THE IMPACT OF THE ALIGNMENT BETWEEN INFORMATION SYSTEMS AND MARKETING ON BUSINESS PERFORMANCE

by

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A thesis

submitted to Victoria University of Wellington

in fulfilment of the

requirements for the degree of

Doctor of Philosophy

in Information Systems

Victoria University of Wellington

2006

Abstract

The purpose of this research was to determine the impact of the strategic alignment between information systems (IS) and marketing on business performance.

The work of Chan (1992) was used as a point of departure. She had explored the fit between IS and business strategies and had used strategic orientation as a basis for determining the fit (alignment). Although the marketing literature did not reveal any measure for alignment, measures existed for market orientation. This appeared to be the approximate marketing equivalent of strategic orientation. Given the strategic nature of market orientation, it was decided to use it in addition to strategic orientation in order to calculate alignment. It was also decided to use marketing performance as an intermediary dependent variable.

A conceptual model was devised which could be applied to the assessment of alignment according to either strategic orientation or market orientation. It consisted of three constructs: alignment, marketing performance and business performance. Implicit in this model was the calculation of alignment based either on strategic orientation or on market orientation. Two versions of the model would thus be tested.

A mixed methods approach was adopted for the research. First, a qualitative phase of interviews with 36 respondents (the heads of information technology (IT)/IS and the heads of marketing of 18 companies) was conducted. The purpose was to obtain a deeper understanding of perceptions of alignment between IS and marketing, and to ascertain the different measures used for marketing performance and business performance. The findings served to refine the conceptual model and inform the second phase survey.

The second phase was quantitative and consisted of a mail survey of heads of IT and heads of marketing of large New Zealand companies. In total 415 responses were received, 350 of them being pairs from 175 companies.

Pairs of responses were a requirement for the calculation of alignment. A new formula was developed for the calculation. This was used to calculate alignment according to both strategic orientation and market orientation.

The data collected in the second phase were used to test the model, using both factor analysis and structural equation modelling. Statistically significant evidence was provided that indicated that the alignment between IS and marketing exerts a positive impact on both business performance and marketing performance, and that marketing performance exerts a positive impact on business performance. This is so, irrespective of whether alignment is calculated according to strategic orientation or market orientation.

The value of the research lies in the development of a parsimonious model which measures the alignment between IS and marketing and the impact of that on business performance. It also lies in the development of a robust formula for the calculation of alignment. It further demonstrates the value of a cross-disciplinary approach which could have significant implications for both academic research and for practitioners. The potential impact on companies consists of the breaking down of the silo mentality; an emphasis on cross-functional teamwork, cross-functional training and job rotation; and an impact on organizational structure and culture.

Acknowledgments

I wish to express my sincere thanks and appreciation to the following people and organizations who have supported me in this venture:

- My chief supervisor, Professor Sid Huff, for making this such a happy, enjoyable and rewarding experience. He hasd been unstinting in his preparedness to advise and guide, and wise in the insights and direction he provided.

- My co-supervisor, Professor Peter Thirkell, for his ongoing support and enthusiasm. He, too, has consistently provided meaningful guidance.

  I have been inspired and challenged by them both. They have helped me learn so much.

- The companies, in particular the heads of IT and marketing, who participated in my research. I appreciate their willingness to take part, and the time and effort they spent in doing so.

- Tony, my dear husband, for his constant love and support and for all the sacrifices he made to help me achieve this milestone.

- My daughters, Philippa and Melanie, for their ongoing enthusiasm and delight in my venture.

- My family and friends all over the world, for always being supportive and interested.

- My colleagues, for their constant encouragement and willingness to provide advice.

- Victoria University of Wellington, for availing me of this great opportunity and the wherewithal to embrace it.

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Chapter 1: Introduction

1.0   Chapter Overview

This chapter introduces the topic of the dissertation in the context of the current status of academic research and practitioner needs. It identifies the gap in the research, and this is then translated into the research question and research objective. The research method is outlined, including the research methodology that is used to address the research objectives. The value and importance of the research is indicated. Finally, an outline of the main chapters of the dissertation is provided.

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1.1   Motivation for the Research

Management literature abounds in reports of empirical studies which demonstrate how information technology and/or information systems (IT/IS) has been and can be used to the strategic advantage of an organization and can impact positively on business performance (e.g. Finlay, 1992; Galliers, 1993; Ross, Beath & Goodhue, 1996; Service & Boockholdt, 2000). Similarly, the strategic importance of marketing and its positive impact on business performance has been strongly emphasized (e.g. Jain, 1997, p. 14; Kotler & Armstrong, 1996, p. 43). However, in most organizations these two functions tend to pursue their strategic directions in a relatively separate fashion (Pender, 2001), linked only by the overarching business strategy (Berthon, Hulbert & Pitt, 1999). Furthermore, the relationship between IS and marketing is

sometimes even perceived to be a troubled or less than optimal relationship (Avital & Vandenbosch, 2000; Vandenbosch & Avital, 2000; Ward & Peppard, 1996).

On the other hand, indications are that where there is a close link between the two functions, the organization appears to reap the benefits handsomely with significantly strong business performance (Fletcher & Wright, 1997; Sashittal & Wilemon, 1994; Murphy, 1999; Winer, 2001).

In the current business climate, high environmental turbulence is experienced by most industries. In order to address this turbulence optimally, organizations need to deploy their resources as efficiently and effectively as possible. In other words, they should seek to use that which is within their control to best advantage. That also means seeking synergies and leverage wherever it is possible. A strong alignment between IS and marketing at a strategic level would potentially provide such synergy and ultimately benefit the business performance.

More recently businesses have placed more and more emphasis on the customer. This is evidenced by the increasing focus on relationship marketing and customer relationship management (CRM). The considerable role of IS and the Internet in these practices also points to the need for the two functions to work together in a synergistic fashion in order to enhance the overall business performance.

Furthermore, with the increased focus on the Internet and electronic business in the past 15 years, and on mobile commerce more recently, it would seem logical for IS and marketing to be working much more closely together. Indications are that such an alignment willl become all the more imperative – and the promise of the rewards all the larger (Kraemar & Dedrick, 2002).

It would thus seem that considerable advantage could be gained by organizations through ensuring a close link or alignment between IS and marketing.

1.2 Research Gap

Although the studies already referred to (Fletcher & Wright, 1997; Sashittal & Wilemon, 1994; Murphy, 1999; Winer, 2001) indicated positive outcomes from a close link between IS and marketing, they focused on operational aspects or sub-areas of marketing such as CRM. Furthermore, apart from preliminary, exploratory studies by Hooper and Van Erkom Schurinck (2002, 2003) there do not appear to have been any studies which have focused on the strategic aspect. None has examined the link between IS and marketing at a strategic level and then determined the impact of that link or alignment on business performance.

From an IS perspective, the concept of strategic alignment has been most prominently addressed with regard to IS and organizational strategies. Studies by Papp (1998), Henderson and Venkatraman (1993), Papp, Luftman and Brier (1996), and Tallon and Kraemar (1998) indicated the positive impact of the alignment between IT and business on business performance, while research by Chan (1992), Chan and Huff (1993) and Chan, Huff, Barclay and Copeland (1997) demonstrated how the alignment of the strategic orientation of the business and the strategic orientation of IS can have a positive impact on business performance. The emphasis of this latter group of studies on strategic orientation was prompted by the work of Venkatraman (1985, 1989b) who had developed one of the few measures of business strategy. Venkatraman (1985) had focused on strategic orientation and developed a valid measure for the construct. This was then used as the basis for Chan's (1992) measurement of alignment, or 'fit' as it was then termed, and subsequently for the other studies.

From a marketing perspective, the concept of alignment has been addressed mainly with regard to the alignment of the organization with its market or customer needs (Mitchell, 2001). A specific measure for strategic alignment involving marketing does not appear to exist.

The strategic orientation of marketing also does not appear to have been specifically researched. However, the notion is captured in part by the view expressed by Noble,

Sinha and Kumar (2002) who interpreted market orientation as being a type of strategic orientation. On the other hand, research by Matsuno and Mentzer (2000), Morgan and Strong (1998), and Vorhies and Morgan (2003) indicated a distinction between strategic orientation and market orientation.

Market orientation has been the topic of much research, the most prominent being that of Narver and Slater (1990) and Kohli and Jaworski (1990). Both these studies were prompted by the need to address the marketing concept, which can be described as a business philosophy which focuses on the customer and the competition. These two studies became the bases for further exploration of the concept and the development of suitable measures for market orientation (e.g. Kohli, Jaworski & Kumar, 1993; Deng & Dart, 1994; Gray, Matear, Boshoff & Matheson, 1998). All of them posited and/or demonstrated the positive effect of market orientation on business performance.

There do thus not appear to have been any studies which have measured the strategic alignment between IS and marketing. While there have been studies which have measured the strategic alignment of IS and business, there does not seem to have been any such study involving IS and marketing.

1.3   Research Question and Research Objective

The main research question that thus arises is:
- What is the impact of the strategic alignment between IS and marketing on business performance?

Translated into the research objective, the aim of the research then becomes:
- To determine the impact of the strategic alignment between IS and marketing on business performance.

Although indications are that that impact should be positive and significant, this has never been researched in depth nor has a model been conceived and tested to validate the proposition.

The combination of two disciplines provides an interesting challenge in that different conceptualizations of more or less the same notion might exist. While strategic orientation has been used to measure the strategic alignment of IS and business, strategic orientation has not been used much at all in the marketing discipline, let alone to measure the alignment between marketing and business. Instead, market orientation has been used in the marketing discipline. It is seen by some as similar to strategic orientation but not by others. Stemming from the different approaches of the two disciplines, the more operational question then becomes:

- On what basis should strategic alignment between IS and marketing be measured or assessed?

However, at this stage only a thorough literature search could provide insight into the formulation and operationalization of constructs. It could also provide direction for the conceptualization of a model to reflect the focus of the main research question.

1.4   Research Methodology

A comprehensive review of the pertinent literature was thus first undertaken. This facilitated a deeper understanding of the research terrain. It also provided more specific direction for the identification of the further research questions and the eventual formulation of the research hypotheses.

The development of a conceptual model then ensued. The aim of the research methodology was to ultimately test the conceptual model using an appropriate instrument that would measure the key constructs in the research and their interrelationships, predict outcomes, and provide a means of control of the causal variables.

A mixed methods approach was adopted. Not only were the shortcomings of both the qualitative and quantitative approaches compensated but the triangulation of the approaches assisted with concomitant greater insights.

The research was conducted in two phases. The first phase was exploratory and predominantly qualitative. The purpose was to further explore the notions of alignment between IS and marketing, how best it should be assessed, and its dependent variable(s). Data were collected by means of personal interviews. Findings were used to inform the model and enhance the instrument which was developed and applied in the second phase.

The second phase of the research was quantitative in approach and focused on testing the model and validating the measurement instrument of that model. Data were collected by means of a mail survey of large New Zealand companies.

1.5 Value and Importance of the Research

This research envisaged providing a number of significant contributions to both the academic and practitioner communities. Although they will be expanded upon in detail in Chapter 9, together with additional benefits which evolved from the research, the main, initial areas are noted below.

1.5.1 Academic Value of the Research

From an academic perspective, it was envisaged that a number of areas would benefit from this research.

The main contribution would be that, for the first time, the alignment of IS and marketing would have been addressed from a strategic perspective. This would apply to the conceptualisation, the measurement, and the determination of its impact on business performance.

The impact of the alignment between IS and marketing would have been rigorously tested and substantiation would have been provided for this impact, which would be assumed to be positive.

Furthermore, the research would have resulted in the development of a higher level model of the impact of the alignment between IS and marketing on business performance. This model would also have been rigorously tested against the criteria of validity and reliability.

Yet another important contribution of this research would have been the fact that it was cross-disciplinary. Even at the outset, it appeared that the two disciplines of IS and marketing might adopt different strategic approaches. It was envisaged that the combination of these two disciplines would enhance the approaches of each other, or certainly indicate the potential of such a combination.

This research would thus have provided an indication that such studies could be conducted with regard to a combination of other disciplines with either IS or marketing or with one another with the exclusion of either IS or marketing. While the alignment between different functions had been the focus of a number of studies (e.g. Dery, 2003), it appeared that such studies had not been construed in such a way that the impact of that alignment on business performance had been measured.

Finally, alignment has been a matter of concern to both the IS and marketing disciplines for a number of years. This study aimed to address this concern and contribute to the body of knowledge in this regard.

1.5.2 Practitioner Value of the Research

From a practitioner perspective, the research would have addressed a matter of consistent concern to all areas business – that of alignment. As with the academics, this concern has consistently been expressed by practitioners over the past few decades.

It would have demonstrated that stronger alignment at a strategic level between IS and marketing could result in stronger business performance. Although such an outcome is assumed, it has never been substantiated by a rigorous research process. As the

ultimate goal of the majority of companies is profit – or at least sufficient income to continue operating – business managers should not fail to want to try to achieve this..

Furthermore, businesses would have been equipped with an instrument with which to measure the alignment between IS and marketing and the impact on business performance. It is not sufficient simply to indicate to managers that if they pursue a certain path, it will improve their business performance. They need to be provided with the wherewithal to do so. As a result businesses should be able to acquire some insights into what aspects they should be focusing on in order to achieve a stronger alignment. This would impact on their strategic planning and implementation, as well as the evaluation of their current and future initiatives.

The third important contribution envisaged for practitioners was that it would have demonstrated to them how the alignment between two functions could impact on business performance. Such a demonstration would possibly prompt businesses to explore the strategic alignment between other pairs of functions, whether IS and another, marketing and another, or two other functions.

1.6   Dissertation Outline

In addition to this chapter, the dissertation is presented in the following eight chapters. A brief indication of the contents of each chapter is provided.

Chapter 2: Literature Review

The literature review covers the evolution of the concepts of strategic orientation and alignment as well as alternative versions of the latter, such as strategic fit. Consideration is given to the dependent variable. Similarly, the evolution of market orientation research is explored with attention being given to the various marketing outcomes.

Chapter 3: The Conceptual Model and Research Propositions

This chapter covers the developments of the conceptual model which is based on the literature review. Consideration is given to the various components of the model and how best to measure them. Some further considerations are explored and finally the model plus the research propositions are presented.

Chapter 4: Research Design and Methodology

The methodology for testing the conceptual model is described in terms of the research paradigm and the two phases of the research, the first being exploratory and mainly qualitative, the second being mainly quantitative and a means of testing and validating the model. The data collection methods are covered as well as an indication of the data analysis. This chapter focuses more on the underlying theory of the research whereas the next three chapters focus on the practical execution of the research design.

Chapter 5: Phase I - In-depth Interviews

An account is provided of the qualitative interviews, from the development of the interview guidelines on the basis of the literature review, through the data collection procedures, analysis of the findings to a discussion thereof. These findings then further serve to inform the conceptual model and the development of the instrument for the survey.

Chapter 6: Phase II - Survey Instrument Development and Data Collection

This chapter describes in detail the development and testing of the survey questionnaire, the data collection procedures and the preparation of the data for analysis.

Chapter 7: Phase II – Data Analysis

The analysis of the survey data is divided into four separate sections and each of these is recorded in sequence. Firstly factor analysis is undertaken to ascertain which factors should be used in the final model, and then an exploration of how best to calculate alignment. Next structural equation modelling is conducted to determine the validity and reliability of both the measurement aspect and the structural aspect of the model, and finally a regression analysis is performed to ascertain the relative contribution of the dimensions of alignment to its prediction.

Chapter 8: Discussion and Interpretation of Research Findings

This chapter discusses the findings of the research in terms of the research hypotheses and research objectives. It also seeks to highlight any prominent links between the literature review and the first and second phases.

Chapter 9: Conclusion: Contributions of the Research, Limitations, and Directions for Future Research

Finally, the conclusion provides an indication of what the research has achieved in terms of answering the research questions. Limitations of the research are noted and directions are given for areas of possible future research.

1.7   Chapter Summary

The topic of alignment between IS and marketing has been introduced and the research gap identified. The primary question of what the impact is of the strategic alignment between IS and marketing on business performance has been identified, and the resultant research objective formulated. The general research methodology has been described, and the potential value of the research in both the academic and practitioner fields has been highlighted. Finally, an outline of the dissertation chapters has been presented.

Chapter 2: Literature Review

2.0 Chapter Overview

The literature review provides an account and consolidation of the most relevant literature in the fields of IS and marketing as it relates to strategic alignment. The review covers the role of strategy and the measurement of it by means of strategic orientation. The concept of strategic alignment as well as alternative versions of the latter, such as strategic fit, are explored, and a comparison of approaches to strategic alignment is provided. Consideration is given to the dependent variable of strategic alignment. The evolution of market orientation research is also explored with attention being given to the various approaches to measuring it. A comparison of these approaches is provided, and the dependent variable is considered as well as various, more general marketing outcomes.

Chapter contents

2.1 The Role of Strategy

2.1.1 Introduction

Post World War II, large-scale business operations became much more prominent. This was primarily due to increases in the number of competing firms and the number of markets, as well as a greater intervention by governments. As a result, companies changed their approach to business. Initially referred to as a 'business policy'

approach (Certo & Peter, 1990, p. 4), it soon became known as the "strategic management approach".

Having a strategy and conducting business according to it was perceived as essential. To quote Jain (1997, p. 9)),

"Any organization needs a strategy when resources are finite, when there is uncertainty about competitive strengths and behaviour, when commitment of resources is irreversible, when decisions must be coordinated between far-flung places and over time, and when there is uncertainty about control of the initiative."

Strategy can thus be seen to mean the "large-scale, future-oriented plans for interacting with the competitive environment to optimise achievement of organization objectives" (Pearce & Robinson, 1988, pp. 6-7)

Dimensions of strategy usually include:
- requirement of top management decisions;
- allocation of large amounts of resources;
- the likelihood of long-term impact on the organization;
- a future orientation;
- multi-functional or multi-business consequences; and
- consideration of factors external to the organization (Pearce & Robinson, 1988, pp. 7-8).

As with strategy, there are many definitions of strategic management – and apparent disagreement (Certo & Peter, 1990, p. 5). Three, more prominent definitions are:

"an integrated and organizational emphasis on securing and sustaining a competitive advantage within the markets" (Day and Wensley, 1983),

"the set of decisions and actions resulting in formulation and implementation of strategies designed to achieve the objectives of an organization" (Pearce & Robinson, 1988, p. 6), and

"a continuous, iterative process aimed at keeping an organization as a whole appropriately matched to its environment" (Certo & Peter, 1990, p. 5).

However, despite the noticeable lack of agreement on the definition of strategic management, by the end of the 1980's most companies were practising it and benefiting from it (Certo & Peter, 1990, p.5).

The actual implementation of an overall business strategy requires objectives which are integrated and coordinated (Pearce & Robinson, 1988, p. 326). Long-term objectives tend to be more relative, for example, 20% of market share in three years' time, whereas short-term objectives are more absolute, for example, 15% sales increase in the next year (Pearce & Robinson, 1988, p. 327).

Apart from the overarching grand strategy which guides the overall direction of an organization, different levels of strategy can be distinguished. Corporate or business levels have a larger, longer term orientation and focus more on "doing the right thing" (effectiveness), while the functional levels [or regional or any other sub-division of the organization] focus more on "doing things right" (efficiency) (Pearce & Robinson, 1988, p. 9). The implication is that functional areas such as IS and marketing would each have their own strategy which would be similarly guided by the business strategy (McDonald, 1995, pp. 409-417; Holland & Lockett, 1992).

It could thus be assumed that there would be similarities or areas of overlap in the strategies of IS and marketing. The question that thus arises is whether greater similarities in strategy development, and/or a synergistic linkage between the two could result in enhanced business performance.

Each strategy will thus be expanded upon and the strategic linkage between them noted.

2.1.2 IS Strategy and the Strategic Use of IT

The distinction between the strategic use of IT and IS strategy has evolved over time, as has the differentiation between IT and IS strategies. It would appear that IS is more encompassing than IT. Not only does it embrace IT, but also the rest of the organization (internal and external), and the people involved in the development or use of the IT (Jessup & Valacich, 2006). This differentiation also demonstrates a distinction between the higher corporate level role of IS strategy and the lower, more functional level IT strategy which needs to tie in with the corporate or overall business strategy (Holland & Lockett, 1992).

Although IT was historically viewed as a support function (Luftman, Lewis & Oldach, 1993), by the late 1980's it became commonly accepted that IT and business strategies should be interdependent or interlinked (Henderson & Sifonis, 1988; Henderson & Thomas, 1992).

A major driving force behind the strategic use of IT by many organizations has been the desire to create some form of competitive advantage. Many organizations have succeeded in this (see Raymond, Brisoux & Azani, 2001; Turban, McLean & Wetherbe, 2002). More specifically, some have achieved a sustainable competitive advantage (Boockholdt & Service, 2001; Cragg & Finlay, 1991; Finlay, 1992; Gunasekaran, Love, Rahimi & Miele, 2001; Laud & Thies, 1997; Lindsay, Cheney, Kasper & Ives, 1990; Mata, Fuerst & Barney, 1995; Service & Boockholdt, 2000) over their rivals by means of IT. In fact, in 1993, Galliers referred to the movement in the 1980's which sought to find "the Holy Grail of competitive advantage from IT".

A further aspect to consider is whether, as suggested by Porter and Millar (1985), IT should support business strategy or lead it, or whether they should work in tandem - in alignment - so that, depending on the situation, either the one or the other or both would take the lead. Chan and Huff (1992), citing Wiseman (1988) and Rackoff, Wiseman & Ullrich (1985), also recognised this differentiation and were of the opinion that strategic IS were those which either supported or shaped an organization's competitive strategy.

It thus appears that IT/IS has developed from being a support function to one which is of strategic importance to an organization. This was prompted, to a large extent, by the competitive advantage to be gained from IT, and also from the development of IS which embraced aspects of IT, the organization and the people using or developing IT. This resulted in the recognition of the interdependence of IS and business strategies.

2.1.3 Marketing Strategy

The central idea of marketing is to match the company's capabilities with the desires, needs and wants of the customers in order to achieve the objectives of both parties (McDonald, 1995, p. 1). As such, marketing performs a boundary role between the company and its markets. It is this role which is critical to strategy development (Jain, 1997, p. 103).

With the worldwide economic constraints of the 1970's, companies swung their focus to the financial aspects of their business, such as cash flow and return on investment (ROI). Although it was realized that financial objectives would be achieved through market share, the latter was regarded more as a result than a cause. However, the increased popularity of the strategic management approach prompted companies to realize the importance and necessity of a marketing strategy (Jain, 1997, p. 27). This correlated with the swing of emphasis to the importance of the competition (Pearce & Robinson, 1988, p. 6).

Marketing strategy essentially deals with the interplay of three forces: the customer, the competition and the company. Marketing strategies focus on the ways in which the company can differentiate itself effectively from its competitors, capitalizing on its distinctive strengths to deliver better value to its customers (Jain, 1997, p. 21). In free market economies, companies thus compete to outperform the competition and to do so in the most profitable way. The key to such profitability lies in achieving a sustainable competitive advantage based on superior performance (Jain, 1997, p. 14).

Over the years, this focus on marketing competitiveness has become all the more absorbed into company strategies so that models such as Porter's (1985) Five Forces and Value Chain and Ansoff's matrix (McDonald, 1995) have come to be regarded as general strategic tools or models which are applied to other areas such as IS (Turban et al., 2002, p. 90). This would seem to signify that the value of strategic marketing is well recognised.

A number of other factors indicate an increasingly important role for strategic marketing. For instance, declining growth rates of many industries have intensified the struggle for market share. Deregulation in many industries, shifts in channel structures, increased international competition, fragmentation of markets, and changes in customer demographics have also contributed to the situation. So, too, have shorter product life cycles and increased competition in getting to market, as well as the challenge of gaining market share by means other than through cost and quality advantages (Jain, 1997, pp. 27-30).

2.1.4 Linkage between IS and Marketing Strategies

With regard to any form of linkage or synergistic relationship between IS and marketing strategies, the evidence is mixed. Colgate (1998) and Li (1997) found less than desirable outcomes resulting from a linkage between IS and marketing – even in terms of marketing IS. Although some, such as Winer (2001), illustrated how IT in CRM could be used to both the customer's and the firm's advantage, Cina (2002) noted that the CRM process was typically driven by IT – almost to the exclusion of the real objective which was to foster long-term relations with customers. Xu (1999) found that one of the reasons for companies not using marketing IS (MkIS) to support strategic marketing, was that the foci differed and that the focus of MkIS tended to be more internal than external, that is, on competition.

In summary, it is evident that both IS and marketing, as functions, contribute to the achievement of corporate objectives and that they do so by means of their own individual strategies which are guided by the overall business strategy. Both the IS

and marketing strategic approaches display a strong emphasis on the competition and on gaining a competitive advantage. In most instances that advantage should be sustainable and this would then contribute to the ongoing profitability of the company.

While both IS and marketing have alternative strategic emphases, such as the customer, added value creation and the competition, ultimately the challenge still appears to be serving the customer's needs better than the competition and outperforming the competition financially as a result. It follows therefore that to achieve a united outcome or outcomes, IS and marketing must at some point come together or become 'aligned'.

However, before the topic of alignment is addressed, consideration needs to be given to the measurement of strategy. Conceptualizing and assessing the strategy of two entities by similar means, would facilitate the assessment of the alignment between them considerably.

2.2 The Measurement of Strategy

The more common approaches to the conceptualisation of strategy had been to describe strategic planning and its desired outcomes, or to classify strategies into categories. The measurement of strategy remained elusive. However, one conceptualisation and measure of business strategy – that of strategic orientation (Venkatraman, 1985, 1989b) – stands out as significant in this area.

2.2.1 Strategic Orientation

Strategic orientation has long been believed to influence the coherence, stability and assertiveness of organizational strategies (Wood & Robertson, 1997).

Strategic orientation has been conceptualised and defined in a number of ways but the common thread that runs through all is that it describes specific managerial perceptions, predispositions, tendencies, motivations and desires which precede and

guide strategic planning which ultimately lead to organizational performance (Wood & Robertson, 1997). It can thus be regarded as a suitable means of reflecting the strategy of an organization.

Despite the popularity of the Miles and Snow (1978) typology, it was only one of a number of approaches to strategic orientation. These approaches can be grouped into either narrative, as in case studies; comparative according to key dimensions (for example, Miller, 1983); or classificatory, either of conceptual typologies (for example, Miles & Snow, 1978; and Porter, 1985) or of empirically researched taxonomies (for example, Miller & Friesen, 1978).

However, there was generally a weak link between theoretical definitions and their measures so, prompted by the need for a valid measure of the strategic orientation of business enterprises, Venkatraman (1985) addressed the issue of conceptualising and developing such a measure.

The four anchors of Venkatraman's (1985) study were scope – means or end; hierarchical level; domain – functionality; and intentions versus realizations. Venkatraman chose to focus on means (that is, behaviour); senior management levels; all domains, thus excluding a functional orientation; and on realizations (that is, reflecting behaviour). Deciding on an a priori identification of dimensions of strategic orientation of a business enterprise (STROBE), Venkatraman identified aggressiveness, analysis, defensiveness, futurity, innovativeness, proactiveness, and riskiness as the main dimensions. Although the research was operationalized in terms of managerial perceptions, the possibility of using archival material was not excluded. The predictive validity was tested on two dimensions of business performance – growth (effectiveness) and profitability (efficiency).

Venkatraman's (1985) measure thus provided a departure point for the measurement of strategy and what would become the basis of the measurement of strategic alignment.

2.3   Strategic Alignment

2.3.1 An Issue of Concern

Alignment has been widely used in the management and marketing literature to emphasize the importance of aligning the organization to the customer and his needs (Mitchell, 2001). It has also been used to refer to the connection between various functional departments, either between functions (see Lowengart & Vekstein, 2000; O'Leary-Kelly & Flores, 2002; Weir, Kockhar, leBeau & Edgeley, 2000) or of a function(s) with the organization (see Houston, Walker, Hutt & Reingen, 2001; Lander, Matheson, Menke & Ransley, 1995; Oxtoby, McGuiness & Morgan, 2000).

Despite the various foci of alignment, it would appear that the concept has been particularly well addressed with regard to IS and organizational strategies. It will thus be from this perspective that the concept will be explored initially, and in subsequent sections extended to include marketing.

The issue of alignment of IS with organizational strategies or within the organization has been amongst the top ten major concerns of IS and general managers alike for nearly two decades (see Boynton & Zmud, 1987; Brancheau & Wetherbe, 1987; Luftman, 1997; and Niederman, Brancheau & Wetherbe, 1991).

Among the possible reasons for this attention are the indications that IT could enhance an organization's competitiveness (Porter & Millar, 1985) or competitive advantage (Eardley, Lewis, Avison & Powell, 1996); that it could maximise IT investments and lead to profitability (Papp, Luftman & Brier, 1996); and that it could generally have a positive impact on business performance (Venkatraman & Prescott, 1990). In addition, e-business has focused attention increasingly on the transfer of IT from the back room to the forefront of business, thereby bringing the matter of alignment under the spotlight to a greater extent (Buxhaum, 2001).

The concept of alignment has been addressed from a number of perspectives – resulting in different descriptions and definitions. Some refer to strategic alignment

(Henderson & Venkatraman, 1993), some to the alignment of strategies (Baets, 1992), some to the alignment of objectives (Reich & Benbasat, 2000), and others to the alignment of planning (Kearns & Lederer, 2000, 2001). Despite these different appellations, all appear to be connected to some form or part of a strategic initiative. It would thus be reasonably safe to conclude that alignment is generally regarded as a strategic concept whether it carries that qualification or not.

Not only has the concept of alignment been elusive to describe and define but few measurement instruments of it exist. However, in order to describe those instruments and their basic conceptualisations, it is necessary to explore the evolution of the concept itself and its roots in its precursor, strategic fit.

2.3.2 Strategic Fit

The concept of fit gained prominence in the strategic management field primarily because of the basic tenet of matching or aligning organizational resources with environmental opportunities or threats (Venkatraman & Camillus, 1984, citing Andrews, 1971). In addition, because strategic management was a relatively new area of research, the fields of marketing, economics and administrative behaviour were relied upon heavily. They each highlighted the concept of fit. Consequently a number of different meanings and conceptualisations of fit existed. This was coupled with the alternative approaches to the conceptualisation of strategy (Venkatraman & Camillus, 1984).

In 1984 Venkatraman and Camillus suggested that fit be considered a central theme in strategic management. They proposed a conceptual scheme, which distinguished the different perspectives of fit, based on the axes of content of fit or pattern of interactions (process); and domain of fit.

Miles and Snow (1989, p.23) viewed fit as "a dynamic search that attempts to align the organization with its environment" and which ensures that internal resources support that alignment. They conceptualised a framework for fit which consisted of four points: minimal fit, tight fit, early fit and fragile fit.

With regard to the fit between IT and business strategy specifically, King (1978) had been one of the first researchers to focus solely on this link. Further work by Simon and Grover (1993) produced a framework which highlighted the importance of fit between a firm's strategic decisions and IT applications in the attainment of competitive advantage in the international environment.

2.3.3   Strategic Alignment: Development of the Concept

However, by the late 1980's, the commonly accepted view was that IT and business strategies should be interdependent or linked (Henderson & Sifonis, 1988, Henderson & Thomas, 1992). Although IT was historically viewed as a support function (Luftman et al., 1993), Henderson and Venkatraman (1991) were of the opinion that a more balanced, more comprehensive approach was required. This was, in part, prompted by the general inability of companies to realize value from IS investments (Henderson & Venkatraman, 1993).

Henderson and Venkatraman (1991) consequently developed the "Strategic Alignment Model" (SAM). The model depicted strategic alignment as comprising the strategic fit between the internal infrastructure and the externally focused strategies of IT and the business respectively, the strategic integration of the IT and business strategies, and the functional integration of the IT and business infrastructures. This conceptualization of strategic alignment differed from the traditional views of fit in that it signified a fundamental shift in focus for the IT function from the internal to external domain (Henderson & Venkatraman, 1993, 1999).

The SAM was a significant step in the conceptualisation of strategic alignment and one which prompted considerable research, such as that by Luftman et al. (1993). However, the actual measurement of alignment still needed to be addressed.

2.3.4   The Measurement of Strategic Fit/Alignment

Up until the early 1990's, few attempts had been made to quantify fit but, based on the work of Venkatraman (1985, 1989b), Chan (1992) conducted empirical research which developed and validated measurement instruments for assessing IS strategy and strategic fit. She chose to use the term "IS strategic fit" in place of "IT functional integration" which had been used in the SAM. She defined IS strategic fit as:

"the coherence or synergy between business strategic orientation and IS strategic orientation".

In addition, and like Venkatraman (1985), she chose to focus on realized strategy as evidenced through observed IS deployments, as opposed to focusing on strategic intentions. She also chose not to separate IT strategy and IT infrastructure as Henderson and Venkatraman (1991) had suggested but acknowledged that it could be a limitation of her model (Chan, 1992).

Using similar dimensions to those used originally by Venkatraman (1985) to assess the strategic orientation of a business enterprise, Chan (1992) chose identical dimensions for assessing the strategic orientation of business and the strategic orientation of IS. The dimensions were aggressiveness, analysis, defensiveness (internal and external), futurity, innovativeness, proactiveness and riskiness (that is, the extent to which IS supported the dimensions). (Venkatraman (1989b) had later excluded the dimension of innovativeness from his model.) Chan's (1992) model (see Figure 2.1) depicted the IS strategic fit between business strategic orientation and IS strategic orientation as impacting on IS effectiveness and on business performance. Strategic fit was not measured but calculated as a moderation between the strategic orientation of IS and the strategic orientation of business. This model was tested and validated. The strategic fit between the IS and business evidenced a positive impact on both IS effectiveness and business performance.
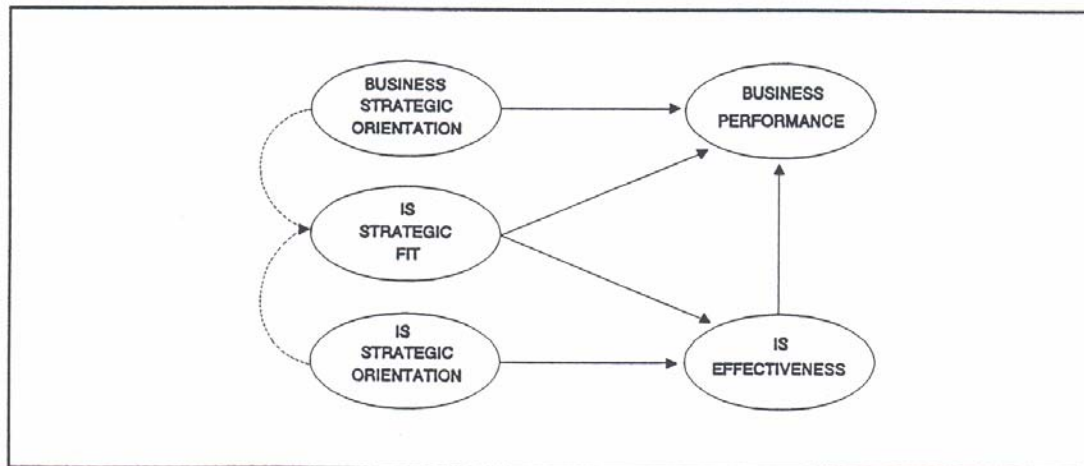
Figure 2.1.   Strategic fit: conceptual model (Chan, 1992)

Based on the seven dimensions of a business strategy as identified by Venkatraman (1985), Chan and Huff (1993) furthered this line of research into the impact of strategic IS alignment on IS effectiveness and business performance. Using a similar model to Chan (1992) they conceptualised strategic alignment as consisting of three phases – awareness, integration, alignment – and they defined alignment as:

"the degree to which the resources being directed to each of the seven dimensions of IS strategy are consistent with the strength of the organization's emphasis on each of the corresponding dimensions of business strategy"

Those dimensions were the same as those used by Chan (1992), with the exclusion of innovativeness.

They found strong relationships between alignment and IS effectiveness and business performance. They also found the latter two factors to be related (Chan & Huff, 1993).

In a further empirical exploration of the model, Chan et al. (1997) altered the original 'riskiness' to 'risk aversion' and reintroduced the dimension of innovativeness. This model was developed to determine the extent to which information systems complemented company strategy, and how they did it.
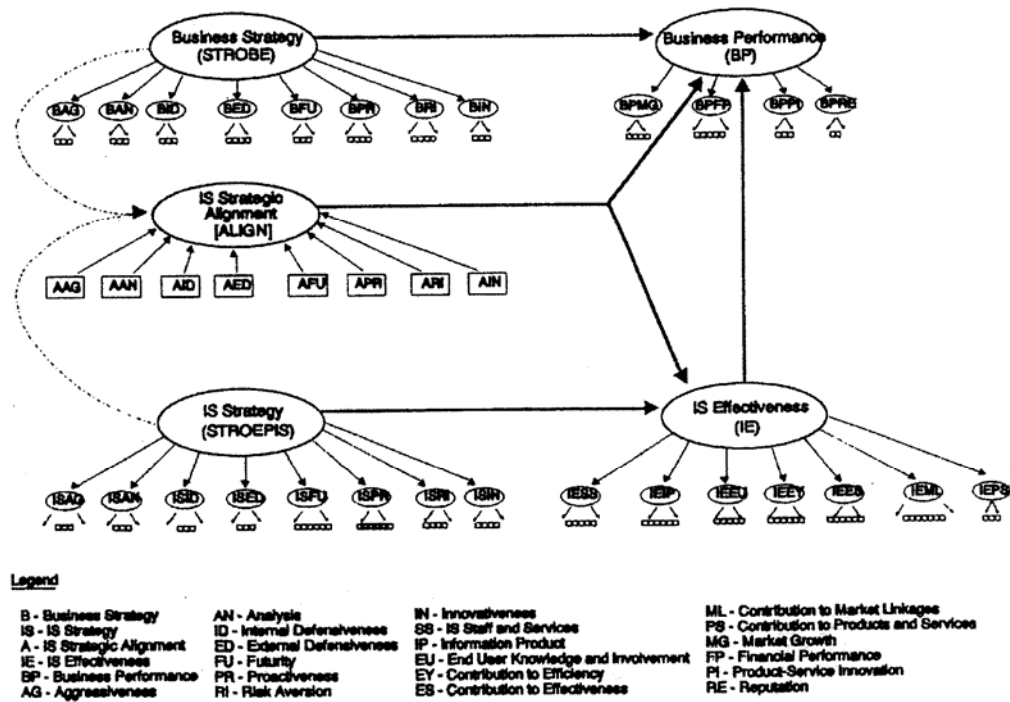
Figure 2.2.   Strategic alignment model utilizing higher order "systems" constructs (Chan et al., 1997)

They found, amongst others, that business strategic orientation, IS strategic orientation and IS effectiveness had positive impacts on business performance, but that IS strategic alignment was a better predictor of IS effectiveness than IS strategic orientation (Chan et al., 1997).

