role played by information technology in their

business. However, the spread of responses across industries and the high response rate confirms the importance of the topic and the desire for companies to improve their performance.

Table 4 below describes the respondents categorised by the title of respondents:

Table 4: Respondents Categorised by Title

Title	# of Respondents
CIO	35
Head: Information Technology	2
IS/IT Director	15
IS/IT Manager	37
Systems Manager	2
*Other	8
Total	**99**

*Other includes Consultant: IT Strategy, Technical Manager, Head of Operations, Section Manager: IT Facilities and Chief Operating Officer.

Table 4 shows that the questionnaire was completed by the target respondents, that is, those who are responsible for the delivery of information systems in their respective organisations. From the responses to this study, the most frequently used title in South Africa is IS / IT Manager, followed by CIO. Studies from other parts of the world such as North America, Canada and England (Rockart et al., 1996; Johnson and Lederer, 2003; Hirschheim et al., 2003; Earl and Feeny, 1994), seem to lean more towards the title CIO for those heading up IS departments. Some studies such as Saunders and Jones (1992) refer to IS executives which is a more encompassing term for senior management in IS departments. Overall, the frequently used titles in IS literature are CIO and IS Manager.

Table 5 below describes the respondents categorised by the size of the IS department:

Table 5: Respondents by IS Department Size

IS Department Size (# of IS Staff)	# of Respondents
< 10	20
10 - 20	14
20 - 50	23
50 - 100	11
100 - 150	11
150 - 200	2
200 - 300	8
300 - 400	5
400 - 500	0
> 500	5
Total	**99**

The majority of respondents had IS departments with a staff complement of between 20 and 50, with 42% having a staff complement of over 50. This is an indication that the IS departments are fairly sizeable and that CIO's or IS managers have medium teams to manage. The size of the IS department could also be influenced by outsourcing which implies that IS department staff retained within organisations form a smaller group as most of the IS work is outsourced to other companies. Thus size is not always a reflection of the value placed on IS by the organisation.

4.3 Data Screening

4.3.1 Missing Values

The data collected was examined for missing values.

There were thirty items to measure customer orientation. 13 of the items had missing values as follows:

Table 6: Customer Orientation Items Missing Values

Item	Number of missing values
com_FreqMeet	1
com_CustRepContact	1
com_FreqExchInfo	1
und_ServiceAttr	1
servdel_ApprTools	1
servdel_Ophours	2
servdel_WellEquip	2
servsys_CustSurvey	1
servsys_EasyContact	2
servsys_CollectAnalyData	2
servsys_MeasSatis	1
skills_SlctApprStaff	1
align_StratRef	1

Because each of the items measuring customer orientation that had missing values did not have more than two missing values, the items were not considered problematic and were therefore retained.

There were eight items to measure IS performance and two of the items had missing values as follows:

Table 7: IS Performance Items Missing Values

Item	Number of missing values
ISPerf_OrgCompetitiveness	1
ISPerf_ProjOnTime	1

Because each of the items measuring IS performance that had missing values had only one missing value, the items were not considered problematic and were therefore retained.

The data was also checked to determine if there were any respondents that omitted more than 10% of the items, in which case the record would be discarded.

Only one respondent had more that 10% of its items unanswered and it was therefore eliminated from further analysis. The final sample consisted of 98 usable responses. For all remaining missing values, a mean replacement strategy was applied.

4.3.2 Distribution of the Data

The distribution of the data was also checked by examining skewness and kurtosis.

Kurtosis is a measure of the extent to which observations cluster around a central point. For a normal distribution, the value of the kurtosis statistic is zero. Positive kurtosis indicates that the observations cluster more and have longer tails than those in the normal distribution and negative kurtosis indicates the observations cluster less and have shorter tails (Hair, Black, Babin, Anderson and Tatham, 2006).

Skewness is a measure of the asymmetry of a distribution. The normal distribution is symmetric and has a skewness value of zero. A distribution with a significant positive skewness has a long right tail. A distribution with a significant negative skewness has a long left tail (Hair et al., 2006).

The following table shows the mean, standard deviation, skewness and kurtosis values of the data collected:

Table 8: Skewness & Kurtosis

Item	Mean	Standard Deviation	Skewness	Kurtosis
com_FreqMeet	4.0510	0.96722	-1.150	0.837
com_CustRepContact	4.0816	0.78219	-1.068	1.519
com_FreqExchInfo	4.1122	0.71627	-1.028	2.044
com_AssigMngrComm	3.5714	1.02545	-0.577	-0.488
und_ServiceAttr	3.8351	0.72766	-0.714	0.828
und_MonitExFactors	3.6531	0.83853	-0.338	-0.365
und_InitBasedOnUnd	4.3469	0.61093	-0.359	-0.637
servdel_ApprTools	4.0104	0.73911	-0.799	1.103
servdel_SincInt	4.3061	0.64868	-0.628	0.506
servdel_Ophours	4.2165	0.73536	-1.007	1.518
servdel_WellEquip	4.0515	0.80426	-0.702	0.291
servsys_CustSurvey	3.3163	1.02139	-0.021	-1.241

Item	Mean	Standard Deviation	Skewness	Kurtosis
servsys_EasyContact	4.4021	0.58609	-0.392	-0.660
servsys_CollectAnalyData	3.5567	0.90780	-0.257	-0.694
servsys_MeasSatis	3.6531	1.00619	-0.369	-0.654
skills_SlctApprStaff	3.6084	0.86819	-0.487	0.052
skills_Trains	3.2347	0.84708	-0.161	-0.530
skills_Perception	4.0408	0.55461	-0.719	3.350
skills_OrgTraining	3.2245	0.95821	0.178	-0.995
innov_CapitaliseNewTech	3.8980	0.76643	-0.665	0.554
innov_IntroNewTech	4.0000	0.71796	-0.682	0.950
innov_ContInvestigate	3.9898	0.75293	-0.575	0.386
innov_EntrepRoles	3.4082	0.81020	-0.290	-0.002
align_JointOppForum	3.2449	0.98506	-0.447	-0.608
align_BusISPlans	3.5000	1.00770	-0.339	-0.297
align_StratRef	4.1238	0.70722	-0.185	-0.965
align_ISInvestments	3.9388	0.83501	-0.751	0.341
lead_CompWideVision	4.0612	0.75732	-0.975	1.459
lead_ArtBusSatis	3.5918	0.77108	-0.521	-0.100
lead_ArtCustOrientVal	3.6633	0.70263	-0.512	0.254
ISPerf_OrgEffectiveness	4.2551	0.52389	0.219	-0.310
ISPerf_OrgEfficiency	4.3061	0.48499	0.575	-0.979
ISPerf_FinPerf	4.1020	0.63392	-0.332	0.493
ISPerf_OrgCompetitiveness	4.0929	0.65931	-0.544	0.986
ISPerf_ProjOnTime	3.1032	0.91364	-0.044	-0.732
ISPerf_ProjOnBudget	3.1633	0.93824	-0.182	-0.893
ISPerf_PlanForImpl	4.0306	0.72445	-0.711	0.961
ISPerf_OpEfficiency	4.1327	0.68320	-0.767	1.462

The skewness and kurtosis values above give reasonable assurance that the data collected in terms of the dimensions of customer orientation and IS performance follow a normal distribution. This is based on the rule of thumb that these values should lie between zero and +- 1. Although some items fell outside this range, on the whole it was not considered necessary to transform any of the items.

4.3.3 Outliers

The data was also checked for outliers. Outliers are responses with unusually high or unusually low values. The strategy used to determine this was to use the general rule of thumb to check for standardised scores greater than +- 3 on more than one questionnaire item. If one response has more than 5 items (10% of items) scoring greater that + - 3 it would be discarded.

No outliers were found in the data.

4.4 Validity and Reliability of Measures

4.4.1 Validity

Customer Orientation

Using SPSS, Principal Components Factor Analysis (PCA) was run on the data to determine unidimensionality (construct validity) of the items measuring customer orientation. Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables (Hair et al., 2006). Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables.

With the initial run of Principle Components Factor Analysis (PCA) Communalities all exceeded 0.300 (Hair et al., 2006); the presence of nine factors with Eigen values exceeding 1 was revealed. To aid in the interpretation of the nine components, Varimax rotation was performed. A priori decision rule specified that an item will not be retained unless its loading is greater than 0.6 on at least one factor (Hair et al., 2006); items that cross-loaded highly onto more than one factor would also be eliminated. After seven iterations of PCA, the following customer orientation items were dropped due either to high cross-loadings or inadequate loadings onto any of the factors:

- und_ServiceAttr
- und_InitBasedOnUnd
- servdel_SincInt
- skills_Perception
- innov_EntrepRoles
- lead_CompWideVision
- lead_ArtBusSatis
- lead_ArtCustOrientVal

Finally a stable solution consisting of seven factors that explained 69.43% of the variance in the individual items was extracted. This is an indication that the validity of these items is good as it is over 60% (Hair et al., 2006). The tables below depict the factors Eigen values, % variance explained and item loadings:

Table 9: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.269	28.495	28.495	6.269	28.495	28.495	2.546	11.571	11.571
2	2.101	9.549	38.044	2.101	9.549	38.044	2.523	11.469	23.040
3	1.701	7.730	45.774	1.701	7.730	45.774	2.308	10.492	33.532
4	1.482	6.735	52.509	1.482	6.735	52.509	2.214	10.063	43.595
5	1.392	6.326	58.835	1.392	6.326	58.835	2.174	9.880	53.474
6	1.235	5.613	64.448	1.235	5.613	64.448	1.821	8.276	61.750
7	1.097	4.988	69.436	1.097	4.988	69.436	1.691	7.685	**69.436**

Table 10: Rotated Component Matrix

* Only loadings greater than 0.400 are shown.

	1	2	3	4	5	6	7
com_FreqMeet		**0.787**					
com_CustRepContact		**0.722**					
com_FreqExchInfo		**0.749**					
com_AssigMngrComm		**0.644**					
und_MonitExFactors					**0.643**		
servdel_ApprTools					**0.591**		
servdel_Ophours					**0.692**		
servdel_WellEquip					**0.780**		
servsys_CustSurvey							**0.824**
servsys_EasyContact			**0.663**				
servsys_CollectAnalyData			**0.548**				
servsys_MeasSatis							**0.823**
skills_SlctApprStaff			**0.781**				
skills_Trains			**0.662**				
skills_OrgTraining	**0.774**						
innov_CapitaliseNewTech				**0.867**			
innov_IntroNewTech				**0.884**			
innov_ContInvestigate				**0.551**			
align_JointOppForum	**0.767**						
align_BusISPlans	**0.655**						
align_StratRef						**0.767**	
align_ISInvestments						**0.748**	

The following factors were retained as dimensions of customer orientation:

1. **Alignment (Joint Planning)** – (skills_OrgTraining, align_JointOppForum, align_BusISPlans)
2. **Communication** – (com_FreqMeet, com_CustRepContact, com_FreqExchInfo, com_AssigMngrComm)
3. **Skills** – (servsys_EasyContact, servsys_CollectAnalyData, skills_SlctApprStaff, skills_Trains)
4. **Innovation** – (innov_CapitaliseNewTech, innov_IntroNewTech, innov_ContInvestigate)

5. **Service Delivery** – (und_MonitExFactors, servdel_ApprTools, servdel_Ophours, servdel_WellEquip)
6. **Alignment (Business Focus)** – (align_StratRef, align_ISInvestments)
7. **Service Systems** – (servsys_CustSurvey, servsys_MeasSatis)

The original Alignment dimension emerged as two factors. The first was labelled Joint Planning because it was measured by items that referred to the IS department creating joint opportunity forums where IS and organisational divisions shared ideas and discussed alternative solutions; and business and IS plans were jointly developed. The second factor was labelled Business focus because the items that loaded highly on this factor include "IS strategy makes specific reference to the business strategy" and "IS investments are always targeted at strategic business priorities".

The following factors were dropped as dimensions of customer orientation:

- Understanding was dropped as a dimension of customer orientation because two items deemed to measure understanding had a loading below 0.6. One item (und_MonitExFactors) which was originally intended to measure understanding, loaded onto service delivery. This item refers to the IS department monitoring exogenous factors that influence the needs of its customers; this suggests that the IS department knows the challenges that its customers face and deliver a service that allows their customers to overcome those challenges. With this suggestion in mind, it makes sense that this item would align to service delivery. If the IS department understands what it is required to deliver on then it is better able to deliver.
- Leadership support was also dropped because all of the items measuring leadership support had a loading well below 0.60.

The 7 factors (communication, service delivery, service systems, skills, innovation, joint planning and business focus) represent the empirically derived dimensions of customer orientation that will be used in subsequent analysis.

IS Performance

In checking for dimensionality in IS performance items, Communalities all exceeded 0.300. Therefore all items were kept (Hair et al., 2006).

PCA on the items measuring IS performance revealed the presence of two factors with Eigen values exceeding 1. An inspection of the output of SPSS after running PCA revealed a clear break after the second component. This result suggests that the eight items used to measure IS performance may be aligned to two factors. The

two factors, explained the variance of 62.82% in the individual items. This is an indication that the validity of the items is good as it is over 60% (Hair et al., 2006).

To aid in the interpretation of the two components, Varimax rotation was performed. A priori decision rule specified that an item will not be retained unless its loading is greater than 0.6 from at least one factor.

Table 11 shows how the items loaded on the two components:

Table 11: Rotated Component Matrix - IS Performance

	Component	
	1	**2**
ISPerf_OrgEffectiveness	0.849	
ISPerf_OrgEfficiency	0.846	
ISPerf_FinPerf	0.770	
ISPerf_OrgCompetitiveness	0.788	
ISPerf_ProjOnTime		0.815
ISPerf_ProjOnBudget		0.856
ISPerf_PlanForImpl		0.673
ISPerf_OpEfficiency		0.662

This means that IS performance has two dimensions, measured by the two components depicted above. Because of the actual wording of the items, the two dimensions were named:

- **IS Impact** – This item refers to the impact of IS on organisational effectiveness, organisational efficiency, financial performance and organisational competitiveness.
- **Internal IS Efficiency** – This item refers to internal IS performance based on projects completed on time, projects completed on budget, implementations being planned for and overall IS operational efficiency.

This split is consistent with Nelson and Cooprider (1996) who say that IS group performance is conceptualized in two parts: operational performance and service performance. These dimensions of performance capture two different aspects of IS performance; the "inward" operational activities of production and development, and the "outward" service activities of customer service i.e. the contribution that IS makes to line group's success in meeting its strategic goals (Nelson and Cooprider, 1996).

4.4.2 Reliability

After the factor analysis, a reliability test was performed for the seven customer orientation dimensions and the two IS performance factors. Table 12 shows the reliability coefficient (Cronbach's alpha) for the seven customer orientation and two IS performance dimensions.