Reverting to other aspects of the Henderson and Venkatraman (1991) model, the SAM, Chan (1999) explored the dimensions of IS strategic alignment and IS structural alignment. She found that the former mattered more to companies than the latter. Companies were more interested in the end, rather than the means.

Further developments included the work of Ragu-Nathan, Ragu-Nathan, Tu and Shi (2001) who conceptualised and successfully tested a model which expanded upon the combined work of Earl (1989), Venkatraman (1989b) and Chan et al. (1997) to test the alignment between IT strategy, IS strategy, information management strategy, and business strategy.

2.3.5   Strategic Alignment: Alternative Approaches

The above approaches to alignment had been mainly from a content perspective. Still using this perspective, Reich and Benbasat (1996) saw 'being linked' (the content) as an outcome of certain organizational processes. They acknowledged the two main dimensions of linkage (which they later called 'alignment'): the intellectual dimension which examined the strategies, structures and planning in organizations; and the social dimension which focused on the values of an organization. The dimensions usually worked in tandem. Reich and Benbasat (1996) argued that while alignment could be seen as an outcome (intellectual), it could also be regarded as a process (social). Their objective was to develop a measure for the social dimensions of linkage between business and IT.

In a later development of their work, Reich and Benbasat (2000) aimed to define the alignment construct, develop measures of alignment and to investigate the organizational influences of alignment. They devised a model which depicted the antecedents of alignment being shared domain knowledge between business and IT executives; and successful IT history. The antecedents impacted on the current practices which were communication between business and IT executives; and connections between business and IT planning. These in turn influenced the alignment.

They found that shared domain knowledge and IT implementation success impacted on communication, which, together with connections, impacted on short-term alignment. An additional factor, short-term business direction/plans, also indirectly influenced short-term alignment. Long-term alignment was impacted upon by shared domain knowledge and indirectly by long-term business direction/plans (Reich & Benbasat, 2000).

Although this provided a viable alternative approach to alignment, research by Hartung, Reich and Benbasat (2000), based on the model of Reich and Benbasat (1996), only partially corroborated the model in the short term but not in the long term.

2.3.6   Strategic Alignment: Comparison of Approaches

In order to obtain a more general overview of the various approaches to strategic alignment, the following consolidation is presented in terms of the different content or process perspectives, the different thrusts of those perspectives, whether the focus was internal or external, the relative role of IS, and the long-term or short-term horizon.

The first studies in this area, such as those of Henderson and Venkatraman (1991, 1993) regarded strategic alignment from a content perspective. Consequently, researchers such as Chan (1992), Luftman et al. (1993), Chan and Huff (1993), Papp, Luftman and Brier (1999) Chan et al. (1997) and Ragu-Nathan et al. (2001) have built on that content perspective. This reflected the intellectual or outcome aspect as noted by Reich and Benbasat (2000) or the realization aspect as noted by Chan (1992).

However, Baets (1992) chose a process perspective. Woolfe (1993) also chose a process perspective, as did Tallon and Kraemar (1998), and Hirschheim and Sabherwal (2001) who viewed strategic alignment as a series of processes over time. In addition, Kotnour, Barton, Jennings and Bridges (1998) saw strategic, higher level alignment as having a process perspective and consisting of the development of strategic direction, definition of roles, alignment of processes, alignment of resources, alignment of the work force, and leading the change.

Combining the merits of both perspectives, Reich and Benbasat (2000), and Kearns and Lederer (2000, 2001) all viewed alignment as consisting of both content and process and incorporated both perspectives into their models.

It thus appears that there have been three main thrusts in the approach to alignment – as content/realized ends; as a process/means; or a combination of both content and process.

Another aspect to consider is the extent to which the various approaches focused on either the internal or external environments of a combination of both. Huff, Huff and Thomas (1992), for instance, stressed the importance of the alignment of internal and

external demands, as had Henderson and Venkatraman (1991) before them. However, Reich and Benbasat (2000) chose more of an internal focus**.**

Most approaches indicated some form of equality between IS strategies and business strategies, although Woolfe (1993) regarded IS as performing a support role, and Kearns and Lederer (2000, 2001) found that the alignment of the IT plan to the business plan, was significantly related to the use of IT for competitive advantage.

Finally, with regard to time horizon and stemming from Venkatraman's (1989b) research, Chan (1992), Chan and Huff (1993), and Chan et al. (1997) all included futurity as a dimension of strategic orientation, which in turn contributed to alignment. Reich and Benbasat (2000) and consequently Hartung et al. (2000) also all included long-term and short-term dimensions of their alignment.

2.3.7 Further Terms to Denote Alignment

Although the term 'alignment' has become the more commonly accepted one in the IT/IS literature to refer to the concept, other terms have also been used. As previously indicated, 'fit' appears to have preceded 'alignment'. Other terms such as 'linkage', 'integration', 'relationship', 'interdependence', 'alliance' and 'partnerships' have also been used.

2.3.7.1   Linkage

Prompted by the IT planning literature, Reich and Benbasat (1996) defined linkage as "the degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives and plans". They differentiated between linkage as a process and linkage as an outcome, reflecting the social and content dimensions. As already indicated, this was the forerunner of their work on alignment (Reich & Benbasat, 2000)

2.3.7.2   Integration

'Integration' has sometimes been used in conjunction with another term to describe the connection between IS/IT and business strategies. Thus Borchers (1998) referred to the fit between business and IT strategies as 'domain integration'. Pun and Lee (2000) proposed a model which integrated various perspectives of competitive advantage with business strategy, IT and IS, and Segars, Grover and Kettinger (1994) explored the categorization of companies, based on the integration, or strategic use of IT, by the company.

2.3.7.3   Relationships

While 'alignment' and 'integration' appear to imply a fairly close connection, 'relationship' implies a looser connection. On top of which, relationships can be more easily tested statistically than either 'alignment' or 'integration'.

Vandenbosch and Avital (2000) and Avital and Vandenbosch (2000) emphasized the relationship between IT and business professionals and the impact on organizational performance, while Cecez-Kecmanovic and Kay (2001) commented on the power shifts in the relationship between IS and the organization as it evolved over time.

From an electronic commerce perspective, Van der Heijden (2000) found that building relationships was a core aspect of the IS/IT function, and Pender (2001) reported that in much of corporate America, companies lost deals because marketing and IT departments worked as separate non-communicating spheres.

Finally, Ward and Peppard (1996) focused on the troubled relationship between business and IT managers, attributing it to organizational culture.

2.3.7.4 Interdependence

Based on a number of case studies, Holland and Lockett (1992) proposed a model which depicted the interdependency between IT and business strategy and the third factor of implementation and organizational change. While two branches of strategy were identified – competitive and creative – the difference between IT strategy and the strategic use of IT was highlighted.

2.3.7.5 Alliances

In an interesting approach, Parise and Henderson (2001) noted that what was important in strategic alliances was not the alliance strategy per se, but the alignment between alliance strategy and business strategy.

2.3.7.6 Partnerships

Another way of referring to the connection is as a partnership. This implies an underlying principle of equality – although not necessarily so.

Ross et al. (1996) found that a partnership between IT and business management, together with strong IT staff and a reusable technology base, could be leveraged to generate sustainable competitive advantage through IT.

In summary, it appears that both 'fit' and 'linkage' manifest the closest resemblance to 'alignment' and that, in fact, both of them have been treated as forerunners and/or components of 'alignment'. 'Integration' seems to imply a connection between dissimilar constructs, as opposed to the similarities which are used as a basis with 'alignment'. 'Interdependence', 'alliances', 'partnerships' and 'relationships' all appear to refer to the closeness of the connection – ranging from the tighter 'interdependence' to the looser 'relationships' – rather than focusing on the basis of the connection as with 'alignment'.

In most studies, irrespective of the term used to refer to the concept of alignment, the dependent variable was either business performance or competitive advantage. The following section explores the approaches to the dependent variable further.

2.3.8   The Dependent Variable of Strategic Alignment

Good or superior business performance is generally seen as the ultimate goal of most organizational activities. Achieving this goal is what drives the corporate strategy which, in turn, drives the strategies of the functional and support departments. An alignment between the strategies of any functional or support department, either with another or with the business strategy, would thus indicate business performance as being the ultimate goal.

Competitive advantage, although a very popular concept or buzzword, has not been graced by as many rigorous measures as business performance. This might, in part, be due to the situational dependence of the concept and therefore the difficulty in comparing such advantages across industries or over periods of time.

Others might argue that competitive advantage is an antecedent of business performance and that measures of the latter would reflect the advantage.

DeLone and McLean (1992) provided a comprehensive taxonomy of the different categories of IS success. The eventual outcome was organizational impact. This taxonomy was expanded upon by Myers, Kappelman and Prybutok in 1997 and included work group impact as a third dependent variable along with the other two, individual and organizational impact. DeLone and McLean updated their taxonomy in 2003 and consolidated the dependent variables into one, net benefits. Despite these expansions, if one interprets organizational impact as being similar to business performance, as in many of the studies cited by DeLone and McLean (1992), then it would appear that most of the studies relating to strategic IS alignment used this ultimate category as the dependent variable, for example, Henderson and Venkatraman (1993), Papp (1998), and Venkatraman, Henderson and Oldach (1993).

Chan (1992) and Chan and Huff (1993) chose to use business performance as well as IS effectiveness as the dependent variables.

However, a number of studies used competitive advantage as the dependent variable, for example, Eardley et al. (1996), Luftman et al. (1993), Raggad (1997), Ross et al. (1996), and Tallon and Kraemar (1998).

When IT/IS is aligned with one or more of the different functions of an organization, the outcome tends to relate to the enhanced performance of that function or else of business performance, or both. (See Dery (2003) with regard to human resources and IT.)

Furthermore, the operationalization or measurement of the dependent variable(s) provided considerable scope as well as ranges of the measures used, for example, with regard to business performance, Chan (1992) and Chan and Huff (1993) used market growth, financial performance, product-service innovation, and company reputation. Henderson and Venkatraman (1993) used, amongst others, improvement in operational costs, increased ability to respond to market conditions, and superior information flow and processing.

At this point it is important to note that while not necessarily used to assess business performance with regard to strategic IS alignment, there are many measures which relate to the impact of strategy on business performance and which could be applied in this context. Chan and Huff (1992) produced a comprehensive list of typical business performance measure used in 19 studies. These included return on equity (ROE), ROI, return on assets (ROA), return on total assets, market share, sales growth - to name the more frequently used measures. Many of them were extended and averaged over a time period, and others were assessed relatively.

With regard to competitive advantage, Cecez-Kecmanovic and Kay (2001) used increase in client loyalty to the company, attraction of better professional staff, and improved quality of service. Kearns and Lederer (2000) used lower costs, creation of barriers to entry, influence of switching decisions, making changes more costly, and electronic links to suppliers and customers. Papp (1999) demonstrated the notion that

business-IT alignment could improve productivity by improving intangibles such as customer satisfaction and service, and thus lead to competitive advantage.

Sethi and King (1994) developed a multidimensional measure for the concept of competitive advantage – Competitive Advantage Provided by an Information Technology Application (CAPITA). The measure consists of the dimensions of efficiency, functionality, threat, preemptiveness and synergy.

IS effectiveness, used by Chan (1992) as one of her dependent variables, was assessed according to satisfaction with IS staff and services, satisfaction with the information product, satisfaction with end user involvement and knowledge, IS contribution to operational efficiency, IS contribution to management effectiveness, and IS contribution to the establishment of market linkages. IS effectiveness was seen to result from IS strategic fit and impact on business performance. Chan and Huff (1993) later used similar measures.

With regard to the measurement of the dependent variable, one should be cognisant of the fact that the perspective which is adopted in the assessment or measurement of performance, influences the outcome. So, too, could subjective or objective measures (Whyte, Bytheway and Edwards, 1997). Seddon, Staples, Patnayakuni and Bowtell (1998) also highlighted this point in noting that accountants, whether management accountants or financial accountants, used different measures of wealth performance, according to the stakeholders for which the information is intended.

2.3.9 Non-strategic Alignment of IT/IS and Marketing

Although much of the essential focus of strategic alignment (and related/substitute terms) has been between IT/IS strategies and corporate strategies, a certain amount of research has focused on the alignment (not strategic) of IT/IS and a specific business function or sub-component of that function.

A number of studies such as those of Fletcher and Wright (1997), Murphy (1999), Ryals and Knox (2001), and Sashittal and Wilemon (1994) found that alignment

between IT/IS and marketing operations led to positive or improved outcomes. Such outcomes were often competitive advantage (Fletcher & Wright, 1997) or innovative offerings (Murphy, 1999).

On the other hand, there have been studies such as those of Fletcher and Wright (1996) and Nelson (1999) which demonstrated that alignment between IT/IS and marketing did not yield the desired results.

Toivonen (1999) was of the opinion that IT could provide considerable benefits to marketing, provided that there was an integration between the marketing planning and IT planning. This presumed that the use of IT was guided by the business strategy and that that strategy was reflected by the IT strategy.

Also with regard to marketing, Carpano and Rahman (1998) found that international firms that integrated their marketing activities with IT use, and matched their international marketing strategies with IT use, gained an increase in market share. Furthermore, Prasad, Ramamurthy and Naidu (2001) found that the integration of Internet technology into marketing activities generally leveraged the influence of market orientation on a firm's marketing competencies which in turn influence the firm's export performance. Srirojanant and Thirkell (1998) also found that Internet technologies were supportive of the customer interaction in relationship marketing.

On the premise that the desired outcome for marketing is the acquisition and maintenance of customer profitability, Sheth and Sisodia (1995) posited that marketing could pursue effectiveness and efficiency and thus achieve productivity by collaboration, rationalization, informationalizing and management. IT could assist in this and the relationship between IT and marketing would be manifested in analytical marketing models, database marketing, front-line IS, Net-base marketing and re-engineering of key marketing processes.

However, Zinkhan (1997) noted that the increasing popularity of the Internet and the corresponding threat to traditional advertising, exemplified the creative destruction of the relationship between marketing and IT.

Although the concepts of strategic orientation and strategic alignment appear to have been more specifically researched from an IS perspective, there is a need to determine whether similar concepts have been embraced by marketing and possibly under alternative names.

An exploration of the marketing literature evidenced very little on the topics of strategic orientation or strategic alignment. However, a significant amount of research had focused on market orientation. It was possible that market orientation was a similar concept to strategic orientation and thus a surrogate for it. The following sections thus expand on the concept and the evolution of research in this area.

2.4   Market Orientation

2.4.1 The Importance of Market Orientation

"Market orientation is the aspect of business that motivates employees throughout the organization to place the highest priority on the profitable creation and maintenance of superior customer value" (Slater, 2001)

Although there are various definitions of market orientation which highlight different aspects of the concept and its implications (Cervera, Molla & Sanchez, 2001; Henderson, 1998), Slater's (2001) definition provides a good indication of the importance to an organization of pursuing a market orientation - ongoing profitability derived from customer value.

In a comprehensive overview of the measurement and scaling techniques used to study market orientation, Wrenn (1997) indicated that the most significantly consistent finding was that a market orientation does improve organizational performance.

In a similar overview, Dawes (2000) summarised the number of studies on the relationship between market orientation and business performance and found that of

the 36 studies conducted in the 1990-1999 period, the vast majority (30) found a positive relationship between market orientation and business performance.

From a slightly different perspective, Morgan and Strong (1998) noted that market orientation led to superior performance over competitors, based on the premise that market orientation could create long-term superior value for customers. This reflects Day and Wensley's 1983 theory of sustainable competitive advantage (Noble et al., 2002).

It would thus appear that not only does market orientation lead to superior business performance, but also that it could lead to sustainable competitive advantage.

2.4.2 Evolution of Market Orientation Research

Market orientation had its origins in the marketing concept, which was first articulated by Drucker in 1954 (Gainer & Padanyi, 2002; Morgan & Strong, 1998)). Contrary to the preceding business approaches which had focused in turn on the production concept, the product concept and the selling concept, the marketing concept placed the emphasis on the customer (McDonald, 1995; Jain, 1997). McNamara (1972) described the marketing concept as a business philosophy which focused on the customer and profit, and which was widely accepted throughout the company, while McGee and Spiro (1988) maintained that the marketing concept could be defined in three ways: as a concept; as a philosophy and as currently implemented.

Towards the end of the 1980's, spurred on by the lack of attention to the marketing concept and its implementation in terms of definition, measurement and empirically based theory, and prompted by researchers such as Deshpande and Webster (1989) and Houston (1986), both Kohli and Jaworski, and Narver and Slater embarked on two separate studies to address the challenge. The outcomes of both pieces of research were published in 1990 (Kohli & Jaworski, 1990; Narver & Slater, 1990).

Kohli and Jaworski (1990) adopted the approach that the implementation of the business philosophy, that is the marketing concept, was what they termed "market orientation". They opted for that term as opposed to "marketing orientation" because it was felt that it focused more on markets which were the concern of the whole company; and also because it thus indicated that ownership of the implementation was not the responsibility and concern of the marketing function alone (Kohli & Jaworski, 1990). Drawing on what little literature was available, Kohli and Jaworski proposed that market orientation was:

"the organizationwide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organizationwide responsiveness to it" (Kohli & Jaworski, 1990).

They also viewed market orientation as a continuous rather than dichotomous, either-or, concept.

Based on exploratory field research, Kohli and Jaworski (1990) proposed a framework which depicted the antecedents of market orientation as consisting of senior management factors, interdepartmental dynamics and organizational systems; the consequences as being customer responses, business performance and employees' responses; and with the moderators of the link between market orientation and consequences as being supply-side moderators and demand-side moderators.
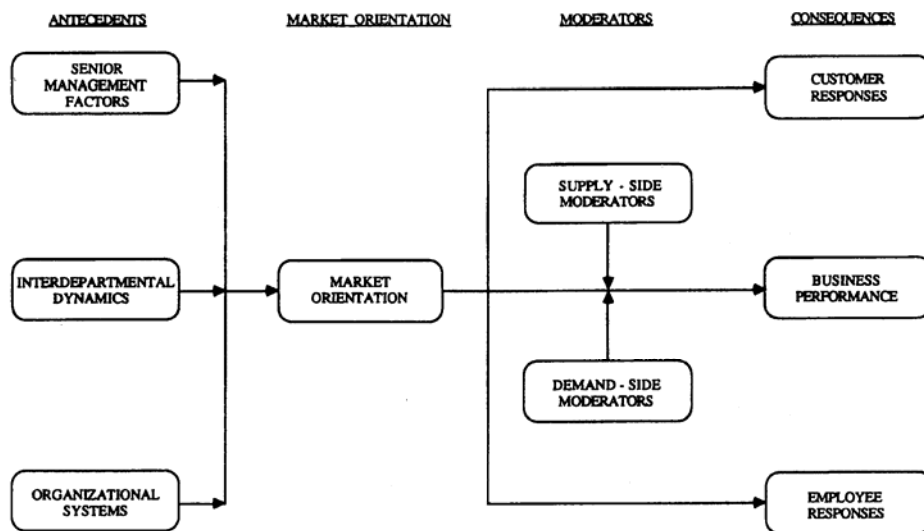
Figure 2.3.   Market orientation: Proposed framework (Kohli & Jaworski, 1990)

Like Kohli and Jaworski, Narver and Slater (1990) had been prompted by the quest to develop a valid measure for market orientation which writers such as Kotler (1984) and Webster (1988) had indicated improved business performance. They devised a framework of market orientation which hypothesized that market orientation was a single-dimension construct which consisted of three behavioural components – customer orientation, competitor orientation and interfunctional coordination – and two decision criteria – long term focus and profitability.

Based on the framework, Narver and Slater (1990) derived a model - the MKTOR model - which depicted three components impacting on business performance – business specific factors (relative costs and relative size), market orientation (customer orientation, competitor orientation and interfunctional coordination), and market-level factors (growth, concentration, entry barriers, buyer power, seller power, and technological change)

```
┌─────────────────────────┐
│   Business-specific factors │
│ Relative cost            │ ──────────┐
│ Relative size            │           │
└─────────────────────────┘           ▼
                                ┌──────────────┐
┌─────────────────────────┐     │              │
│    Market orientation    │     │   Business   │
│ Customer orientation     │ ──▶ │ performance  │
│ Competitor orientation   │     │              │
│ Interfunctional          │     └──────────────┘
│      coordination        │           ▲
└─────────────────────────┘           │
                                       │
┌─────────────────────────┐           │
│    Market level factors  │           │
│ Growth                   │ ──────────┘
│ Concentration            │
│ Entry barriers           │
│ Buyer power              │
│ Seller power             │
│ Technological change     │
└─────────────────────────┘
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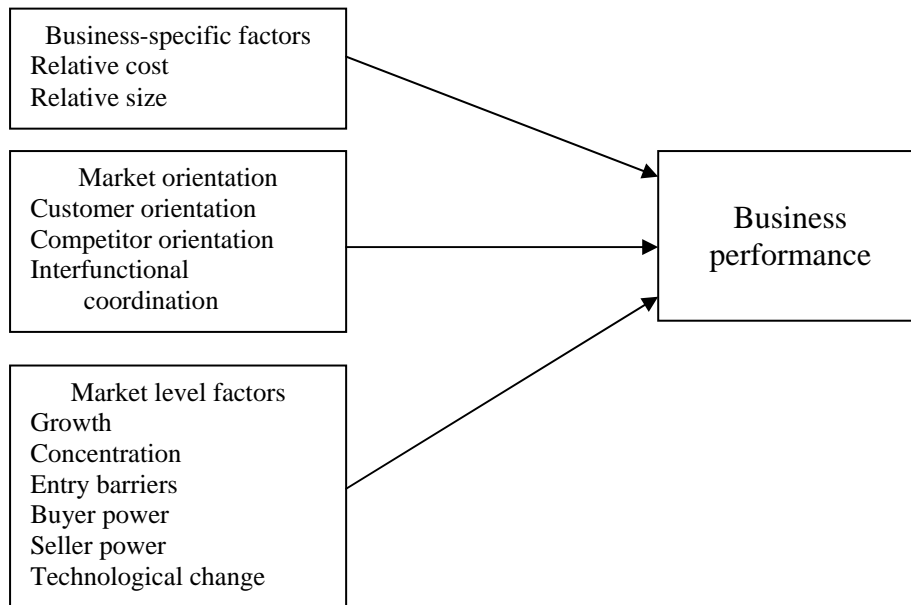
Figure 2.4.   Market orientation (adapted from Narver & Slater, 1990)

Using a sample more than twice the size of Kohli and Jaworski's (1990) sample of 62 managers, Narver and Slater (1990) found support for the relationship between market orientation and business performance, although the relationship between market orientation and profitability in commodity, as opposed to non-commodity, businesses was U-shaped.

It is noteworthy that Kohli et al. (1993), while acknowledging the MKTOR model as being the most comprehensive to date, indicated that there appeared to be too narrow a focus on customers and competition, and that it neglected to take account of the speed of market intelligence generation and dissemination, or of the specific behaviours and activities of market orientation.

Jaworski and Kohli (1993) subsequently set about testing their 1990 model. In an empirical study in which they limited their previous measures of top management and organizational systems antecedents, they studied the impact of market orientation on employees as well as on business performance, the latter relationship being moderated by the environment (market turbulence, competitive intensity and technological turbulence). They found support for their hypothesis that market orientation appeared to be significantly related to a judgmental assessment of overall business performance. However, it was not related to an objective measure of market share.

This was interpreted as a signal that business performance was a multi-dimensional concept and that some components, such as effectiveness and efficiency, might work in contradiction to one another. They also concluded that as none of the environmental factors played a moderating role on the relationship between market orientation and business performance.
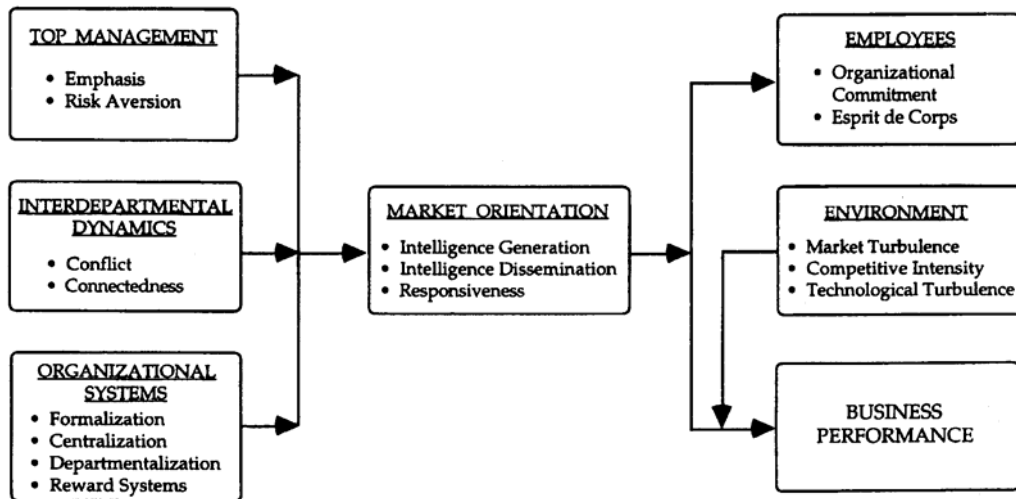
Figure 2.5.   Market orientation (Jaworski & Kohli, 1993)

A further refinement of their model resulted in a 20-item market orientation scale (MARKOR) consisting of six factors - general market orientation, intelligence generation, intelligence dissemination, responsiveness, marketing informant and non-marketing informant (Kohli et al., 1993). Validation tests were moderately supportive of the market orientation construct.

Apart from these two main thrusts of market orientation research, other significant studies were those of Deshpande, Farley and Webster (1993) which focused on the inclusion of the cultural elements of organizations, and of Deng and Dart (1994). The latter regarded the previous measures as being insufficient in capturing the comprehensive nature of market orientation, as well as being very simple measures. Their research led to a more statistically reliable and valid measure of the construct. It also included the profit orientation component which reflected the original work of Narver and Slater (1990) but which emphasized the distinction between such an orientation and profits as an end.

By that stage, researchers were starting to explore the merits of combining what they perceived to be the more suitable factors and measures of both the MKTOR and MARKOR models, and also of extending and enhancing the measures.

Building on the models of Deng and Dart (1994), Kohli et al. (1993), and Narver and Slater (1990), Gray, Matear, Boshoff and Matheson (1998) combined and refined the measures of market orientation and marketing performance to a 20-item measure. This they found particularly appropriate for a New Zealand context. The five dimensions of market orientation were customer orientation, competitive orientation, interfunctional coordination, responsiveness and profit. Interfunctional coordination was later dropped because it displayed low reliability.

In addition, they found that the strength of the market orientation-performance relationship appeared to be weaker in New Zealand than the Deng and Dart (1994) study in Canada, and stronger than in a similar study in the UK (Greenley, 1995) which had used the Narver and Slater (1990) instrument. This highlighted the question of the generalizability of the models across different countries and economic cultures.

Furthermore, in a Maltese context, Caruana (1999) found the generalizability of the MARKOR scale questionable, but in a replicative study conducted in the UK and Malta, Pitt, Caruana and Berthon (1996) found that the instrument was reliable across boundaries – companies, cultures and industries.

With regard to extending either the MARKOR or MKTOR models, in his study Dawes (2000) favoured the Narver and Slater (1990) MKTOR model because of the narrower focus on information sharing, as opposed to interfunctional coordination of the MARKOR instrument. This was despite the fact that he had questioned the different measures of performance, especially the subjective nature of the majority

Prasad et al. (2001) also overcame their criticisms of the existing models and integrated Internet technology into their model which was based on that of Narver and Slater (1990). They found that such an integration had a positive effect on the firm's marketing competencies and export performance.

In the foregoing section the evolution of the more general models and instruments of market orientation has been outlined. A number of studies, however, have focused on different sections of the models, as well as on the different factors comprising the components of the models. The following sections will provide an indication of such studies and their findings.

2.4.3 Focus on the Components of Market Orientation

As already mentioned, Gray et al. (1998) found that the different components of market orientation had differently significant relationships with either the whole performance concept or with its components.

By 2000, Dawes was proposing that the different components of market orientation could have different strengths of impact on business performance; and also that that impact might well have a lagged effect. To overcome the various criticisms of the more prominent models, Dawes used a combination of Narver and Slater's (1990) MKTOR model, Kohli et als' (1993) MARKOR model, and Deng and Dart's (1994) and Deshpande et als' (1993) instruments to explore his hypotheses.

Dawes (2000) found the positive relationship between market orientation and business performance to be robust when measured in both present and time-lagged contexts. He also found that competitor orientation had a strong correlation with performance as measured by profitability, but that customer analysis and responsiveness were not unimportant. However, he did not find a significant association between market information sharing and performance. This was in contrast to the findings of Gray et al. (1998) and signalled an area for future research.

Similarly to Dawes (2000), Beam (2002), Noble et al. (2002), Lukas and Ferrell (2000), Brown, Mowen, Donovan and Licata (2002), Liu, Luo and Shi (2002, Langerak (2001), Ruekert and Walker (1987), Wrenn, Souder and Berkowitz (2000), and Kahn (2001) all favoured a disaggregated perspective and explored the influence

of various components of market orientation on business performance or various aspects thereof.

It would appear that even though market orientation could be regarded as a single dimension construct, there would be significant merit in treating it as a multi-dimensional construct.

2.4.4 Intermediary Consequences of Market Orientation

Another aspect to consider was that although most studies assumed a direct link between market orientation and business performance, a number explored market orientation in the role of intermediary variable.

Slater and Narver (1995) proposed that market orientation impacted on organizational learning which, in turn, influenced customer satisfaction, and new product success which impacted on both sales growth and profitability. Kumar (2002) found that market orientation contributed to organizational competencies which led to superior performance in areas such as cost containment and success of new services.

Building on Narver and Slater's 1990 model, Han, Kim and Srivastava (1998) found that market orientation facilitated an organization's innovativeness and in turn positively influenced business performance. Also with regard to innovation, Lado and Maydeu-Olivares (2001) found that it could be enhanced by the adoption of market orientation principles and then lead, presumably, to superior business performance.

In 1998 Chang and Chen found that market orientation had a strong effect on service quality, and that this then impacted business profitability, and in 2001, Slater proposed that market orientation led to competitive advantage. The assumption would be that this would lead to enhanced business performance.

It thus seems that where market orientation acts in an intermediary role, it is more in connection with the intangible aspects of a business than with the tangible ones.

2.4.5 The Dependent Variable of Market Orientation

With regard to the dependent variable or consequence of market orientation, in the majority of the studies it was business performance. For profit-oriented firms, a variety of different measures was used. These will be expanded upon further below. However, they tended to reflect the generally accepted accounting principles (GAAP) measures, or typical measures of marketing effectiveness such as number of customers. In spite of their accounting focus, the GAAP measures do, nevertheless, accommodate the scope of the firm's operations, for example international or export.

On the other hand, not many studies cited marketing performance, or such synonyms, as the dependent variable, although some of the measures of business performance, such as customer satisfaction and keeping customers (Homburg & Pflesser, 2000), could be construed as such. This provides substantiation for the approach of the marketing concept – and hence market orientation – that it should be the responsibility of the whole organization and not simply the marketing function as might be implied if marketing performance were the dependent variable.

2.4.6 Measures of Performance

Over the course of the development of models of the market orientation-performance relationship, the measures of performance have changed. Initially Narver and Slater (1990) focused on return on investment, return on assets and return on net assets in relation to competitors in a firm's main markets, over the past year. Kohli and Jaworski (1990) used return on investment, profits, sales volume, market share and sales growth. Dawes (2000) opted for profitability indicators of sales growth and profit margins, while Slater and Narver (1994) used return on assets, sales growth and new product success – all relative to competitors over the past five years. Pelham (2000) measured performance with a range of measures including marketing effectiveness, sales growth, market share, and profitability. Other measures have included growth in overall revenue, return on capital, success of new products and services, ability to retain customers, and success in controlling expenses

(Subramanian & Gopalakrishna, 2001) and performance of new products (Ramaseshan, Caruana & Pang, 2002).

With regard to exporting firms, Thirkell and Dau (1998) used level of export over each of the previous five years; export intensity over the same period; and perceptions towards export with regard to strategic outcomes. These were explored from both a subjective and an objective perspective. Rose and Shoham (2002) used change in export sales, export profits, and change in export profits.

It will be noted from the preceding examples of measures and from reference to Appendix 1 that, in addition to absolute market and financial criteria, relative growth in sales, market share and profitability over a specified time were also used

It thus seems that performance measurements differed considerably in their focus and composition. This led researchers such as Pulendran, Speed and Widing (2000) to call for greater attention to the performance effects of market orientation and the variety of measures used.

The different measures of performance, especially the subjective nature of the majority, have also been questioned by writers such as Dawes (2000). However, the high correlation found between subjective and objectives measures in studies of this ilk, were cited by Narver and Slater (1990) as being grounds for the use of both these measures.

2.4.6.1   Influence of the Focus of Studies on Measures of Market Orientation

Depending on the perspective and focus of a study, so the measurement instruments were developed accordingly.

The two most prominent measures of market orientation have focused on behaviours such as intelligence generation (Kohli et al., 1993) and interfunctional coordination (Narver & Slater, 1990). Other studies, such as those of Deshpande and Webster (1989) have highlighted situational aspects such culture, while more recent literature

such as that of Hurley and Hult (1998) has suggested two separate components: market-oriented activities and market-oriented culture.

Some, such as Deshpande et al. (1993) and Noble et al. (2002) have regarded market orientation as a sub-dimension of an organizational cultural construct. Although the cultural perspectives, such as those demonstrated by Homburg and Pflesser (2000) have been acknowledged, this work has typically used behavioural measures for manifestations of culture.

By 2000, Jaworski, Kohli and Sahay were further starting to question the approach to market orientation – whether it should be market-driven as opposed to driving markets. While a market-driven organization was very responsive to customers and general marketplace stakeholders and drivers, a market driving organization was one which had a more proactive role in forming that marketplace and in guiding the customer in certain directions. They noted that the study of market orientation to date had focused on maintaining the status quo, i.e. market-driven, as opposed to the more proactive, yet complimentary approach of driving markets.

2.4.7   Prevalence and Criticisms of the Models/Instruments

It is evident that the two models used in the vast majority of market orientation research were those of Kohli et al. (1993) and Narver and Slater (1990) (see Appendix 1). In some studies, such as that of Pitt et al. (1996), the model, or instrument, was used in its entirety. In others, such as that of Voss and Voss (2000), parts of the model were used, and in yet still others, such as that of Deshpande and Farley (1998) aspects of the two models were combined and sometimes extended/adapted.

However, Morgan and Strong (1998) indicated that in most studies, the Narver and Slater (1990) conceptualisation of market orientation appeared to have been preferred over other alternatives, owing to the apparent superiority of the measures, as noted by Gabel (1995) and Oczkowski and Farrell (1996).

In addition, Mavondo and Farrell (2000) found the Narver and Slater (1990) model preferable for cross-cultural, cross-group or cross-industry comparisons of market orientation.

Citing Hooley and Cox, [Fahy and Shipley] (2000) and Hunt and Morgan (1995), Prasad et al. (2001) also deemed Narver and Slater's (1990) model to be more appealing as it incorporated the intelligence generation and dissemination aspects, and the responsiveness of the Kohli and Jaworski (1990) conceptualisation, as well as cultural aspects of an organization.

Furthermore, again citing Hooley [et al.] and Cox (2000), Prasad et al. (2001) highlighted the fact that the Kohli and Jaworski (1990) model appeared to focus more on marketing orientation as opposed to market orientation, as with Narver and Slater (1990).

Lastly, Prasad et al. (2001) referred to the number of studies which had attempted to combine the more appropriate aspects of both models but which had tended to rely more heavily of the Narver and Slater model – for example, those of Deshpande and Farley (1998) and Pelham (1997b).

However, the Narver and Slater (1990) model has not been without its criticisms. Kohli et al. (1993) criticised the model as having too narrow a focus on customers and competition, and for neglecting to take account of the speed of market intelligence generation and dissemination, or of the specific behaviours and activities of market orientation.

Sigauw and Diamantopoulos (1994) viewed Narver and Slater's (1990) MKTOR instrument as only partially reflecting the proposed dimensions.

With regard to Kohli and Jaworski's 1990 framework, and later the MARKOR instrument (Kohli et al., 1993), they have been criticized for focusing too much on a marketing orientation as opposed to a market orientation (Prasad et al., 2001, citing Hooley [et al.] & Cox, 2000, and Hunt & Morgan, 1995).

Despite its origins, the Kohli et al. (1993) model was criticised by Harris (1996), for possibly losing sight of the customer in its attempt to operationalise market orientation. The focus was on the market and not on the customers. Harris (1996) perceived market orientation to be a state of mind, rather than a flow of information as suggested by Kohli et al. (1993). Harris (1996) also felt that they had not produced a definitive model – the components not being interlinked and the model being too complex.

Bhuian (1998) found the MARKOR instrument was psychometrically weak, and Gray et al (1998) in their refinement of the model, dropped the intelligence generation component because of low reliability.

Pelham (1997b) was of the opinion that the model was too narrow in that it excluded aspects of customer understanding.

Kohli et al. (1993), themselves, noted that there could be a potential ordering among their components of market orientation, and also that the scale items could be revised in future to include more stakeholders.

Harris and Ogbonna (2001) also referred to the detailed criticisms of the Kohli et al. (1993) MARKOR measure by such as Diamantopoulos and Hart (1993), and concluded that, given the number of different contexts in which the Narver and Slater (1990) measure had been successfully applied, it was the more suitable measure.

However, citing examples such as the studies by Diamantopoulos and Hart (1993), Pitt et al. (1996) and Selnes, Jaworski and Kohli (1996), Harris (2000) noted that the Kohli et al. (1993) measure had been widely applied, while the Narver and Slater (1990) model had been the subject of considerable criticism and thus not widely applied.

There are thus a number of points in favour of each model as well as points against them. These are summarized in the table below.

Table 2.1.   Points in favour of, and against the Narver & Slater (1990) and Kohli et al. (1993) models

| Narver & Slater (1990) | | Kohli et al. (1993) | |
In favour	Against	In favour	Against
Apparently the preferred conceptualization of market orientation	Too narrow a focus on customers and competition	Widely applied	Focussed more on marketing orientation than on market orientation
More comprehensive coverage than Kohli and Jaworski's (1990) conceptualization	Neglect of market intelligence generation and dissemination		Not a definitive model
Superiority of measures	The instrument only partially reflects the proposed dimensions		Model is too narrow and loses sight of the customer
Combinations of the two models rely more heavily on Narver & Slater (1990)	Came under considerable criticism and thus was not widely applied		Psychometrically weak instrument – low reliability of some measures
Preferable for cross-cultural, cross-group & cross-industry comparisons			
Applied successfully in a number of different contexts			

Three issues which have frequently been noted as problems in studies, or aspects which need to be addressed in the future are: the appropriateness of some of the measures of business performance; the use of subjective versus objective measures of business performance; and the different weights which might be applied to the components of market orientation.

Market share, particularly, has been identified as a questionable measure of business performance. Jaworski and Kohli (1993) found that market orientation was not related to an objective measure of market share and indicated that lagged measures might be more appropriate. Harris (1996) supported their view. Slater and Narver (1994) felt that market share might be an inappropriate measure because market share was not an objective of all businesses.

Furthermore, Narver and Slater (1990) had indicated that although market growth was an important determinant of profitability, the impact differed across companies.

Slater and Narver (1994) also queried ROE as a measure of business performance, pointing out that market orientation influenced ROA but not capital structure. As ROE was influenced by ROA and capital structure, the ROE might be diluted.

In their original work in 1990, Narver and Slater had noted that areas for future research could include other measures of performance, such as customer retention, new product success and sales growth.

With regard to subjective measures of performance, Deng and Dart (1994), Dawes (2000) and Noble et al. (2002) all questioned the use of such measures. Acknowledging the difficulty frequently encountered in obtaining objective measures, they indicated that subjective measures might not correspond with the factual. A concern expressed by Noble et al. (2002) was that many studies, for example Han et al. (1998) and even Narver and Slater (1990), had shown no direct relationship between objective measures of performance and market orientation.

The fact that different weights might apply to the different components of market orientation was first raised by Narver and Slater in 1990. Jaworski and Kohli (1993) took care to explain that their conceptualisation of market orientation consisted of the unweighted sum of the components. Once more, Slater and Narver (1994) indicated that the relative emphasis of the components should be an area of future research, while both Dawes (2000) and Beam (2002) noted that equal weightings of the market orientation components might lead to skewed results.

Lastly, the long-term focus and profit focus which were originally proposed and subsequently rejected by Narver and Slater (1990) have been severally indicated by Dawes (2000), Gray et al. (1998,) and Noble et al. (2002) as being important components of market orientation.

Each model thus appeared to have its own appeal, depending on the relevant study. However, gaps remained and did not appear to have been completely satisfactorily addressed by any extension, improvement on, or combination of the various models.

In summarizing the various approaches to market orientation, Uncles (2000) highlighted some of the main issues of the status quo which still applied. The first was that there was no universally agreed operational definition of market orientation. While the MARKOR and MKTOR scales were related they were not equivalent, nor were they interchangeable. The second was that there was no resolution on which performance measures to use. Finally, although performance was used as the dependent variable, successful performance could impact positively on the enhancement of a market orientation.

Despite the differences noted, there are decided similarities. There is a common focus on the customer and on the sharing of information, whether about the customer or about the competition and a wider environment. In other words, all reflect the marketing concept.

2.5 Marketing Outcomes

While it is noticeable that the majority of studies on market orientation used business performance as the dependent variable, it is important to consider the measures of marketing performance, independently of market orientation. In focusing on marketing performance, the emphasis swings back to the responsibility of the marketing function specifically, as opposed to the whole organization as in market orientation.

The purpose of considering these various measures of marketing outcome - whether termed 'performance', 'effectiveness', 'productivity', 'success', or 'excellence' – is to assess whether they would be more suitable measures of the market orientation dependent variable, or whether they do, in fact, measure the same aspects by which business performance is measured. In other words, the question is whether marketing performance (whatever the term) is seen as synonymous with business performance or whether it can provide more appropriate conceptualizations and measures of another dependent variable. (Appendix 2 provides a consolidation of the outcomes and their measures.)

2.5.1 Marketing Performance

Up until 1977 there had been a thrust by such authors as Rayburn (1977) for accounting tools to be recognized and applied to marketing in far greater measure so that managers could control their marketing performance.

However, in 1977 first Kotler (1977) and then Kotler, Gregor and Rodgers (1977) produced a standard set of procedures for the measurement of marketing effectiveness. Although these procedures purported to be focusing on marketing performance, the model was actually addressing marketing effectiveness and despite this development advancing the measurement of marketing performance considerably, it addressed the requirements of a marketing performance orientation measurement more than it addressed the measurement of the actual marketing performance.

Following on from the ideas of Kotler (1977), Walker and Ruekert (1987) suggested using effectiveness, efficiency and adaptability as measures of marketing performance.

Finally, in 1988 Bonoma and Clark presented their marketing performance assessment model (Shapiro, 1999) which depicted marketing productivity as being composed of a combination of marketing effectiveness and marketing efficiency. According to the model, marketing performance could also be interpreted by what has been referred to as marketing productivity.

Further work addressing the quandary of measuring marketing performance was carried out by Bhargava, Dubbelaar and Ramaswami (1994), and Herremans and Ryans (1995), and while Wasilewski (2002) and Leong, Randall and Cote (1994) focused on using more subjective measures, Jackson, Ostrom and Evans (1982) and Little (1998) suggested the need to take geographical scope and time scope into consideration.

In 2002, Morgan, Clark and Gooner suggested two distinct approaches – a normative and a contextual marketing productivity analysis system, both of which focused on

effectiveness. The former included, among others, efficiency and adaptability, while the latter measured market performance in terms of customer responses and financial performance, amongst others.

Pursuing the inclusion of effectiveness as a component of marketing performance measurement, Vorhies and Morgan (2003) opted for a measure of marketing performance which consisted of two main components: - marketing effectiveness which was measured using a perceptual measure; and marketing efficiency which was an objective measure.

However, despite all these developments, the reliance on the more traditional methods of measurement persisted, albeit with a greater awareness of the need to be less narrowly focused.

Measurements such as general financial performance (Hansen, Gronhaug & Warneryd, 1990), market share growth (Manu, 1993), profits, market size and growth (Theodorakioglou & Wright, 1998), incremental net present value (Hansotia & Rukstales, 2002), and keeping profitable customers (Nielsen, 2002) have persisted over the decades – even to the present.

2.5.2   Marketing Effectiveness

From the previous section, it would appear that marketing effectiveness was seen by some such as Kotler (1977) as being synonymous with marketing performance. Others, such as Vorhies and Morgan (2003) viewed effectiveness as being a component of marketing performance.

On the other hand, Kotler (1977) focused on operationalizing the concept itself as opposed to an operationalization of the manifestations of the concept as measured by profitability, market share and such like. Further expansions on the measure included the work of Norburn, Birley and Dunn (1988) and Webster (1995).

However, the more traditional, and frequently used, measures of marketing effectiveness persisted. These included profitability, sales volume, brand awareness, return on investment, coverage of market segments (Lai, Huang, Hooley, Lynch & Yau, 1992), market share, purchasing intentions (Howard, Shay & Green, 1988), growth of market share (Bhargava et al., 1994), and sales of new products and new customers (Sherman, 1998), to name a few. This was despite the lament of Wyner (2002b), Wyner (2002a), Llonch, Eusebio and Ambler (2002), and Dekimpe and Hanssens (1995) regarding the paucity and inappropriateness of the measures.

2.5.3   Marketing Productivity

There appears to be no agreed upon definition of marketing productivity, and the measurement of it has not received much attention (Sheth & Sisodia, 2002). Marketing productivity had traditionally been seen in terms of efficiency but such measures often failed to present a holistic picture and focused on the components of marketing such as advertising (Sheth & Sisodia, 2002). Sheth and Sisodia (2002) viewed productivity as consisting of two dimensions: effectiveness (doing the right thing) and efficiency (doing things right).

While Sheth and Sisodia (2002) noted that no one size [of productivity measures] fitted all companies, measures of marketing productivity thus tended to be more specifically selected to reflect the main foci of an organization's marketing function, for instance, number of transactions per week (Dubbelaar et al., 2002), and better account development (Pullig, Maxham & Hair, 2002).

The concept of marketing productivity thus appears not only to be a concept which is difficult to define, but also difficult to measure. Strong links to marketing efficiency are evident. An important aspect is that each measure seems to be very context- or company-specific.

2.5.4 Marketing Success

The measures used for assessing marketing success are varied. They appear to cover a wide range, depending on the objectives of the marketing initiative and also on whether the measures are subjective or objective. Measures thus include, for example, a simple increase in sales (Berman & Duboff, 2003), and management's perceptions of the achievement of marketing goals such as sales, revenue and profits (Sashittal & Tankersley, 1997).

Other measures, such as those of Irwin, Zwick and Sutton (1999), Smith (1996), Gummesson (1996) and Cardozo (1983) seemed to identify the components of success, and by implication that they should be regarded as measures of such. These were often based on Peters and Waterman's (1982) eight attributes of business excellence: bias for action, closeness to customer, autonomy and entrepreneurship, productivity through people, hands-on value driven approach, sticking to one's knitting, a simple form and lean staff, and simultaneous loose-tight properties.

2.5.5 Marketing Excellence

Although there are various measures of excellence in marketing, each with their inherent advantages and disadvantages, firms and customers differed in their use of criteria of excellent marketing performance, and success criteria varied across product categories (Hansen et al., 1990).

As with marketing success, Peters and Waterman's (1982) eight attributes of excellence have become the benchmark for many companies and been used with regard to marketing excellence, for example, by Sharma and Yetton (1996).

2.5.6 Summary of Marketing Outcomes

In summary it appears that the different measures of marketing outcomes manifest certain common characteristics. They all seem to present a problem with regard to conceptualisation and measurement. As a result, there is a heavy reliance on the

traditional financial and market business performance measures – even though these have been questioned as being the most suitable measures. Some of the concepts, such as performance and productivity, display overlaps or commonalities with other concepts such as effectiveness and efficiency. In addition, many of the marketing outcomes are measured according to the same criteria by which business performance is measured. These also happen to be the criteria according to which market orientation is measured. Finally, the measurement of productivity and success, especially, appear to be very context-or company-specific, thus rendering the generalizability of such measures problematic.

2.6   Summary of Strategic Orientation and Market Orientation

Although a more detailed comparison of strategic orientation and market orientation and the various models which measure the constructs are presented in Chapter 3, it is worth noting the general similarities between the two constructs.

Firstly, both provide a general guiding philosophy for organizations. Secondly, the main dependent variable for both concepts is business performance. Competitive advantage is also noted as an additional dependent variable of both. Thirdly, both incorporate an external focus. Lastly, they both apply to the whole organization.

Market orientation thus appears to possibly be a surrogate for strategic orientation. A more specific assessment of the possibility will be presented in the next chapter.

2.7 Chapter Summary

The literature review has introduced the concepts of strategic orientation and strategic alignment, as well as alternative versions of the latter, such as strategic fit. The development of these concepts has been described. Alternative approaches have been discussed, and consideration has been given to the dependent variable of strategic alignment. These explorations have focused on the IS perspective.

The evolution of market orientation research has been described in a similar manner. The various approaches to measuring market orientation and a comparison of these approaches has been provided. In addition, consideration has been given to the dependent variable of market orientation, as well as the dependent variables of marketing, in general.

Chapter 3: The Conceptual Model and Research Propositions

3.0 Chapter Overview

This chapter presents the conceptual model which is derived from the research question and based on the literature review. In developing the model, the concept of alignment is first discussed. Then consideration is given to the qualification of 'strategic', and the suitability of the measures of strategic orientation and market orientation in terms of that qualification. The measures which could be used for those constructs are discussed, and which dependent variable(s) would be the most appropriate. Finally, the research propositions are presented.

Chapter contents

3.1 Introduction

According to Hair, Babin, Money and Samouel (2003, p. 147) a concept is a generic idea formed in the mind. It groups together different variables which represent certain aspects of a construct or phenomenon being studied. The concept is usually measured and this is often done by measuring the component variables. This can be done in varying degrees of complexity.

A conceptual model groups together different constructs to depict their relationships with one another. The composition of the conceptual model is driven by the research question. Not only are the different constructs measured but so, too, are the relationships between them. The relationships form the basis of the research hypotheses and these seek to answer the research question(s).

The aim of a conceptual model is to embody the phenomena being studied and their relationships as comprehensively yet parsimoniously as possible.

However, the literature review significantly informs further construction and expansion of the model. In this case the literature review highlighted a number of issues which could significantly impact on the components of the conceptual model. These will be expanded upon in the following sections.

3.2   Conceptual model

In this research, the conceptual model depicts the impact of the strategic alignment between IS and marketing on business performance. Consequently the main components of the model are alignment and business performance with alignment acting as a predictor of business performance and marketing performance, and the latter also predicting business performance
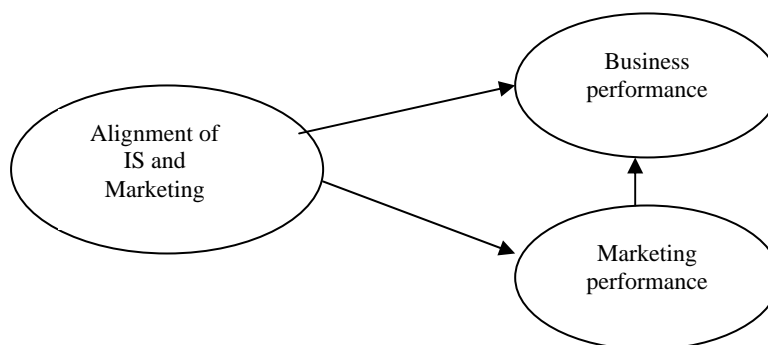
Figure 3.1.   Conceptual model

Because strategic alignment plays such a pivotal role in this research, it serves as a suitable point of departure for the discussion.

3.3   Measure of Alignment

The measurement or assessment of this construct posed one of the most interesting challenges of the research. To date, Chan (1992) (and the subsequent studies that built on her original study, e.g. Chan and Huff (1993) and Chan et al. (1997)) appeared to have provided one of the very few measures for strategic alignment. On top of which, she demonstrated the positive impact of alignment on business performance. Reich and Benbasat (1996, 2000) also devised a measure for alignment but it focused on internal processes and was largely not strategic. They also did not test the impact of alignment on business performance.

Chan's (1992) measure had been found to be both valid and reliable and thus seemed to point the way to measuring alignment. However, Chan's conceptualization of the construct was not simply as consisting of a number of factors. Instead, alignment was calculated. It was based on the measures of identical dimensions of IS strategic orientation and business strategic orientation.

While a new measure for alignment could be devised, and might possibly be less complex to implement, the fact that a suitable instrument already existed and had demonstrated its validity, influenced the decision to follow Chan's (1992) example and calculate alignment.

Chan (1992) had used a moderation approach for this calculation, rather than a matching approach. The latter was, nevertheless, noted as an option. It would imply the calculation of the difference or similarity between IS and marketing on each dimension. A moderation approach would additionally take account of the influence of IS on the effect of marketing on business performance, and the influence of marketing on the effect of IS on business performance. Synergy on both sides was thus implied (Chan et al., 1997).

Miles and Snow (1994) had suggested that alignment did not always require a match between similar components or phenomena, but that it should provide a complementary package that provided meaning. They cited an organization and its environment as an example of this approach. Although this view has its merits, the actual operationalization could provide significant challenges in the measurement of alignment.

Given that Chan (1992) had demonstrated the success of using (in essence) identical dimensions of IS strategic orientation and business strategic orientation to calculate the alignment, this route seemed the less risky to follow. Alignment would thus be calculated using identical strategic dimensions of IS and marketing.

It should be noted that although the focus of this research is on strategic alignment, 'strategic' in this sense is a transferred epithet and, in fact, refers to the constructs that are being aligned.

In order to determine which constructs would be aligned and thus the basis for the calculation of alignment, the next issue to address was the qualification of 'strategic'. Although strategic orientation presumably did qualify, nothing could be assumed. The concept of market orientation also required consideration.

3.4   Qualifying 'Strategic'

In order to describe something as 'strategic' it is necessary that it conform to certain commonly accepted criteria. In this regard it would appear that the more common descriptors are: large-scale, future-oriented, requiring top management decisions (Miles & Snow, 1978), having a long-term impact, being multi-functional (Pearce & Robinson, 1988) and integrated (Day &Wensley, 1983), as well as having an external focus in terms of the impact of external factors (Pearce & Robinson, 1988), and on the markets and competition (Day & Wensley, 1983). Further attributes of strategy include flexibility (Pearce & Robinson, 1988), risk and adaptability (Miles & Snow, 1978).

Apart from descriptive attributes, other issues which need to be considered are whether the strategy focuses on content, process or a combination of both (Chan & Huff, 1992); and whether the strategy is intended or realized (behavioural) (Miles & Snow, 1978, p. 7). Linked to the latter is the differentiation between a strategy being planned/formulated, or implemented, or both. Miles & Snow (1978, p. 7) indicated that an organization's strategy could be inferred from its behaviour.

A further aspect of strategy to consider is whether it encompasses both the means and the ends (Porter, 1980) or the ends as being separate goals (Hofer & Schendel, 1978). However, strategy usually focuses on the achievement of the firm's [goals/] objectives (Pearce & Robinson, 1988) whether they be performance as measured in terms of, for example profit (Pearce & Robinson, 1988), or sustainable competitive advantage (Day & Wensley, 1983), or whether they focus on effectiveness or efficiency (Pearce & Robinson, 1988). It is thus difficult to completely separate out goals from the strategic means.

Having explored the qualification of 'strategic', it then needed to be ascertained whether strategic orientation and market orientation met the criteria of that qualification.

3.5   Suitability of Measures of Strategic Orientation and Market Orientation

Referring to Wood and Robertson (1997), it would appear that amongst the many definitions of strategic orientation, the common elements are specific managerial perceptions, predispositions, tendencies, motivations and desires which precede and guide strategic planning and ultimately lead to business performance. It thus indicates a strong attitudinal orientation with a definite link to implementation and thence to the goal or outcome. However, depending on the premise, it seems that there are different interpretations of, and approaches to, strategic orientation. Morgan and Strong (1998) regard competitive strategy as being "synonymous with the term strategic orientation". Venkatraman (1989b) on the other hand, regarded strategic orientation as "a particular conceptualization of strategy".

Originally, in 1975 Miles had referred to "….strategic or market orientation…."
(Miles & Snow, 1978), implying that strategic orientation and market orientation
could be used interchangeably and were thus one and the same thing. However, in
acknowledging their limitations and those of the relevant disciplines, this perspective
was later adjusted (Miles & Snow, 1978, p.3).

Miles & Snow (1978) then developed their well-known typology of "types of
organizations", "strategic types", "business strategies", or "competitive strategies".
Although they appear to use the terms interchangeably, their terminology is somewhat
confusing as it implies different things. The first term does not specifically imply the
predispositions and what precedes and guides the strategic planning, whereas the
latter seem to do so. "Strategic types" is ambiguous and could refer to the
organization or to the strategy. "Competitive strategies" could be "business strategies"
but so could other strategies, such as those focusing on differentiation or quality.

Strategic orientation (or business strategies, as the indications were initially) has been
examined from three main perspectives: narrative, classificatory and comparative.
Many, if not the majority, of these strategic orientations have focused on the
competitive aspect and can be regarded as competitive strategies (Chan & Huff,
1992). In addition, many of these strategic orientations manifested a strong focus on
markets and on aligning the company as optimally as possible with the opportunities
in the marketplace. Competition and markets are thus prominent components of
strategic orientation.

Venkatraman's (1985) comparative approach to measuring strategic orientation used
four anchors (means, upper hierarchical level, non-functional limitations and realized
behaviour) and seven dimensions (aggressiveness, analysis, defensiveness, futurity,
innovativeness, proactiveness and riskiness). Many, if not all, of these reflect the
criteria, attributes and qualifiers of strategy previously noted. They manifest a strong
competitiveness emphasis, as well as a focus on markets, on the means as opposed to
the ends, on realized as opposed to intended behaviour, on implemented as opposed to
planned strategy, and on content as opposed to process. In addition, the construct is
multi-dimensional. Furthermore, being a comparative measure, a less limited

perspective is provided than with the classificatory approach, and a greater ability to measure the variables than with the narrative approach (Morgan & Strong, 2003).

Chan (1992), Chan and Huff (1993) and Chan et al. (1997) subsequently used Venkatraman's (1985, 1989b) model as a basis for exploring the fit/alignment between strategic business orientation and strategic IS orientation. Venkatraman's (1985, 1989b) dimensions for strategic business orientation were translated for strategic IS orientation to read "the extent to which IS supports the business enterprise assertiveness" and so forth.

The measures in the Venkatraman (1985) model had translated well to the function of IS, and had demonstrated validity and reliability in that application (Chan, 1992). This would suggest that they could translate equally well to another function such as marketing. The Venkatraman (1985) measure for strategic orientation thus appeared a suitable measure to consider for this research, but with the alteration made by Chan and Huff (1993) and Chan et al. (1997) to the name of 'riskiness' - from that to 'risk aversion'.

Turning to market orientation, this concept has been addressed from the perspectives of two main studies – those of Narver and Slater (1990) and Kohli and Jaworski (1990) (and the subsequent work by Kohli et al. (1993)). As previously indicated, each model has found favour in terms of validity or partial validity amongst a number of researchers. Some researchers have used the models in their entirety or in part, some have combined aspects of the models, some have combined and enhanced aspects of the models, and some have simply altered one model. Despite any convolutions, they remain the main approaches to studying market orientation.

There are decided overlaps between the Narver and Slater (1990), and Kohli and Jawoski (1990) approaches. Both exhibit a customer focus and an emphasis on behaviours relevant to the dimensions of their models. They also both focus on implemented as opposed to planned actions.

Despite these similarities, Narver and Slater (1990) viewed market orientation as a single-dimension construct with profitability as the objective. Initially the model

included both the means (customer orientation, competitor orientation, and interfunctional coordination) and the ends (profit focus and long-term focus). They subsequently limited their model to only the means and split their model to reflect the multi-dimensional components of market orientation. However, the subsequent developments of the Narver and Slater (1990) model by Deng and Dart (1994) and Gray et al. (1998) threw a different light on the approach to profit which became much more of a means, that is profit orientation, than an end.

On the other hand, Kohli and Jaworski (1990) only focused on the means. They perceived market orientation as a sequence or process which began with intelligence generation and viewed profitability as a consequence. The focus of the intelligence and information gathered in this way was especially on the customer but also on whatever exogenous factors impacted on the customer. Other factors which influenced the market orientation were placed outside the construct – either as antecedents or as moderators of the market orientation–business performance relationship.

Although both models highlight interfunctional coordination, Narver and Slater (1990) do so more explicitly in their construct while Kohli and Jaworski (1990) do so more implicitly in the antecedents to their construct. However, there is a considerable degree of overlap between Narver and Slater's (1990) interfunctional coordination and Kohli and Jaworski's (1990) intelligence generation, dissemination and responsiveness. Although the former refers to a broader scope than the latter and embraces all resources as well as a focus on interfunctional dependency, Kohli and Jaworski's (1990) three interlinked components of intelligence generation, dissemination and responsiveness to that information, also emphasize the interfunctional aspects of these behaviours but appear more limited with regard to which resources are treated interfunctionally. Furthermore, Kohli and Jaworski (1990) treated interfunctional dynamics as an antecedent to market orientation as opposed to a component of it.

While the specific customer and competitor orientation of Narver and Slater (1990) is desirable, it is too limited in terms of stakeholders or exogenous factors requiring