Table 12: Reliabilities and Validities

Likert Scale Construct	No. of Items	Mean	Standard Deviation	Chronbach's Alpha
Communication	4	3.954	0.673	0.762
Service Delivery	4	3.982	0.567	0.703
Service Systems	2	3.484	0.900	0.734
Skills	4	3.700	0.620	0.762
Joint Planning	3	3.323	0.818	0.778
Innovation	3	3.962	0.629	0.797
Business Focus	2	4.031	0.653	0.600
IS Impact	4	4.189	0.468	0.822
IS Internal Efficiency	4	3.607	0.624	0.755

Reliability coefficients depicted in table 12 range from 0.60 – 0.82. Business focus was 0.6 which although lower than the others is still acceptable for exploratory work (Hair et al., 2006). The majority was above 0.70 which falls within the acceptable range (Hair et al., 2006). Reliability is considered acceptable and composite scores for the dimensions were calculated to aid subsequent hypothesis testing. Table 12 also presents the means and standard deviations of the composite scores for the study's main constructs. The means fall below 4 for most of the customer orientation dimensions, indicating that organisations have some way to go to improving their IS department customer orientation.

4.5 Results

Following the validity and reliability tests, the study's hypotheses were examined.

H2 stated that *the greater the IS department's understanding of the business needs, the greater will be IS performance.* This hypothesis falls away because "Understanding" was dropped as a dimension of customer orientation.

H7 stated that *the greater the alignment between IS and business strategies and plans, the greater will be IS performance.* H7 will be tested using two dimensions; joint planning and business focus separately. This is because joint planning and business focus were established as the dimensions that make up alignment following reliability testing.

H8 stated that *the more IS leadership shows support for customer orientation, the greater will be IS performance.* This hypothesis falls away because "Leadership Support" was dropped as a dimension of customer orientation.

The dimensions of customer orientation will be correlated with both IS impact and IS internal efficiency dimensions of IS performance. A significance level of $p < 0.05$ was selected (Hair et al, 2006).

The results of the correlation testing are as follows:

Table 13: Pearson Correlations: Customer Orientation and IS Performance

	IS_Impact	IS_Internal_Efficiency
Communication	0.194	0.246*
Service_Delivery	0.203*	0.479***
Service_Systems	-0.008	0.376***
Skills	0.254*	0.492***
Joint_Planning	0.270**	0.396***
Innovation	0.269**	0.362***
Business_Focus	0.189	0.242*

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

4.5.1 Communication

H1 stated that *the greater the communication between the IS department and the business, the greater will be IS performance*.

- The correlation coefficient of communication and IS impact is 0.194. This indicates a positive correlation between communication and IS impact. The p-value is above 0.05 which indicates that communication and IS impact are not significantly correlated.
- The correlation coefficient of communication and IS internal efficiency is 0.246. This indicates a positive correlation between communication and IS internal efficiency. The p-value is 0.015 ($p<0.05$) which indicates that communication and IS internal efficiency are significantly correlated. Therefore, as communication increases, IS internal efficiency also increases.

This suggests that when frequent meetings are held between IS users and IS staff, when the IS department frequently exchanges information with IS users and when there are managers assigned to specifically focus on IS-business communication, then the IS department is more likely to complete projects on time and within budget, and IS operational efficiency is increased.

Therefore H1 is partially supported.

4.5.2 Service Delivery

H3 stated that *the greater the ability of the IS department to deliver service, the greater will be IS performance*.

- The correlation coefficient of service delivery and IS impact is 0.203. This indicates a positive correlation between service delivery and IS impact. The p-value is 0.045 ($p < 0.05$) which indicates a statistically significant relationship. Therefore, as service delivery increases, IS impact also increases.
- The correlation coefficient of service delivery and IS internal efficiency is 0.479. This indicates a positive correlation between service delivery and IS internal efficiency. The p-value is 0.000 ($p < 0.001$) which indicates a statistically significant relationship. Therefore, as service delivery increases, IS internal efficiency also increases.

This suggests that when the IS department monitors and understands factors that influence user needs, has the appropriate tools to meet user needs, has operating hours convenient for all users and is well equipped with mechanisms to meet user needs then the IS department is more likely to contribute to organisational efficiency, effectiveness, financial performance and competitiveness. IS internal efficiency is also improved.

Therefore, H3 is supported.

4.5.3 Service Systems

H4 stated that *the greater the quality of service systems and feedback mechanisms, the greater will be IS performance*.

- The correlation coefficient of service systems and IS impact is -0.08 and is not statistically significant.
- The correlation coefficient between service systems and IS internal efficiency is 0.376. This indicates a positive correlation between service systems and IS internal efficiency. The p-value is 0.000 ($p < 0.001$) which indicates a statistically significant relationship. Therefore, as service systems increases, IS internal efficiency increases.

This suggests that the use of tools such as customer surveys to keep in touch with IS user needs and measurement of user satisfaction on a regular basis is associated with improvements in IS internal efficiency.

Therefore H4 is partially supported.

4.5.4 Skills

Hypothesis 5 stated that *the greater the organisational and interpersonal skills of IS staff, the greater will be IS performance*.

- The correlation coefficient of skills and IS impact is 0.254. This indicates a positive correlation between skills and IS impact. The p-value is 0.012 ($p < 0.05$) which indicates a statistically significant relationship. Therefore, as skills increases, IS impact increases.
- The correlation coefficient of skills and IS internal efficiency is 0.492. This indicates a positive correlation between skills and IS internal efficiency. The p-value is 0.000 ($p < 0.001$) which indicates a statistically significant relationship between skills and internal IS efficiency. Therefore, when skills increases, IS internal efficiency increases.

The skills items of customer orientation emerged as the ease with which the IS department can be contacted by its customers and IS staff continuously collecting and analysing data to observe any changes in the business' service priorities; skills also refers to the IS department selecting staff with the appropriate interpersonal skills to interface with IS users and thoroughly training the staff members who must interface with IS users on issues such as interpersonal communication. This means that when the IS department pays close attention to its customers to the extent that they ensure that they closely monitor customer engagement, then IS impact and IS

internal efficiency increases, more so, IS internal efficiency as this is in the coal face, closer to the customer and more apparent if there are any changes in performance.

Therefore H5 is supported.

4.5.5 Innovation

H6 stated that *the greater the innovation in IS departments, the greater will be IS performance*.

- The correlation coefficient between innovation and IS impact is 0.269. This indicates a positive correlation. The p-value is 0.007 ($p < 0.01$) which indicates a statistically significant relationship. Therefore, as innovation increases, IS impact increases.
- The correlation coefficient between innovation and IS internal efficiency is 0.362 which indicates a positive correlation. The p-value is 0.000 ($p < 0.001$) which indicates a statistically significant relationship. Therefore, as innovation increases, IS internal efficiency increases.

In order for the IS department to contribute to organisational effectiveness, efficiency, competitiveness and financial performance this finding suggests that the IS department should innovate, which can be done through encouraging users to capitalise on new technologies, encouraging the introduction of new technologies into the organisation and continuously investigating ways to create business value. Innovation also leads to increased IS efficiency.

Therefore, hypothesis 6 is supported.

4.5.6 Alignment

Hypothesis 7 stated that *the greater the alignment between IS and business strategies and plans, the greater will be IS performance*.