consideration. Kohli and Jaworski (1990), on the other hand, cover a wider scope with their intelligence activities, yet at a less strategic level.

In summary, it would appear that the Narver and Slater (1990) model has a more strategic and externally oriented perspective whereas the Kohli and Jaworski (1990) framework is more functional and internally focused. On the other hand, the latter model includes more stakeholders than the Narver and Slater (1990) model which is more limited to customers and competition.

In comparing the two models to the criteria of strategy, it can be seen from the table below that most of the criteria are met, albeit some implicitly and some not always completely.

Table 3.1.   Strategy attributes of Narver and Slater (1990) model and Kohli and Jaworski (1990) framework approaches

Strategy attributes	Narver & Slater (1990)	Kohli & Jaworski (1990)
Large scale	Not always	Not always
Future-oriented	Implicit	Implicit
Involving top management decisions	Not always – more so than Kohli and Jaworski (1990)	Not always
Long-term impact	Implicit – more so than Kohli and Jaworski (1990)	Implicit
Multi-functional	Yes	Yes
Integrated	Yes	Yes
External focus	Limited	Yes
External focus – markets	Yes	Yes
External focus – competition	Yes	Yes

It thus seems that market orientation, as conceptualized by the Narver and Slater (1990) and Kohli and Jaworski (1990) approaches, has sufficient attributes to qualify as being strategic. Although there might be slight shortfalls with each model, as a concept, market orientation manifests all the necessary evidence of being strategic.

A number of studies have given credence to this view and used both strategic orientation and market orientation, or aspects thereof, in their research models. For instance, Ruekert and Walker (1987) studied the impact of strategic orientation, according to Miles and Snow's (1978) typology, on one aspect of market orientation,

interdepartmental coordination. Voss and Voss (2000) explored the impact of customer orientation, competitor orientation, product orientation and strategic orientation on business performance. Matsuno and Mentzer (2000) studied the effect of business strategy type as moderators of the market orientation-performance relationship. Pelham (1997a), Raju and Lonial (2001) and Salavou (2002) also all explored the impact of different strategic orientations on the market orientation-performance relationship.

In the first study specifically linking strategic orientation to market orientation, Morgan and Strong (1998) referred to Slater and Narver's (1996, p. 59) reference to the importance of understanding the link between market orientation and [business] strategies. Morgan and Strong (1998) conceptualized competitive strategy as the strategic orientation of a business, and as a vehicle for market orientation. They viewed market orientation as guiding strategic selection. They maintained, citing Ruekert, 1992), that competitive strategy was "a key organizing focus for market orientation". Their use of the Venkatraman (1989b) STROBE measure of strategic orientation to measure competitive strategy was appropriate, given the strong competitive emphasis of the Venkatraman measure. Similarly, their focus on the competitive element explained, amongst others, their preference for the use of the Narver and Slater (1990) measure of market orientation which highlighted the competitor orientation more strongly than the Kohli et al. (1993) measure.

However, Noble et al. (2002) provided a different perspective, viewing market orientation as one of a number of strategic orientations. They offered production orientation and selling orientation as a couple of alternatives. Their view could be explained by their statement that "any differences among 'culture', 'strategic orientation' and 'market orientation' have not been well established, in part because of the different steps and treatments of the construct in the literature" (Noble et al., 2002, p. 26).

To conclude this discussion, the concept of strategic orientation qualifies as a suitable measure for both the IS and marketing functions, and thus one which can be used to measure the alignment between the two functions and thence the impact on business performance.

On the other hand, market orientation is the responsibility of the whole organization so can apply to both the IS and marketing functions. Although not the same as strategic orientation, despite the stance of Noble et al. (2002), it has a decided link to strategic orientation and, like strategic orientation, can exercise a significant impact on business performance.

Furthermore, the main measures of strategic orientation and market orientation discussed (Venkatraman, 1985; Chan, 1992; Narver & Slater, 1990; Kohli et al, 1993), exhibit similarities in that they are all manifested in terms of a focus on realized behaviour, implemented strategy, and on the means as opposed to the means and/or the end. Kohli et al. (1993) focused more on the content and process, while the others focused on content alone.

Despite the fact that the Narver and Slater (1990) model originally intended market orientation to be a unidimensional construct; it lends itself to multi-dimensional analysis, like the other measures.

While Venkatraman (1985) and Chan (1992) displayed a content approach to their measures of strategic orientation, both the Narver and Slater (1990) and Kohli et al. (1993) models displayed a mixture of content and social approaches to their measures of market orientation. With regard to the social approach, they tend to tally with the Reich and Benbasat (2000) antecedents of alignment between business and IT objectives - communication between business and functional (IT) groups, and the connections between business and functional (IT) planning.

Market orientation thus not only qualifies as strategic, but the more prominent measures of market orientation generally demonstrate similar strategic attributes to the measure of strategic orientation. In addition, the concept of market orientation lends itself to exploration from both a marketing and IS functional perspective.

This exploration thus appeared to present a choice between either calculating alignment according to strategic orientation or according to market orientation. However, the possibility also existed of calculating alignment according to each

separately. This would provide comparative insights which could hold potentially valuable implications for both academic researchers and practitioners.

It was thus decided to follow the latter route and explore the alignment of the strategic orientation of IS and the strategic orientation of marketing, as well as the alignment of the market orientation of IS and the market orientation of marketing. Two separate but similar models would thus be devised. These are presented after the discussion on the dependent variable in section 3.6.

At this point it is necessary to provide a general indication of which dimensions might be included in the two constructs. Although a more detailed discussion is presented on the development of the survey instrument in Chapter 6, an indication is given below of how the various instruments might be combined or altered, and how possible overlaps between the strategic orientation and market orientation measures might be addressed.

3.6   Measures to be Used

3.6.1   Measure of Strategic Orientation

The STROBE measure of Venkatraman (1985) appeared to be the most suitable and best known measure of this construct. It had evidenced easy translation to the IS arena where it had demonstrated validity and reliability. It promised to be similarly applicable to marketing. It had been tested over a spectrum of industries as well as in different northern hemisphere contexts. Its dimensions were aggressiveness, futurity, innovativeness, proactiveness, riskiness, analysis and defensiveness.

However, contrary to Chan's (1992) decision to divide 'defensiveness' into two separate components, 'internal defensiveness' and 'external defensiveness', Venkatraman's (1985) use of a single dimension of 'defensiveness' would be followed. This approach was based on the rationale that all the activities were guided by a single approach to the marketplace and the business environment. If the split was made, it could also be applied to other dimensions which embodied both an internal

and an external focus. For instance, internal proactiveness could concentrate on the internal efficiency within the company, while external proactiveness could focus more on effective ways of outperforming the competition.

'Innovativeness' would likewise be included as a measure. Venkatraman (1985) had originally included 'innovativeness' as a strategic orientation dimension and then excluded it (Venkatraman, 1989b) – possibly because it might have appeared to have been subsumed by his proactiveness dimension. This is reflected by his allusion to the importance of seeking new opportunities and introducing new products onto the market (Venkatraman, 1989b).

Chan (1992) had also initially included 'innovativeness' as a dimension of her measure of strategic orientation, but in subsequent work (Chan & Huff, 1993) had excluded it, only to reintroduce it later (Chan et al, 1997).

However, despite these alternations, the topic of innovation or innovativeness has become the focus of ever-increasing attention – partly due to the shortening of product life cycles and the increased speed of communication facilitated by the Internet.

Deshpande et al. (1993) cited Drucker (1954) in terms of the emphasis he had placed on the definition of business purpose – to create a customer – and that the two basic functions of achieving this were marketing and innovation. Berthon et al. (1999) supported Drucker's perspective and highlighted the importance of firms being innovation oriented. They viewed market orientation as an antecedent of innovation. In similar vein, Han et al. (1998), Lado and Maydeu-Olivares (2001) and Matear, Osborne, Garrett and Gray (2002) found that market orientation exerted a positive influence on innovativeness and thence on business performance. Relating innovativeness to the other STROBE dimensions, Gatian, Brown and Hicks (1995) found a positive connection between the innovative climate of an organization and the aggressiveness of a company's strategy.

While many of these studies referred to the connection of innovativeness with market orientation, innovation was not regarded as a component of market orientation. As a

component, the relationship with strategic orientation appeared more powerful and suggested it as a dimension of the latter.

Lastly, Chan and Huff's (1993) and Chan et als' (1997) decision to use 'risk aversion' rather than 'riskiness' would be followed. It appeared more logical to assume that companies and their respective functions would choose to pursue a risk aversion strategic approach rather than to deliberately choose a risky one. However, these appeared to be flip-sides of the same concept and both aspects would be captured.

3.6.2   Measure of Market Orientation

In deciding on a measure for market orientation, the main consideration was to utilize models, where possible, which had already been demonstrated to be valid and reliable, as well as generalizable over different industries and contexts.

In this regard the Narver and Slater (1990) MKTOR and Kohli et al. (1993) MARKOR measures formed the two main considerations. Their limitations have been outlined and it would thus be necessary to determine whether any adaptations or consolidations of their measures would be more suitable.

The refinement of the MARKOR scale by Matsuno et al (2000) extended the range of stakeholders and developed their MO scale which evidenced a greater unidimensionality than the MARKOR scale.

The Deng and Dart (1994) measure provided the appealing inclusion of profit emphasis. However, this tended to focus on an end as opposed to a means and was therefore not regarded as compatible with the other component measures. Despite that component, the overall measure remained a contender.

Possibly the best measure was developed by Gray et al. (1998) who combined the most reliable items of the MARKOR (Kohli et al., 1993), MKTOR (Narver & Slater, 1990), and Deng and Dart (1994) measures and refined that combination in a large,

multi-industry study in a southern hemisphere context. Like Deng and Dart (1994), they included the profit orientation component, which was discounted for this study.

An alternative combination of the three measures that Gray et al. (1998) used, plus that of Deshpande et al. (1993) was developed by Dawes (2000). He focused more on the customer, including both customer analysis and a customer responsiveness component. Unfortunately, the study was only conducted in two industries, making its generalizability questionable. On the other hand, it did include a wider scope in terms of factors affecting markets.

The Gray et al (1998) and Dawes (2000) measures thus provided the most suitable options (see Section 2.4.3 for discussion). However, neither was entirely suitable, so a combination of the two appeared the most comprehensive option to use and one which comprised the dimensions of customer analysis, customer responsiveness, competitor analysis, competitor responsiveness, environmental analysis, environmental responsiveness, and interfunctional coordination. Reference to Appendix 3 will provide an indication of the sources of the dimensions. Chapter 6 will provide greater insight into the reasons for their selection.

Regarding the use of a measure for strategic orientation and one for market orientation in parallel, a possible concern was raised over the potential of overlaps of certain aspects or dimensions. Based on consideration of the Venkatraman (1985), Gray et al. (1998) and Dawes (2000) measures, it seemed that only one item of Venkatraman's (1985) measure for strategic orientation might overlap with the measures of market orientation. Venkatraman's (1985) item was a measure of the dimension of 'analysis' and focused on the emphasis placed on effective coordination among different functional areas. That might have overlapped with the 'interfunctional coordination' dimension of Gray et al. (1998) and the 'market information sharing' dimension of Dawes (2000). However, no single item of either of these scales overlapped directly with Venkatraman's (1985) items. Furthermore, the order levels were different, the latter being of a lower order level.

3.7 Dependent Variable to be Used

The last component of the conceptual model which needed clarification was the dependent variable. Prompted by the research question, the initial premise had been to use one dependent variable, business performance. However, the literature review had brought additional aspects to light which required further consideration. Before this discussion is presented, though, the dependent variables of market orientation, the various measures of marketing outcomes, and the dependent variable of strategic orientation are summarized. It should be noted that although there would be two different calculations and thus measures of alignment, the same dependent variable would be used in both models.

From the literature review and with reference to Appendix 1 it was evident that the dependent variable most frequently used with regard to market orientation was business performance. This was particularly true for the two most frequently used measures of Narver and Slater (1990) and Kohli et al. (1993). The predominant measures for business performance were absolute financial and market measures, as well as relative measures of the same.

With regard to the different conceptualizations and measures of marketing outcomes, although there were a few studies which favoured customer perceptions or attitudinal measures as outcomes, the majority displayed a decided focus on the financial and market measures in either absolute or relative terms.

From the literature review it is evident that the most popular measures for marketing performance and marketing effectiveness were similar to those used to measure business performance (see Appendix 2). They exhibited a strong focus on financial as well as market measures – both absolute and relative. The measures for marketing productivity and marketing success appeared to follow the same pattern, although the smaller number of these studies made such a generalization unwise.

Two studies used both the potentially conflicting effectiveness and efficiency, among others, as measures of outcomes. For Walker and Ruekert (1987) they reflected

marketing performance, while for Sheth and Sisodia (2002), they reflected marketing productivity. Vorhies and Morgan (2003) also used a combination of effectiveness and efficiency to reflect marketing performance.

In addition it is worth noting that the Kotler (1977) measure for marketing performance, which actually measured marketing effectiveness, included operational efficiency as one of the six components of the model. It also included a small measure of strategic orientation. Studies which used that measure include those of Appiah-Adu (1999), Dunn, Norburn and Birley (1985), Norburn, Birley, Dunn and Payne (1990), Norburn et al. (1988) and Webster (1995).

With regard to the dependent variable of strategic orientation, Venkatraman's (1989b) lead in identifying business performance as that variable, has been followed by those studies which used the STROBE model, for example Chan (1992) and Morgan and Strong (1998), or by those studies which used the Strategic Alignment Model (Henderson & Venkatraman, 1991), for example Luftman et al. (1993) and Papp (1998).

The reference to Chan's (1992), Chan and Huff's (1993), and Chan et als' (1997) research also draws attention to the outcome of strategic alignment. They all opted for business performance as the dependent variable of the strategic alignment between IS and the business enterprise. Business performance was measured in much the same way as for market orientation.

In considering that business performance is the dependent variable most frequently used when measuring strategic alignment, strategic orientation, market orientation, marketing performance, marketing productivity, marketing effectiveness or marketing success, it seemed a very obvious dependent variable for this research.

According to the literature, the measures of business performance fell into four main categories – absolute and relative financial measures, and absolute and relative market measures. This suggested that in order for a measure of business performance to be comprehensive it would be appropriate for it to represent each of these categories.

A further issue to be explored, however, was whether it was necessary to identify an intermediary variable. Chan (1992) and Chan and Huff (1992) had indicated that although business performance was one outcome of the strategic alignment between IS and the business enterprise, IS effectiveness was an additional and intermediary outcome of that alignment which impacted, in turn, on the business performance.

In the context of this research, the only feasible intermediary options would be marketing performance, effectiveness, productivity or success. The marketing literature had indicated the impact of marketing performance on business performance (McDonald, 1995; Jain, 1997; Kotler & Armstrong, 1996; Carrillat, Jaramillo & Locander, 2004; Brooksbank, Kirby & Taylor, 2004; Wyner, 2002a, 2002b). Given the similarities of the measurements of marketing performance, effectiveness, productivity or success with those of business performance, it seemed that the introduction of an intermediary variable would be redundant. However, it was worth considering the measures not so commonly used (see Appendix 1 and especially Appendix 2).

Kohli and Jaworski (1990) originally included customer responses, employee responses, and business performance as outcomes of market orientation. The three outcomes were not interlinked. Customer responses were proposed to consist of customer satisfaction and repeat business from customers (Kohli & Jaworski, 1990). As the future focus of their research lay on refining the measure for market orientation, the outcome of customer responses appears to have been relegated to the sideline, in favour of the more obvious measurements of business performance.

However, customer responses in terms of either customer attitudes or customer behaviour were highlighted in the work of a number of researchers. Tansuhaj, Randall and McCullough (1988) used customer loyalty, customer perception of quality, and customer satisfaction as measures of marketing performance. Morgan et al. (2002) used customer perceptions and customer behaviour, as well as the more traditional, financial outcomes of marketing performance. Reim (2002) used changes in consumer behaviour as an outcome measure of marketing effectiveness. While all these examples were of conceptual work, on the empirical side, Tezinde, Smith and Murphy (2002) and Appiah-Adu, Fyall and Singh (2001) researched response rates and

customer retention respectively in their studies on marketing effectiveness. Baines and Egon (2001) measured turnout of spectators as an indication of marketing success in their empirical research. It is worth noting that with regard to marketing effectiveness, the outcomes tended to be more company- and/or industry-specific – as in the last example.

Although marketing outcomes are often measured similarly to business performance outcomes, it appears that measures which focus on customers are much more the domain of marketing outcomes. This focus on customers also tallies with the focus of the marketing concept and thus market orientation.

It is posited that customer responses precede and impact on business performance. This runs counter to Kohli and Jaworski's (1990) proposition of them being on a par. However, it is logical to assume that both a market orientation and a strategic orientation would impact on customers/markets first before the effect of those impacts was converted into traditional business performance.

With regard to the effectiveness/efficiency paradox, the models, such as that of Vorhies and Morgan (2003) which have combined the two aspects, appear to use measures for effectiveness which reflect business performance measures. Given that effectiveness is more strategic and efficiency more operational (McDonald, 1995), it could be assumed that effectiveness would be covered by business performance measurement, and that marketing efficiency measures could be incorporated in the marketing outcome measures.

Marketing performance would thus be used as an intermediary variable between alignment and business performance. Measures which focus on customers and marketing efficiency would be used to assess the marketing performance.

However, a direct link would also be established between alignment and business performance. This was based on the premise that both strategic orientation and market orientation have been shown to exert a direct influence on business performance, and an alignment based on either of them would presumably do so, too. All the influence of alignment would not necessarily be channeled through marketing performance.

3.7.1 Lagged Effect

Dawes (2000) had found a stronger relationship between market orientation and company performance when a lag of one year was introduced before the performance measurement than when there was no time difference between the measures. The introduction of a lag raises a number of questions and potential problems. One question would be how large the lag should be. A potential problem would be the extent of the attrition of the sample.

The assumption of a lagged effect could imply that market orientation, as in the case of Dawes's (2000) study, or strategic orientation had been recently introduced and the effects had not yet been fully felt. This recent introduction might well not be the case in many companies.

Finally, it would be difficult to control for other variables which might have exercised a changing effect on the company's performance over time.

Lagged effect would thus not be measured. However, it presented a possibility for future research and this study, if sufficiently large to accommodate for attrition of the sample, could be configured in such a way as to provide the baseline for a longitudinal study.

3.8   Research Propositions

To reiterate, for this research a single conceptual model was developed. This is depicted below and represents the main constructs of this research and their relationships. The impact of the alignment on business performance and on marketing performance is depicted, as well as the impact of marketing performance on business performance. The direct and indirect effects of alignment on business performance are thus both measured.
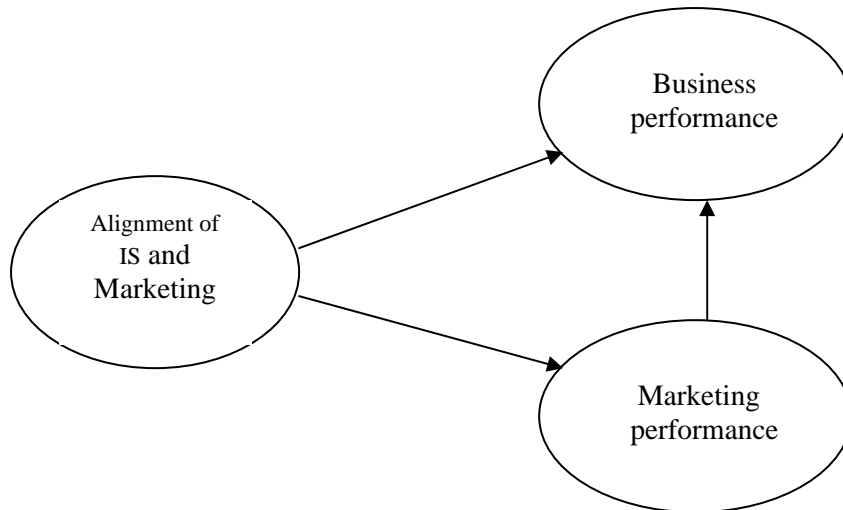
Figure 3.2   Conceptual model

The research propositions reflect the relationships between the constructs.

The literature had indicated very definitely that both IS (e.g. Galliers, 1993) and marketing (e.g. Jain, 1997) each exercised a positive influence on business performance. Indications were that where there was a close link between IT/IS and marketing, albeit not at a strategic level, the impact on business performance was significant (Fletcher & Wright, 1997; Sashittal & Wilemon, 1994; Murphy, 1999). Furthermore, Chan (1992), Chan & Huff (1993) and Chan et al. (1997) had all found a positive impact of the alignment/fit between IS and business on business performance. The assumption, and thus the proposition, was that an alignment between IS and marketing would have the same effect.

Research Proposition 1:
The stronger the alignment between IS and Marketing, the stronger the business performance

Chan (1992), Chan and Huff (1993) and Chan et al. (1997) had all found a positive impact of alignment/fit between IS and business on IS effectiveness. Based on this evidence, it seemed logical to propose that the functional performance of one of the partners of alignment would be positively impacted as well. In this instance, it was marketing performance.

Research Proposition 2:

>Research Proposition 2:
>
>The stronger the alignment between IS and Marketing, the stronger the marketing performance

McDonald (1995), Kotler and Armstrong (1996) and Jain (1997), to name a few, had all found that strong marketing performance contributed to a strong business performance. The following proposition reflects their findings.

>Research Proposition 3:
>
>The stronger the marketing performance, the stronger the business performance

With additional information from the findings of the first phase of the research, these propositions would later be formulated to become the research hypotheses which would be tested in the second, quantitative phase of the research. The propositions were based on the assumption that strategic alignment would exert a positive influence on both marketing performance and business performance, and that marketing performance would exert a positive influence on business performance.

The conceptual model would be tested in two ways: with alignment according to strategic orientation; and alignment according to market orientation. The following two models provide an indication of the components of alignment in each case. The first model depicts the alignment of IS and marketing as consisting of a combination of the strategic orientation of IS and the strategic orientation of marketing. The dotted lines indicate that the relationship between each of the latter constructs and alignment is calculated as opposed to being directly measured. The second model depicts the alignment as consisting of a combination of the market orientation of IS and the market orientation of marketing.
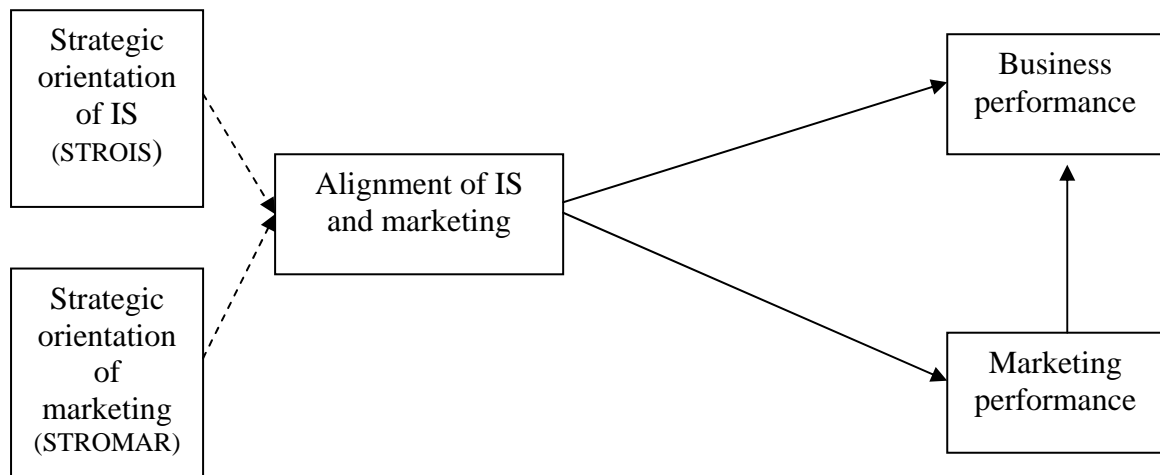
Figure 3.3.   Alignment of IS and marketing according to strategic orientation:
               Proposed conceptual model
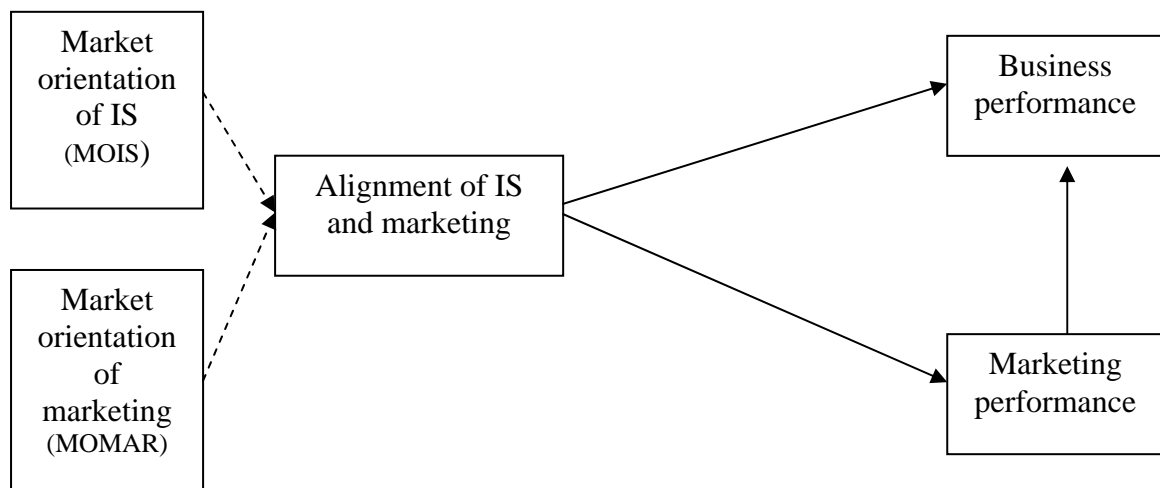
Figure 3.4.   Alignment of IS and marketing according to market orientation:
               Proposed conceptual model

The following diagrams depict an indication of the measures which would be used to comprise the components of the model. An expansion of the derivation of the measures is provided in Appendix 3. At this stage these were, however, only indicative and would be more carefully explored in subsequent phases of the research.

STROMAR
Analysis
Aggressiveness
Futurity
Proactiveness
Innovativeness
Defensiveness
Risk aversion

STROIS
Analysis
Aggressiveness
Futurity
Proactiveness
Innovativeness
Defensiveness
Risk aversion

ALIGNMENT
of IS and
Marketing

**BUSINESS
PERFORMANCE**

ROI
Profit
Sales
Market growth
Profit growth
Sales growth
Market share
Market position
Relative % of new
products
Product/service innovation

**MARKETING
PERFORMANCE**

Customer satisfaction
Customer retention
Customer loyalty
Customer base growth
Marketing efficiency

Figure 3.5.   Alignment of IS and marketing according to strategic orientation:
Proposed components of the conceptual model
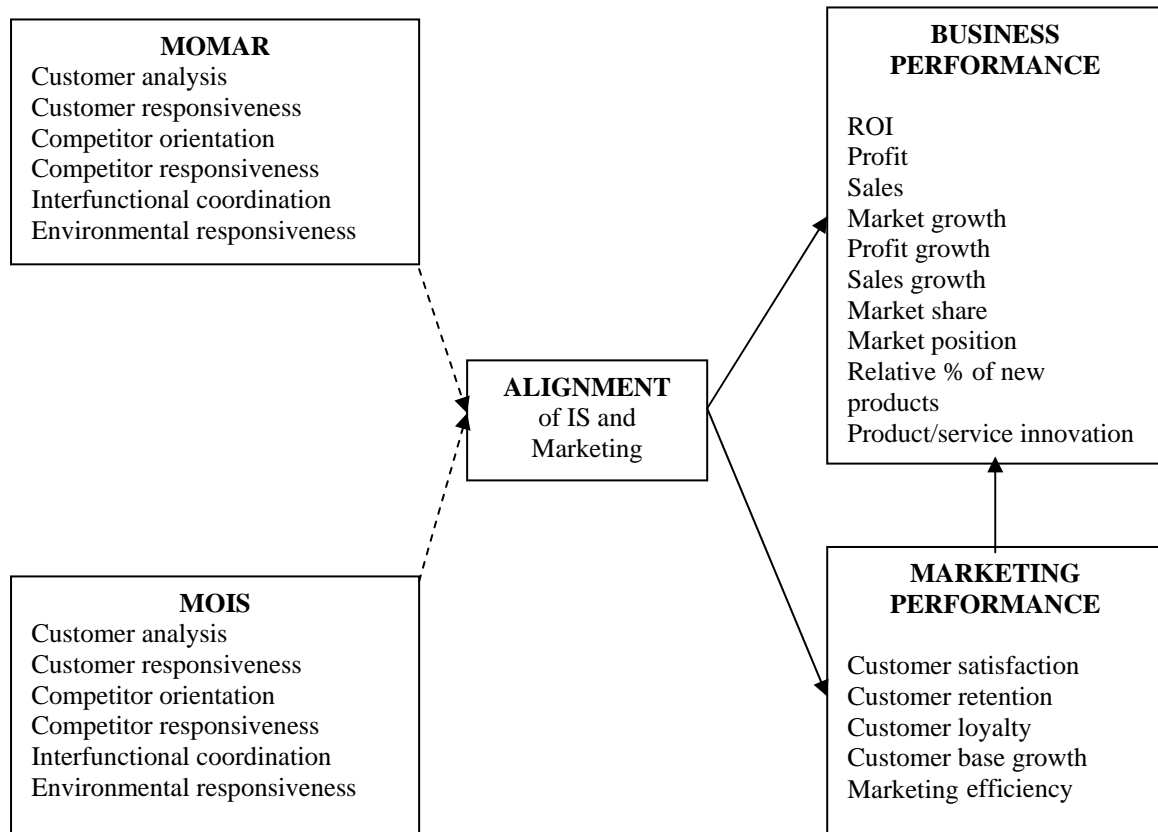
Figure 3.6.   Alignment of IS and marketing according to market orientation:
                Proposed components of the conceptual model

It should be noted that up until this stage the abbreviations, STROIS, STROMAR,

MOIS and MOMAR, were used. These were derived from the examples set by

Venkatraman (1995) with regard to STROBE and by Chan (1992) with regard to

STROBE and STROIS. Furthermore, MOIS and MOMAR incorporated the MO used

by Matsuno et al. (2000) and aspects of MARKOR as used by Kohli et al. (1993).

This served to indicate the links back to the literature. However, as none of these

would be constructs per se that would be directly used in the testing of the conceptual

model, the abbreviations were not applied after this point.

3.9   Chapter Summary

This chapter has presented the conceptual model. The point of departure was an

exploration of the concept of alignment. Next the qualification of 'strategic' was

discussed as well as the suitability of the measures of strategic orientation and market

orientation in terms of that qualification. It was determined that both strategic orientation and market orientation qualified as a basis for measuring strategic alignment. However, they would not be explored together but alignment according to each orientation would be used in two separate executions of the model. Possible measures for the constructs of strategic orientation and market orientation were presented as well as a discussion on which dependent variable would be the most appropriate. Finally, two versions of the conceptual model and the research propositions were presented.

Chapter 4: Research Design and Methodology

4.0   Chapter Overview

This chapter explains the design of the empirical research. It first outlines the philosophical approach to the research and identifies the paradigm which was deemed most appropriate. The methodology is discussed in particular detail because of its direct bearing on the actual collection of the data. The three main methods of research – qualitative, quantitative and mixed methods – are described. The final choice is discussed and how any problems associated with the chosen methods would be overcome. Finally, reference is made to the actual data collection and analysis.

Chapter contents

4.1   Introduction

Once the conceptual model had been developed and the research propositions established, the execution of the research needed to be planned. The research design provided the framework according to which the research would be conducted. The research question provided the initial direction of the research design. It underpinned the rationale of the conceptual model, but it also provided an indication of whether the research aimed to explore, describe, or explain, or, in fact, all three (Babbie, 1995). As the ultimate goal was to ascertain the impact of the alignment between IS and marketing on business performance, explanation was the primary direction. This

description would include research which aimed to assess the predictive ability of a model (Chin, 1998), as in this case. However, in order to be able to explain or indicate predictive ability, a certain amount of description and exploration is also required. These directions consequently guided the research paradigm selected and the research methodology.

4.2   Research Paradigm

The aim of the research methodology was to produce a model and instrument that would explain the topic of the research, predict outcomes, and provide a means of control of the causal variables (Guba & Lincoln, 1994a). Before embarking on the research, certain underlying philosophies needed to be considered. These constitute the research paradigm which Guba and Lincoln (1994a) described as a set of basic beliefs or first principles which represent a world view, or 'Weltaanschauing', as Deshpande (1983) referred to it. These are underpinned by the ontology – what is knowledge or reality; the epistemology – how we know it; and the methodology – how we gain the knowledge or study it (Guba & Lincoln, 1994b).

The ontological approach selected was one of critical realism. Accordingly, claims about reality are critically assessed in order to ensure that reality is captured or approximated as closely as possible (Guba & Lincoln, 1994a). Developed largely by Bashkar (1979, 1989) as a way of addressing divisive issues in the philosophy of science, Mingers (2002) saw this as an appropriate way to bridge the gap between positivist and interpretive approaches, and to compensate for the weaknesses of each. He also saw it as a way to move from an isolationist adoption of only one paradigm to a pluralist acceptance of a diversity of paradigms (Mingers, 2002).

For this study, a post-positivist philosophy was adopted. This is particularly suitable for studies in social sciences where it is acknowledged that the research cannot provide absolutely positive proof of the research phenomena. The philosophy is thus deterministic and the knowledge gained is conjectural (Phillips & Burbules, 2000). It also incorporates aspects of both positivist and interpretivist philosophies (Klein &

Myers, 1992) and echoes Gummesson (2003) who maintained that there is an interpretive element in all research.

Typically post-positivism examines a causal relationship (Creswell, 2003) – or a predictive one as would be the case in this research. It is also reductionist in its condensation of ideas to a small set to be tested by a model (Creswell, 2003).

In keeping with the post-positivist philosophy, and one of its beliefs in "methodological pluralism" (Hirschheim, 1992), a mixed methods approach was indicated. This methodology combines both qualitative and quantitative approaches. The following sections will expand on each of these methods, and then on the mixed methods.

4.3   Research Methodology

Research has been described as the "discerning pursuit of truth" (Hair et al., 2003, p.4), and by implication, the research methodology describes how the pursuit will be conducted. It is primarily concerned with the collection and analysis of data. The analysis, to a large extent, is derived from the collection, or research method. The choice of the research method can be influenced by a number of factors, including the quantity of data or information required, the extent and type of control required by the researcher, whether validity or reliability is more critical, and whether the concern is with understanding or with seeking causes.

One of the main divisions in research methods is between qualitative and quantitative research. These two methods have even been referred to as 'paradigms' (Deshpande, 1983). Latterly, researchers have embraced the use of both these methods together as a mixed methods approach.

Three important influences on the methodology selected for this research were what the most appropriate methodology would be to answer the research question, the prevalence of certain methodologies in the relevant disciplines, and the research methodologies adopted by the studies on which the research is based. As has already

been explained, the research was to be mainly explanatory with certain elements of exploration and description. This would indicate both quantitative and qualitative research. With regard to the second influence, IS research has overwhelmingly favoured quantitative approaches with surveys being the predominant method (Palvia, Leary, Pinjani & Midha, 2004). While marketing research did exhibit more quantitative studies (Deshpande, 1983), more recently qualitative research has become as popular (Sudman & Blair, 1998).

As far as the studies on which the research is primarily based are concerned, the work on strategic orientation and on strategic alignment had used both qualitative and quantitative methods. However, the original work by Chan (1992) which formed the basis of much of this research, had employed a mixed methods approach – first qualitative in-depth interviews and then a quantitative survey. The majority of the work on market orientation had been based on the models developed by Narver and Slater (1990) and Kohli et al. (1993). Both of these pieces of research had involved quantitative surveys which had been based on qualitative exploration.

Initial indications were thus that a mixed methods approach would be appropriate and that in-depth interviews and a quantitative survey would be suitable means of data collection.

The following sections thus provide more detail of each of the research methods and clarification for the eventual choice of a mixed methods approach.

4.4   Qualitative Methods

Qualitative research is usually exploratory research and primarily inductive (Deshpande, 1983). It may also include elements of descriptive research (Dillon, Madden & Firtle, 1994). It aims to achieve a better understanding of a specific phenomenon or to explore a relatively new one (Hair et al., 2003; Deshpande, 1983). Qualitative research often involves ascertaining people's thoughts, opinions, feelings and beliefs about that phenomenon. A relatively small number of respondents are typically involved and the research usually follows an unstructured format. The

measurement can be either direct, as in the case of observation, or indirect, as in the case of attitudinal research (Dillon et al., 1994).

Qualitative research thus provides well-grounded, rich descriptions and explanations which are often context-defined and which take account of the sequence in which events or behaviours occur. They often yield unexpected findings and thus serve to expand the initial preconceptions and frameworks. As they are often direct accounts of actual experiences, they also present a strong argument for the undeniability of the findings (Miles & Huberman, 1984, p. 15).

Some of the more prominent research strategies associated with qualitative research are ethnography, grounded theory, case studies, phenomenological research, and narrative research (Creswell, 2003).

These strategies employ different research methods which may include in-depth personal interviews, focus groups, and projective techniques, such as word association, sentence completion, story completion, cartoon completion and role playing (Dillon et al., 1994). Other types include Delphi techniques (Hair et al., 2003), metaphor analysis, sampling (Schiffman & Kanuk, 2000), and observational methods. The latter would include naturalistic enquiry, garbology, and even physiological movement (Dillon et al., 1994)

While each method has its distinct advantages and disadvantages, the overall advantages of qualitative research are that it provides depth and richness of data/information. It assists the researcher in gaining a deeper understanding of the phenomenon being explored. The emphasis is on validity (Deshpande, 1983). In most instances, the amount of control which the researcher can exercise is considerable. The researcher is able to direct further exploration of the topic of discussion, is able to probe where necessary, can provide instant clarification of questions if needed, and his/her presence usually ensures immediate response.

The disadvantages of qualitative research are that it is relatively expensive, time consuming and labour intensive. The results are also not usually generalizable to the population. Furthermore, there is a large amount of subjective interpretation of the

results (Sudman & Blair, 1998, pp. 200-201), which brings the reliability into question.

One of the more prominent types of qualitative research is in-depth interviews. As it appeared to be the most suitable for this research, it is discussed in more specific detail below.

4.4.1   In-depth Interviews

An individual, or personal, in-depth interview is an unstructured or semi-structured (Hair et al., 2003, p. 59) conversation on a given topic, typically designed to ascertain opinions and/or feelings on that topic (Sudman & Blair, 1998, pp. 196-197). Unlike structured interviews where there is no opportunity for the interviewer to change the questions or sequence of questions (Dillon et al., 1994), in semi-structured interviews, the researcher is free to use his/her initiative in following up an interviewee's response to a question. This would include posing additional questions which might have been prompted by the interviewee's responses. As such, it might result in unexpected findings which would provide additional insight and enrich the findings (Hair et al., 2003).

Often a series of in-depth interviews act as a prelude to the development of further qualitative surveys (Sudman & Blair, 1998).

The advantages of in-depth interviews reflect those of general qualitative research. They add depth to the understanding of the topic. In fact, because they are conducted individually, the context is very intimate and provides the opportunity to explore individual points of view more deeply than with other qualitative methods. It also provides the opportunity to interpret body language, and for spontaneity in the discussion (Sudman & Blair, 1998). In-depth interviews are thus particularly suitable for research which requires confidential information, depth of information, or information on a sensitive subject. They are also suitable for overcoming logistical constraints of other research methods (Dillon et al., 1994).

Disadvantageously, in-depth interviews have a high cost per interview. They are both time and labour intensive. They tend to lack generalizability and there is not the possibility of group interaction and dynamic as in focus groups. They do not provide the anonymity of telephone or online interviews, and analysis is subjective (Sudman & Blair, 1998).

4.5   Quantitative Methods

Quantitative research seeks the facts or causes of certain phenomena without requiring subjective interpretation. It is thus objective (Deshpande, 1983), although it can also encompass subjective measures. It is usually explanatory but can also include a descriptive aspect (Hair et al., 2003, p. 60). Often prevalent in the 'pure' sciences, or promoted as the 'scientific method', quantitative research aims to verify as opposed to qualitative research which aims to explore (Deshpande, 1983). Quantitative research methods usually involve a large number of respondents, and are designed to produce findings which are generalizable to the whole population (Dillon et al., 1994).

As with qualitative research, each type of quantitative research has advantages and disadvantages. However, the main common advantages of a quantitative approach are that it yields a large quantity of data and the findings are usually generalizable to the whole population. It provides an objective assessment of the phenomenon being studied and a greater degree of reliability than subjective, qualitative research methods (Deshpande, 1983). Quantitative research is also cheaper to conduct per respondent than qualitative research.

However, on the negative side, the amount of control which the researcher can exercise is limited. The researcher is usually not present when the response is completed and thus the opportunity for clarification of ambiguous aspects is minimized and the perceived need to respond immediately is absent. This often results in the relatively low response rates of most types of quantitative research.

The more prominent quantitative strategies include surveys, experimentation and observational research (Schiffman & Kanuk, 2000). The research methods employed

for experimentation include both true experiments and quasi-experiments, while the surveys can be either cross-sectional or longitudinal (Pinsonneault & Kraemar, 1993). Cross-sectional surveys collect data from many respondents at the same point in time, while longitudinal surveys collect data from the same or similar respondents at different points in time (Dillon et al., 1994). The surveys can further be personal interviews, mall intercepts, telephone surveys, mail surveys, or online surveys (Schiffman & Kanuk, 2000). The latter two are examples of self-administered surveys.

The survey has not only been the most frequently used quantitative research method in marketing research (Deshpande, 1983) but also in IS research (Palvia et al., 2004). Each type of survey has its own particular advantages and disadvantages. Their merits are generally assessed according to the following criteria: cost, speed, response rate, geographic flexibility, interviewer bias, degree of research control, quality of response (Schiffman & Kanuk, 2000), quantity of response, sample control, and complexity (Dillon et al., 1994).

Among the different types of quantitative research methods, mail surveys seemed the most appropriate option for this research. They are discussed in greater detail below.

Internet or web-based surveys were a strong alternative to mail surveys. Both their advantages and disadvantages were comprehensively covered in a consolidation of the relevant literature by Evans and Mathur (2005). However, the relative advantage of a mail survey for this research will become apparent in the next section and in Section 6.3 which describes the physical design of the questionnaire.

4.5.1 Mail Surveys

Mail surveys involve the postal despatch of a fairly structured questionnaire to a sample of respondents (Dillon et al., 1994, p. 141) with a request for the return within a certain period.

In comparison with other types of surveys and with other research methods, they have distinct advantages. They are capable of acquiring a very large quantity of data from a widely dispersed geographical area (Dillon et al., 1994). This can be done at relatively low cost. Respondents can complete the questionnaire in their own time, at their own pace. Relative anonymity can be provided – certainly visual anonymity (Hair et al., 2003). There is also the elimination of interviewer bias (Dillon et al., 1994), and the whole exercise can be conducted relatively quickly (Schiffman & Kanuk, 2000).

However, there are a number of disadvantages to mail surveys. Although they are relatively speedy, they are not as quick as online surveys. Because of lack of interviewer control or ability to clarify confusing points, the questionnaires cannot be too complex. They should be simple and straightforward. This lack of control also extends to the sample and whether the person who actually completes the questionnaire qualifies as a member of the sample. Mail surveys also lack the versatility of personal interviews. However, two of the biggest disadvantages of these surveys are the low response rate and non-response bias. Non-respondents can represent a portion of the population with a particularly strong reason for not participating in the research. Not capturing their perspective can have a significantly skewing impact on the findings and might even render the research meaningless (Dillon et al., 1994).

4.6   Mixed Methods

A mixed methods approach to research consists of a combination of qualitative methods and quantitative methods. Less well-known than either qualitative or quantitative research, the idea of combining the two methods of research was popularized by Campbell and Fiske in 1959 when they used mixed methods to study the validity of psychological traits. This was in order to compensate for the limitations of either qualitative or quantitative methods. Others such as Sieber (1973) and Jick (1979) followed suite (Creswell, 2003).

In terms of marketing research, in 1983 Deshpande appealed for a combination of both qualitative and quantitative methods. He indicated that they were complementary

– while qualitative research was more suited to exploration and theory development, quantitative research was more suited to theory verification and testing. Qualitative methods were more concerned with validity, while quantitative methods were more concerned with issues of reliability. As all research aimed to be both valid and reliable, a combination of methods seemed logical. In addition, following Sieber's (1973) lead, it was suggested that the one research method would inform and enhance the other (Deshpande, 1983; Greene, Caracelli & Graham, 1989).

In terms of IS research, in 1991 Orlikowski and Baroudi similarly appealed for attention to the adoption of a plurality of research methods, indicating that much insight could be gained thereby and the findings enriched. Pinsonneault and Kraemar (1993) argued that because each method provided only a partial view of reality, the validity of the findings would be enhanced.

Exploring the prevalence of the use of mixed methods research, the fact that an international journal, the *Journal of Mixed Methods Research*, is to be launched in 2007, is indicative of the growing interest in, and adoption of, this type of research. In IS research alone, Mingers (2001) found that about 20% of research was using this approach.

There have been various ways to describe the combination of the methods used in the mixed methods approach. These have included 'nested', 'multi-method', 'convergence', and 'integrated'. However, the three main types of mixed methods are:

- sequential procedures, in which the researcher attempts to expand or elaborate on the findings of one method, by using the other;
- concurrent procedures, in which both methods are used together and interpreted in an integrated fashion; and
- transformative procedures, in which the researcher uses a theoretical lens as an overarching perspective (Creswell, 2003).

4.6.1 The Mixed Methods Approach Selected

As already indicated, it was decided to adopt a mixed methods approach for this research. The first phase would thus be primarily exploratory and, to a certain extent, descriptive. It would comprise personal, in-depth interviews. The second phase would be both confirmatory and explanatory, and would be quantitative. It would comprise a large, national mail survey. A sequential procedure would be used in that a predominantly qualitative phase would be followed by a quantitative phase. However, nested in the first phase, would be a brief quantitative survey. The resultant responses would be integrated into the interpretation of the overall results (Creswell, 2003).

The obstacles raised with regard to in-depth interviews did not appear insurmountable. The interviews would be scheduled so that travel costs would be kept to a minimum. The time and labour intensity were what could be expected in doctoral research. The lack of anonymity would be overcome with a formal undertaking of the confidentiality of the research and that any report would preserve the anonymity of the respondents. Group dynamics would not be required for this research as the interviewees would be targeted for their specific, expert knowledge of the topic. The questionable reliability of qualitative research would be compensated for by the second, quantitative phase, and so would the lack of generalizability.

In order to address the lack of complexity required for mail surveys, great care would be taken in the compilation of the questions and in the pre-testing of the questionnaire. To overcome both a low response rate and a possible non-response bias, each potential respondent would be contacted beforehand to ascertain their preparedness to participate. Further frequent communication would ensure continual reminders (Jobber & O'Reilly, 1996). In addition, each respondent would need to sign the completed questionnaire and provide their job title. This would ensure that the appropriate respondent completed the questionnaire. The lack of versatility and validity would have been compensated for by the qualitative interviews in the first phase.

4.7   Data Collection and Analysis

This chapter has focused on the design of the research. While this also theoretically includes the actual collection and analysis of the data, each of these aspects will be dealt with in the following chapters, according to each phase of the research.

It is important to note that Victoria University of Wellington maintains high ethical standards of research which involves human participants and all such research has to be cleared with the University before it is undertaken.

4.8   Chapter Summary

In this chapter an outline has been provided of the design for the empirical research. Starting with the research paradigm, the ontological approach would be one of critical realism, with a post-positivist philosophy, and the methodological approach one of mixed methods. Subsequently, both qualitative and quantitative methods as well as mixed methods were described in detail. The mixed methods design decided upon was explained – a sequential procedure with a predominantly qualitative phase followed by a quantitative phase – and an indication was finally provided of how the actual data collection and analysis fitted into the research design.

Chapter 5: Phase I – In-depth Interviews

5.0   Chapter Overview

In this chapter the first phase of the research is described. The objectives are outlined and then the development of the interview protocol is explained. The data collection procedures are described, and the findings, analysis and discussion thereof are presented in four main sections. These are: description of the alignment between IT and marketing; ratings of strategic orientation and market orientation dimensions; business performance measurement; and marketing performance measurement. Finally, conclusions are drawn.

Chapter contents

5.1   Introduction

This phase was predominantly exploratory in nature and had two objectives. The first objective was to explore notions of alignment between IS and marketing – the understanding of the concept and perceptions regarding its existence between IS and marketing. Particular emphasis was placed on aspects of strategic orientation and market orientation which could be aligned.

The second objective was to determine the distinction that companies made between marketing performance and business performance assessment criteria, and what measures they used.

These findings would inform the questionnaire which would be used in the second phase of the research.

5.2   Interview Protocol Development

The interview protocol (see Appendix 4), was based on the objectives of this phase, on the literature review, on the conceptual model, and on the various constructs which other studies had attempted to measure, and on which the model was based.

The objective of the protocol was to facilitate the exploration and description of the alignment between IS and marketing. In doing so, it would help the researcher to probe aspects of the topic which had not been covered by prior research. It would also facilitate the exploration of the relationship of the IS-marketing alignment to both business performance and marketing performance. Lastly, it would aid in the exploration and description of measures for business performance and marketing performance. The end result would be greater insights into, and understanding of, the topic of research and a better informed platform from which to embark upon the quantitative phase of the research.

Because the instruments on which the conceptual model was based had all been employed in quantitative research, they provided very clear indications of the aspects which needed to be explored. Consequently, the interview protocol lent itself to a fairly structured approach. The greater structure also implied greater stability of the interviews (Miles & Huberman, 1984). However, in order to facilitate unexpected responses to the questions and deeper exploration of those and other responses (Dillon et al., 1994, p. 115), the interviews were designed to be semi-structured with a mixture of closed- and open-ended questions. A combination of objective and subjective responses would thus be elicited. This design would accommodate the respondent in his world and also allow for the sequence of the questions to be changed if the responses indicated this to be necessary (Fontana & Frey, 1998).

The interview protocol was divided into four main sections: (1) description of the alignment or relationship between IS and marketing; (2) ratings of the company and

marketing function on the dimensions of strategic orientation and market orientation; (3) identification of the marketing performance measures used by the company; and (4) identification of the business performance measures used by the company. The second section would comprise a short questionnaire. This exemplifies the nested mixed methods approach of the methodology. The dimensions of the different measures for strategic orientation and market orientation had been very specifically indicated by the literature and therefore it was appropriate that this section was structured and quantitative.

The interview protocol was structured so that non-threatening questions were placed at the start (Fontana & Frey, 1998), thereby allowing rapport to be established between the interviewer and the respondent. On occasions questions were repeated later in the interview in a different format in order to check the accuracy of previous statements made by the respondents (Fontana & Frey, 1998).

5.3 Data Collection

Victoria University of Wellington requires that any research involving human participants be submitted to the Human Ethics Committee (HEC) for approval before the research is embarked upon. Appendix 5 contains a copy of the HEC application which was submitted and approved. Attachments to the application were the interview protocol, a short information sheet and a participation consent form (Appendices 4, 7 and 8).

5.3.1 Sampling

A sample of fifteen large (100 plus FTE's) New Zealand companies was planned. Large companies were deemed to be able to provide a more comprehensive span of activities than smaller companies; they probably had larger budgets and more resources; and they probably had a longer history, reflecting successful sustainability.

Two sources were used in the compilation of the sampling frame – 'The Atlantis 800 Business Directory' (2003) and 'Top 2003' (New Zealand Management, 2003). They

were cross-checked and integrated, and the companies that qualified in terms of size identified.

A composite sampling strategy was applied. The first stage consisted of a stratified sample. The qualifying companies were grouped into categories according to the ANZSIC (Australia-New Zealand Standard Industrial Classification) codes. The organizations which fell into the governmental and non-profit sections of the ANZSIC codes were excluded as they would not have been able to supply appropriate responses to the business performance measurement questions.

Proportional numbers in each broad ANZSIC category were calculated, and convenience sampling applied to identify companies in each category that required the least amount of travel time and distance to their head office. Where more companies than were needed in a cell were identified, simple random sampling was used to identify those companies to be sampled.

Although a sample of fifteen had been envisaged, twenty-five companies were identified in order to provide for refusals to participate or inappropriateness of the company. Letters were despatched to each of the heads of the companies, outlining the study and requesting their participation (see Appendix 6). Follow-up telephone calls were made to these company heads within a week. Twenty organizations indicated their willingness to participate. One refused (a representative of an industry which had come under considerable attack internationally), and four indicated that they would have been willing to participate but that the time was unsuitable (large IT implementation or company restructuring underway). In one of the companies that indicated willingness, one individual, the Chief Financial Officer (CFO), was responsible for both functions, so that company was excluded. In addition, it transpired that another company which had indicated willing, was a government funded organization and therefore inappropriate for the sample. The remaining eighteen companies comprised the final sample.

Facilitated by the introductions of the heads of the companies, the heads of IT and marketing were next contacted telephonically to request their participation and to set up appointments for the individual interviews.

5.3.2 The Interviews

The majority of the interviews were conducted between mid-February and the end of March 2004 with two interviews taking place in late April 2004 because the respondents had been overseas.

In each company both the head of IT (the vast majority were referred to as the head of IT and not of IS) and the head of marketing were interviewed. Each was initially presented with a copy of the letter which had been sent to the chief executive officer (CEO) in case they had not seen it. A short information sheet on the topic was also provided, and a participation consent form which they were required to sign (see Appendices 7 & 8). The researcher conducted all the interviews. These lasted, on average, 45 minutes. The interviews were tape-recorded, with additional notes being taken by the interviewer. These covered aspects such as body language and would help with the interpretation of the responses.

Although the data for the second section were collected by means of a survey form, discussions pertaining to the dimensions were included in the interview.

A letter of thanks was sent to each participant after the interviews (see Appendix 9).

Each interview was transcribed and two versions prepared. One included notes on such aspects as long pauses, repetition of points, revisiting of prior points, and laughter which would add depth to the interpretation of the transcripts (Miles & Huberman, 1984). The other version only contained a transcript of the words used and these versions were forwarded to the respective respondent for verification. This would ensure the validity of the data gathered (Creswell, 2003).

5.3.3 Data Preparation

In order to prepare the data for analysis, the transcripts were thoroughly examined and the responses divided and allocated according to each question or topic of exploration.

Because the interviews were only semi-structured, responses did not always follow the sequence of the interview protocol.

The questions fell into a number of categories which each required a different type of response. Some questions required answers of numerical numbers within a constrained range, for example the rating of the alignment between IT and marketing on a scale of one to seven. Some required answers in categories which could have been expected to a large extent, such as criteria for business performance; and some required answers which could only have been expected to a limited extent. An example of the latter is the description of the relationship between IT and Marketing within the company. Preparation was thus made accordingly for any categories which could have been expected (Sudman & Blair, 1998).

In some instances, interpretation of responses was straightforward, for example, a numerical rating. However, sometimes responses needed to be interpreted together with voice tone and/or answers to related questions. Thus a response from a head of marketing which described the relationship between IT and marketing as: "Sometimes we moan and grumble if we can't have what we need all the time" needed the accompanying laughter and the high numerical rating of the alignment to be interpreted in a positive light.

The analysis of the responses followed the three-step approach followed by Ashill, Frederiksen and Davies (2003) which was based on the guidelines of Glaser and Straus (1967) and Miles and Huberman (1994). The responses were first grouped into "thought units", then these were grouped into categories, and finally, they were organized into overarching themes. Colour coding was used to group the responses into categories. The coding helps to both organize and retrieve data. It also allows for the later clustering of similar categories into larger, overarching groups. Clustering thus sets the stage for analysis (Miles & Huberman, 1984). Table 5.1 provides an example of the three-step approach as applied to some responses to the question about what the difference would be for company performance between a company where the IT and marketing functions were well aligned, and a company where they were not.

Table 5.1   Example of three-step approach to response analysis

Respondent	Thought units	Interpretation category	Overarching theme
A (IT)	We won't deliver the right thing	Impact on delivery	Negative impact if not well aligned
B (IT)	Suicide	Financial impact	Negative impact if not well aligned
C (Marketing)	Efficiency will increase	Impact on efficiency	Positive impact if well aligned
D (IT)	Business wouldn't be in control of customer data	Impact on quality/management of information	Negative impact if not well aligned
		Impact on customer or customer relations	Negative impact if not well aligned
E (Marketing)	[Disastrous] financial impact	Financial impact	Negative impact if not well aligned
F (Marketing)	Greater client integration	Impact on customer or customer relations	Positive impact if well aligned

A number of the questions lent themselves to comparison with one another, for instance the description of the alignment between IT and marketing, and the rating of that alignment, and matrices were thus used to facilitate this.

The findings and analysis of the different sections are reported below according to the main questions and issues raised.

5.4   Findings, Analysis and Discussion

In order to provide the context of the responses, it is necessary to expand upon two aspects which might well have influenced the responses. The first was the extent of ownership by, or alliances with, foreign companies. Four companies had US owners, one a French owner, one an Australian, and one a Japanese owner. These were all multi-national companies. The US owners appeared to exercise more control over the subsidiaries than the French and Japanese owners, in that much of both the IT and marketing systems and processes was standardized. This led one IT manager to question the future role of IT managers in organizations when it appeared that all development was done in the head office and all that the subsidiary managers were required to do was to implement and maintain. On the other hand, some of the IT and marketing managers of the other US-owned companies saw the standardization of both IT and marketing as beneficial to the efficiency of the companies. Those companies that were either Australian owned or that had close alliances with an

Australian counterpart, as in the case of one company, seemed to require dotted line reporting across the Tasman. This was also the case with most of the multi-nationals which grouped New Zealand with Australia in an ANZ sub-region.

Five of the companies had previously been owned by the New Zealand government. Although a number of years (4-10) had passed since the privatisation of these companies, they were still subject to some form of industry-specific regulation, over and above the normal regulation which applied to all companies.

Lastly, two companies were owned by their members, as opposed to shareholders, and another company was owned by its partners.

The second aspect which appeared to influence responses was the 'newness' of the respondent to his/her position and/or to the company. This perception varied. Some respondents regarded four weeks as new, while others regarded 15 months as new. Whatever the perception, the main issue was that the newness was frequently offered as a reason for the respondent not providing what he/she regarded as a comprehensive or complete response, or for the company not being in a position which the respondent felt was desirable. Considering that nine out of the 36 respondents (25%), of which seven were heads of marketing, referred to themselves as 'new', this 'excuse' for perceived below-par performance lends one to question how many large New Zealand companies might be operating at a sub-optimal level.

5.4.1   Description of Alignment between IT and Marketing

Initially a general description of the relationship between IT and marketing was requested. The objective was to gain a top of the mind description of the relationship or alignment between the two functions. Furthermore, given the content of the introductory letter and participant information sheet, this would provide the link to the interview content. It was emphasized that the discussion would focus on the strategic level. Depending on which aspects were focused on in each response, so further descriptions were probed. These covered the following: mutual (personal) perceptions, reporting levels of the head of each function, the role of IT, the extent of

collaborative planning between the functions, and the extent of outsourcing by each function. In addition, respondents were required to provide a rating of the alignment as well as an indication of how this compared to the competition. They were also asked what the impact of alignment on business performance might be.

The responses to many of the aspects of this section of the interview are depicted in Table 5.2. While most respondents were amenable to discussing all of the aspects, in a few cases there was either a reluctance, often because of strict confidentiality requirements of the company, or an inability to provide any input. The latter might have been because that aspect was not addressed by the company or because the respondent did not know the answer. These non-responses are noted by the gaps in the table.

Generally the alignment or relationship was described in positive terms, although in two companies, it was described negatively by both respondents. These initial descriptions fell into two categories – from very good to poor; and from very tight to very loose.

In interpreting these responses, caution needed to be exercised against the skewing influence of demand artefacts. In other words respondents might have felt obligated to provide answers that they thought the researcher expected or wanted to hear. Given that the respondents had been alerted to the objectives of the study, and that this was the first question, they might also have felt the need to provide a positive reflection of their company to the relatively strange interviewer. Subsequent probing and subsequent questions served to substantiate or refute these responses.

Table 5.2. Demographic details and description of alignment: Consolidated view of responses

Co.	Respondent	Owner/Links	'New'	Report to	Report. Comparison	Liaison	Collaborative planning	Relationship	Relationship summary	Align. Rating
A	IT	Partners	Y	CEO	par		N	Pos.	P	3
	M			CEO				Pos.		3
B	IT	French		Finance	IT lower		Y	Neg.	Discrepancy	6
	M			CEO				Pos.		5
C	IT	Japanese		Finance	IT lower		Projects	Neg.	Discrepancy	2
	M		Y	CEO				Pos.		4
D	IT	US		CEO	par		Co. planning	Pos.	P	5.5
	M			CEO				Pos.		5.5
E	IT	US		Other - co. specific	IT lower		Co. planning	Neg.	N	5
	M		Y	CEO				Neg.		
F	IT	Ex-govt.		Finance	par	Y	Discrepancy	Variable	Discrepancy	
	M			Trading				Variable		5
G	IT	Members		CEO	M lower		Projects	Pos.	P	5
	M			Retailing				Pos.		5
H	IT	US		Finance	IT lower	Y	N	Pos.	P	6.5
	M			CEO				Pos.		5.5
I	IT	NZ		Finance	par		N	Neg.	Discrepancy	4.5
	M		Y	Finance				Pos.		4.5
J	IT	NZ		CEO	par		Projects	Neg.	Discrepancy	4
	M			CEO				Pos.		7
K	IT	Ex-govt.		CEO	par		Y	Pos.	P	3
	M		Y	CEO				Pos.		3
L	IT	Members		CEO	par		Y	Pos.	P	6
	M			CEO				Pos.		6
M	IT	US		Finance	IT lower		Informal	Pos.	P	7
	M			CEO				Pos.		6
N	IT	Ex-govt.		CEO	M lower		Discrepancy	Pos.	Discrepancy	5
	M		Y	Retailing				Neg.		3
O	IT	Ex-govt.		CEO	M lower	Y	Y	Pos.	P	
	M			Operations				Pos.		
P	IT	NZ +Austral.		CEO	par		Co. planning	Variable	Discrepancy	6
	M		Y	CEO				Pos.		4
Q	IT	Ex-govt.	Y	CEO	M lower		N	Neg.	N	2
	M		Y	Other - co. specific				Neg.		3
R	IT	Austral.		Other - co. specific	IT lower	Y	Y	Pos.	P	4
	M			CEO				Pos.		5

In most companies the heads of IT and marketing described the alignment more or less similarly. In nine companies there was a strong, predominantly positive, similarity between descriptions. In fact, in one of these companies, the head of marketing even questioned the need to explore the alignment between IT and marketing. There was such a perceived closeness and integration between IT and marketing in the company, that it was assumed to be the case in all companies.

In seven companies there appeared to be no similarity at all between the responses of the heads of IT and marketing. In four of these seven companies, the heads of marketing were 'new'. This might have been indicative of a new incumbent wanting to approach a new position in a positive fashion, or possibly seeing their first task to

be internal marketing. In one of those four companies, the head of IT was also new, but had a negative perception of the alignment between the two functions.

Expanding on the descriptions, five heads of marketing and two of IT indicated the importance of a good mutual understanding of one another's objectives and areas of operation. In fact, one respondent noted that alignment suffered when meaning got lost in the 'translation' of ideas between the two functions. In one company, the head of marketing had a background in IT, and the head of IT had served as a head of marketing in another company. They thus had a good mutual understanding of one another's areas and consequently were able to describe their alignment in equally positive terms (see Reich & Benbasat, 2000). Furthermore, two heads of marketing praised IT for being responsive and three expressed the respect that they had for the IT function. However, on the negative side, one head of IT reported that IT was seen as a necessary evil by marketing.

Potential or actual constraints or barriers to alignment that were mentioned were: the lack of speed in IT delivery (by four heads of IT), lack of funds for IT (by four heads of IT), imposition of standardized systems from overseas owners (by two companies – heads of both IT and marketing), size of the organization (by two companies – heads of both functions), physical separation of IT and marketing functions (by two companies – heads of both functions), and reporting level differences, unclear roles, the 'newness' of the head of marketing (all by one company each).

At a more personal level, the IT and marketing departments were reported to get along well, apart from occasional personality clashes. This was irrespective of the reported state of alignment. However, some comments emerged which might be seen as stereotyping. Eight respondents (six IT and two marketing, of which four were from two companies) reported along similar lines. Some of the remarks were:

> 'Marketing have ideas and want to react immediately, IT like to plan and need time to do things' (IT)

> 'Marketing probably think that IT is a barrier to doing the job – slow, never deliver, and make it hard' (IT)

> 'IT people are black and white' (M)

'IT accountants are unrealistic regarding marketing campaigns' (M)

'Marketing often doesn't consider the costs' (IT)

'IT are probably seen to take too long. Marketing are seen to be disorganized and reactive' (IT)

One respondent commented that although the stereotyped perceptions were not evident in the workplace, over a couple of beers, they might well emerge.

5.4.1.1   Reporting Levels

In terms of reporting lines, six heads of IT reported to the CFO who, in most cases, then reported to the CEO as did the head of marketing. In one of those cases, the head of marketing also reported to the CFO. In two companies, the heads of IT reported to a head of infrastructure or such like company-specific position which, together with the head of marketing, reported to the CEO.

In six companies (33%) the head of IT was placed at a lower level organizationally than the head of marketing, and in four companies, the head of marketing was placed at a lower organizational level. This was usually because marketing reported to the head of retailing or such like position which was on a par with the head of IT.

In addition, in three companies, the heads of marketing perceived the heads of IT to be on the same reporting level as they were but this was erroneous – they were at a lower level. This was similarly the case with the perception of one head of IT with regard to the reporting level of the head of marketing. These misconceptions were not reflective of the 'newness' of the respondent.

In summary, in ten companies (55%), the heads of IT and marketing were not on a par. These inequalities might well have impacted on the perceived superiority of either function, or the higher regard in which it was held within the company. As a consequence, communication and mutual understanding might have been hindered and, as a result, the alignment between the two functions.

In addition, the fact that IT fell under the CFO in six companies placed them at a lower level than marketing in the hierarchical structures and could therefore have impacted on the communications between IT and marketing.

A potentially confounding issue seemed to have been the dotted line reporting – usually trans-Tasman. This applied to most of the companies with foreign ownership or alliances and affected both the heads of IT and marketing – not always with the desired synergistic results. For instance, one head of marketing reported:

"Say, for example, in the country we're really interested in customer satisfaction, revenue, profit and today's sales outstanding, whereas we might be a little more interested internationally in the health of our brand, how well we're tracking with certain campaigns. If I sat round with the exec team and started talking about validated lead target or about campaign assurance metrics, they'd laugh me out of the room. So I have more of the down-to-earth measures here in New Zealand and more of the esoteric measures offshore."

While the similarities or differences in reporting levels, as well as to whom, might have been expected to show some correlation with the similarities or differences in the general descriptions of the IT-marketing relationship, none was evident.

5.4.1.2   Role of IT

The role of IT was explored in order to ascertain whether the heads of IT and marketing held similar perceptions and thus similar expectations of the IT function. It was also in order to determine whether difference in reporting levels might have had any impact on these expectations.

IT's role was seen by the overwhelming majority of respondents as that of an enabler and/or service or support provider. In most instances, the view was that IT should be led by marketing or the business. In two companies, it appeared that IT had done the leading in the past. However, with a new head of marketing in one instance, and a company restructuring in the other, this was predicted to change in both cases. In addition, one head of IT referred to the strategic leverage which IT could supply.

The reporting level of IT vis-à-vis marketing did not appear to influence perceptions and expectations of IT's role, although it could be argued that, in those companies where the head of marketing was on a higher hierarchical rung than marketing, IT could be regarded as being subservient to marketing.

5.4.1.3 Liaison Position/Unit

In order to facilitate a closer alignment between IT and marketing, four companies had specifically created liaison positions or units which would bridge the gap between the two functions and act as a communications conduit. In three instances, these initiatives fell under the responsibility of the IT function. As could have been expected from closer links, the heads of IT and marketing from three of these companies displayed a strong correlation in their positive descriptions of the relationship between the two functions in their respective companies. On the other hand, there appeared to be no correlation between the existence of such a liaison position or unit and similarity of reporting levels. In fact, such an initiative might well have been used to overcome differences which arose from disparities in reporting levels.

5.4.1.4 Collaborative Planning

The aim of exploring collaborative planning was to determine to what extent IT and marketing worked together towards the same goals – whether mutual or individual. The greater the extent, the more one might thus imply a greater communication and mutual understanding and thus expect greater alignment between the two functions (Reich & Benbasat, 2000).

Of the nine companies that reported any form of collaborative planning between IT and marketing, one indicated that it was much more on an informal level, while three others indicated that it was more in terms of projects such as website development. Only five of these companies thus really approached it strategically.

As could have been expected, four of those five companies had reported a close relationship between IT and marketing. Whether that closeness gave rise to collaborative planning or vice versa is debatable, but there appeared to be a link between the two.

With regard to reporting levels, the heads of IT and marketing in three of the nine companies that reported collaborative planning reported at the same level in the organization – to the CEO. In four instances, the head of marketing was higher and in two instances the head of IT was higher. The similar reporting levels might well have enhanced opportunities for collaboration.

Although reported as collaborative planning between IT and marketing, in three additional companies, the extent of collaboration was questionable as it occurred mainly, if not solely, within the context of the company planning process and not exclusively for IT and marketing. On the one hand it could be argued that such a context would lend a greater perspective to the overall positions, requirements and abilities of each function. On the other hand it could be argued that in such general forums, the focus might fall on other functions so that the specific IT-marketing relationship did not receive sufficient attention and thus opportunity for collaboration.

No collaborative planning was reported in four companies, irrespective of reporting levels of the heads of IT and marketing, and in two companies, one respondent perceived collaborative planning to have been taking place, while the other respondent did not. This tended to be the case, for instance, when the marketing function was one of a number of related functions reporting to a head of retailing. Thus the head of IT would be confused as to with which function or sub-section he/she had actually been planning collaboratively.

Of the four companies which had instituted liaison positions or units between IT and marketing, two reported that they practised collaborative planning, one that they did not, and in one company the heads of IT and marketing were at odds. This might be explained by a real commitment to collaboration and alignment between IT and marketing in the first two companies.

The company which had such a unit but which reported no collaborative planning, was a large multinational and such collaboration possibly took place at a head office level. In that case, the liaison function between IT and marketing acted, in all likelihood, more as a communications channel. Alternatively, there might have been a possible complacency with the establishment of such a position or unit as being sufficient to ensure collaboration and thence alignment.

Apart from one US-owned company, in all the foreign-owned companies or companies that were in an alliance with foreign companies, collaborative planning between IT and marketing took place – even though it was part of the company planning process in three instances.

One further factor which was considered was the influence of the size of the organization. Two companies which mentioned this as a potential barrier to alignment were obviously aware of it, and appeared to have sought to overcome it by ensuring that planning between IT and marketing was collaborative.

In summary, it seems that there was a positive connection between the extent of strategic collaborative planning between IT and marketing and positive descriptions of the relationship between IT and marketing. The existence of a liaison position/unit seems to have enhanced the collaboration, as did the relatively large size of the company.

5.4.1.5 Outsourcing

The existence and extent of outsourcing was explored, especially with regard to IT-enabled marketing. The possibility existed that by outsourcing, the potential to enhance alignment might have been reduced. Another reason for exploring this aspect was to determine the extent of knowledge of the other function's activities and possibly a closer link between marketing and the outsourcing agent of IT.

It should be borne in mind that the responses were by no means exhaustive lists. They were top of the mind recollections. Nevertheless, they did indicate some form of priority, importance or recency.

Five companies outsourced all of their main IT and network functions. Two companies outsourced their core IT functions, two outsourced their web development and web hosting respectively, and two companies outsourced their helpdesks and infrastructure support. Four other companies outsourced their disaster recovery; IT maintenance; development and security; and desktop, networking and applications support respectively. Two companies did not outsource any IT at all, and one company only occasionally called in a consultant.

Responses from the heads of marketing appeared to reflect those of the heads of IT, to a greater or lesser extent. With regard to the other aspects which had been explored, there did not seem to have been any discernible patterns or common characteristics amongst the outsourcing practices, except that those companies which did not outsource anything were in the IT/IS service industry. At the other end of the spectrum, those companies which outsourced all of their IT and networking functions operated in very data intensive and IT-dependent industries, such as banking. Apparently, outsourcing provided them with greater security or reassurance.

As far as marketing outsourcing was concerned, the heads of IT did not appear to be aware of which aspects of marketing were outsourced. One company reported that the IT aspects of marketing were the responsibility of the marketing function. The only condition was that any outsourcing had to be compatible with the company IT policies and practices.

Multiple answers were forthcoming from most heads of marketing. The main activities that were outsourced were advertising (nine companies), research (eight companies), promotions (three companies), media buying (three companies), public relations (two companies) and direct marketing (two companies). Six companies outsourced three or more activities, while most of the remainder outsourced two activities.

There did not appear to have been any correlation between the amount of IT outsourcing and the amount of marketing outsourcing.

In general, the heads of marketing appeared to have been better informed as to which aspects of IT were outsourced, than the heads of IT with regard to marketing outsourcing. This might be explained by the fact that IT underpins much of marketing's activities but not vice versa. However, there appear to have been aspects of marketing, such as research, where IT could have been more involved with marketing.

5.4.1.6 Alignment Ratings

By the time the interview was well underway and a chance had been provided to establish a level of mutual trust, respondents were asked to rate the alignment between IT and marketing on a scale of one to seven, seven being very high or close, and one being very low. Some respondents felt they could best describe the alignment in terms of half-way between two numbers and they were allowed to do so.

These ratings were intended to act as a check on the descriptions of the relationship provided at the start of the interview. The impact of the preceding discussions, however, needed to be taken into account insofar as they might have influenced the ratings.

Six of the companies yielded the same rating from the head of IT and the head of marketing. Only one company displayed a marked difference in ratings (3 points), three manifested a 2-point difference and the rest less than that.

There appeared to have been no correlation between the differences or similarities of the heads of IT and marketing's ratings and the differences or similarities of their prior descriptions of the relationship. In other words, where there might have been a large difference in the prior description, the actual ratings were similar, and vice versa. This might have been because of differences in individual benchmarks. For example, one respondent described the relationship as "often not easy" and accorded the perceived alignment a rating of 6, while another who described the relationship as "good" gave the perceived alignment a rating of 5. However, the respondents from three companies both described and rated the IT/marketing alignment similarly positively. Two of these companies were the two member-owned companies.

In comparison to their competitors, most respondents indicated their inability to assess their alignment between IT and marketing comparatively. However, five respondents, mainly heads of marketing rated the alignment within their company as being stronger than that of the competition. This could possibly have been because marketers, by nature of their jobs, tend to be more alert to their competition and also have more contact with the competitive world that IT professionals. One of these positive respondents, nevertheless, was a head of IT. In fact, both the heads of IT and marketing in that company perceived their alignment to be stronger than that of the competition. They had also provided similar ratings and similarly positive descriptions of their alignment.

5.4.1.7   Impact of Alignment on Business Performance

To introduce this topic, two scenarios were described: one of a company in which there was a good alignment between IT and marketing, and another of a company where the alignment was poor. Respondents were asked how the difference between those two companies in terms of business performance would be manifested, all things being equal. The objective was to ascertain whether the respondents viewed the alignment between IT and marketing as having a significant impact on the company, and if so, in which area.

Multiple responses were possible but those provided could be divided into five main categories: impact on the customer or customer relations, impact of efficiency, impact on delivery, impact of quality/management of information, and financial impact. In all instances, a negative influence would be exercised where there was a low alignment, and a positive influence in the case of a tight alignment.

Of the seven responses which focused on the customer, six came from heads of marketing. The comments ranged in the extent to which they were more or less strategic and included:

> "…providing a better service to clients and integrating the client more with the organization" (M)

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"primarily a crappy customer experience" (M)

"more IT systems that weren't aligned to the delivery of the product and services to the customer" (IT)

With regard to efficiency, all the responses came from heads of marketing. While the majority emphasized reduced costs, one respondent highlighted the reduction in spare capacity

There were four responses which focused on delivery. Three of these were from heads of IT and one from a head of marketing. The perspectives varied. The IT respondents were concerned about non-delivery or delivering the wrong things to marketing. The marketing respondent was concerned about non-delivery to the customer. The latter respondent and the respective company head of IT had both highlighted the focus on delivery which seemed to indicate a concerted company emphasis on delivery.

Both IT and marketing respondents (four in total) focused on the quality and/or management of information – and not exclusively about customers.

The largest number of responses (eight) emphasized the financial impact. Five of these responses were from heads of IT and three from heads of marketing. These were generally focused on the company as a whole, as opposed to marketing, although the reference to the impact on sales by one respondent could have alluded to the marketing function.

Indirectly linked to the direct financial impacts were the long term implications for the company. Comments in this regard included the following:

"Its almost commercial suicide" (IT)

"The company just wouldn't grow at the requisite rate" (IT)

Other impacts mentioned included the effect on the ability to evaluate success, reduced business responsiveness, and development of innovative systems.

Judging from these responses, it seems that the heads of marketing saw alignment between IT and marketing as having more significant impacts on the customer or customer relations, on efficiency and on the quality and management of information. The heads of IT, on the other hand, focused more on delivery and on the financial impact, than on the company specifically. The focus of the two functions thus appears to have been somewhat different.

5.4.2 Dimension Ratings

At this point in the interview a short Likert-style questionnaire was introduced. Respondents were required to rate the extent to which the company, as a whole, manifested the dimensions of both strategic orientation and market orientation. These dimensions were based on the tentative model which had been derived from the literature.

The objectives were to determine:
- the similarities/differences between the ratings of the heads of IT and the heads of marketing;
- the similarities/differences between the ratings by the heads of marketing between the company as a whole and the marketing function;
- the similarities/differences between the ratings of the dimensions of strategic orientation and those of market orientation;
- the comprehensibility of the terms used; and
- the appropriateness of the terms used.

Respondents were first required to characterize the company's overall business strategy. They were provided with a form (see Appendix 10) which listed the attributes or dimensions of strategic orientation and which provided for a rating on each dimension on a scale of one to seven, seven being very high and one being very low. The dimensions were: aggressiveness, analysis, defensiveness, futurity, proactiveness, innovativeness, and risk aversion. These were based on Venkatraman's (1985) and Chan's (1992) measures. An explanation of each of the dimensions was provided. It was also emphasized that a high rating didn't necessarily mean a good

rating. It simply reflected the extent to which the company manifested each of the dimensions. The respondents were asked to circle the number on each dimension which reflected their company's manifestation of that dimension.

Next, the heads of marketing were asked to rate the extent to which the marketing function of their company manifested each of the dimensions. This was done with a different coloured pen on the same form as before. The objective was to ascertain the extent to which the heads of marketing perceived the strategic orientation of the marketing function to be similar to that of the company - in other words, how closely they might be aligned. The heads of IT were not required to do this because marketing performance, and not IT performance, was the intermediary dependent variable of the conceptual model.

After completion of the first form, the respondents were given a similar form (see Appendix 11) which listed the dimensions of market orientation with similar rating options to those on the strategic orientation forms. Once again, the dimensions were explained and respondents requested to circle the number which reflected the extent to which their company manifested each of the market orientation dimensions. These were: customer analysis, customer responsiveness, competitor analysis, competitor responsiveness, interfunctional coordination, and responsiveness to the environment in general. These were derived from a combination of the measures of Narver & Slater (1990), Kohli et al. (1993), Deng and Dart (1994), Gray et al., (1998) and Dawes (2000).

As with the strategic orientation dimensions, the heads of marketing were subsequently required to circle, with a different coloured pen, the extent to which the marketing function manifested the six dimensions.

Before discussing the results, it is necessary to consider the aspects of the survey which required clarification in order for the forms to be completed.

5.4.2.1 Comprehensibility and Appropriateness of Names Used for the Dimensions

Firstly, despite the initial explanations, a number of dimensions required re-clarification by the time the respondent got to rating that dimension. These were almost exclusively all dimensions of strategic orientation. The dimensions most queried were 'defensiveness' (seven queries – four heads of IT and three of marketing) and 'futurity' (four queries – two heads of IT and two of marketing). In addition, 'proactiveness' and 'risk aversion' were queried by a head of marketing. Only two market orientation dimensions were queried – 'customer responsiveness' and 'competitor responsiveness' – and those by a head of marketing. This particular respondent had questioned 'defensiveness', 'risk aversion' and 'futurity' as well so it might be assumed that the clarification requested was more attributable to the nature of the respondent than the obscurity of the dimensions.

The dimension which gave rise to most alternative suggestions was 'aggressiveness'. One head of IT interpreted 'aggressiveness' and 'defensiveness' as being one and the same thing while another head of IT thought that a dimension of 'aggressive defensiveness' would be more appropriate. A head of marketing suggested that 'assertiveness' would be a more acceptable, less strident version of the concept, while another head of IT thought that 'competitiveness' would be more suitable. To address these suggestions, reference should be made to the business and marketing literatures which favour the use of 'aggressiveness'. In addition, more popular media reports also favour the term so it can be assumed to be generally acceptable and comprehensible.

A couple of respondents suggested including 'flexibility' in the strategic orientation dimensions. However, this was arguably covered by the dimensions of 'proactiveness' and 'responsiveness'.

A second consideration was that the market orientation dimensions which referred to customers, required some distinction between the concepts of the customer, which manufacturers might have considered to be both the retailer and the end consumer. The latter was generally regarded as the customer. In addition, some respondents felt

it necessary to note that both the current and potential customers were considered in their responses.

Thirdly, at least six respondents needed to clarify that what they were describing was the company as it was, not as it was intended to be. This was very often the case with 'new' incumbents.

Fourthly, some respondents felt it more suitable to provide half-point ratings. These were allowed.

5.4.2.2 Ratings

The various summary tables presented below serve to highlight some of the more pertinent aspects of the findings.

Table 5.3 depicts which of the two measures received higher ratings by either the heads of IT, the heads of marketing or the heads of marketing with regard to the marketing function. It also provides an indication of whether the heads of IT or marketing provided higher average ratings and on which dimensions either group rated their company more highly. In turn, the same comparison applies to the ratings by the heads of marketing of their company and their marketing function.

Table 5.3.   Strategic and market orientation dimensions: Average ratings

Measures	Dimensions	IT's rating of the company	Marketing's rating of the company	Marketing's rating of the marketing function	IT's rating of the company minus Marketing's rating of the company	Marketing's rating of the company minus Marketing's rating of the marketing function