- The correlation coefficient of joint planning and IS impact is 0.270 which indicates a positive correlation between joint planning and IS impact. The p-value is 0.007 ($p < 0.01$) which indicates a statistically significant relationship. Therefore, when joint planning increases, IS impact increases.
- The correlation coefficient of joint planning and IS internal efficiency is 0.396 which indicates a positive correlation. The p-value is 0.000 ($p < 0.001$) which indicates a statistically significant relationship. Therefore, when joint planning increases, IS internal impact increases.
- The correlation coefficient of business focus and IS impact is 0.189. This indicates a positive correlation with IS impact. The p-value is 0.189 which indicates that the correlation is not statistically significant.

- The correlation coefficient of business focus and IS internal efficiency is 0.242. This indicates a positive relationship with IS internal efficiency. The p-value is 0.016 ($p < 0.05$). This indicates a statistically significant relationship. Therefore, as business focus increases, IS internal efficiency increases.

This suggests that when the IS department trains IS staff on the organisation's business, creates joint opportunity forums to share ideas with the business, jointly develops business and IS plans, ensures that the IS strategy makes specific reference to the business strategy and objectives, and IS investments being targeted at specific business priorities then IS impact and IS internal efficiency are improved.

Therefore, hypothesis 7 is mostly supported; support was found for the following three relationships:

- Joint planning and IS impact
- Joint planning and IS internal efficiency
- Business focus and IS internal efficiency

4.6 Multiple Regression

Most of the dimensions of customer orientation were correlated to the two dimensions of IS performance, which raised the question of what the relative effects of the different dimensions of customer orientation were on the dimensions of IS performance. To address this question multiple regression was run, but first it was necessary to assess the correlations of the variables. Table 14 shows the inter-correlations; although correlations are not greater than 0.70, there clearly is some collinearity between the dimensions of customer orientation which might still become problematic for multiple regression testing. This is not unexpected, however, because the theoretical foundation of customer orientation dimensions does not require strict independence and recognises the likelihood of the close coexistence of these concepts. The impact of multicollinearity is to reduce any single independent variable's predictive power by the extent to which it is associated with the other independent variables (Hair et al., 2006).

Table 14: Pearson Correlations: Between Customer Orientation Dimensions

	Communication	Service_ Delivery	Service_ Systems	Skills	Joint_ Planning	Innovation	Business _Focus
Communication	1						
Service_Delivery	0.195	1					
Service_Systems	0.243*	0.327**	1				
Skills	0.518***	0.373***	0.316**	1			
Joint_Planning	0.406***	0.369***	0.296**	0.505***	1		
Innovation	0.292**	0.395***	0.172	0.307**	0.404***	1	
Business_Focus	0.213*	0.285**	0.215*	0.288**	0.334**	0.290**	1

Correlation is significant at the following levels:

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

The correlations between the dimensions were a little high. It was decided to split the dimensions of customer orientation into two groups:

- Those that were more operational in nature. Egan and Shipley (1995) defined the following dimensions which are more operational in nature:
    - Communication
    - Service Delivery
    - Service Systems
    - Skills
- Those that were more strategic in nature. Gray et al. (1998) defined the following dimensions, which are more strategic in nature:
    - Joint Planning (Alignment)
    - Business Focus (Alignment)
    - Innovation

Not only were the above groups theoretically meaningful, but the grouping eliminated some of the concerns around collinearity.

The following tables depict the results of multiple regression, both groups using IS internal efficiency as the dependent variable:

IS Internal Efficiency / Operational Dimensions of Customer Orientation

To maximise the prediction from the independent variables, multiple regression (MR) was run on the two groups of customer orientation dimensions separately. The dependent variable is IS internal efficiency.

R^2	0.370
F Statistic	13.680
Significance of the F	0.000

Table 15: MR - IS Internal Efficiency and Operational Dimensions of Customer Orientation

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Variable	**B**	**Std. Error**	**Beta**		
Communication	-0.030	0.090	-0.032	-0.335	0.739
Service_Delivery	0.332	0.100	0.301	3.318	0.001
Service_Systems	0.122	0.062	0.176	1.976	0.049
Skills	0.326	0.091	0.324	3.576	0.001

The results show that the model explains approximately 37% of the variance in IS internal efficiency. This is a significant finding ($p < 0.001$). Service delivery, service systems and skills have a significant influence on IS internal efficiency at the $p < 0.001$, $p < 0.05$ and $p < 0.001$ respectively. This means that of the four operational dimensions of customer orientation, service delivery, service systems and skills are the more important variables for IS internal efficiency.

IS Internal Efficiency / Strategic Dimensions of Customer Orientation

R^2	0.212
F Statistic	8.420
Significance of the F	0.000

Table 16: MR - IS Internal Efficiency and Strategic Dimensions of Customer Orientation

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
Variable	**B**	**Std. Error**	**Beta**		
Joint_Planning	0.211	0.079	0.277	2.679	0.009
Innovation	0.224	0.101	0.226	2.217	0.029
Business_Focus	0.081	0.094	0.084	0.855	0.395

The results show that the model explains approximately 21% of the variance in IS internal efficiency. This is a significant finding ($p < 0.001$). Joint planning and innovation have a significant influence on IS internal efficiency at the $p < 0.01$ and $p < 0.05$ respectively. This means that of the three strategic dimensions of customer orientation, joint planning and innovation are the more important variables for IS internal efficiency.

IS Impact

In the case of IS impact, only four of the independent variables that correlated with IS impact were included in multiple regression analysis; joint planning and innovation as the strategically oriented dimensions and service delivery and skills as the operationally oriented dimensions of customer orientation.

The operational dimensions explained only 21% of IS impact. The strategic dimensions explained only 10% of IS impact. The low R^2 is not surprising given the difficulty in predicting the impact of IS on organisational performance. The failure to find support for correlation between some customer orientation dimensions and IS impact reflects the difficulty in attempting to predict higher order measures of IS performance which, due to the existence of multiple intervening and confounding variables, are difficult to control for.

4.7 Summary

This chapter presented the results of this empirical study. The following table summarises these results:

Table 17: Summary of Results

	IS Performance	
Hypothesis	**IS Impact**	**IS Internal Efficiency**
H1 - *The greater the communication between the IS department and the business, the greater will be IS performance*	Not supported	Supported
H2 - *The greater the IS department's understanding of the business needs, the greater will be IS performance*	N/A Dropped	N/A Dropped
H3 - *The greater the ability of the IS department to deliver service, the greater will be IS performance*	Supported	Supported
H4 - *The greater the quality of service systems and feedback mechanisms, the greater will be IS performance*	Not supported	Supported
H5 - *The greater the organisational and interpersonal skills of IS staff, the greater will be IS performance*	Supported	Supported
H6 - *The greater the innovation in IS departments, the greater will be IS performance*	Supported	Supported
H7 - *The greater the alignment between IS and business strategies and plans, the greater will be IS performance* **(Joint Planning)**	Supported	Supported
H7 - *The greater the alignment between IS and business strategies and plans, the greater will be IS performance* **(Business Focus)**	Not supported	Supported
H8 - *more IS leadership shows support for customer orientation, the greater will be IS performance*	N/A Dropped	N/A Dropped

The analysis has shown that innovation and joint planning are the important dimensions of customer orientation for IS impact. The analysis also shows that communication, service delivery, service systems, skills, innovation, joint planning and business focus are all very important dimensions of customer orientation for improving the perceptions of IS internal efficiency.

The next chapter discusses the findings with reference back to the literature presented in Chapter 2.

5 Chapter 5 – Discussion of Findings

5.1 Introduction

The purpose of this chapter is to discuss the findings of the study. The initial sections reflect on the literature presented in chapter 2 in light of the findings. Following this a description is provided on how the results impact the theory and what insights were obtained that can push the theory forward. Finally a summary of the chapter is provided.