Strategic orientation	Aggressiveness	4.83	4.33	4.42	0.50	-0.08
	Analysis	5.33	4.58	4.94	0.75	-0.36
	Defensiveness	4.31	4.22	4.06	0.09	0.17
	Futurity	5.67	4.89	5.28	0.78	-0.39
	Proactiveness	5.22	4.53	5.17	0.69	-0.64
	Innovativeness	5.28	4.56	5.11	0.72	-0.56
	Risk aversion	4.89	4.5	3.78	0.39	0.72
	Average	5.08	4.52	4.68	0.56	-0.16
Market orientation	Customer analysis	5.11	4.56	5.56	0.55	-1.00
	Customer responsiveness	4.94	4.89	5.56	0.05	-0.67
	Competitor analysis	5.08	4.61	5.06	0.47	-0.44
	Competitor responsiveness	5.14	4.44	4.67	0.70	-0.22
	Interfunctional coordination	4.75	4.69	5.39	0.06	-0.69
	Environmental responsiveness	5.42	4.89	5.33	0.53	-0.44
	Average	5.07	4.68	5.26	0.39	-0.58

On average, the heads of IT rated all of the strategic orientation dimensions and all of the market orientation dimensions more highly than the heads of marketing.

Furthermore, the heads of marketing rated the marketing function more highly than the company on all the strategic orientation dimensions except 'defensiveness' and 'risk aversion'. They, nevertheless, rated the marketing function more highly than the company on all the market orientation dimensions.

The higher ratings by the heads of IT might imply that by nature of the enabling, supportive role of IT, the heads were more in touch with what went on in all parts of the business and could thus form a more comprehensively informed view of the business. On the other hand, it might well have been that the heads of marketing had a more realistic impression of the company, particularly with regard to the company's

dealings with the external environment. Yet it might also imply that the heads of marketing were more inclined to being pessimistic.

Although it was not part of the overall research objective to determine the differences between the subjective assessments/ratings of the heads of IT and the heads of marketing, this very obvious difference suggests areas of future research.

The heads of marketing rated the marketing function higher than the company. This could be interpreted as marketing being at the forefront of manifesting the company's strategic initiatives and thus displaying certain characteristics more keenly. It could also hint at a possible frustration of the heads of marketing with the company's 'slower' or 'less keen' approach.

Table 5.4 highlights the main points of Table 5.2 in that it pinpoints the strategic orientation and market orientation dimensions which received the highest and the lowest average ratings and compares them across groups of respondents. As can be seen, there was a definite similarity between the heads of IT and marketing's average ratings of the highest (futurity) and lowest (defensiveness) strategic orientation measures, and the highest market orientation measure (environmental responsiveness).

Table 5.4.   Strategic and market orientation: Highest and lowest rated dimensions

Measures		IT of Company	Marketing of Company	Marketing of Marketing
Strategic orientation	Highest rated dimension	Futurity (5.67)	Futurity (4.89)	Futurity (5.28)
	Lowest rated dimension	Defensiveness (4.31)	Defensiveness (4.22)	Risk aversion (3.78)
Market orientation	Highest rated dimension	Environmental responsiveness (5.42)	Customer responsiveness (4.89) Environmental responsiveness (4.89)	Customer analysis (5.56) Customer responsiveness (5.56)
	Lowest rated dimension	Interfunctional coordination (4.75)	Competitor responsiveness (4.44)	Competitor responsiveness (4.67)

With regard to the ratings of the heads of marketing in terms of the company and the marketing function, there were marked similarities between the highest rated strategic

orientation measures (futurity) and the highest (customer responsiveness) and lowest (competitor responsiveness) rated market orientation measures.

From the focus on 'futurity' it could have been assumed that companies were adopting a strategic perspective and this, in turn, might have contributed to a closer alignment between IT and marketing – certainly in terms of planning horizons and alignment of long term goals. The lower ratings for 'defensiveness' could have indicated a focus of companies on getting on with the job in hand, rather than worrying about what the next man was doing, as stated by one respondent: On the other hand, it could be a cause for concern, either indicating a complacency or a lack of awareness of the competition.

Although 'defensiveness' and 'futurity' were the two dimensions which were queried most, there did not seem to be any reason for this apparent coincidence except a possible over-awareness of the dimensions.

In terms of the market orientation ratings, the similarity with regard to 'environmental responsiveness', once again seems to indicate that IT and marketing were both driven by corporate goals – a positive indication for alignment. The high ratings for 'customer analysis' and 'customer responsiveness' for both the company and the marketing functions, indicated a similar direction of pursuit and an appropriate focus for both. Conversely, the similarly low ratings for 'competitor responsiveness', might well have reflected the same underpinnings as suggested in respect of 'defensiveness'.

Using a different approach, the average differences between the responses of the heads of IT and the heads of marketing were first calculated per dimension and then averaged across the construct. Previously the average across all dimensions had first been calculated and than the differences between the ratings of the heads of IT and marketing.

Table 5.5 presents a summary of the dimensions which displayed the more extreme differences (2.5+ points) in terms of the ratings of the heads of IT and marketing.

Table 5.5. Strategic and market orientation dimensions: Extreme differences between IT and marketing, and marketing's rating of company and marketing function

Measures	Dimensions	IT's rating of the company minus Marketing's rating of the company	Marketing's rating of the company minus Marketing's rating of the marketing function
Strategic orientation	Aggressiveness	2	2
	Analysis	1	0
	Defensiveness	5	1
	Futurity	1	1
	Proactiveness	3	1
	Innovativeness	3	2
	Risk aversion	4	3
Market orientation	Customer analysis	2	1
	Customer responsiveness	0	2
	Competitor analysis	4	2
	Competitor responsiveness	3	1
	Interfunctional coordination	0	2
	Environmental responsiveness	1	1

As can be seen, on both the strategic orientation dimensions and the market orientation dimensions, there were more extreme differences between the heads of IT and marketing, than between the heads of marketing's ratings of the company and the marketing function.

In the former case, it might well have been attributable to an actual difference, a difference in understanding – especially given the clarification required of 'defensiveness', a difference in exposure of IT and marketing either to company strategic planning or company strategy implementation, or simply a difference in personalities. In the latter case, given that the head of marketing rated both the company and the marketing function, it is more conceivable that the difference would have been attributable to an actual difference as opposed to differences in personal benchmarks.

It is also notable that the strategic orientation dimensions displayed more extreme differences between the ratings of the heads of IT and marketing than the market orientation dimensions. The 'defensiveness' and 'risk aversion' dimensions of

strategic orientation and the 'competitor analysis' dimension of market orientation were all significant in this regard. This might have been due to easier comprehension of the market orientation dimensions than those of strategic orientation. This is borne out by more of the clarifications having been required for the strategic orientation dimensions.

With reference to Appendices 12 and 13, it can be seen that the absolute average differences between the heads of IT and marketing were larger on the strategic orientation dimensions (1.41, 'defensiveness' (1.72) being the largest) than on the market orientation dimensions (1.14, 'competitor responsiveness' (1.47) being the largest). These differences were larger than the differences between the heads of marketing's ratings of the company (1.10, 'risk aversion' (1.39) being the largest) and the marketing function (0.95, 'customer analysis' (1.11) being the largest). The same possible explanations as above apply.

It is notable that, as with the average ratings, 'defensiveness' displayed the highest difference or range.

Of the six companies where there was the highest absolute average difference between the heads of IT and marketing, in five of them the head of marketing was new. In addition, the descriptions of the relationships had reflected discrepancies in four of the companies, a similarly positive description in one company and a similarly negative description in another. This might suggest a connection between the 'newness' of an incumbent and the alignment between IT and marketing.

With regard to a comparison between the former one-off ratings and these composite ratings (see Appendices 14 and 15), of the 32 respondents who provided all the relevant data for this discussion, more (19 – nine IT and ten marketing) displayed greater differences between the strategic orientation averages and the original ratings than between the market orientation averages and the original ratings. Three respondents (one IT and two marketing) had provided exactly the same ratings for their market orientation and one-off ratings. In addition, two of these respondents were the heads of IT and marketing of the same company. They had also provided

exactly the same one-off ratings. However, their description of the relationship had not been similar.

This could possibly indicate that the market orientation measures are more reflective of alignment between the heads of IT and marketing, than the strategic orientation measures. Furthermore, the market orientation measures seemed equally appropriate for both the heads of IT and marketing.

In addition, with regard to the differences between the average ratings of both strategic orientation and market orientation and the original ratings, the heads of marketing displayed smaller differences than the heads of IT. This could be indicative of marketing's greater sensitivity to the strategy of the company. However, the sample was very small and the influence of outliers could be significant, so it would be rash to draw such a conclusion.

In reporting on the extent to which the IT function supported the marketing function in manifesting both the strategic orientation and the market orientation dimensions, most heads of IT referred to the basic infrastructural support and maintenance. This was particularly focused on 'customer analysis' and 'customer responsiveness'. In some companies this extended to the customer relationship management systems. To a lesser degree support was provided for 'competitor analysis', six companies having established special competitive intelligence units. In three companies the heads of IT played a proactive role in suggesting systems to the marketing function, but generally IT was led by marketing requirements.

In summary, the results from this section indicated that the heads of IT tended to provide higher ratings than the heads of marketing with regard to both strategic and market orientation, and that there appeared to be greater differences between the heads of IT and marketing on the strategic orientation dimensions than on the market orientation dimensions. This seemed to suggest that that heads of IT and marketing had a better sense of shared understanding and agreement as to the company's market orientation than they did with regard to the company's strategic orientation.

By the same score, the heads of marketing tended to provide higher ratings for the marketing function than the company with regard to both strategic and market orientation, and there appeared to be greater differences on the strategic orientation dimensions than on the market orientation dimensions. This could have been attributable to the heads of marketing being more at the cutting edge of a company's strategic initiatives, rather than being in a support role such as reported of IT.

By and large the dimensions used seemed acceptable to the respondents, although a number of them require careful definition. These tended to be strategic orientation dimensions rather than those of market orientation.

Once the survey had been completed, the qualitative interview proceeded to explore the last two sections, business performance and marketing performance.

5.4.3 Business Performance

Business performance is the dependent variable in this research. As such, it was important to ascertain how it was assessed and measured. Although many examples were evident in the literature of how this has been addressed, verification was required of whether these measures were still appropriate, whether they were commonly applied, and whether additional measures should be considered. It was also necessary to ascertain what distinctions or similarities there were in companies between the assessment/measurement of business performance and marketing performance.

The main question posed consisted of two components – the assessment and measurement. The assessment referred to the criteria used and the measurement referred to the metric. However, much as this separation was emphasized, respondents appeared hard pressed to distinguish between the two and treated this as one question.

Three respondents, two of which were heads of IT, weren't able to provide answers to the question. Only one of these respondents was 'new' to the position.

As multiple responses were possible, it was expected that responses would fall into four main categories: financial measures, both absolutes and relative; and market measures, both absolute and relative.

By far the majority of the responses fell into the absolute financial category. Most of these were measures as opposed to assessment criteria. As many of the companies interviewed were listed companies, it could have been expected that they would have a strong focus on financial measures or GAAP. This was the case. Profit was named by 23 respondents, representing 16 companies, margin by four respondents from four companies; and sales by 14 respondents representing 11 companies. Further measures noted were return (two respondents), return to shareholders (six respondents from five companies), return on capital invested (four respondents). Other absolute financial measures included earnings per share, EAT, EBITDA, ROI and EBIT. Within this category, there were finer breakdowns of the measures, for instance, profit per segment, as well as many ratios, such as gross profit against total sales, and interest/income.

Relative financial measures were named less frequently. These consisted of growth in profit (one respondent), growth in sales (four respondents from four companies) and growth in equity.

The absolute market measures consisted of customer satisfaction (seven respondents from five companies), customer loyalty (four respondents from four companies), and customer service (four respondents from four companies). These responses tended to focus more on the assessment criteria and respondents had to be prompted for the measures thereof.

Relative market measures included market share (five respondents from three companies), customer retention (seven respondents from six companies) and customer conversion (one respondent).

Over and above the four categories of measures, there were those that fell into industry specific measures, such as health and safety measures, and industry awards. There were also those which focused on social and environmental responsibility. The

latter were very company specific and were seen as distinguishing competitive advantages.

A couple of comments from respondents provided meaningful insights. A number noted that market share was not always an appropriate measure for a company. This depended very much on the type of industry in which the company operated and the type of market structure which dominated that industry. Another measure which was not appropriate for all companies, was that of profit – noted specifically by a member-owned company. A further comment was that there tended to be fashions in the ways in which companies were measured. This depended very much on the fashion in the international exchanges. EBITDA appeared to have been one of those measures which was currently in fashion, as well as cash related measures – 'Cash is king' to quote one head of IT.

One respondent indicated that the extent to which the annual budget was met was how business performance was assessed/measured. Another respondent indicated that measuring up to a scorecard formed the assessment/measure. These two responses applied more to the assessment than the measurement but they provided some indication of what the benchmark mechanisms might have been. This did, however, suggest a rather blinkered focus on the means rather than the ends.

There did not appear to have been any marked differences between the response focuses of the heads of IT and marketing, either with regard to the financial or the market measures. Nor did there appear to have been any significant discrepancies between the heads of IT and marketing in the individual companies.

In most instances business performance goals were set annually with quarterly formal updates, such as reports to the boards, and/or monthly senior management team reports. Three companies reported three-year rolling plans, one a five-year rolling plan, and two companies reported rolling plans of more than five years. Three companies indicated that once the performance goals were set, they couldn't be changed, and in three companies, the heads of IT and marketing were at odds as to whether or not the goals could be changed within the relevant time period. The rest of

the respondents reported that performance goals could be changed during the course of the year if necessary.

Reporting level, either direct or dotted line, did not appear to have impacted on the reported business performance measures. However, in two companies, external measures of relative market performance were used.

The correlation of the business performance measures noted and the effects of the impact of alignment on company performance evidenced a similar focus on financial measures, especially absolute measures. This suggested a reinforcement of the emphasis of the companies on financial outcomes. Given that many of the companies were listed, this was not surprising. In addition, the impact on efficiency, as noted by a number of companies, could have been tied in with this financial emphasis. The impact on customer experience and customer relations, as well as on delivery, could have been linked into the absolute market measures of business performance such as customer service and customer satisfaction. There thus appeared to have been considerable similarity between the responses to the two questions – certainly as far as focus was concerned although the business performance measures were stated much more specifically. A caveat is that the impact effects were named without prompting, while the customer related business performance measures required prompting, so possibly the focus in this area might not have been so strong.

In terms of the focus of each group of respondents, on the other hand, there appeared to have been a difference in the responses with regard to the impact of alignment where the heads of IT focused more on the financial aspects and the heads of marketing more on the customer aspects, and the responses with regard to business performance measures where neither the heads of IT nor marketing appeared to focus predominantly on any group of measures.

In summary, the business performance measures were provided as expected – apart from the additional categories of industry- and company-specific measures. In the light of the strict guidelines of GAAP, this was not surprising. Furthermore, in the light of the general business focus of customer satisfaction and service, neither were the market measures.

5.4.4 Marketing Performance

As explained in the development of the conceptual model, marketing performance would be an intermediary variable in this research. As with business performance, it was important to ascertain how marketing performance was assessed and measured. Verification was likewise required as to whether the various measures noted in the literature were still appropriate, whether they were commonly applied, and whether additional measures should be considered.

Only the heads of marketing were required to respond to this question as they represented the function responsible for the performance. As with the business performance assessment and measurement, the same apparent confusion applied, the responses being couched in terms of measurement, whether they actually were so or not.

Similarly to the measures for business performance, multiple responses were provided by all respondents.

The measures had been expected to fall into two main categories – absolute measures such as customer loyalty, and relative market measures such as market share. However, a number of financial measures, both relative and absolute were introduced. Sales and revenue were absolute measures mentioned by five respondents, and two respondents listed profit as a measure.

The absolute market measures were much more prominent than the relative measures. Customer satisfaction was named by six respondents, customer loyalty by five, and customer acquisition by four. Additional absolute measures included promotional efficiency, brand awareness, and customer service. However, at least seven respondents needed to be prompted to recall the customer related measures, their focus being much more on the financial measures or on the relative market performance measures.

Relative marketing measures included customer retention (eight respondents) market share (three respondents) and brand preference (four respondents). Increased brand awareness, increase in foot traffic, and share of spend were other measures noted.

In the case of market share there was a decided duplication in terms of respondents providing that as both a business and marketing performance measure. When questioned about this, they all indicated that it applied in both cases. The same applied to those heads of marketing who had named sales and profit as both business and marketing measures. In addition, the performance measure of industry awards applied in both instances.

As with the business performance measures, the reporting level – and especially dotted line reporting – did not appear to impact on the measures used.

It is worth noting that many companies outsourced the measurement of some aspect of their market performance - both absolute, such as customer satisfaction measures, and relative, such as brand preference.

In terms of correlation of the impact of alignment between IT and marketing on business performance, and the marketing performance measures, the findings reflected similarly to those of the business performance measures – a focus on financial measures, as well as on absolute and relative market measures. Similarly, there did not appear to have been any distinction between the responses of the heads of IT and marketing with regard to the marketing performance measures, but there did appear to have been a difference with regard to the impact of alignment.

Overall, the marketing performance measures provided were largely as expected, especially with regard to the absolute and relative market measures. However, the overlap with the business performance measures is worth noting. It might either have suggested the critical role of marketing within the company, or it might have suggested a lack of clarity of areas of responsibility or specificity of measures. Thus, although marketing contributed to some aspects of profit, so did other functions of the company, and marketing could therefore not regard themselves as being entirely responsible for it. On the other hand, ensuring customer loyalty through customer

service could be regarded as a requisite orientation of the whole company but the responsibility might lie with marketing.

5.4.5 Conclusion of Interviews

Opportunity was provided at the end of the interview for respondents to raise additional, related issues which might have occurred to them. Most of these were a consolidation of what had already been stated, although some additional points were that the marketing function lacked vision, that the marketing function was too narrowly defined in the company, and that there was a lack of understanding [by marketing] of what the IT function was really doing. A summary comment was made by one head of IT which described the place of IT in a company and which could be similarly applied to IT's relationship with marketing:

> "Business leads IT but IT guides the business"

5.5   Conclusion

This first phase was exploratory in nature. It attempted to explore the notions of alignment - the understanding of the concept and perceptions regarding its existence between IT and marketing. Emphasis was placed on aspects of strategic orientation and market orientation which could be aligned.

This phase of the research also attempted to determine the distinction that companies made between marketing performance and business performance measures, and what measures they used.

The findings suggested strong correlations between the general descriptions of the relationship/alignment and collaborative planning, as well as with the existence of liaison positions or units. In addition, reporting levels seemed to impact on the extent of collaborative planning. Although the description of the relationships could be perceived as very subjective, the apparent correlations with the other factors seem to substantiate the descriptions.

On the other hand, one-off numerical ratings of the alignment did not appear to correlate very highly with the general descriptions. This could possibly have been attributable to subjective benchmarking in assigning numbers. However, these ratings displayed considerable similarity with the average market orientation ratings – more so than with those of strategic orientation.

Regarding the average ratings across the strategic orientation dimensions and the market orientation dimensions, the heads of IT generally provided higher ratings than the heads of marketing on both constructs. In addition, the differences between the ratings of the heads of IT and marketing were greater with regard to the strategic orientation dimensions than the market orientation dimensions. Coupled with the fact that the strategic orientation dimensions received by far the majority of clarification requests and alternative suggestions, this seemed to point to market orientation as being an 'easier' measure for the alignment between IT and marketing. This is substantiated by the findings in respect of the similarity of the market orientation ratings with the one-off numerical ratings. However, an 'easier' measure is not necessarily the best measure and caution needed to be exercised in drawing erroneous conclusions.

The measures of business performance were much as the literature had indicated, falling into the four categories of absolute and relative financial measures, and absolute and relative market measures. However, a greater emphasis lay on the absolute financial measures. Coupled with responses to the potential impact of alignment on business performance, the evidence suggests that the heads of IT focused more on the financial measures while the heads of marketing focused on both the financial and the market measures. This might have been attributable to the fact that a large number of heads of IT reported to the CFO's of companies. Furthermore, this focused, or possibly blinkered approach, also appeared to tie in with the fact that the heads of marketing appeared to know more about the extent of IT outsourcing than IT did of marketing outsourcing. On top of which much of marketing was outsourced where IT could possibly have supported those activities in-house.

The marketing performance measures were generally as indicated by the literature, falling into the two main categories of absolute and relative market measures. There was considerable overlap with some of the market measures of business performance – which could have been expected if the company had had a very strong marketing focus. However, there was also some overlap with the financial business performance measures such as sales and profit.

One caveat is that the relative 'newness' of an incumbent appeared to impact negatively on various aspects of the relationship. This could have led to a possible skewing of perceptions and findings. On the other hand, it could reflect the status very accurately. This would depend very much on the relative strength and power of the individual and the position.

The findings of this first phase would be used to enhance the questionnaire which would be used in the second phase of the research.

5.6   Chapter Summary

The chapter has described the first phase of the research. The objectives were stated and the development of the interview protocol explained. The data collection procedures were described, including the sampling technique employed, how the interviews were conducted, and how the data were prepared for analysis. The findings and their analysis and discussion were presented in four main sections. These comprised, firstly, a description of the alignment between IT and marketing. This included an exploration of reporting levels, the role of IT, the existence of a liaison unit/position, collaborative planning, outsourcing, general alignment ratings, and the impact of alignment on business performance. The second section was quantitative and consisted of ratings of the dimensions of both strategic orientation and market orientation. The third and fourth sections explored business performance measurement and marketing performance measurement respectively. Finally, conclusions were drawn.

Chapter 6: Phase II - Survey Instrument Development and Data Collection

6.0   Chapter Overview

This chapter covers the various procedures involved in the development of the survey instrument through to the collection of the data. The main stages of construct identification, item creation and scale development are described, as well as a card sorting exercise designed to refine the research instrument. Next the pre-testing of the instrument is explained and, finally, the data collection procedures, including the sampling and data preparation, are described.

Chapter contents

6.1   The Survey Instrument

The survey instrument selected for this research was a questionnaire. The purpose of the survey was to empirically test the constructs and the research model. Therefore, an important guideline in designing the questionnaire was to ensure that it manifested construct validity in terms of its coverage of the constructs, and convergent validity and discriminant validity in terms of the items that measured those constructs (Moore & Benbasat, 1991). The following sections describe the compilation process – from the development of the questionnaire to the finalization of the instrument that would be despatched.

6.1.1 Instrument Development and Operationalization of the Variables

The questionnaire was based on the research model, the various instruments which have been noted, the literature review, and on the outcomes of the first phase of the research. In outlining how the instrument was initially developed and how the variables were operationalized, the constructs and their dimensions are first described, then the item creation, and finally the construction of a preliminary questionnaire.

6.1.1.1 Construct Identification

In determining which constructs and dimensions of the constructs should be covered in the questionnaire, one important consideration was to ensure content validity (Moore & Benbasat, 1991), that is, that the questionnaire measured what it purported to measure. The following constructs were to be measured: strategic orientation; market orientation; marketing performance and business performance. Each has been discussed in Chapter 3 – The Conceptual Model and Research Propositions - but findings of Phase 1 resulted in certain changes in the dimensions included in each construct. The discussion below explains the choice of the dimensions of the constructs, and their coverage. A section on demographics would also be included in the questionnaire.

6.1.1.1.1 Strategic Orientation

Most of the strategic orientation dimensions were derived from Venkatraman's (1985) and Chan's (1992) instruments. Any alterations are noted under the relevant dimension headings.

Aggressiveness
This is one of the main descriptions of the ways in which companies approach their external environment - and their competitors in particular. It reflects a very concerted

striving towards outperforming the competition to becoming the company which fares best in the marketplace. The focus is more on effectiveness than efficiency.

According to Venkatraman's (1985) explanation, aggressiveness could be based on product innovation and/or market development (Miles & Cameron, 1982) or on high investment to improve relative market share (Hofer & Schendel, 1978). It could also reflect a short term business thrust (Wissema, Van Der Pol & Messer, 1980) or an expansion of market share by 'multiplication' (Vesper, 1979).

Futurity

An important attribute of strategy is that it looks to the future – where the company wants to be in the long term and its plans of the best way to get there. This dimension thus distinguishes between long-term and short-term perspectives. Venkatraman (1985), in referring to Lorange (1982), highlighted the forecasting of sales and customer preferences, as well as formal tracking of electronic trends.

Innovativeness

This dimension covers innovation and creativity with regard to offerings in the marketplace, ways of conducting business, and the use of IT in promoting innovativeness in general. A more extensive discussion on this dimension was presented in Section 3.5.1 where it appeared that Venkatraman (1985, 1989b), and Chan 1992) and Chan et al. (1997) had alternated between including or excluding it. However, the evidence suggested that in the current business climate, innovativeness would form an important dimension of strategic orientation.

Proactiveness

Often confused with aggressiveness, proactiveness refers to the constant striving to improve a company's strengths and to seize as many opportunities as might arise. While there is an element of aggressiveness in terms of beating the competition to seizing opportunities, the focus is more on achieving the lead and thus being more able to control than being controlled.

Venkatraman (1985) cited Miles and Snow (1978) who had emphasized the continuous search for market opportunities, and experimentation with potential responses to changing trends.

Risk aversion

Initially Venkatraman (1985) and Chan (1992) had conceptualized this dimension as 'riskiness'. Venkatraman (1985) had expected it to be evident in resource allocation (Hertz & Thomas, 1983; Bowman, 1982) and in general decision making (Baird & Thomas, 1985). However, Chan and Huff (1993) and Chan et al. (1997) changed its name to 'risk aversion'. Risk aversion approaches the concept from the opposite perspective to riskiness and reflects the caution that a company might exercise in the way it approaches both its internal operations, as well as its external environment. This is particularly in comparison to its competitors as risk aversion is a function of the type of industry. A more all-encompassing name of 'risk tolerance' would have accommodated both approaches but as Chan's (1992) instrument had already been validated and focused more on risk aversion, it was decided to adopt this approach to the dimension.

Analysis

As with risk aversion, this reflects the caution with which a company makes decisions, particularly about major business situations. Venkatraman (1985) referred to Miller and Friesen's (1982) view that this reflected a searching for the roots of problems in order to find the best solutions, as well as Fredrickson's (1984) view that this reflected comprehensiveness.

It should be noted that analysis, like risk aversion, could be perceived as being a function of the industry in which the company operates, and possibly more so than the other dimensions.

Defensiveness

This is often seen as the counter-approach to aggressiveness and, as with aggressiveness, there is a strong focus on the competition. It implies the protection of what the company perceives to be theirs. This may take the form of protecting and maintaining their internal strengths (Venkatraman, 1985), or improving their internal

efficiency (Thompson, 1967). It may also comprise entrenching relationships with suppliers or customers, or adjustments in bargaining power (Venkatraman, 1985).

Chan (1992) chose to split defensiveness into internal and external defensiveness, and it was initially envisaged that this approach would be followed. However, this would have led to an increased complexity of the model. With the intention of keeping the model parsimonious, it was thus decided to maintain the single dimension. This was also discussed in Section 3.5.1.

6.1.1.1.2   Market orientation

Most of these dimensions resulted from a combination of the Kohli and Jaworski framework (1990), the Kohli et al. (1993) and Narver and Slater (1990) measures, and refinements of them by researchers such as Deng and Dart (1994), Gray et al. (1998) and Dawes (2000). Although most of the items already existed, they were rearranged in order to provide a balance between analysis and responsiveness with regard to customers, competitors and the environment. Two additional dimensions of interfunctional coordination and market driving completed the coverage of the construct.

Interfunctional coordination
Interfunctional coordination is essential to ensuring that the right information reaches the right person at the right time, and that actions are taken in a concerted and well-focused manner. Appropriate information about the company, its customers, suppliers, competitors, and relevant aspects of the external environment is crucial to ensure the company is equipped to deal with all the challenges and opportunities it faces.

This dimension is largely based on the 'interfunctional coordination' dimension of Narver and Slater (1990). It also reflects the 'intelligence generation' and 'intelligence dissemination' dimensions of Kohli and Jaworski (1990) who indicated the importance of having both a customer and competitor focus, and on gathering, generating and disseminating the information along both formal and informal channels within an organization.

Customer analysis

As no company can exist without the customer, it makes sense to learn as much about the customer, his/her needs, as well as trends in customer behaviour. This reflects the marketing concept which focuses on the customer. It captures the 'intelligence generation' dimension of Kohli and Jaworski (1990) in part, as well as the 'customer orientation' dimension of Narver and Slater (1990) insofar as it refers to understanding the customer.

Competitor analysis

As so many companies are driven by a competitive strategy, it follows that they would acquire as much information as possible about the competition. Through this analysis the company would gain insights and an understanding that would best equip them to respond to the competitors.

Narver and Slater (1990) and Kohli and Jaworski (1990) had highlighted the importance of understanding and focusing on the competitor in their 'competitor orientation' and 'intelligence generation' dimensions respectively.

Environmental analysis

Each company is affected by, or affects, the external environment. In order to better understand these effects, careful analysis is continually required of the external environment and the relevant stakeholder groups.

Kohli and Jaworski (1990) had referred to the importance of understanding the market needs in general, and Narver and Slater (1990) had emphasized the impact of market dynamics on the organization and its buyers.

Customer responsiveness

This goes in tandem with customer analysis. Once the needs of the customer are understood, the company will be better able to fulfil these requirements and, very often, to exceed them. The response to the analysis is what renders the analysis meaningful. It also reflects the value added strategy that many companies pursue.

To a certain extent, it captures part of the dimension of 'responsiveness' of Kohli and Jaworski (1990) and the dimension of 'customer orientation' of Narver and Slater (1990).

Competitor responsiveness

As with customer analysis and responsiveness, it is logical that only by responding to the analysis of the competition, can anything be achieved. Ultimately the goal is to outperform the competition, and the responsiveness to the competitors' actions would help achieve that.

This dimension reflects part of the 'responsiveness' dimension of Kohli and Jaworski (1990) and part of the 'competitor orientation' dimension of Narver and Slater (1990).

Environmental responsiveness

As with the above two dimensions, the way in which the analysis is acted upon, dictates the success and meaningfulness of the analysis. It also indicates to the environmental stakeholders that the company is alert and responsive to their needs and concerns.

As with the two previous dimensions, this reflects part of the 'responsiveness' dimension of Kohli and Jaworski (1990) as well as responding to the market dynamics covered by Narver and Slater's (1990) 'customer orientation' dimension.

Market driving

This dimension had not been included in previous market orientation measures. However, authors such as Jaworski et al. (2000) and Hills and Sarin (2003) have stressed the importance of not only responding to the markets or being market driven, but also of shaping, leading, or controlling the markets. This approach displayed many of the strategic attributes according to which the measures for market orientation were assessed (see Section 3.4). Its importance was also highlighted during the Phase I interviews. It was thus included as a dimension of market orientation.

Indications of the items that would need to be created were taken from Carrillat et als' (2004) suggested ways of driving a market. In this they drew heavily on Jaworski et als' (2000) work. They suggested four main ways:

- deconstruction – eliminating competitors from the value chain;
- construction – adding players to the industry value chain;
- functional modification – shifting the functions performed by players in the value chain; and
- shaping market behaviours by either creating or reversing customer or competitor preferences, or by building or removing customer or competitor constraints.

In constructing items for this dimension, care would be taken not to overlap with any of the other measures.

6.1.1.1.3   Marketing performance

Marketing performance was modelled as a single dimension. Findings from the literature and Phase 1 had indicated that although a strong emphasis on customer measures was indicated, an equally strong focus on the effectiveness and efficiency of the marketing department was required. Both of these aspects would be covered in the questionnaire.

6.1.1.1.4   Business Performance

Business performance would also consist of a single dimension. In line with the initial plan outlined in Section 3.6, both absolute and relative market and financial measures would be used.

6.1.1.1.5   Demographics

Although not required for the analysis of this research, these data would serve to identify the company and the respondent. They might also serve to enrich the interpretation of the data and add insights into aspects pertaining to the company strategy.

6.1.1.2 Item Creation

Once the dimensions had been decided, the items that would operationalize the measure of these dimensions needed to be identified or created. There was also the issue of subjective or objective measures to address.

Dess and Robinson (1984) and Venkatraman and Ramanujam (1986) maintained that subjective measures of business performance correlated strongly with objective measures. This has been offered as substantiation for a number of studies favouring the use of subjective measures, for example, Narver and Slater (1990). Furthermore, for certain companies or strategic business units, objective measures are often very hard, if not impossible to obtain (Chan & Huff, 1993).

However, Chan and Huff (1992), citing Dubofsky and Varadarajan (1987) and Ford (1979), also pointed out that there could be discrepancies between actual and perceptual measures pertaining to financial aspects, while Dawes (2000) questioned the subjective measures used by many researchers.

Furthermore, Venkatraman (1989b) had indicated that future research should include measures other than managerial perceptions for strategic orientation.

Taking note of these different perspectives, and in order not to exclude any valuable measure, it was decided to use a combination of subjective and objective measures, although they would be largely subjective.

As one important goal of the item creation was to develop scales which embodied content validity (Moore & Benbasat, 1991), it was deemed prudent, where possible, to use scales from instruments which had been validated and found reliable in previous research (Zmud & Boynton, 1991). Many items were thus derived from other sources.

For each construct, the questions from the validated instruments were carefully compared, and slight differences in the wording were examined for the most appropriate version. For strategic orientation, Chan's (1992) questionnaire was the basic document used although changes that her questionnaire had been through were

carefully examined. In addition, her source document, the Venkatraman (1985) questionnaire, was also considered.

While it was envisaged using a single dimension of 'defensiveness' in this research rather than two (internal and external defensiveness), to provide further insight, the distinction is noted in this text if it refers to the sources of the items.

The questions for market orientation were chosen from the Dawes (2000), Gray et al. (1994), Kohli et al. (1993) and Narver and Slater (1990) instruments. Despite the first two models being based largely on refined combinations of the latter two, all the models were examined carefully, apparent duplications deleted, and the most appropriate questions for this research selected.

The questions on both business performance and market performance were derived from multiple sources, and the most commonly used were selected. However, these were also considered in the light of the responses to the first phase of the research.

Special care was taken to exclude questions that did not have a clear strategic focus. These were mainly market orientation questions but there were not many.

Overlaps of questions between those measuring the strategic orientation dimensions and those measuring the market orientation dimensions were examined. Questions on analysis tended to be more general when used for the strategic orientation dimension of 'analysis' than for the market orientation dimensions of 'customer analysis', 'competition analysis' and 'environmental analysis'. The possible overlap between the 'external defensiveness' questions and the questions of the market orientation dimensions of 'environmental analysis' and 'environmental responsiveness' was considered but none of the questions was excluded.

6.1.1.3   Scale Development

Once the pool of items had been compiled, it was necessary to ensure that the number of items was not too large. Too long a questionnaire might tire or daunt the respondents and thus result in non-response. Because the instrument would measure

both strategic orientation and market orientation, when questionnaires pertaining to both these constructs were consolidated, the result was a large number of items (100+). Hinkin (1998) had indicated that the internal validity of a construct could be achieved with as few as three items and that more than six items did not improve content validity. With 15 dimensions comprising the strategic orientation and market orientation constructs, the number of items consequently had to be reduced.

Through four iterations and regular consultation with an expert academic in IS and an expert academic in marketing, a questionnaire of 81 items was decided upon. The independent variables of strategic orientation and market orientation were covered by 23 and 39 items respectively; the dependent variables of marketing performance and business performance by six items each; and seven items covered demographics. (See Appendix 16 for the list of items and their sources.) It should be noted that although the heads of IT and marketing would each respond to similar items with regard to the strategic orientation, market orientation, and business performance constructs, only the heads of marketing would answer the questions on marketing performance. They would also answer one more demographic question.

As Likert scales had been employed in most of the prior instruments, it was decided to follow this example and use 5-point Likert scales for the response options to all the independent and dependent variables. These would be largely subjective measures and would focus on the respondents' perceptions. Only the few demographic questions required open-ended responses but these would be constrained to a number or short, one-word answers, and would be largely objective. The scaling format thus guided the wording of the questions.

Care was also taken to ensure that the tone of the wording of questions from different sources was as similar as possible, and also the length of the questions. Generally, not much wording required changing, apart from ensuring that the organization was similarly referred to as a 'company', a 'firm' or a 'business unit', or that the use of any of the latter was appropriate. New questions were formulated according to the style of the existing instruments.

A number of items would be reverse coded. The inclusion of such items would serve to reduce response set bias (Hinkin, 1998). (See Appendix 16 for reverse coded items.)

Once the items had been decided upon, the order in which they would be presented had to be determined.