This study aimed to explore the concept of customer orientation in the context of an IS department and examine its role in influencing IS performance outcomes. Marketing literature cited customer orientation as a key determinant of business performance (Hennig-Thurau, 2004; Hajjat, 2002; Narver and Slater, 1990; Deshpande et al., 1993) and this study aimed to show the relevance and impact of an IS department's customer orientation on IS performance.

Considerable marketing research has shown that organizations are more successful when they embrace a customer orientation (see Berry and Parasuraman, 1997; Deshpande et al., 1993; Jaworski and Kohli 1993; Narver and Slater, 1990). Although theory is continuously refined, the importance of customer orientation in driving organizational performance is largely undisputed; nevertheless, the literature is only modestly descriptive of the processes for implementing this desired orientation (Kennedy et al., 2003). This is more so in the case of IS where IS literature is not overly descriptive on applying customer orientation in IS; the findings of this study refine and expand theory from the marketing arena to the IS context.

The following dimensions of customer orientation were explored with reference to the work of Egan and Shipley (1995), Gray et al. (1998), Berry and Parasuraman (1997), Pitt et al (1995) and Jiang et al (2003):

- Communication
- Understanding
- Service Delivery
- Service Systems
- Skills
- Innovation
- Alignment
- Leadership Support

Most of the dimensions were empirically confirmed; however Understanding and Leadership Support were dropped during factor analysis because of the low loadings of the items measuring these two dimensions on any one factor.

The original Alignment dimension emerged as two dimensions, Business Focus and Joint Planning.

It was found that the empirically confirmed dimensions of customer orientation could be divided into two groups, those that were operational in nature and those that were strategic in nature:

- Operational (as defined by Egan and Shipley, 1995):
    - Communication
    - Service Delivery
    - Service Systems
    - Skills
- Strategic (as defined by Gray et al., 1998):
    - Innovation
    - Business Focus
    - Joint Planning

IS performance also emerged as consisting of two dimensions, IS impact and IS internal efficiency. IS impact is more externally focused, leaning more towards the impact that IS has on overall organizational performance; and IS internal efficiency is more internally focused, leaning more towards the efficiency of the IS department internally. This is consistent with Nelson and Cooprider (1996) who say that IS group performance is conceptualized in two parts: operational performance and service performance. These dimensions of performance capture two different aspects of IS performance; the "inward" operational activities of production and development, and the "outward" service activities of customer service i.e. the contribution that IS makes to line group's success in meeting its strategic goals (Nelson and Cooprider, 1996).

5.2 Hypothesis Fully Supported

Because IS performance was determined to be made up of two factors, IS impact and IS internal efficiency, only those hypotheses that were supported both from an IS impact and IS internal efficiency perspective are considered to be fully supported.

5.2.1 Service Delivery

Similar to Hirschheim et al.'s (2003) findings, this study found that for IS to create a strategic advantage for the business it must develop the ability to deliver systems when needed and to affect business objectives through IT implementation. This is a reflection of IS performance. When the IS department monitors and understands factors that influence user needs, has the appropriate tools to meet user needs and is well equipped with mechanisms to meet user needs then the IS department is more likely to contribute to organisational efficiency, effectiveness, financial performance and competitiveness. Jiang et al. (2003) found that end users and IS staff report reliability as an important dimension to IS service quality. Jiang et al. (2003) define reliability as the IS department's ability to deliver at the time they committed to and when users have a problem, the IS department showing a sincere interest in solving it. This is consistent with the findings of this study.

Service Delivery refers to the ability to accurately meet the stated requirements of customers (Egan and Shipley, 1995); in meeting the requirements of customers, the IS department fulfils it's mandate and this is a reflection of IS performance. Literature says that service delivery impacts performance and this study has shown that service delivery is a determinant of IS impact and IS internal efficiency.

5.2.2 Skills

Rockart et al. (1996) say that the IT-business relationship is critical to an IT organisation's ability to add value to the business. They emphasise the importance of training IS staff in interpersonal skills and business knowledge, saying that this leads to successful systems and improved relationships which in turn leads to improved IS performance. The findings of this study are consistent with this view. This study has found that when the IS department selects staff with the appropriate interpersonal skills to interface with IS users and trains staff appropriately and when the IS department is easy to contact then IS impact performance is improved.

Without the business to serve, the IS department does not have a purpose. It is thus critical that the interface between the IS department and its customers creates a sensitivity to customers needs that allows the IS

department to better deliver value. The skills possessed by those who interface with the customer are critical in this regard.

5.2.3 Innovation

Bassellier and Benbasat (2004) said that as business relies even more strongly on partnerships between IS and business people, a different perspective of how IT professionals view their organizational contributions is needed for organisations to remain competitive. They suggest that innovation in the IS department contributes to IS performance. This is also reflected in the results of this study which have determined that when the IS department encourages IS users to capitalise on new technologies, encourages the introduction of new technologies into the organisation and continuously investigates ways to create business value in services offered without a specific request from IS users then IS performance improves.

While Bassellier and Benbasat (2004), Saunders and Jones (1992) and others have not explicitly tested innovation as having an impact on IS performance, this study has not only adopted innovation as a dimension of customer orientation, but it has also tested and provided empirical support that innovation leads to IS performance. Innovation would lead to IS performance because innovation is about continuously investigating ways to create business value in services offered without a specific request from IS users. The key word here is creating business value; it is through creating business value that the IS department truly performs.

5.2.4 Joint Planning

Teo and King (1999) said that business planning (BP) and IS planning (ISP) integration involves the coordination of BP and ISP activities so that IS strategies are aligned with business goals and business strategies; if there is no coordination between BP and ISP, it would be very difficult for the IS function to adequately support business objectives and strategies or to contribute to achievement of competitive advantage. The findings of this study support this statement; the findings suggest that when the IS department creates joint opportunity forums where the business and IS share ideas and solutions and when business and IS plans are jointly developed then IS contributes to overall organisational effectiveness, efficiency, financial performance and organisational competitiveness. It also means that IS projects are delivered on time, within budget and that IS operational efficiency is increased. Teo and King (1999) hypothesised that the extent of BP-ISP integration influences organizational performance directly. Consistent with this study's finding, Teo and King (1999) found that integration has an overall positive relationship with IS performance.

5.3 Hypothesis Partially Supported

Hypotheses that are partially supported are those that have either the IS impact or the IS internal efficiency perspective of IS performance supported, not both.

5.3.1 Communication

Nelson and Cooprider (1996) found that shared knowledge between IS groups and their line customers lead to improved IS group performance. One of the antecedents of shared knowledge in Nelson and Coopriders's (1996) study is communication. They suggest that communication leads to increased shared knowledge which in turn leads to increased IS performance. This is in line with the findings of this study that communication, as a dimension of customer orientation, contributes to performance. Nelson and Cooprider (1996) refer to the fact that repeated and frequent communication contribute to IS performance. This study has found however that communication does not necessarily lead to high IS impact in the form of IS contributing to organisational efficiency, effectiveness, financial performance and competitiveness. Communication rather leads to improved IS performance through projects completed on time and within budget, IS operational efficiency and all implementations being planned for.

Communication has more of an impact on the more immediately inwardly focused aspects of IS performance such as IS projects being delivered on time, on budget and project implementations involving checks and approvals. This is not surprising because communication involves frequent engagement with the customer through frequent meetings, a dedicated customer representative from maintaining contact, frequent information exchange and a dedicated manager to focus on IS-business communication. This level of detail in communication suggests a focus on operational activities of production and development and hence communication influences IS internal efficiency.

5.3.2 Service Systems

Consistent with expectations, having service systems in place has a positive impact on IS internal efficiency. Berry and Parasuraman (1997) said that firms intent on improving service need to continuously listen customers, that without the voices of customers guiding investment, all companies can hope for are marginal gains. Service systems implies using methods such as customer surveys, focus group interviews and customer advisory panels to keep in touch with IS user needs and regularly measuring IS user satisfaction. Service systems would have a greater impact on IS internal efficiency than IS impact because when users provide feedback to the IS department, it would typically be on operational issues that relate directly to IS operational

efficiency, completion of projects on time and completion of projects within budget. This implies short term implications rather than long term implications such as improved organisational efficiency, effectiveness, financial performance and competitiveness reflected in IS impact.

According to Berry and Parasuraman (1997) the benefits of an effective service system are:

- Encourages and enables management to incorporate the voice of the customer into decision making.
- Reveals customers' service priorities.
- Identifies service improvement priorities and guides resource allocation decisions.
- Allows the tracking of performance over time.
- Offers performance based data to reward excellent service and correct poor service.

These benefits are more operationally aligned and hence the findings that service systems have a positive influence on IS internal efficiency.

5.3.3 Business Focus

Contrary to expectation, business focus was partially supported; it does not seem to contribute to IS impact. One would expect that if the IS strategy makes specific reference to the business strategy and objectives and if IS investments are always targeted at specific business priorities, then IS would contribute to overall organisational effectiveness, efficiency, financial performance and competitiveness. However, the results show otherwise. This may be because of the different levels at which alignment may occur between the IS department and business. Teo and King (1999) say that there is a significant difference between the levels of organizational impact that are associated with proactive types of BP-ISP integration (where BP feeds into ISP and ISP feeds back into BP and BP and ISP are conducted as an integrated process) and those associated with reactive types (where there is separate BP and ISP with administrative integration in scheduling, budgets, etc or BP feeding into ISP and not vice versa). The level of alignment between IS strategy and business strategy was not clearly defined in this study which might explain why business focus was partially supported.

Business focus does however contribute to IS internal efficiency. IS internal efficiency is reflected by the ability of the IS department to deliver projects on time and on budget; it is also reflected by IS implementations being planned for and the reliability of IS systems. This suggests that if the IS strategy makes specific reference to the business strategy and if IS investments are always targeted at specific business priorities, then IS work is driven by specific business objectives, suggesting project driven initiatives that are more focused in the IS department. This results in improved IS internal efficiency.

5.4 Hypothesis not Tested

The following hypotheses were not tested because the dimensions of customer orientation were dropped as they were deemed not to be valid or reliable dimensions of customer orientation:

- **H2 -** *The greater the IS department's understanding of the business needs, the greater will be IS performance*

In hindsight, "understanding" is a concept that underlies many of the dimensions of customer orientation. By implication, for instance, for service delivery to occur and for alignment to be in place, there has to be some understanding of the users needs on the part of the IS department. A suggestion for future research is to use the items used to define understanding to further refine the other dimensions that overlapped with understanding such as service delivery, skills and alignment.

- **H8** – *The more IS leadership shows support for customer orientation, the greater will be IS performance*

Jaworski and Kohli (1993) found that it is important that top managers continually emphasise the importance of customer orientation through emphasising the need for ongoing tracking and response to market developments to their employees. Perhaps this study was not explicit enough in the definition of Leadership Support and how it is operationalised; hence the dimension had to be dropped. A suggestion for future research is to further define Leadership Support and how it is translated into practice. This can then be reviewed in future customer orientation and leadership support studies.

5.5 Insights

Overall, this study provides empirical evidence of the importance and usefulness of customer orientation in increasing IS performance. As such, it represents a step in an ongoing stream of research to improving IS performance.

As a measure of IS performance, IS impact, reflected through the contributions of IS to improved organisational effectiveness, efficiency, financial performance and competitiveness is shown to be of relatively smaller magnitude, perhaps because of the well-known methodological difficulty in finding a direct relationship between IS and financial impact measures (Teo and King, 1999). This elusive link between IS and organizational performance has given rise to much research examining the appropriate dependent variable(s) to measure IS success as reflected by DeLone and McLean (1992). This could be the reason why IS internal efficiency was supported more that IS impact in the testing of the hypothesis.

Until this study, IS literature had not yet explored the concept of customer orientation and its impact on IS performance. This study adopted the customer orientation concept from marketing literature and sought to apply it to IS. Marketing literature said that customer orientation leads to improved organisational performance and this study applied this to the IS context by investigating the impact of customer orientation of IS performance.

Overall this study found that increased customer orientation leads to increased IS performance. This study has provided a framework for how IS performance can be improved through customer orientation. This study suggests that IS managers should be taking a closer look at the level of customer orientation in their respective departments and identifying those opportunities to improve customer orientation. This will lead to improved customer orientation. Chapter 6 will provide managerial guidelines in this regard.

5.6 Summary

This chapter has discussed the findings of the study and reflected on the literature presented in chapter 2 in light of the findings in chapter 4. Insights on how theory can be pushed forward were presented.

The next chapter highlights the implications of these findings for both practitioners and researchers and recommendations for further research are made.

6 Chapter 6 – Conclusion

6.1 Introduction

The previous chapters outlined the theoretical foundation for the hypothesised relationships between customer orientation and IS performance, the methods employed to test these relationships and the results of the tests and data analyses. Chapter 5 discussed the findings of the study and major results. In this chapter the implications of these findings for practitioners are discussed. Some of the limitations of this study that may affect the validity and generalisability of the results are also highlighted and recommendations for further research are made.

6.2 Implications for Practitioners

Several practical implications can be derived from the key findings of this study. This study has established that customer orientation contributes to IS performance. From a practitioners perspective, the identification of customer orientation as a determinant of IS performance implies the need to introduce or enhance customer orientation in IS departments. To achieve customer orientation and therefore improve IS performance, practitioners, in this instance IS managers, must implement the following suggestions in their IS departments:

6.2.1 Communication

Communication can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Hold frequent meetings between the IS department and IS users** - This gives IS staff an opportunity to interact with IS users and better understand their needs.
- **Have a customer representative from the IS department who contacts and maintains frequent communication with IS users** - Having a customer representative maintaining frequent communication with IS users ensures that the lines are always open between the IS community and the general user base. This does not necessarily mean a senior manager in the IS department, but rather someone that users can be in touch with if they have any issues.
- **Frequently exchange information with IS users** - This can be in the form of newsletters to make users aware of what is happening in the IS community, it could be information on the latest trends in technology that may be relevant to the user's work or it could be updates on IS projects that are being undertaken on behalf of the users.

- **Have assigned "managers" to focus specifically on IS-business communication** - This means that there are dedicated senior people in the IS department who focus on IS-business communication and have an intimate knowledge of customer needs and ensure that those needs reach the IS department, are sufficiently interpreted and addressed by the IS department. These are dedicated account managers who understand individual user needs and communication is more specific to specific client needs rather than being more generic and targeted at a broader audience.