With regard to the independent variables, the sequence and grouping of the questions needed to ensure that the respondents were not predisposed to the perception that a group of questions or items might be measuring the same dimension and that answers to those items should thus be similar. The questions should thus have been grouped in such a way that they were logical, but neither indicative of the dimension nor of whether the item was measuring strategic orientation or market orientation.

The groups could have been arranged according to strategic behaviour or according to a target group, such as customers. After due consideration, it was decided to follow the former arrangement but to use the word 'approach' to avoid any allusion to, or bias towards, strategic orientation or market orientation. Four groups would be used with the following names and respective number of items: 'business approach' (16 items); 'internal management approach' (8 items); 'analytical approach' (18 items); and 'approach to the external environment' (20 items). The groups were neither too small so that the resultant large number of groups would be confusing, nor were they too large as to be daunting. The items in each group were then mixed so as not to be grouped according to strategic orientation or market orientation but yet appear arranged in an apparently logical fashion.

Table 6.1 displays the allocation of the dimensions according to the four groups. The majority of the strategic orientation dimensions fitted most appropriately in the 'business approach' group, while 'analysis' grouped suitably with the three 'analysis' dimensions of market orientation. Although it was proposed that 'defensiveness' be a single dimension, for the purpose of allocating items to the four groups, it made more sense to split it up into two parts which accorded with Chan's (1992) 'internal defensiveness' and 'external defensiveness'.

Table 6.1.   Allocation of construct dimensions to questionnaire groups

	Strategic orientation dimensions	**Market orientation dimensions**
Business approach	Aggressiveness; Futurity; Innovativeness; Proactiveness; Risk aversion	
Internal management approach	(Internal) defensiveness	Interfunctional coordination
Analytical approach	Analysis	Customer analysis; Competitor analysis; Environmental analysis
Approach to external environment	(External) defensiveness	Customer responsiveness; Competitor responsiveness; Environmental responsiveness; Market driving

With regard to the dependent variables, 12 questions were envisaged, six each for business performance and marketing performance. As the heads of IT would not be answering the questions on marketing performance, the most obvious division of the questions was simply according to each variable. The items for each variable were presented in a logical order.

The demographic questions were similarly contained in their own logical group.

Appendix 17 depicts the proposed set of questionnaire items according to their groups. An indication is also provided of the construct and dimension to which each item belonged.

Although most of the proposed items for the questionnaire had been validated in prior instruments, some were new, and the combination of questions had not yet been tested. This needed to be considered, given that items from strategic orientation and market orientation questionnaires were being combined and might possibly exercise a confusing influence on one another. A card sorting exercise, including only the items pertaining to strategic orientation and market orientation, was undertaken to address these concerns.

6.1.2   Card Sorting

Although card sorting is usually undertaken to assess the construct validity of the scales used in a questionnaire and to clarify ambiguous or unclear items (Moore & Benbasat, 1991), in this case the objective was to determine whether a proposed grouping of the items, or questions, would seem logical to the respondents. It was also undertaken to ascertain whether the meanings of the questions were clear or whether there was ambiguity, particularly in reworded or new questions.

A group of seven academics from the IS discipline, and eleven Masters in Information Management students participated in the card sorting exercise. Each received a similar set of randomly ordered item cards, and one of three sets of instructions which were randomly allocated. Each group would thus meet the minimum size of six suggested by Gaffrey (2000) or even four suggested by Robertson (2001) for card sorting. The instructions were to:

A)   group the items into an unlimited number of groups and provide names for the groups; or

B)   group the items into four groups and provide names for the groups; or

C)   group the items into four groups which were named 'business approach', 'internal management approach', 'analytical approach', and 'approach to the external environment'.

On average, respondents took 40 minutes to complete the sorting which was in line with the guideline supplied by Gaffney (2000).

The results indicated that the proposed groupings and their names were generally acceptable to the respondents. However, the grouping according to 'approach to external environment' was less clear than according to the other three groups. There was a noticeable split of items intended for that group between it and 'business approach'. These items all happened to fall in the 'customer responsiveness', 'competitor responsiveness' and 'environmental responsiveness' dimensions which all belonged to the market orientation construct.

It also seemed that items measuring the strategic orientation construct and its component dimensions were more easily grouped than those measuring market orientation and its dimensions, although this should be tempered by the possible influence of the larger number of items in most of the latter dimensions.

Consequently the grouping of the questionnaire items was reconsidered in order to improve the 'approach to external environment' grouping but eventually the proposed grouping seemed the most suitable and was thus maintained.

Although not an objective of the card sorting, but a result which provided useful insights, it was found that the proposed dimensions that suggested the most obvious groupings to the respondents were 'analysis' and 'innovativeness'. These were both strategic orientation dimensions. Those that least suggested any grouping were the market orientation dimensions of 'environmental analysis' and 'environmental responsiveness', and the strategic orientation dimension of 'futurity'. (See Appendix 18 for more detail.)

Three respondents commented on wording or ambiguities of the items or proposed groups. Two found the wording of item 53 - 'We seek opportunities for either forward or backward integration' – ambiguous. One found it too general while the other questioned whether it referred to within the firm or with customers and suppliers. The third respondent found the names of the groups too general and felt that they should reflect the main item(s) in those groups. He suggested names such as 'internal processes', 'extent of analysis' and 'business personality'.

The problematic wording was discussed with each of the respondents. It should be noted that forward and backward integration are common business concepts and the two relevant respondents, not having had much business experience, subsequently saw the sense of such wording once they were explained. Similarly, the names of the groups were discussed with the respondent who had queried them, and when it was explained that the names were intended to be as general, strategic and all-encompassing as possible, he agreed on the suitability of the names. The wording of the questions and the names of the groups was thus maintained.

6.2   Pre-testing of the Questionnaire

According to Hair et al. (2003, p. 201), no questionnaire should be fielded without being pre-tested for the likely accuracy. Given that the majority of the questions had been used and validated in a number of prior research studies, the focus would lie more on the new questions and on the apparent logic in the groupings of the items.

The sample for the pre-test should have the same characteristics as the target population (Hair et al., 2003). The interviewees from the first phase were identified as being suitable participants in the pre-testing. They had already been involved in the interviews and in the checking of the transcripts, and many of the interviewees had expressed an interest in the further development of the research. Sudman and Blair (1998) had suggested that ten to fifty respondents could be used to pre-test a questionnaire. Hair et al. (2003) indicated that a sample of a minimum of four would be sufficient if most questions had been previously validated. A sample of five was regarded as sufficient for this research. This was because most of the questions had already been used a number of times in instruments which had been found valid and reliable, and because the clarity of the questions had already been tested in the card sorting exercise. To allow for non-responses, a random sample of fifteen Phase I interviewees (seven IT and eight marketing) was thus drawn. They were sent e-mail requests to comment on the draft questionnaire (See Appendix 19 for the invitation and Appendices 20 and 21 for the pre-test questionnaires for the heads of IT and marketing respectively). Some declined, owing to business pressure, and some were on leave or away on business. A total of seven responses was received – four IT and three marketing, one couple being from the same company.

Most respondents found the questionnaire clear and without problems. However, the comments that required attention are quoted in Table 6.2, together with the relevant questions, and the way in which they were addressed.

Table 6.2.   Pre-test queries and responses

	Question	Query	Response
19	We optimize coordination among the different functions (e.g. finance and marketing)	"Is 'functions' the roles of the individual or the team or something else?"	Changed to: 'We optimize coordination among our departments (e.g. finance and marketing)'
29	The firm regularly researches customer needs and preferences	"The 'firm' could be the 'company'"	'Firm' changed to 'company'
30	The firm studies underlying trends or patterns in its customer behaviour	Same as above	Same as above
51	We don't hesitate to compete with our suppliers	"I read this as competing with our suppliers – should it be more that we compete between suppliers to get better prices/services?"	The wording was considered quite clear and therefore no action was taken
52	We seek opportunities for either forward or backward integration, e.g. by acquiring our distributors or suppliers	"Wasn't sure what the integration is into/with – is this of software/applications or into a market?	No action was taken as the concept is commonplace in business and the example provided an illustration of it. However, it was noted that this echoed the queries of two respondents in the card sorting exercise.

There was a more general query on how companies that were monopolies would complete the questionnaire. Excluding monopolies created by government legislation, the possibility always existed for a monopoly to be attacked by a competitor. The basis of this query was therefore not regarded as realistic.

Apart from a typographical error, there were no further issues that required addressing. The questionnaire was thus amended accordingly and the next stage of the physical design of the questionnaire ensued.

As with Phase 1, the approval of the University HEC was acquired before the research was embarked upon. Appendix 22 contains a copy of the approved application. A copy of the covering letter plus the questionnaires for both the heads of IT and marketing (Appendices 23, 24 and 25) accompanied the application.

6.3 Physical Design of the Questionnaire and Questionnaire Package

The physical questionnaire, as well as the questionnaire package, were designed in such a way as to reduce non-response rate. Because senior executives typically get many e-mails in a day and there was a sizeable chance that the questionnaire might consequently be more easily overlooked or discarded, it was decided to distribute hard copies of the questionnaire to each potential respondent rather than soft copies. Although it was more costly, and more labour intensive to collate all the parts and to dispatch the questionnaires, it had decided benefits. It would be a tangible reminder of the request. Bright turquoise and bright yellow were selected for the covers of the questionnaire booklet - the heads of IT received yellow booklets and the heads of marketing blue. The bright colours would ensure that they were noticeable and not easily overlooked on an executive's desk. An A4 size of questionnaire booklet was chosen because it would provide a large, colourful reminder but not be of an inconvenient size. The booklet format would also keep all the relevant pages of the questionnaire together (Sudman & Blair, 1998). Furthermore, each questionnaire and the accompanying letter of introduction were signed by the researcher. This personalization indicated that the potential respondent was important and warranted the extra effort of a personal signature, rather than an electronic, or copied version (Kanuk & Berenson, 1975).

The questionnaire booklet consisted of a 'consent to participate' form which all respondents were required to sign; an introduction to the research and the questionnaire; and the questionnaire. The latter included a set of demographic questions at the end which covered aspect such as length of employment with the company, recent change of strategy, and so on. Each questionnaire was coded in order to identify the respondent. Although respondents' names and the names of their companies were requested in the questionnaire, there was a possibility that their writing might not be easily legible, and/or that the company had changed its name or operated under another name than the one under which it was registered. Finally, a request was prominently printed on the cover of the questionnaire to return it, completed, within two weeks of receipt (Kanuk & Berenson, 1975).

Along with the questionnaire, a letter of appreciation indicating the value of the research, the benefits of participation, and the confidentiality of the responses would be included. In addition, it promised the participating companies a copy of the report of the research. (See Appendices 24 and 25 for the questionnaire lay-out for the heads of IT and marketing respectively, and Appendix 23 for the accompanying letter.) A self-addressed, stamped envelope would be inserted in the pack for the return of the completed questionnaire. These facilitators of response were based on the guidelines of Dillon et al. (1994), Kanuk and Berenson (1975) and Jobber and O'Reilly (1996).

6.4   Data Collection

6.4.1 Sampling

In order to determine the size of the sample, Chin's (1995) approach was followed. He advised that the sample size should be equal to the larger of: ten times the largest number of causal indicators; or ten times the largest number of structural paths directed at a certain construct. Because two models were, in effect, being measured by one questionnaire, a conservative approach was adopted. The first option was selected and the number of causal indicators interpreted to include the 7 (strategic orientation) + 8 (market orientation) = 15 dimensions. Accordingly, the sample size should have been at least 150 companies or 300 respondents. However, the response rate to postal surveys can vary considerably from 10% to 60% (Sudman & Blair, 1998, p. 165). It would also be more difficult to obtain responses from both the heads of IT and marketing than from one respondent. The recruited sample was thus set at 280 companies (560 respondents).

The same sources of information about the population as in the first phase were used. All large New Zealand companies, apart from the participants in the first phase, and those excluded from the first phase such as non-profit organizations, were thus potential participants. Among the more prominent industry sectors represented in the population, about a quarter were involved in the manufacturing, about a sixth in

wholesale, and about an eighth in property. Finance and insurance came next, and then a more or less even distribution over the remaining industries.

The companies were listed alphabetically and the names of the heads of IT and Marketing listed with them as potential participants. The details filled 27 pages. A mixture of simple random and convenience sampling was employed. Simple random sampling is a type of probability sampling (Sudman & Blair, 1998) and is particularly appropriate for samples with national coverage (Dillon et al., 1994). It was initially applied to select a page. Each potential participant on that page was contacted – or attempts were made to contact them – by means of personal telephone calls from the researcher or one of her two assistants. The study was outlined, its benefits were described and the value of participation emphasized. The phone call also helped to identify the correct respondent, and to respond to any queries which the potential respondents might have had.

In the case of not being able to make contact at the first attempt, there were a number of alternative treatments and outcomes:
- to leave a message with a personal assistant or colleague briefly explaining the reason for the call and undertaking to call back at a set time or within a set period, and then doing so;
- to leave a similar message with a personal assistant, colleague or on an answering phone but having the call returned prematurely by the potential participant;
- to try again later if no message could be left or if the phone was engaged.

Because more than one phone call was usually required to contact the potential participant, as far as possible the random sampling procedure was followed with regard to second attempt and subsequent calls. However, the unpredictable developments resulting from initial inability to make contact, led to the sampling method eventually becoming non-probability convenience sampling (Sudman & Blair, 1999) Accordingly, it was decided to stop the recruitment procedure once 280 companies (560 individuals) had agreed to participate.

In fact, in total 281 companies (562 individuals) indicated they would participate. Although this was more than 150 companies (300 respondents) it reduced the risk of an eventually insufficient sample. No company was included in the sample unless both the heads of IT and marketing agreed to take part. If one couldn't be contacted or refused to participate, the assenting head was informed and thanked for his/her willingness to contribute to the research.

Because the study was not a cross-industry one, specific attempts were not made to ensure proportional representation of each industry sector. However, on average the responses did reflect the population distribution.

6.4.2   Questionnaire Despatch and Response

The questionnaire packages were despatched towards the end of September 2004. In total, 562 questionnaires were posted out. Following the guidelines of Dillon et al. (1994), after the initial despatch, there were two main follow-up stages. The first follow-up took place three weeks after the initial despatch. This consisted of a reminder letter (see Appendix 26). The second stage, which started six weeks after the initial despatch, comprised phone calls to each individual who had not yet responded. Sometimes another questionnaire package was requested. In 33 cases, electronic versions of the covering letter and questionnaire were requested. - mainly to speed up the process.

In a number of instances initial non-response occurred because the company had changed its postal address, the company had changed its name after a merger or take-over, the respondent was on leave or away on business, or the business had entered a very busy period. Decisive non-response often occurred because a new incumbent had assumed the position of either head of IT or marketing between the initial recruitment and receiving the questionnaire, and he/she felt ill-equipped to answer the questions. In a number of instances, non-respondents or their secretaries had phoned to indicate that an unexpected crisis had occurred, or an unexpected busy period, or that the business demands required the person to be overseas.

In total 415 completed questionnaires were returned – a 74% response rate. Table 6.3 depicts the response rate for each stage. However, there were a number of instances where either only the head of IT or the head of marketing responded. In total 175 companies were represented by both the required heads – a 62% company response rate. This was a particularly high responses rate. It was higher than expected and was probably achieved because of the initial recruitment phone calls, the questionnaire design, and/or the concerted follow ups.

Table 6.3.   Responses to the stages of questionnaire despatch and reminders

Despatch	Response				
	Response received	IT	Marketing	Total	Cumulative response rate (individuals)
Initial despatch	Within 3 weeks	108	105	213	38%
First stage follow-up (3 weeks)	Between 3 and 6 weeks	28	29	57	47%
Second stage follow-up (6+ weeks)	After 6 weeks	136	134	170	74%
Total		206	209	415	74%

As the response rate had been very high – over 70%, and because a higher response rate reduces the likelihood of non-response bias (Mills, 1996), the latter did not pose a significant problem. Furthermore, the almost even number of responses from the heads of marketing and the heads of IT at every stage of the data collection, seemed to indicate that the functional role did not affect the response or non-response rate.

Non-response bias was, nevertheless, considered. The more common treatment of non-response is by either comparing the data with "known" values of the population; by subjective estimation of non-response bias (Mills, 1998); or by comparing the responses to key questions of early respondents with later respondents. In the latter case, it is assumed that the later respondents would have responded similarly to non-respondents (Kanuk & Berenson, 1977; Tetiwat, 2003).

However, as already indicated, a substantial proportion of those who had agreed to participate explained their non-response for the sorts of reasons which affect many

companies and senior executives. There was thus no reason to expect that their responses would have been any different from those who responded.

In the light of the very high response rate - which was balanced between IT and marketing respondents - it was decided that non-response bias did not present a significant problem.

The balance of IT and marketing responses also precluded the necessity of weighting the responses of either group in order to balance the input in the analysis (Dillon et al., 1994). In addition, any difference in the numbers of responses would only impact on the dimension analysis because only pairs of responses would be used for the structural equation modelling.

The data collection process was stopped at the end of December 2004. Two responses received after that were excluded from the data analysis.

6.4.3   Data Preparation

Upon receipt, the questionnaires were identified, recorded and checked for completeness and that the intended head had completed the questionnaire.

Table 6.4 summarizes the completeness of the questionnaires. There were generally a minimal number of responses missing. However, Item 72 – 'Return on marketing investment' – was not responded to by 46 respondents. This could have been because those companies did not measure it or because the respondents did not know the answer. The possibility of that item having been overlooked by so many respondents seemed unlikely in light of the good response rates to the other questions.

Table 6.4.   Missing responses according to category of variables

Category of variables	Number of responses missing	Number of items
Independent variables – strategic orientation and market orientation	1	24
	2	12
	3	3
	4	2
Dependent variable – business performance	1	7
	2	6
	3	5
Dependent variable – marketing performance	1	2
	2	2
	46	1

No questionnaire evidenced more than three items which were not responded to. All questionnaires and all items were thus retained.

The responses to the questions were captured in a spreadsheet. This would facilitate some analysis and provide suitable preparatory formatting for the dimension analysis and structural equation modeling which would ensue. Missing data were treated as such and once all the data had been captured, reverse coding was applied to items that required it. These are indicated in Appendix 16.

6.5   Chapter Summary

In this chapter the development of the research instrument was described. A questionnaire was the type of instrument chosen, and the various stages of construct identification, item creation and scale development were accordingly expanded upon. The latter two stages served to operationalize the constructs. A card sorting exercise further enhanced the questionnaire, especially with regard to the grouping of items.

Pre-testing of the questionnaire was then described, as well as the physical design of the questionnaire.

The data collection consisted of a number of phases. Firstly, the sampling method was explained, including the recruitment procedure. Next followed an account of the

questionnaire despatch and responses, as well as the follow-up procedures. Finally, the data preparation was described.

Chapter 7: Phase II - Data Analysis

7.0 Chapter Overview

In this chapter the analysis of the data collected in the second phase of the research is described. Initially, the criteria of data analysis are outlined. This is followed by a detailed description of the analysis which was conducted in four stages: factor analysis, calculation of alignment, structural equation modeling, and regression analysis. In the third stage the hypotheses of the research are tested and the results presented.

Chapter Contents

7.1 Introduction

The ultimate purpose of the analysis was to test the conceptual model. To this end, data analysis of this phase was conducted in four stages. The first stage comprised factor analysis of the four measured constructs: strategic orientation, market orientation, business performance, and marketing performance. The reason for conducting factor analysis was to ensure that the factors identified were as properly specified (Anderson & Gerbing, 1982) and sufficiently valid and reliable for subsequent analysis. The second stage consisted of a calculation of alignment, which would become an input for the third stage of structural equation modeling (SEM). SEM was used to simultaneously test the constructs of the model and the relationships

between those constructs. In this way, both the measurement model and the theoretical model were tested (Aubert, Rivard & Patry, 1994). A fourth stage comprised a regression analysis to determine the relative contributions of the dimensions of alignment to the explained variance in the alignment index. Although not part of the formal model testing, this would enrich the insights gained from the earlier aspects of the findings.

The following sections provide a detailed description of the four stages. It is also prefaced by a general overview of the criteria which apply to data analysis.

7.2   Criteria of Data Analysis

Two *sine qua non*'s of research are that any measures should be both valid and reliable. Validity refers to the extent to which a measure truly measures what it purports to measure. Reliability is a necessary, although not sufficient, condition for validity. Reliability refers to the extent to which measures are free from error and thus yield consistent results (Peter, 1979). Although error has two components – systematic error and random error - systematic errors do not contribute to inconsistency. Therefore, reliability can simply be regarded as yielding consistent results which are free from random error (Dillon et al., 1994, p. 321). Validity, on the other hand, refers to non-random or systematic error (Dillon et al., 1994, p. 324). The analysis of the data collected for this phase was thus structured in order to meet the two major requirements of validity and reliability.

Different authors have focused on assessing different components of validity. In his comparison of the various measures, Goodhue (1998) cited the work of Bagozzi (1979, 1980), Cook and Campbell (1979), Campbell and Fisk (1959), Carmines and Zeller (1979) and Straub (1989). Although there is a large degree of commonality, there are also some differences in the components which are assessed, and even occasionally in the naming of the component being assessed. Bagozzi (1980) provides one of the most comprehensive coverages and the one that accords with most others.

Bagozzi (1980) chose to use the term "construct validity" and saw it as being divided into six components:

(1) Theoretical meaningfulness of concepts – This is a semantic criterion and refers to the extent to which the character and quality of the language used to describe the concepts and their components is meaningful. In other words, it is not vague, ambiguous, opaque, or contradictory.

(2) Observational meaningfulness of concepts – This is also a semantic criterion and refers to the clarity and meaningfulness with which the concepts are operationalized - in a questionnaire, for instance.

(3) Internal consistency of operationalization – This refers to the homogeneity or single factoredness of the measures. In other words, it reflects the extent to which repeated measures are consistent and relatively unclouded by random error. This is often interpreted and measured as reliability. However, it is only one method of assessing reliability. The other two are split-halves testing, and test-retest methods.

(4) Convergent validity – This reflects the extent to which two different measures of the same concept or construct agree.

(5) Discriminant validity – This is the converse of convergent validity and refers to the extent to which the concept differs from other concepts.

(6) Nomological validity – The extent to which the relationship of the concept to other concepts can be predicted by the theoretical network.

With regard to nomological validity, Goodhue (1998) pointed out that where theories were still under development, it might be more appropriate to refer to "predictive validity". In fact, predictive validity and nomological validity differ in terms of degree and could be seen as being at two ends of a theoretical continuum (Bagozzi, Davis & Warshaw, 1992).

Bagozzi's (1980) measures thus provide a sound basis for assessing both validity and reliability. However, not all his components of construct validity are applicable to factor analysis or to SEM. Therefore, when each of these methods is described, the relevant validity (and reliability) tests will be described.

It is worth noting, at this point, that the first two components of construct validity, theoretical meaningfulness and observational meaningfulness of components, were assessed in the card sorting exercise and in the pre-testing of the questionnaire. Goo, Kishore and Rao (2004) interpreted content validity as being comprised of convergent and discriminant validity, so in that sense, one could regard these two components of construct validity as having been assessed by means of the card sorting and the pre-testing.

7.3   Demographics

The demographic details of the respondents painted a fairly consistent picture with regard to the respondents' years in their relevant position and their years with the company. Figures 7.1 and 7.2 illustrate the distribution of the responses while Table 7.1 provides an overview of the main characteristics.

Figure 7.1.   Respondent's years in their positions

Figure 7.2.   Respondent's years with their companies

Table 7.1.   Demographics of respondents

		Years with company	Years in position
Respondents	Sample = 415	400*	404*
Mean		8.9	4.6
Distribution	First quartile	2.5	1.5
	Second quartile	6	3
	Third quartile	12	6
Range	Least number of years	0.25	0.25
	Most number of years	42	33

* Not all respondents answered the questions

At virtually nine years, the average time employed by the same company was relatively long and indicated a certain degree of stability. It also possibly indicated that the respondents had worked their way up the corporate ladder to their present positions. Even when the median was assessed, six years can be regarded as a substantial period. With 75% of the respondents having been employed by the same company for 2.5 years and more, that should have provided them with ample opportunity to become acquainted with the strategic direction of the company.

The range of employment length is large. A check was conducted on those respondents who indicated that they had worked for the company for less than a year, and in all cases, this had been the result of a company merger or a move to a

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competitor company in a market with very few players. Adequate knowledge of the company could thus be assumed to have existed.

There was no marked difference between these overall demographics and those of the IT or Marketing respondents. There was also no marked difference in the demograhic details of the respondents to the various stages of questionnaire despatch and reminders.

The demographics thus indicated that the sample was stable and that the respondents could be assumed to be qualified, in terms of their company knowledge, to answer the questionnaire.

7.4 Factor Analysis

The first stage of the analysis comprised factor analysis. In the following sections, the technique is first discussed and then the actual analysis of the collected data.

Factor analysis is a multivariate technique for identifying whether the correlations between a set of observed variables stem from their relationship to one or more latent variables in the data (Field, 2005, p. 731). It is an iterative approach. The main reasons for using factor analysis are to identify the underlying dimensions - known as factors or latent variables - and to reduce the data set to a smaller, more parsimonious set of uncorrelated factors which explain the maximum common variance (Field, 2000, p. 423). It also provides an indication of construct validity and can be used to test for construct reliability. It can furthermore indicate whether items associated with constructs are as expected (Tetiwat, 2003). Not only is it an accepted method of analysis in both the IS and Marketing disciplines, but it was used by Chan (1992) in her research in the area of strategic fit. By taking a similar approach, comparisons between the works could be facilitated.

A mixture of confirmatory factor analysis and exploratory factor analysis was conducted. The confirmatory analysis refers mainly to the analysis pertaining to the measurement of strategic orientation where the items used by Chan (1992) were

replicated almost identically. However, with regard to the items comprising the constructs of market orientation, business performance and marketing performance, they were not replications of any specific single instrument but rather a combination of parts of a number of instruments, plus some additions. With regard to these constructs, the factor analysis can be regarded as exploratory, albeit grounded in the findings of other researchers in the field.

Although in most instances both the heads of IT/IS and Marketing of each participating company responded, in 65 cases only one responded. However, a paired response from each company was not regarded as essential for this stage of the analysis, and all the responses - a total of 415 - were thus used for the factor analysis. With the questions pertaining to the independent variables and the measures of business performance being exactly the same for the two sampled groups, it was felt that (1) the larger the sample, the more accurately it would represent the population. It would also (2) increase the data-to-subject ratio, and, (3) despite the lack of 100% pairing, there was an almost equal input from IT (206) and Marketing (209), so there might only have been a slight bias in the direction of marketing. It should be noted, though, that only the heads of Marketing were required to respond to the questions on marketing performance.

The validity criteria according to which the constructs were assessed were convergent validity, discriminant validity, and internal consistency or reliability.

Factor loadings were used to determine convergent and discriminant validity. Loadings could range between –1 and +1. The higher the absolute loading value, the higher the correlation between the item and the factor (Dillon et al., 1994, p. 322). The factor loading provides an indication of the substantive importance of an item in a factor. Thus a loading of 0.4 explains 16% (4-squared) of the variance in a factor (Field, 2005). For a sample of 415, a requisite loading of 0.6 was deemed appropriate. This was based on the recommendation of Hair, Anderson, Tatham and Black (1998, p. 111) who indicated that a factor loading of greater than 0.5 was practically significant for individual item reliability and thus for convergent validity. Furthermore, as the number of items in a factor increases, so the acceptable level for considering a loading significant decreases (Hair et al., 1998, p.112). Thus, for a

sample of 50 a loading of 0.722 would be required, but for a sample of 600 only a loading of more than 0.21 would be necessary (Field, 2005).

Cronbach's alpha was used to calculate the internal consistency, and thus the reliability, of the items and the factors. According to Hair et al. (1998, p. 118) the generally agreed upon lower limit for Cronbach's alpha is 0.7 but it may decrease to 0.6 in exploratory research. Chan (1992) had used 0.6 as her lower limit. In addition, Peter (1979) maintained that in the early stages of research, measures of between 0.5 and 0.6 should suffice, but as instruments became more widely used, a score of 0.8 and more should be sought. Hair et al. (1998) also pointed out that there is a positive relationship between Cronbach's alpha and the number of items in the scale. Thus for fewer items, a lower alpha is acceptable. An alpha lower limit of 0.6 was thus deemed an appropriate level for this phase of the research.

SPSS, versions 11.5 and 12, was the package used for this research. A principal components analysis approach was adopted. Missing values, or "cases", were excluded pairwise so that that respondent's data were only excluded from calculations for which the missing data were required (Field, 2000, p.452). A limit of 25 iterations, or searches, was set within which the factors should converge. An eigenvalue of greater than 1 (Field, 2000, p. 436) was selected as the benchmark for factor retention. However, scree plots were also used as a guide. Varimax rotations with Kaizer normalization were used to maximize the loadings of the variables onto their relevant factors and to reduce any ambiguities that might confound interpretation of the analysis (Hair et al., 1998, p. 109). These orthogonal rotations also ensured that the factors were kept independent (Field, 2000, p, 438).

The independent variables were analyzed separately from the dependent variables. The independent variables consisted of the items constituting the constructs of strategic orientation and market orientation. The dependent variables consisted of the items comprising the business performance and marketing performance constructs.

Four alternative approaches to the analysis were used. Although they were all applied in the exploratory factor analysis of market orientation, business performance and

marketing performance, only approaches (1a) and (3) were applied in the confirmatory factor analysis of strategic orientation. The different approaches were:

(1) (a) the variables of the independent constructs of strategic orientation and market orientation altogether, and those of the dependent constructs of business performance and market performance altogether

(b) the variables of each separate construct together, for example those items measuring strategic orientation together, and similarly for market orientation business performance, and for marketing performance

(2) the variables of each separate construct together but according to a predetermined number of factors, and

(3) the variables of each separate construct together but according to the specified predetermined factors.

The rationale for each approach is discussed below. Approach (1a) was unconstrained and would not predefine the number of factors or the specific factors. It would provide a good indication of how the items loaded and cross-loaded onto the various factors, and also between constructs. It would provide an indication of the construct validity, of both the strategic orientation and market orientation constructs – whether they could be regarded as separate constructs or whether there was, in fact, so much overlap between the two that they might be measuring dimensions of the same construct. The same applied to the constructs of business performance and marketing performance.

Approach (1b) adopted the same rationale as for Approach (1a) but was more focused on the separate constructs as they had been predetermined. It would be particularly important with ascertaining whether there might be any duplication, particularly between the factors comprising market orientation which had never been tested as it was proposed for this research. Approach (2) was considered because it directed and constrained the items according to the number of factors conceived in the model. This was in order to ascertain the extent to which the items grouped together according to the envisaged factors or whether certain items displayed a greater affinity with other factors. Approach (3) was the most directive and provided an insight into the

reliability of the predetermined factors. It also provided an indication of the extent to which Chan's (1992) instrument proved reliable for measuring strategic orientation.

The following sections describe the findings according to the analysis of the independent variables of strategic orientation and market orientation, and then according to the dependent variables of business performance and market performance. Each is reported according to the relevant approaches.

7.4.1 Independent Variables: Strategic Orientation and Market Orientation

Approach (1a) - unconstrained

When Approach (1a) was applied, 15 clear factors emerged. These are presented in Table 7.2. Loadings of <0.4 were suppressed and therefore items F31, F12, F52 and F6 appear as though without a loading. This cut-off point for reporting factor loadings is followed throughout the analysis.

Table 7.2. Independent variables: Initial unconstrained factor analysis and item loadings

Item	Factor														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F45	.814														
F47	.809														
F46	.774														
F49	.700														
F48	.625														
F50	.551														
F30	.431														
F36		.774													
F34		.737													
F37		.627													
F35		.574													
F55		.572													
F38		.459	.409												
F32		.454													
F31 *															
F42			.662												
F41			.601												
F63			.539												
F60			.498												
F7			.496												
F33			.490												
F8			.453												
F40			.451												
F44			.430												
F62			.404												
F21				.619											
F20				.616											
F26				.587											
F25				.549											
F22				.529								.420			
F19				.488											
F28					.811										
F29					.798										
F27					.717										
F10						.722									
F11						.687									
F9						.658									
F12 *															
F3							.735								
F4							.635								
F5							.633								
F14							.453								
F13								.696							
F59								.681							
F54								.657							
F17									-.785						
F16									-.765						
F18									-.728						
F43										.771					
F51										.731					
F39											.616				
F61											.594				
F52 *															
F23												.697			
F24												.664			
F56													.621		
F57													.533		
F53													-.513		
F6 *															
F64														.672	
F58														.445	
F15															.768

Rotation converged in 12 iterations

Note: Shaded loadings represent those of original strategic orientation items
        Items denoted with an asterisk are those with loadings of <0.4

Appendix 27 provides an indication of the wording of each item. Together the factors accounted for 61.7% of the variance in the data. Three factors were comprised of only two items each, and one of one item. However, having a factor consisting of fewer than three items is regarded as undesirable (Hinkin, 1998) so they could present problems unless refined. Of the fifteen factors, five (factors 1, 2, 12, 13, 14) were comprised entirely of market orientation items. Five factors (factors 5, 6, 7, 9, 15) consisted entirely of strategic orientation items. The third, fourth and eighth factors consisted predominantly of market orientation items with a few strategic orientation items each. The remaining two factors were a combination of both strategic and market orientation items but these only comprised two items each. Only two items cross-loaded. These were both originally market orientation items and they both cross-loaded onto market orientation factors.

This approach allowed for the identification of possible overlaps between the measures for strategic orientation and market orientation. While there were some mixtures of items loading onto the same factor, this is understandable in the light of the wording of the questions, and especially as it would be difficult to completely extract market considerations from strategic ones. However, the main point of note was that the cross-loading appeared to be limited to two market orientation factors. It was therefore assumed that it was safe to treat strategic orientation and market orientation as two distinct constructs.

7.4.1.1 Strategic orientation

As the analysis of the strategic orientation measures was confirmatory, the analysis was conducted using the predetermined factors.

Approach 3 – predetermined factors

The seven predetermined factors were 'aggressiveness', 'futurity', 'innovativeness', 'proactiveness', 'risk aversion', 'analysis' and 'defensiveness'. The factors and their item loadings are depicted in Table 7.3.

Table 7.3.   Strategic orientation: Factor analysis and item loadings according to
             seven predetermined factors

Item	Factor						
	Aggressive-ness	Futurity	Innovative-ness	Proactive-ness.	Risk Aversion	Analysis	Defensive-ness
F3	.774						
F4	.845						
F5	.780						
F6		.755					
F7		.773					
F8		.857					
F9			.848				
F10			.871				
411			.878				
F12				.736			
F13				.758			
F14				.745			
F15					.407		
F16					.791		
F17					.751		
F18					.818		
F27						.785	
F28						.903	
F29						.889	
F19							.740
F21							.757
F51							.638
F63							.613

All the items loaded onto the factors which they were intended to measure. For
example, items F3, F4 and F5 had been intended to measure 'aggressiveness' and they
all loaded onto that factor. All but three of the item loadings onto the factors were
above the 0.7 level of acceptability. Only item F15 manifested a low loading.

Cronbach's alpha calculations of these seven factors and their items were conducted
to gain an indication of their reliability. Appendix 28 provides these results, together
with the relevant questions per item. Standardized alphas are supplied as they reflect
the alphas that would have resulted if all the items had been standardized to having a
variance of 1. Table 7.4 depicts a summarized version of the appendix. The
Refinement section provides an indication of the alpha scores after the removal of
items which impacted negatively on those scores. A distinction is made between
'internal defensiveness' and 'external defensiveness' in the tables and appendices
pertaining to the analysis of strategic orientation in order to facilitate any later
comparisons with the work of Chan (1992).

Table 7.4.   Strategic orientation: Reliability of initial factor analysis, according to predetermined factors, and refinement

Initial factor analysis						Refine-ment
Item	Question (& abbreviated text)	Original factor	Alpha if item deleted	Factor alpha		Factor alpha
F3	Q1 – Strive to be top company	Agg	0.6476			
F4	Q2 – Try to be ahead of competition	Agg	0.5387			
F5	Q3 – Act aggressively	Agg	0.6592	0.7022		0.7022
F6	Q4 – Budget allocations short-term	Fut	0.6812			
F7	Q5 – Long-term research for future edge	Fut	0.6608			
F8	Q6 – Future-oriented	Fut	0.5008	0.7063		0.7063
F9	Q7 – Innovative and imaginative	Inn	0.7934			
F10	Q8 – Early adopters of innovations	Inn	0.7548			
F11	Q9 – Creative and original	Inn	0.7334	0.8282		0.8282
F12	Q10 – Seeking new business opportunities	Pro	0.5053			
F13	Q11 – On lookout for business units to acquire	Pro	0.4810			
F14	Q12 – Expand capacity ahead of competitors	Pro	0.4764	0.5893		0.5893
F16	Q14 – Conservative decision making	RA	0.0724			
F17	Q15 – Operations follow 'tried and true' paths	RA	0.0383			
F18	Q16 – Risk averse	RA	0.2277			0.7267
F15	Q13 – Operations riskier than competitors'	RA	0.7267	0.4157		
F27	Q25 – Require deal of information for decision making	Anal	0.8591			
F28	Q26 – Comprehensive analysis of business situations	Anal	0.6816			
F29	Q27 – Highly analytical in decision making	Anal	0.7130	0.8230		0.8230
F19	Q17 – Attention to efficiency of operations	I Def	0.5282			
F21	Q19 – Optimise coordination among departments	I Def	0.5101			
F51	Q49 – Emphasis on relationships with key suppliers	E Def	0.5929			
F63	Q61 – Emphasis on relationships with stakeholders	E Def	0.6062	0.6318		0.6318

Legend

Agg - Aggressiveness   RA – Risk aversion
Fut – Futurity   Anal – Analysis
Inn - Innovativeness   I Def – Internal defensiveness
Pro - Proactiveness   E Def – External defensiveness

Most factors demonstrated an acceptable level of reliability, except that the reliability of 'proactiveness' was slightly below the 0.6 level. This could not be improved by the removal of any item. The reliability of 'risk aversion' was considerably lower. The analysis suggested that a refinement might be to exclude item F15. This was done with a significant resultant increase in the reliability of the factor[1]. Item F15 was thus deleted from further analysis of strategic orientation.