6.2.2 Service Delivery

Service delivery can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Monitor exogenous factors that influence the needs and preferences of the business such as government regulations and competitor's actions** - This enables the IS department to give a more holistic service to their customers as it equips the IS department with a knowledge of the bigger picture in terms of what influences the needs of its customers. Having this broader knowledge will enable the IS department to provide a better services to its customers.
- **Have the appropriate tools and methodologies to meet IS user needs** - Without the right tools to meet customer needs, even the most well intentioned IS departments will fail. While it is imperative that IS departments fully understand they requirements of their customers, they also need to be able to have the right tools in place to be able to meet those needs. IS managers need to constantly assess whether or not they have the right tools in place to meet IS user needs and if not, ensure that they acquire the necessary tools.
- **Have operating hours convenient to all IS users** - Without the ability to reach the IS department, IS customers will not have their requirements met at the time that they require them to be met. This suggests a lack of responsiveness on the part of IS and this could undermine IS performance. While IS departments may not be able to have operating hours convenient for all users, IS departments should strive toward meeting this requirement for the majority if not all users. This of course needs to be balanced with variables such as the cost of operations, the criticality of user needs and the availability of resources to meet the demand.
- **Be well equipped with the right hardware and software most useful for IS user needs** - In this day and age where most users are dependent on using computers for their work, users require the most up to date and relevant software and hardware relevant for their needs. IS departments need to assess whether or not

the hardware and software that they provide to users is relevant for the users needs. This assessment will also have benefits for the IS department in that only that which is relevant is procured and utilised which could result in cost savings for the IS department.

6.2.3 Service Systems

Service systems can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Use methods such as customer surveys, focus group interviews and customer advisory panels to keep in touch with IS user needs -** These channels give IS users opportunity to raise issues, concerns and requirements to the IS department.
- **Measure IS user satisfaction with IS service on a regular basis** - Through knowing the satisfaction levels of IS users with IS department service, the IS department can institute measures to improve their service and consequently their performance. IS departments must constantly seek feedback from their customers regarding the service they receive. This will allow the IS department to understand its shortcomings and where it is doing really well. This encourages the notion of continuous improvement in IS departments.

6.2.4 Skills

Skills can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Make it easy for IS users to contact the IS department** - It must be easy for IS customers to contact the IS department. IS departments need to create a simple means of contact that is convenient and accessible for all its customers; this way IS users can reach the IS department and therefore the IS department can meet and address user needs.
- **Continuously collect and analyze data to observe any changes in the business' service priorities** - Beyond what is verbalised voluntarily by IS customers, the IS department needs to constantly gather data on and observe any changes in customers' service priorities. This means really being in tune with customers, prompting them for information and monitoring their priorities.
- **Select staff with the appropriate interpersonal skills to interface with IS users -** Because it is crucial to send the right messages to customers and to correctly interpret messages from customers, it is imperative that the IS departments selects staff with the correct interpersonal skills such as active listening, negotiation

skills and team building. The personnel that interact with customers must reinforce a favourable image of the IS department.

- **Thoroughly train the staff members who must interface with IS users on issues such as interpersonal communication skills -** Over and above selecting appropriate staff to interface with customers, the IS department must constantly train and assess those IS staff who interface with customers. This is to ensure that they are equipped with the appropriate skills and knowledge as the face of the IS department.

6.2.5 Joint Planning

Joint planning can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Provide IS staff with training on the organisation's business such as its business unit processes and organisational challenges -** While the focus on the IS department is on technology and IS staff must have the required skills in this regard, the IS department must train IS staff on business unit processes and organisational challenges. IS exists to enable business requirements and strategies, therefore it is imperative for IS staff to understand what business processes the technology is meant to enable and what business problems the technology solutions are meant to address. In order to recommend and provide the correct technology solutions, the IS department must have a full understanding of the business process and challenge. This can be achieved through training IS staff accordingly.
- **Create joint opportunity analysis forums where IS and organisational divisions share ideas and discuss alternative solutions -** Joint opportunity analysis forums allow for sharing of ideas and solutions to business problems. IS can get a view from IS users on how a particular problem could be solved and they translate this into IS solutions. It is a forum for debate and discussion that could lead to improved IS performance.
- **Jointly develop business and IS plans** – Problems associated with the IS planning process concern the suitability of inputs as well as the involvement of non-IS staff; they include the lack of user or business involvement and the failure to take organisational goals and strategies into account. Failing in the ability to align IS strategies with business strategies affects IS performance. To promote the achievement of organisational goals, IS planning must be tied to organisational planning. Therefore in the development of IS and business plans, there must be involvement from both the IS and user communities.

6.2.6 Innovation

Innovation can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Encourage IS users to capitalise on new technologies** – The IS department must continuously make IS users aware of the latest trends in technology that are relevant to the users, this can be done through channels such as "technology days" where users get to test or "sample new technologies and inviting IS users to technology conferences to learn about new technologies in their fields.
- **Encourage the introduction of new technologies into the organisation** – While this must be done within reason from a cost perspective, IS departments must periodically review the technologies available in the organisation and in the market and encourage the introduction of new technologies. The IS department would need to dedicate resources (people and money) towards understanding these technologies before introducing them but the benefits could be very significant for addressing user needs and improving IS performance.
- **Continuously investigate ways to create business value in services offered without a specific request from IS users** – The IS department must not always necessarily wait for a request from its customers to initiate improvements, it must constantly investigate opportunities to improve the services it offers. This can be done having a dedicated research unit that is continuously investigating ways to improve processes and services.

6.2.7 Business Focus

Business focus can be operationalised in IS departments through the following actions; these may not necessarily apply to all IS environments:

- **Ensure that the IS strategy makes specific reference to the business strategy and objectives –** Because the IS department is there to address business requirements and problems through technology, it is imperative that the IS strategy makes reference to business objectives. The IS department should not operate as a silo in the organisation; the IS strategy must reflect those issues that IS intends on addressing.
- **Always target IS investments at strategic business priorities** – In line with the IS strategy making specific reference to business objectives, the IS investments must be targeted at strategic business priorities. This means that when IS makes significant investment to projects, hardware or software, this should be with the aim of addressing business requirements and problems. This fosters a more focused IS department and instils confidence in the business that IS prioritises their needs.

6.3 Research Limitations

The present research has some limitations that should be noted. There is a threat of respondent bias since the subject pool was restricted to senior managers in the IS department and did not include customers of the IS department. It is possible that the perceptions and opinions of the IS department managers may be different from those of IS department customers. Jiang et al (2003) say that in general, IS personnel are more satisfied with their own performance than are the users. They say that this overall result is not unexpected, that personal bias will more likely favour oneself. A multi-respondent approach that includes the IS department customers may have increased confidence in the observed data.

Although the results of this study contribute to the body of knowledge on IS performance, the generalisability of these results cannot be confirmed. The respondents of this study covered a wide breadth of organisations in South Africa and this suggests that the results of this study should prove robust in other contexts. However, the predictive value of results is not fully certain and begs for further research in other contexts such as other countries and other industries.

6.4 Recommendations for Further Study

This study intended to determine the effect of customer orientation on IS performance. This study started first by defining the dimensions of customer orientation and through empirical analysis determined which of those dimensions were relevant to IS performance. It is possible that certain dimensions are relevant for certain industries. Future studies should develop a theoretical basis to explain the relevance of certain dimensions of customer orientation to specific industries.

Another area that should be explored in future studies is that of the relevance of the role played by IS in the organisation; whether IS use is relevant and strategic to overall organisational performance or whether it is merely a support function that is not too relevant to the overall performance of the organisation. These scenarios could impact the extent of customer orientation that an IS department would strive for.