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[1] As a matter of interest, the strategic orientation measures were also analyzed according to the other approaches – unconstrained and according to a predetermined number of factors. While the latter mirrored the findings of the analysis according to the predetermined factors, the former pinpointed item F15 as being problematic. It demonstrated a tendency towards double loading – onto 'risk aversion' and 'defensiveness'. It also impacted negatively on the reliability of the measure for 'risk aversion'.

7.4.1.2   Market Orientation

As the analysis of market orientation was exploratory, it was only strictly necessary to run the analysis according to the unconstrained approach. However, as analysis according to the other approaches might have provided additional insights, all three approaches were adopted.

Approach (1b) - unconstrained

The factor analysis of the market orientation measures yielded a total of nine factors, each with an eigenvalue of greater than 1 and cumulatively accounting for 58.0% of the variance in the data. The resultant factors are displayed in Table 7.5.

Table 7.5.   Market orientation: Initial unconstrained factor analysis and item loadings

Item	Factor								
	1	2	3	4	5	6	7	8	9
F45	.832								
F47	.808								
F46	.789								
F49	.712								
F48	.646								
F50	.554								
F30	.506	.458							
F36		.777							
F37		.737							
F34		.655							
F35		.594							
F55		.552							
F31	.417	.459							
F32		.454	.402						
F38		.402							
F42			.678						
F41			.644						
F40			.577						
F33			.540						
F44			.452						
F62	.403		.414						
F22				.702					
F23				.621					
F20				.617					
F25				.613					
F24				.558					
F26				.455					
F54					.717				
F59					.642				
F53					.515				
F60					.491				.438
F56						.688			
F57						.636			
F61							.693		
F39							.597		
F52								.649	
F43								.544	
F64									.724
F58						.400			.449

Rotation converged in 14 iterations

To a large extent, the items loaded onto the factors as expected. Reference to Table 7.5 will provide more details in this regard. The items for 'interfunctional coordination' (factor 4) and 'market driving' (factor 5) loaded cleanly onto their respective factors without any additional or missing items. Items for 'customer analysis' and 'competitor analysis' tended to load together onto one factor (factor 2). All of the items for 'customer responsiveness' (factor 1) and most of those for 'environmental analysis' (factor 3) loaded correctly onto their respective factors, albeit with additional items. However, the items for 'environmental responsiveness' did not group together. They tended to load onto a number of other factors.

Items with factor loadings of >0.4 and which cross-loaded were items F30, F31, F32, F58, F60 and F62. In each instance, the factor loading onto either factor was unacceptably low, all but one being below 0.5. In addition, the seventh and eighth factors only consisted of two items each, and the sixth and ninth factors would also have consisted of only two items each if they had had a double-loading item extracted.

Cronbach's alpha calculations of each of the factors and their component items was thus conducted to establish the reliability of the factors and their items and to determine the impact on the factor reliability of the exclusion of a cross-loading item from a factor. The findings are provided in Appendix 29 with the relevant questions pertaining to each item, and summarized in Table 7.6.

Table 7.6. Market orientation: Reliability of initial unconstrained factor analysis, and refinement

Initial factor analysis						Refine-ment
Item	Question (& abbreviated text)	Original factor	Alpha if item deleted	Factor alpha		Factor alpha
F45	Q43 – Commitment to customers	CuR	0.8537			
F46	Q44 – Emphasis on relationships with customers	CuR	0.8637			
F47	Q45 – Meet needs of customers	CuR	0.8539			
F48	Q46 – Create customer value	CuR	0.8594			
F49	Q47 – Priority of increasing customer satisfaction	CuR	0.8518			
F50	Q48 – Turn deaf ear to customer complaints	CuR	0.8684			0.8754
F30	Q28 – Effective customer analysis	CuA	0.8659			
F31	Q29 – Research customer needs	CuA	0.8696			
F62	Q60 – Consider stakeholders in strategies	ER	0.8721	0.8755		
F30	Q28 – Effective customer analysis	CuA	0.8481			
F31	Q29 – Research customer needs	CuA	0.8471			
F32	Q30 – Study customer behaviour	CuA	0.8473			
F34	Q32 – Collect data on competitors' activities	CoA	0.8459			
F35	Q33 – All staff alert to competitive activity	CoA	0.8504			
F36	Q34 – Analyse competitor's marketing	CoA	0.8412			
F37	Q35 – Top management discuss competitors	CoA	0.8531			
F38	Q36 – Special competitive intelligence unit	CoA	0.8619			
F55	Q53 – Respond to competitors' actions	CoR	0.8517	0.8642		0.8642
F32	Q30 – Study customer behaviour	CuA	0.7712			
F33	Q31 – Review effect of changes on customers	CuA	0.7579			
F40	Q38 – Collect macro-economic information	EA	0.7849			
F41	Q39 – Collect social trends information	EA	0.7582			
F42	Q40 – Contacts with government and regulatory bodies	EA	0.7883			
F44	Q42 – Understanding stakeholders groups' needs	EA	0.7701			
F62	Q60 – Consider stakeholders in strategies	ER	0.7740	0.7982		0.7712
F20	Q18 – All depts involved in strategic plans preparation	IC	0.6875			
F22	Q20 – Market information shared with all depts	IC	0.6572			
F23	Q21 - Marketing people interact with other depts	IC	0.7124			
F24	Q22 – Departments slow to alert other depts	IC	0.7148			
F25	Q23 – Interdepartmental meetings of environmental issues	IC	0.7020			
F26	Q24 – IT share technology information with other depts	IC	0.7368	0.7398		0.7398
F53	Q51 – Compete with suppliers	MD	0.5370			
F54	Q52 – Seek opportunities for integration	MD	0.3960			
F59	Q57 – Eliminate competitors	MD	0.3789			
F60	Q58 – Remove competitor constraints	MD	0.4663	0.5220		0.5220
F56	Q54 – Target competitive advantage opportunities	CoR	0.4418			
F57	Q55 – Target customers where competitive advantage	CoR	0.4667			0.7300
F58	Q58 – Respond to competitor campaign	CoR	0.7300	0.6412		
F61	Q59 – Take longer to respond to change in regulatory policy	ER	N/a			}
F39	Q37 - Slow to detect industry shifts	EA	N/a	0.5013		}
						}
F52	Q50 – Slow to start business with new suppliers	ER	N/a			}
F43	Q41 – Learn about suppliers' business	EA	N/a	0.3511		}
						}
F58	Q58 – Respond to competitor campaign	CoR	0.2669			}
F60	Q58 – Remove competitor constraints	MD	0.3081			}
F64	Q62 – Respond to harmful business practice accusations	ER	0.3322	0.3694		} 0.5393

Note: Shaded rows highlight cross-loading of items

Legend

CuR – Customer responsiveness   CoR – Competitor responsiveness
CuA - Customer analysis   EA –   Environmental analysis
ER – Environmental responsiveness   IC –   Interfunctional coordination
CoA – Competitor analysis   MD – Market driving

As can be seen, the first four factors demonstrated a good level of reliability, and the sixth factor demonstrated an acceptable level. However, the fifth and seventh factors were below the specified threshold at 0.522 and 0.5013 respectively. For the eighth and ninth factors, reliability was significantly below the threshold level and could therefore not be confirmed.

Refinement of the factors by the more appropriate allocation of items in terms of the sense of the factor items and the impact on reliability of a factor if that item were deleted, resulted in seven factors. Five of these were over the acceptable 0.6 reliability level and two were below, although not excessively so. The latter were the fifth and seventh factors and their reliability measures were 0.522 and 0.5393 respectively. However, the second last factor only consisted of two items which is not desirable. The last factor was formed by the combination of what would have been three factors of two items each. They all pertained to "speed of reaction" or lack thereof.

Overall, this outcome indicated that the underlying factors were generally as expected and that appropriate items had been chosen to operationalize them. Not only did the previously researched factors emerge but also the newly formed factor of 'market driving'.

Approach 2 – predetermined number of factors

Eight factors had been hypothesized. The factor analysis was thus conducted with the specification that the items should all be fitted to a limit of eight factors. The cumulative variance that these factors accounted for in the data was 55.3% and each had an eigenvalue of greater than 1. Table 7.7 depicts the factor loadings of the various items on each factor.

Table 7.7.   Market orientation: Factor analysis and item loadings according to a predetermined number of factors

Item	Factor							
	1	2	3	4	5	6	7	8
F45	.825							
F47	.795							
F46	.768							
F49	.719							
F48	.644							
F50	.548							
F62	.424							
F36		.759						
F34		.721						
F37		.605						
F32		.570						
F31	.431	.566						
F35		.530						
F30	.503	.516						
F55		.495						
F38		.451						
F22			.706					
F20			.622					
F25			.619					
F23			.613					
F24			.552				.417	
F26			.477					
F42				.682				
F41		.426		.596				
F40				.574				
F33				.488				
F44				.437				
F43				.420			.405	
F54					.673			
F59					.644			
F60					.559			
F53					.453			
F56						.641		
F58						.553		
F57						.549		
F52							.673	
F39							.579	
F64								.672
F61								.668

Rotation converged in 10 iterations

The loading of the items onto the factors was largely as expected, and also similar to when the factor analysis was conducted without constraints. Reference to Table 7.8 will provide more detail. The items for 'market driving' (factor 5) loaded cleanly onto that factor without additional or missing items. The items for 'customer analysis' and 'competitor analysis' tended to load together onto one factor (factor 2), while those for 'environmental responsiveness' tended to load onto various other factors and not onto one factor. Items for the other factors were largely according to expectations.

Five items, F24, F30, F31, F41 and F43, cross-loaded. In all instances, except the last, the stronger loading of the two made more logical sense when grouped with the items of that factor. In all cases, that loading was also above 0.5 which was moderately high

albeit below the specified threshold of 0.6. In the case of item F43, the stronger loading made more logical sense but, at 0.42, it was below the specified threshold level.

Cronbach's alpha calculations, prior to any refinement, then provided an indication of the reliability of the factors and their relevant items. These are presented in Appendix 30 and summarized in Table 7.8.

Table 7.8.   Market orientation: Reliability of factors, according to a predetermined number of factors, and refinement

Initial factor analysis						Refinement
Item	Question (& abbreviated text)	Original factor	Alpha if item deleted	Factor alpha		Factor alpha
F45	Q43 – Commitment to customers	CuR	0.8537			
F46	Q44 – Emphasis on relationships with customers	CuR	0.8637			
F47	Q45 – Meet needs of customers	CuR	0.8539			
F48	Q46 – Create customer value	CuR	0.8594			
F49	Q47 – Priority of increasing customer satisfaction	CuR	0.8518			
F50	Q48 – Turn deaf ear to customer complaints	CuR	0.8684			
F62	Q60 – Consider stakeholders in strategies	ER	0.8721			0.8698
F30	Q28 – Effective customer analysis	CuA	0.8659			
F31	Q29 – Research customer needs	CuA	0.8696	0.8755		
F30	Q28 – Effective customer analysis	CuA	0.8575			
F31	Q29 – Research customer needs	CuA	0.8564			
F32	Q30 – Study customer behaviour	CuA	0.8555			
F34	Q32 – Collect data on competitors' activities	CoA	0.8557			
F35	Q33 – All staff alert to competitive activity	CoA	0.8590			
F36	Q34 – Analyse competitor's marketing	CoA	0.8519			
F37	Q35 – Top management discuss competitors	CoA	0.8625			
F38	Q36 – Special competitive intelligence unit	CoA	0.8673			
F41	Q39 – Collect social trends information	EA	0.8642			
F55	Q53 – Respond to competitors' actions	CoR	0.8600	0.8713		0.8642
F20	Q18 – All depts involved in strategic plans preparation	IC	0.6875			
F22	Q20 – Market information shared with all depts	IC	0.6572			
F23	Q21 - Marketing people interact with other depts	IC	0.7124			
F24	Q22 – Departments slow to alert other depts	IC	0.7148			
F25	Q23 – Interdepartmental meetings of environmental issues	IC	0.7020			
F26	Q24 – IT share technology information with other depts	IC	0.7368	0.7398		0.7398
F40	Q38 – Collect macro-economic information	EA	0.7244			
F41	Q39 – Collect social trends information	EA	0.6975			
F42	Q40 – Contacts with government and regulatory bodies	EA	0.7245			
F43	Q41 – Learn about suppliers' business	EA	0.7388			
F44	Q42 – Understanding stakeholders groups' needs	EA	0.7143			
F33	Q31 – Review effect of changes on customers	CuA	0.7064	0.7534		0.7534
F53	Q51 – Compete with suppliers	MD	0.5379			
F54	Q52 – Seek opportunities for integration	MD	0.3960			
F59	Q57 – Eliminate competitors	MD	0.3789			
F60	Q58 – Remove competitor constraints	MD	0.4663	0.5220		0.5220
F56	Q54 – Target competitive advantage opportunities	CoR	0.4418			
F57	Q55 – Target customers where competitive advantage	CoR	0.4667			
F58	Q58 – Respond to competitor campaign	CoR	0.7300	0.6412		0.6412
F24	Q22 – Department slow to alert other depts	IC	0.4526			
F43	Q41 – Learn about suppliers' business	EA	0.4500			
F39	Q37 - Slow to detect industry shifts	EA	0.3643			
F52	Q50 – Slow to start business with new suppliers	ER	0.4844	0.5112		0.4500
F61	Q59 – Take longer to respond to change in regulatory policy	ER	N/a			
F64	Q62 – Respond to harmful business practice accusations	ER	N/a	0.3537		0.3537

Note: Shaded rows highlight double loading of items

<u>Legend</u>

CuR – Customer responsiveness   EA - Environmental analysis
ER – Environmental responsiveness   CoR – Competitor responsiveness
CuA - Customer analysis   IC – Interfunctional coordination
CoA – Competitor analysis   MD – Market driving

The first four factors and the sixth one demonstrated moderately high to high levels of reliability. The fifth and the seventh factors demonstrated a level of reliability below the specified level of 0.6 at 0.5220 and 0.5112 respectively. However, for the last factor, reliability of 0.3537 was significantly below the threshold level and could therefore not be confirmed. In addition, the factor only consisted of two items.

A refinement of the factors, following the same approach as in Approach (1b) did not do much to improve the reliability scores. The Refinement section of the table reflects the reliability scores. The first four factors plus the sixth factor remained at a good level of reliability, the fifth was slightly below the specified level at 0.522, while the seventh and eighth were significantly below the specified level of 0.6 at 0.45 and 0.3537 respectively. In addition, the last two factors only consisted of two items each.

Although the factors emerged along the lines of the predetermined factors, the tendency for 'customer analysis' and 'competitor analysis' to form one factor was unexpected in terms of the target focus but yet could have been expected in terms of the activity, analysis. In addition, 'environmental responsiveness' failed to emerge clearly. Possibly the dimension, as it was conceived, was too large and encompassing of too many aspects. This indicated that consideration could be given to subdividing the factor in future.

Approach 3 – predetermined factors

Eight factors had been predetermined to reflect market orientation. They were 'interfunctional coordination', 'customer analysis', 'competitor analysis', 'environmental analysis', 'customer responsiveness', 'competitor responsiveness', 'environmental responsiveness', and 'market driving'. Table 7.9 depicts the factor loadings of the various items on each factor.

Table 7.9.   Market orientation: Factor analysis and item loadings according to predetermined factors

Item	Factor							
	IC	CuA	CoA	EA	CuR	CoR	ER	MD
F20	.715							
F22	.796							
F23	.635							
F24	.623							
F25	.652							
F26	.515							
F30		.810						
F31		.826						
F32		.847						
F33		.701						
F34			.798					
F35			.741					
F36			.831					
F37			.716					
F38			.608					
F39				.444				
F40				.651				
F41				.712				
F42				.651				
F43				.631				
F44				.695				
F45					.862			
F46					.779			
F47					.863			
F48					.756			
F49					.819			
F50					.655			
F52							.511	
F53								.480
F54								.705
F55						.715		
F56						.807		
F57						.756		
F58						.654		
F59								.740
F60								.634
F61							.710	
F62							.613	
F64							.563	

Legend

IC – Interfunctional coordination
CuA - Customer analysis
CoA – Competitor analysis
EA - Environmental analysis

CuR – Customer responsiveness
CoR – Competitor responsiveness
ER – Environmental responsiveness
MD – Market driving

Cronbach's alpha calculations of the eight factors and their items were thus conducted. Appendix 31 provides these results while Table 7.10 provides a summarized version of the appendix.

Table 7.10.   Market orientation: Reliability of factors, according to predetermined factors, and refinement

Initial factor analysis				
Item	Question (& abbreviated text)	Original factor	Alpha if item deleted	Factor alpha
F20	Q18 – All depts involved in strategic plans preparation	IC	0.6875	
F22	Q20 – Market information shared with all depts	IC	0.6572	
F23	Q21 - Marketing people interact with other depts	IC	0.7124	
F24	Q22 – Departments slow to alert other depts	IC	0.7145	
F25	Q23 – Interdepartmental meetings of environmental issues	IC	0.7020	
F26	Q24 – IT share technology information with other depts	IC	0.7368	0.7398
F30	Q28 – Effective customer analysis	CuA	0.7534	
F31	Q29 – Research customer needs	CuA	0.7428	
F32	Q30 – Study customer behaviour	CuA	0.7271	
F33	Q31 – Review effect of changes on customers	CuA	0.8115	0.8094
F34	Q32 – Collect data on competitors' activities	CoA	0.7297	
F35	Q33 – All staff alert to competitive activity	CoA	0.7527	
F36	Q34 – Analyse competitor's marketing	CoA	0.7144	
F37	Q35 – Top management discuss competitors	CoA	0.7625	
F38	Q36 – Special competitive intelligence unit	CoA	0.7965	0.7915
F39	Q37 - Slow to detect industry shifts	EA	0.7064	
F40	Q38 – Collect macro-economic information	EA	0.6568	
F41	Q39 – Collect social trends information	EA	0.6366	
F42	Q40 – Contacts with government and regulatory bodies	EA	0.6588	
F43	Q41 – Learn about suppliers' business	EA	0.6624	
F44	Q42 – Understanding stakeholders groups' needs	EA	0.6421	0.7011
F45	Q43 – Commitment to customers	CuR	0.8407	
F46	Q44 – Emphasis on relationships with customers	CuR	0.8569	
F47	Q45 – Meet needs of customers	CuR	0.8396	
F48	Q46 – Create customer value	CuR	0.8601	
F49	Q47 – Priority of increasing customer satisfaction	CuR	0.8455	
F50	Q48 – Turn deaf ear to customer complaints	CuR	0.8804	0.8754
F52	Q50 – Slow to start business with new suppliers	ER	0.3915	
F61	Q59 – Take longer to respond to change in regulatory policy	ER	0.2652	
F62	Q60 – Consider stakeholders in strategies	ER	0.3317	
F64	Q62 – Respond to harmful business practice accusations	ER	0.3714	0.4087
F53	Q51 – Compete with suppliers	MD	0.5370	
F54	Q52 – Seek opportunities for integration	MD	0.3960	
F59	Q57 – Target customers where competitive advantage	MD	0.3789	
F60	Q58 – Respond to competitor campaign	MD	0.4663	0.5220
F55	Q55 – Target customers where competitive advantage	CoR	0.6412	
F56	Q54 – Target competitive advantage opportunities	CoR	0.5987	
F57	Q55 – Target customers where competitive advantage	CoR	0.6406	
F58	Q58 – Respond to competitor campaign	CoR	0.6863	0.7045

Legend

IC –	Interfunctional coordination	CuR – Customer responsiveness
CuA -	Customer analysis	CoR – Competitor responsiveness
CoA –	Competitor analysis	ER – Environmental responsiveness
EA -	Environmental analysis	MD – Market driving

Six of the eight factors demonstrated a good level of reliability However, 'market driving' was just under the specified threshold at 0.5220 and 'environmental responsiveness' was significantly below the threshold level at 0.4087 and could thus not be regarded as reliable. In the case of the latter, the deletion of none of the items

would have improved the reliability. In the case of 'market driving', the deletion of item F53 would only have increased the reliability of the factor marginally from 0.5220 to 0.5370. Thus, apart from the latter, in no case would the reliability of the factor have been increased by the deletion of an item.

Summary of the market orientation factor analysis

In order to synthesize the findings, the refined versions of Approaches (1b) and (2) were compared with Approach (3). As is demonstrated in Appendix 32, it would appear that Approach (3) provided a greater measure of reliability than the other two approaches. Two factors emerged consistently with their predetermined items. These were 'interfunctional coordination' and 'market driving'. However, although the reliability of the former was confirmed, 'market driving' provided a reliability level which, at 0.522, fell short of the acceptable level of 0.6. The combination of the 'customer analysis' and 'competitor analysis' factors into one in Approaches (1b) and (2) failed to differentiate between two important targets of marketing activities, the customer and the competitor. Furthermore, the addition of item F55 in both approaches, made greater semantic sense if it was included with 'competition responsiveness'. Thus, although the individual reliabilities of both 'customer analysis' and 'competitor analysis', as in Approach (3), were lower than a combination of the two, Approach (3) appears preferable.

With regard to 'environmental analysis', the inclusion of item F33 in Approaches (1b) and (2) is understandable as the item includes a reference to both the environment and the customer. However, the focus of this item is on the latter and therefore, the exclusion of this item from 'environmental analysis' would be preferable. The inclusion of item F62 ('We consider our stakeholders in our strategies') in Approach (1b) depends on the interpretation of 'strategy'. However, it makes better sense when viewed as a response rather than an analysis because a strategy is usually devised after analysis has taken place.

'Customer responsiveness' was comprised of similar items in Approaches (1b) and (3) and almost so, in Approach (2), apart from the addition of one item which reduced

the reliability and made better sense if grouped with a more general responsiveness factor.

'Competitor responsiveness' obviously retained all its predetermined items in Approach (3) and also yielded a high reliability score. The other two approaches appeared to suffer from the loss of item F55 in both approaches, and from the additional loss of item F58 in Approach (1b). Furthermore, in the latter case, the factor was then left with only two items which represents a weak scale.

The 'environmental responsiveness' factor provided the most problems. When Approach (3) was used, the reliability was below the acceptable level. When the other two approaches were used, the reliability was still unacceptable but the factor became split into either three, in the case of Approach (1b), or two factors of two items each as in the case of Approach (2). Although these could be combined into a single factor in each case, it did not really improve the reliability significantly. On top of which, both approaches used items from other factors which were more suitable when grouped with their predetermined factors.

Thus, although Approach (3) did not always demonstrate a higher reliability per construct than the other two approaches, the reliability of most constructs was good. The exceptions were 'market driving' which was lower than the acceptable 0.6 level but which was equal to the other approaches, and 'environmental responsiveness' which was split up into unacceptably small factors with Approaches (1b) and (2). As it was necessary to maintain one factor to reflect responsiveness to the environment in order to counter-balance the 'environmental analysis', it was consequently decided that Approach (3) would be most suitable. The predetermined factors would be used in the instrument to measure market orientation and consequently used in the calculation of alignment according to market orientation. However, it was realized that 'environmental responsiveness' could present problems in the subsequent SEM.

Overall, the factor analysis demonstrated strong support for the predetermined factors. Apart from the few items already discussed and the possibly problematic factor of 'environmental responsiveness', a good set of factors emerged which generally demonstrated both validity and reliability. They had been carefully tested via a

number of approaches. They thus formed a sound basis for the structural equation modeling stage.

7.4.2 Dependent Variables: Business Performance and Marketing Performance

It should be noted that only the heads of marketing responded to questions pertaining to marketing performance. The number of cases in this instance was thus 209.

Approach 1 - unconstrained

Approach (1a) was initially used with the dependent variable items. This resulted in three distinct factors with eigenvalues of greater than 1 each and cumulatively responsible for 72.9% of the variance in the data. Table 7.11 reflects the factor loadings of the various items onto their respective factors. Although only two factors had been expected, three emerged. All the items belonging to the 'business performance' scale loaded onto that factor (factor 1) but the items of the 'marketing performance' scale split into two factors (factors 2 and 3). Only one item, F69 ('market share gains'), loaded onto two factors. This is understandable, given the possible ambiguity of whether it measures marketing or business performance.

Table 7.11. Dependent variables: Initial unconstrained factor analysis and item loadings

Item	Factor		
	1	2	3
F65	.863		
F66	.859		
F70	.857		
F67	.854		
F68	.751		
F74		.852	
F76		.836	
F75		.784	
F69	.496	.547	
F73			.876
F72			.849
F71			.747

Rotation converged in 5 iterations

Cronbach's alpha calculations of reliability indicated a very high reliability level for all the factors. Appendix 33 depicts the initial reliability scores which are summarized in Table 7.12.

Table 7.12. Dependent variables: Reliability of initial unconstrained factor analysis, and refinement

Initial factor analysis						Refine- ment
Item	Question (& abbreviated text)	Original factor	Alpha if item deleted	Factor alpha		Factor alpha
F65	Q63 – Net profits	BP	0.8829			
F66	Q64 – Return on investment	BP	0.8861			
F67	Q65 – Revenue growth	BP	0.8701			
F68	Q66 – Sales growth	BP	0.8817			
F69	Q67 – Market share gains	BP	0.9099			
F70	Q68 – Overall performance	BP	0.8657	0.9008		0.9008
F69	Q67 – Market share gains	BP	0.8402			
F74	Q72 – Return on marketing investment	MP	0.7129			
F75	Q73 – Efficiency of marketing promotions	MP	0.7638			
F76	Q74 – Overall marketing performance	MP	0.7198	0.8080		.8402
F71	Q69 – Customer satisfactions	MP	0.8107			
F72	Q70 – Customer retention	MP	0.7278			
F73	Q71 – Customer loyalty	MP	0.7417	0.8277		0.8277

Note: Shaded rows highlight double loading of item
<u>Legend</u>
MP – Marketing performance
BP – Business performance

Although all three factors demonstrated high reliability, the reliability of the second factor would have been increased more than the first factor by the exclusion of item F69. It also made greater conceptual sense to include the item, 'market share gains', with the first factor, business performance. The factors were thus refined accordingly. The resultant reliability scores are presented in the Refinement section of the table.

As Approach (1a) distinguished neatly between the business performance and marketing performance factors, albeit with the latter being divided into two factors, it was unnecessary to use Approach (1b).

Although analysis according to an unconstrained approach was all that was really necessary, it was similarly felt that analysis according to the other approaches might provide useful insights in the interpretation of the findings.

Approach 2 – predetermined number of factors

Two factors had been predetermined and the factor analysis was thus conducted according to this constraint. The two factors each had an eigenvalue of greater than 1 and cumulatively they accounted for 60.7% of the variance in the data. Table 7.13 reflects the factor loadings of each factor and their respective items. Item F69 cross-loaded onto both items, although the loading onto the first item was heavier.

Table 7.13. Dependent variables: Initial factor analysis and item loadings according to a predetermined number of factors

Item	Factor	
	1	2
F67	.872	
F70	.872	
F65	.843	
F66	.839	
F68	.782	
F69	.547	.450
F76		.789
F74		.723
F72		.711
F73		.696
F71		.626
F75		.618

Rotation converged in 3 iterations

A subsequent reliability calculation of each factor using Cronbach's alpha indicated a high reliability of both factors. This is presented in Appendix 34 and summarized in Table 7.14.

Table 7.14. Dependent variables: Reliability of factors, and refinement, according to a predetermined number of variables

| Initial factor analysis | | | | | | Refine-ment |
Item	Question (& abbreviated text)	Original factor	Alpha if item deleted	Factor alpha		Factor alpha
F65	Q63 – Net profits	BP	0.8829			
F66	Q64 – Return on investment	BP	0.8861			
F67	Q65 – Revenue growth	BP	0.8701			
F68	Q66 – Sales growth	BP	0.8817			
F69	Q67 – Market share gains	BP	0.9099			
F70	Q68 – Overall performance	BP	0.8657	0.9008		0.9008
F69	Q67 – Market share gains	BP	0.8049			
F71	Q69 – Customer satisfactions	MP	0.7869			
F72	Q70 – Customer retention	MP	0.7900			
F73	Q71 – Customer loyalty	MP	0.7963			
F74	Q72 – Return on marketing investment	MP	0.7793			
F75	Q73 – Efficiency of marketing promotions	MP	0.8049			
F76	Q74 – Overall marketing performance	MP	0.7748	0.8154		0.8049

Note: Shaded rows highlight double loading of item
<u>Legend</u>
MP – Marketing performance
BP – Business performance

The deletion of item F69 from either factor would not have had a significant impact on either factor. However, subsequent refinement took into account the content of the item's question, and it made better sense for it to be grouped with the first item. The Refinement section of the table reflects the reliability values after the refinement. Both factors' reliability remained high.

Approach 3 – predetermined factors

As Approach (2) yielded the two factors as they had been predetermined, analysis using this approach had, in effect, already been executed.

Summary of factor analysis of dependent variables

Both approaches (1a) and (2) demonstrated high reliability of the factors and their respective items. However, in Approach (1a), the marketing performance factor of Approach (2) was split neatly into two factors, one of which reflected the marketing function performance, and the other the effect on customers. With the latter approach, the reliability of each of the marketing performance factors was higher than in

Approach (1b) where they were combined. However, splitting them into two would deny the all-encompassing concept of marketing performance. It could be argued that the customer-related measures preceded the other measures, but by the same score, 'promotional efficiency' could precede the eventual marketing performance. It was thus decided to pursue Approach (2) with the predetermined number of factors – and by implication, Approach (3) with predetermined factors.

7.4.3   Overall Summary of Factor Analysis

From the confirmatory analysis of strategic orientation, the predetermined factors appeared to provide an appropriate measure of the construct and would be used. However, item F15 exercised a negative effect on the reliability of the factor, and the measurement instrument was enhanced by the exclusion of that item. In measuring market orientation, business performance and marketing performance, it appeared most appropriate in all cases to use the predetermined factors and their component items. The market orientation measure had not been tested and validated in its proposed form in prior research and was therefore not as robust in terms of valid and reliable factor formation as that of strategic orientation. However, when tempered with a logical perspective, it was decided to use the predetermined factors as a measure for market orientation. The predetermined measure for business performance emerged clearly as the most suitable approach, and while the option existed for marketing performance becoming a split measure, the combined, single, predetermined measure made better conceptual sense and performed strongly.

The predetermined measures of all the constructs, including the modified strategic orientation measure, were thus used in the next stage for the calculation of alignment, and subsequently in the structural equation modeling. However, the components of the market orientation construct and the possibility of splitting marketing performance into two constructs would be monitored.

Tables 7.15, 7.16 and 7.17 present the items (questions) used in the factor analysis and those that were used subsequently in the calculation of alignment.

Table 7.15.   Strategic orientation: Items used in the factor analysis, and those retained after the factor analysis

Question (& abbreviated text) used in factor analysis	Original factor	Question (& abbreviated text) retained after factor analysis
Q1 – Strive to be top company	Agg	Q1 – Strive to be top company
Q2 – Try to be ahead of competition	Agg	Q2 – Try to be ahead of competition
Q3 – Act aggressively	Agg	Q3 – Act aggressively
Q4 – Budget al.locations short-term	Fut	Q4 – Budget al.locations short-term
Q5 – Long-term research for future edge	Fut	Q5 – Long-term research for future edge
Q6 – Future-oriented	Fut	Q6 – Future-oriented
Q7 – Innovative and imaginative	Inn	Q7 – Innovative and imaginative
Q8 – Early adopters of innovations	Inn	Q8 – Early adopters of innovations
Q9 – Creative and original	Inn	Q9 – Creative and original
Q10 – Seeking new business opportunities	Pro	Q10 – Seeking new business opportunities
Q11 – On lookout for business units to acquire	Pro	Q11 – On lookout for business units to acquire
Q12 – Expand capacity ahead of competitors	Pro	Q12 – Expand capacity ahead of competitors
Q14 – Conservative decision making	RA	Q14 – Conservative decision making
Q15 – Operations follow 'tried and true' paths	RA	Q15 – Operations follow 'tried and true' paths
Q16 – Risk averse	RA	Q16 – Risk averse
Q13 – Operations riskier than competitors'	RA	**DELETED**
Q25 – Require deal of information for decision making	Anal	Q25 – Require deal of information for decision making
Q26 – Comprehensive analysis of business situations	Anal	Q26 – Comprehensive analysis of business situations
Q27 – Highly analytical in decision making	Anal	Q27 – Highly analytical in decision making
Q17 – Attention to efficiency of operations	I Def	Q17 – Attention to efficiency of operations
Q19 – Optimise coordination among departments	I Def	Q19 – Optimise coordination among departments
Q49 – Emphasis on relationships with key suppliers	E Def	Q49 – Emphasis on relationships with key suppliers
Q61 – Emphasis on relationships with stakeholders	E Def	Q61 – Emphasis on relationships with stakeholders

Legend
Agg - Aggressiveness   RA – Risk aversion
Fut – Futurity   Anal – Analysis
Inn - Innovativeness   I Def – Internal defensiveness
Pro - Proactiveness   E Def – External defensiveness

Table 7.16.   Market orientation: Items used in the factor analysis, and those retained after the factor analysis

Question (& abbreviated text) used in factor analysis	Original factor	Question (& abbreviated text) retained after factor analysis
Q18 – All depts involved in strategic plans preparation	IC	Q18 – All depts involved in strategic plans preparation
Q20 – Market information shared with all depts	IC	Q20 – Market information shared with all depts
Q21 - Marketing people interact with other depts	IC	Q21 - Marketing people interact with other depts
Q22 – Departments slow to alert other depts	IC	Q22 – Departments slow to alert other depts
Q23 – Interdepartmental meetings of environmental issues	IC	Q23 – Interdepartmental meetings of environmental issues
Q24 – IT share technology information with other depts	IC	Q24 – IT share technology information with other depts
Q28 – Effective customer analysis	CuA	Q28 – Effective customer analysis
Q29 – Research customer needs	CuA	Q29 – Research customer needs
Q30 – Study customer behaviour	CuA	Q30 – Study customer behaviour
Q31 – Review effect of changes on customers	CuA	Q31 – Review effect of changes on customers
Q32 – Collect data on competitors' activities	CoA	Q32 – Collect data on competitors' activities
Q33 – All staff alert to competitive activity	CoA	Q33 – All staff alert to competitive activity
Q34 – Analyse competitor's marketing	CoA	Q34 – Analyse competitor's marketing
Q35 – Top management discuss competitors	CoA	Q35 – Top management discuss competitors
Q36 – Special competitive intelligence unit	CoA	Q36 – Special competitive intelligence unit
Q37 - Slow to detect industry shifts	EA	Q37 - Slow to detect industry shifts
Q38 – Collect macro-economic information	EA	Q38 – Collect macro-economic information
Q39 – Collect social trends information	EA	Q39 – Collect social trends information
Q40 – Contacts with government and regulatory bodies	EA	Q40 – Contacts with government and regulatory bodies
Q41 – Learn about suppliers' business	EA	Q41 – Learn about suppliers' business
Q42 – Understanding stakeholders groups' needs	EA	Q42 – Understanding stakeholders groups' needs
Q43 – Commitment to customers	CuR	Q43 – Commitment to customers
Q44 – Emphasis on relationships with customers	CuR	Q44 – Emphasis on relationships with customers
Q45 – Meet needs of customers	CuR	Q45 – Meet needs of customers
Q46 – Create customer value	CuR	Q46 – Create customer value
Q47 – Priority of increasing customer satisfaction	CuR	Q47 – Priority of increasing customer satisfaction
Q48 – Turn deaf ear to customer complaints	CuR	Q48 – Turn deaf ear to customer complaints
Q50 – Slow to start business with new suppliers	ER	Q50 – Slow to start business with new suppliers
Q59 – Take longer to respond to change in regulatory policy	ER	Q59 – Take longer to respond to change in regulatory policy
Q60 – Consider stakeholders in strategies	ER	Q60 – Consider stakeholders in strategies
Q62 – Respond to harmful business practice accusations	ER	Q62 – Respond to harmful business practice accusations
Q51 – Compete with suppliers	MD	Q51 – Compete with suppliers
Q52 – Seek opportunities for integration	MD	Q52 – Seek opportunities for integration
Q57 – Target customers where competitive advantage	MD	Q57 – Target customers where competitive advantage
Q58 – Respond to competitor campaign	MD	Q58 – Respond to competitor campaign
Q55 – Target customers where competitive advantage	CoR	Q55 – Target customers where competitive advantage
Q54 – Target competitive advantage opportunities	CoR	Q54 – Target competitive advantage opportunities
Q55 – Target customers where competitive advantage	CoR	Q55 – Target customers where competitive advantage
Q58 – Respond to competitor campaign	CoR	Q58 – Respond to competitor campaign

Legend

IC –   Interfunctional coordination   CuR – Customer responsiveness
CuA - Customer analysis   CoR – Competitor responsiveness
CoA – Competitor analysis   ER – Environmental responsiveness
EA -   Environmental analysis   MD – Market driving

Table 7.17. Dependent variables: Items used in the factor analysis, and those retained after the factor analysis

Question (& abbreviated text) used in factor analysis	Original factor	Question (& abbreviated text) retained after factor analysis
Q63 – Net profits	BP	Q63 – Net profits
Q64 – Return on investment	BP	Q64 – Return on investment
Q65 – Revenue growth	BP	Q65 – Revenue growth
Q66 – Sales growth	BP	Q66 – Sales growth
Q67 – Market share gains	BP	Q67 – Market share gains
Q68 – Overall performance	BP	Q68 – Overall performance
Q69 – Customer satisfactions	MP	Q69 – Customer satisfactions
Q70 – Customer retention	MP	Q70 – Customer retention
Q71 – Customer loyalty	MP	Q71 – Customer loyalty
Q72 – Return on marketing investment	MP	Q72 – Return on marketing investment
Q73 – Efficiency of marketing promotions	MP	Q73 – Efficiency of marketing promotions
Q74 – Overall marketing performance	MP	Q74 – Overall marketing performance

Legend
MP – Marketing performance
BP – Business performance

At this stage, the average response scores on the various strategic orientation dimensions were as depicted in Figure 7.3.
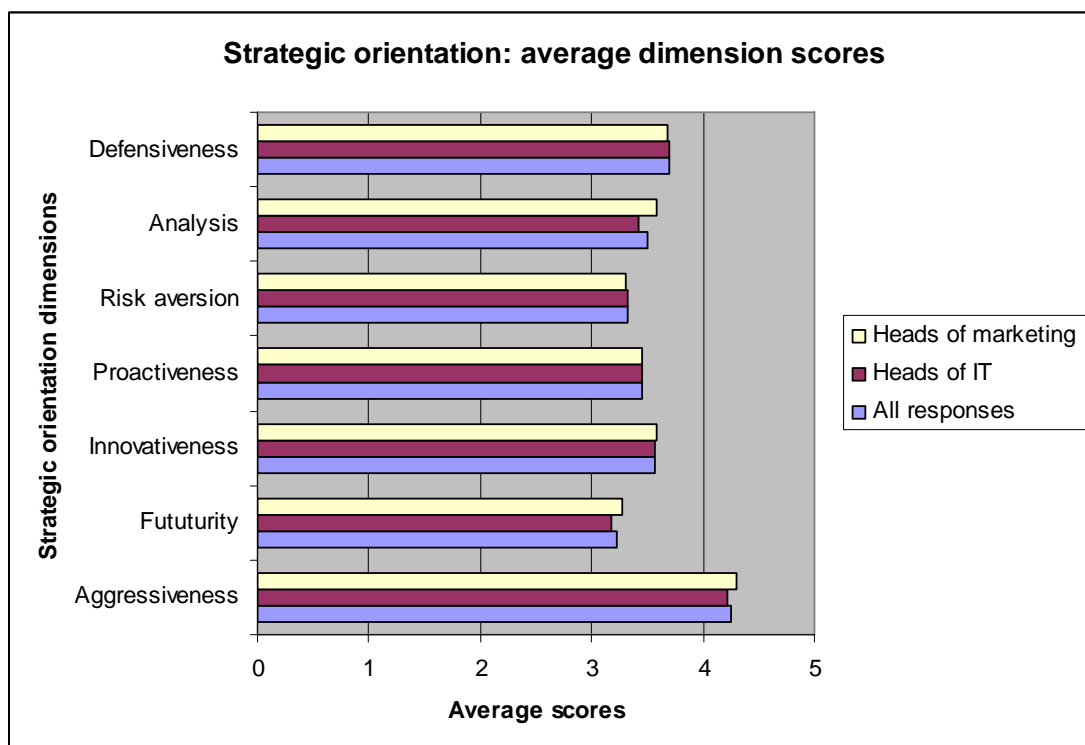
Figure 7.3. Strategic orientation: Average dimension scores after factor analysis

Although the heads of IT and Marketing responded more or less similarly on all dimensions, the heads of Marketing seemed to provide higher scores than the heads of IT on the 'analysis', 'innovativeness', 'futurity' and 'aggressiveness' dimensions.

Overall, the average scores for 'aggressiveness' were noticeably higher than the scores of the other dimensions, and the average scores for 'futurity' were lower than those of the other dimensions. This seems to indicate that large New Zealand companies place more emphasis on an aggressive approach to their business, with less emphasis on looking to the future. This could be reflective of the current economic environment, either nationally or globally.

The average response scores on the various market orientation dimensions were as depicted in Figure 7.4.
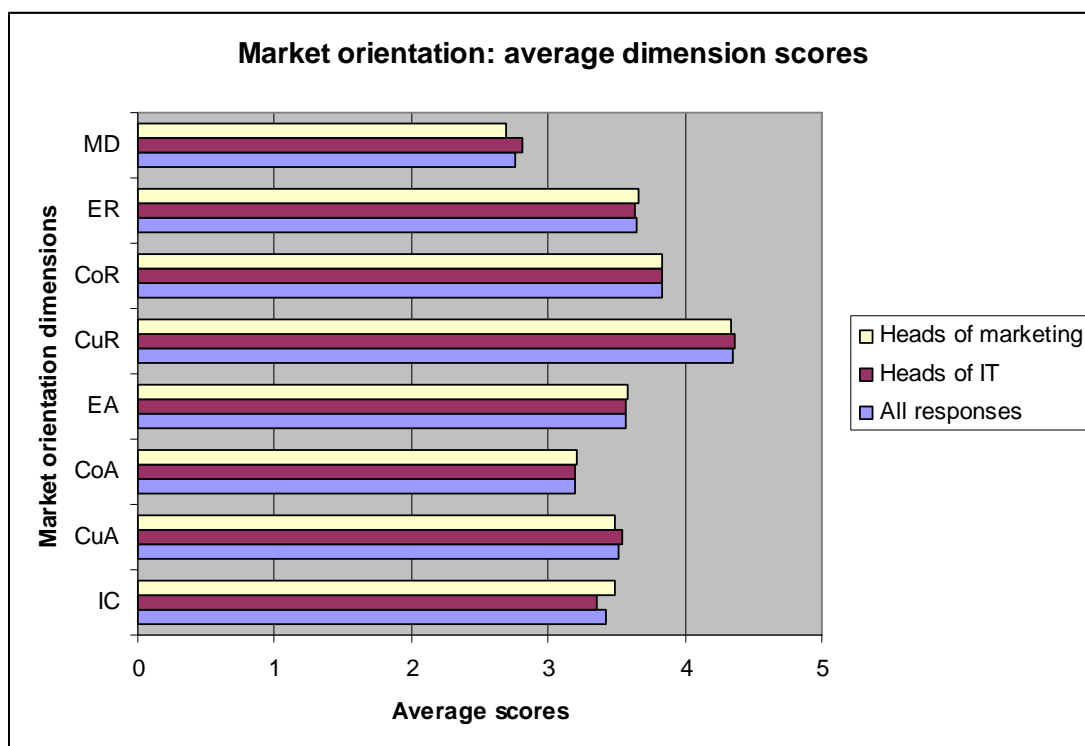
Market orientation: average dimension scores

Legend
IC –   Interfunctional coordination   CuR – Customer responsiveness
CuA - Customer analysis   CoR – Competitor responsiveness
CoA – Competitor analysis   ER – Environmental responsiveness
EA -   Environmental analysis   MD – Market driving

Figure 7.4.   Market orientation: Average dimension scores after factor analysis

Similarly to the strategic orientation dimensions, on most dimensions the average scores of the heads of Marketing were higher than those of the heads of IT. Only on 'market driving' and 'customer analysis' were the scores of the latter higher. The distribution of the scores demonstrated a similar range to the distribution of the average strategic orientation dimensions, that is, one noticeably higher and one

noticeably lower score. 'Customer responsiveness' demonstrated a markedly higher score than the other dimensions, and 'market driving' a score much lower than the rest and, in fact, lower than any strategic orientation dimension. This could be construed as large New Zealand companies pursuing customer responsiveness arduously while attending less to driving their markets.

7.5   Calculation of Alignment

The second stage of the analysis consisted of the calculation of alignment.

From the outset it was the intention that alignment would be calculated, as opposed to measured. The fact that the concept of alignment implied a fit or linkage of, in this instance, two equal originating drivers indicated this, but so did the complexity of the possible alternative approach of measuring alignment. Taking strategic orientation, for example, this research would require the respondent to conceive and mentally calculate their perception of the company's orientation on the various dimensions of strategic orientation, their estimation of the other respondent's perceptions of the same, and then a further estimation of the difference/similarity between the two. That would be based on the simplest understanding of the concept of alignment (see later discussion). Estimating another's perceptions is always risky and any measures of the alignment acquired in this way would severely compromise the validity and reliability of the research. Furthermore, as much of this research was based on the work of Chan (1992), it would seem prudent to follow a path of enquiry which had been tested and found valid.

The alignment construct would thus consist of a single measure, or index. This calculation of alignment would require some means of matching up the item responses of the heads of IT/IS and Marketing. This would occur within each independent construct and within each dimension thereof. In deciding how best to approach the calculation, this research drew on the work of Chan (1992). As part of her research objective, Chan (1992) had set out to examine several models of fit, which later became referred to as alignment (Chan et al., 1997), and to determine which was the most appropriate. She considered the calculation of fit from a number

of perspectives, but in order to avoid unnecessary complexity, she favoured three of Venkatraman's (1989a) options - calculating matching, profile deviation, and moderation models of fit. All three were explored. The moderation approach emerged as the preferred option. Logically, it appeared to be most suitable and it also found support from Chan's (1992) analysis. The moderation approach used the positive product at item level, then the average of these at each dimension. Fit was thus characterized as an index of eight indicators, based on her strategic orientation dimensions. However, Chan (1992) did acknowledge that alternative models should not be dismissed regardless of the fact that they were not well supported in her study.

This study considered Chan's (1992) arguments carefully. (Her formula is referred to as Formula 1.) While the merits of the rationale behind her moderation approach cannot be denied, there was concern that such a calculation would not accommodate the "anti-synergy" which might result from the IT/IS and Marketing respondents' scores being very different. In other words, according to Chan's (1992) approach of initially calculating the product of the two respondents' scores (xy), if the two scores for an item, such as 'We constantly try to be ahead of the competition' were 1 and 4 respectively, or if they were 2 and 2, the alignment score in each case would be 4. However, the assumption is that if both respondents produced similar scores, they would be of like mind and would act accordingly in their approach vis-à-vis the competition. On the other hand, if they had different perceptions regarding their approach to the competition, they would act differently and in what might be a contradictory or "anti-synergistic" way whereby the difference would be magnified.

In order to accommodate this alternative perspective, the following formula, Formula 2, was considered:

$$(4- |x-y|)((x+y)/2)$$

- 4 represents the largest possible difference between the item scores of the IT/IS and Marketing respondents, given the 5-point Likert scale.
- It was necessary to subtract the absolute difference from 4 in order to obtain an indication of the alignment, or similarity, between the item scores rather

than the non-alignment, or dissimilarity, which would have resulted if it were not subtracted from 4.

- Using the absolute difference between x and y removes the implication of order in the subtraction. A negative sign would have been an artifact of such an order.

- (x+y)/2   represents the average of the two scores. It could be assumed that the strength of the manifestation of any aspect of a dimension, as captured by an item, would result from the average strength, or score, of the two.

- The product of the two parts of the formula captures the synergy, or the magnification, between the similarity of the scores and the average strength of each of those scores.

A third approach, Formula 3, was considered and that was to simply use the absolute difference between the scores per item. The rationale was that the difference would imply the lack of alignment and thus the synergy between the two respondents. As already stated, the use of the absolute difference removes both the confounding effect of negative signs as well as any indication of preferred score of departure.

There were thus three approaches to choose from: Formula 1, using Chan's (1992) (xy) formula; Formula 2, using $(4- |x-y|)((x+y)/2)$; and Formula 3, using the absolute differences between item scores.

Yet another issue to consider was whether to first apply whatever formula was selected at item level and then average the resultant scores across each dimension, or whether to first average the individual respondents' scores across each dimension and then apply the formula at the dimension level. In each case the average dimension score would be calculated to form the alignment index. It was felt that each item of a dimension was important, and that an aggregation first across the dimension would obscure the relative impact of each item. The preferred approach was therefore to capture that individual importance by calculating the formula at item level first.

In conclusion, the approach using Formula 2, $(4- |x-y|)((x+y)/2)$, was selected, with the calculation of the formula at item level first, rather than only at an average

dimension level, being preferred. Although not expanded upon in this dissertation, significant additional analysis was also conducted as a precaution to see whether statistical calculations according to the other five approaches which had been considered would yield radically different results from the selected method. These other approaches are depicted in Table 7.18 and were:

Table 7.18.   Optional approaches to calculating alignment

	Formula 1 Chan's formula (xy)	Formula 2 (4- |x-y|)((x+y)/2)	Formula 3 Absolute difference formula |x-y|
Applied at item level	Considered	Preferred	Considered
Applied at average dimension level	Considered	Considered	Considered

- Formula 1, Chan's (1992) formula, applying the formula
    - at item level and
    - at average dimension level;
- Formula 3, the absolute difference formula, applying the formula
    - at item level and
    - at average dimension level; and
- Formula 2, (4- |x-y|)((x+y)/2), applied
    - at average dimension level.

The calculated alignment value thus formed the sole independent variable in the model which would be tested in the next stage of the analysis.

Figure 7.5 depicts the average alignment score for each of the strategic orientation dimensions. These were calculated after the application of the formula. Table 7.19 presents the scores as well as the standard deviations.
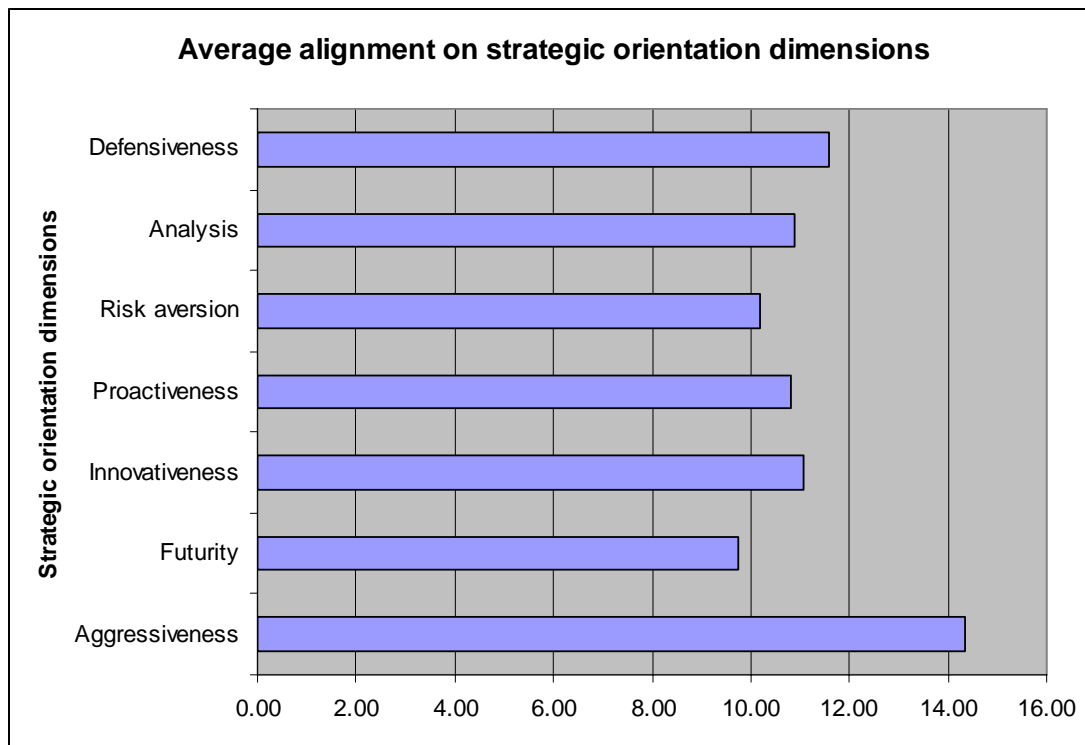
Figure 7.5.   Alignment on strategic orientation: Average score per dimension

Table 7.19   Alignment on strategic orientation: Descriptive statistics per dimension

Dimension	Minimum	Maximum	Median	Mean	Std dev.
Aggressiveness	0	20.00	14.67	14.42	3.68
Futurity	0	16.50	9.83	9.79	3.09
Innovativeness	0	20.00	11.17	11.15	3.37
Proactiveness	0	17.83	11.00	10.89	2.84
Risk aversion	0	16.00	10.17	10.23	3.11
Analysis	0	20.00	11.00	10.96	3.53
Defensiveness	0	19.00