Saunders and Jones (1992) suggested that in terms of dimensions measuring IS performance, these are subjective and need to be balanced; they say that in earlier stages of IS development, the dimensions that are more operational in nature may be considered more important whereas in organisations with more mature IS departments, the more strategically inclined dimensions were more relevant. This study's aim was not to refine IS performance measurement. It instead relied on dimensions previously defined in literature. A

suggestion for future study is to further refine the measurement of IS performance as this may impact the results of a study such as this one.

From the customer orientation perspective, in IS, this study did not rank the relative importance of the different dimensions of customer orientation. Ranking the dimensions of customer orientation has been done before in marketing literature (see Egan and Shipley, 1995) but not from an IS perspective. Ranking these dimensions may depend on a number of organisational factors and the stage of the organisation's IS maturity.

Because the concept of customer orientation has been around for a long time, more prominently in the marketing arena, a suggestion for future research is for an investigation into the constraints that may have impeded IS practitioners from implementing and promoting the concept of customer orientation in their respective organisations. While IS departments likely have some form of customer orientation in place, a more structured approach to customer orientation is required where there is customer segmentation and development of more appropriately tailored services to customers. Future studies should explore the enablers and inhibitors of customer orientation in IS departments.

Problems with the measurement of the two dimensions of customer orientation, understanding and leadership support requires that they be further examined in the IS context. In this vein, future research should seek to further define these dimensions of customer orientation and determine the appropriate items to measure these concepts such that they can be interpreted appropriately in the IS community. This interpretation may have led to their being dropped in this study as dimensions of customer orientation.

The concept of customer orientation is an ongoing phenomenon. This concept and its dimensions were measured at a static point in time rather than as it develops in organisations thus losing some richness of explanatory power. A longitudinal study to examine changes in customer orientation over time in IS departments would be an alternative method of capturing this richness. This longitudinal study should also explore the responsibilities of IS management, IS users and IS staff in enabling this concept within organisations.

This study also found that there was a degree of collinearity between the dimensions of customer orientation; a suggestion for future research is to explore this collinearity in more detail and perhaps define more succinct dimensions of customer orientation relevant to the IS context. Future studies should examine the nature of the inter-relationships between the dimensions of customer orientation.

6.5 Conclusion

This survey based empirical study examined customer orientation in 98 organisations in South Africa. It found that customer orientation is an important determinant of IS performance. By leveraging marketing literature and examining customer orientation in the IS context, it has added to the body of knowledge on the factors that influence IS performance.

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Appendix A: Questionnaire

SECTION A

*** The terms "customer", "the business" and "IS users" in this survey refer to business functions supported by your IS (IT) department.**

Double click on the most applicable box to choose your response.

Please indicate the extent to which you agree with each of the following statements relating to your IS (IT) department, its operations and its interactions with the business*:*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Frequent meetings are held between IS staff and IS users.	☐	☐	☐	☐	☐
2. A customer representative from the IS department contacts and maintains frequent communication with IS users.	☐	☐	☐	☐	☐
3. The IS department frequently exchanges information with IS users.	☐	☐	☐	☐	☐
4. The IS department has assigned "managers" to focus specifically on IS-business communication.	☐	☐	☐	☐	☐
5. The IS department understands what attributes of its service IS users value the most.	☐	☐	☐	☐	☐
6. The IS department monitors exogenous factors that influence the needs and preferences of the business such as government regulations and competitors actions.	☐	☐	☐	☐	☐
7. IS initiatives are based on the understanding of the business needs as provided by IS users.	☐	☐	☐	☐	☐
8. The IS department has the appropriate tools and methodologies to meet IS user needs.	☐	☐	☐	☐	☐
9. When users have a problem, the IS department shows a sincere interest in solving it.	☐	☐	☐	☐	☐
10. The IS department has operating hours convenient to all its users.	☐	☐	☐	☐	☐
11. The IS department is well equipped with the right hardware and software most useful for IS user needs.	☐	☐	☐	☐	☐
12. The IS department uses methods such as customer surveys, focus group interviews and customer advisory panels to keep in touch with IS user needs.	☐	☐	☐	☐	☐
13. It is easy for IS users to contact the IS department.	☐	☐	☐	☐	☐
14. The IS department continuously collects and analyzes data to observe any changes in the business' service priorities.	☐	☐	☐	☐	☐
15. IS user satisfaction with IS service is measured on a regular basis.	☐	☐	☐	☐	☐

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
16. The IS department selects staff with the appropriate interpersonal skills to interface with IS users.	☐	☐	☐	☐	☐
17. The IS department thoroughly trains the staff members who must interface with IS users on issues such as interpersonal communication skills.	☐	☐	☐	☐	☐
18. IS staff perceive themselves as having the ability to serve IS users.	☐	☐	☐	☐	☐
19. IS staff receive training on the organisation's business such as its business unit processes and organisational challenges.	☐	☐	☐	☐	☐
20. The IS department encourages IS users to capitalise on new technologies.	☐	☐	☐	☐	☐
21. The IS department encourages the introduction of new technologies into the organisation.	☐	☐	☐	☐	☐
22. IS staff are continuously investigating ways to create business value in services offered without a specific request from IS users.	☐	☐	☐	☐	☐
23. IS staff take on roles that are more entrepreneurial in nature and focus on innovation through IS.	☐	☐	☐	☐	☐
24. The IS department creates joint opportunity analysis forums where IS and organisational divisions share ideas and discuss alternative solutions.	☐	☐	☐	☐	☐
25. Business and IS plans are jointly developed.	☐	☐	☐	☐	☐
26. The IS strategy makes specific reference to the business strategy and objectives.	☐	☐	☐	☐	☐
27. IS investments are always targeted at strategic business priorities.	☐	☐	☐	☐	☐
28. The CIO / IT Manager shares a company wide vision for the role of technology and information with IS staff.	☐	☐	☐	☐	☐
29. Senior IS managers regularly articulate business satisfaction drivers to IS staff.	☐	☐	☐	☐	☐
30. Senior IS managers regularly articulate to IS staff customer oriented values.	☐	☐	☐	☐	☐
31. IS contributes to overall organisational effectiveness.	☐	☐	☐	☐	☐
32. IS contributes to overall organisational efficiency.	☐	☐	☐	☐	☐
33. IS contributes to organisational financial performance.	☐	☐	☐	☐	☐
34. IS contributes to improved organisational competitiveness.	☐	☐	☐	☐	☐
35. IS projects are always delivered on time.	☐	☐	☐	☐	☐
36. IS projects are always delivered on budget.	☐	☐	☐	☐	☐

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
37. The IS department has in place planning strategies for all implementations undertaken i.e. project implementations involve checks and approvals	☐	☐	☐	☐	☐
38. IS operational efficiency is satisfactory (e.g. system availability, reliability and responsiveness).	☐	☐	☐	☐	☐

SECTION B

Background Information

This information will help identify trends in data and will help in comparing this study's results with similar studies.

1. What industry sector does your organisation operate in?

Government	☐	Utilities	☐	Telecommunications	☐	Manufacturing	☐	Retail	☐
Financial Services	☐	Other (please specify)							

2. What is your job title?

Chief Information Officer	☐	IS/IT Manager	☐	IS/IT Director	☐	General Manager: IS/IT	☐	Systems Manager	☐
Other (Please Specify):									

3. What is the size of your IS department (No. of employees)?

4. How long has the organisation been using IS (IT)?

Thank you for taking time to fill this survey. Please check whether you have answered all the questions.

If you require the outcomes of this study (summary only, no organisation names) please provide your contact details below:

Name:

E-mail Address:

Any additional comments: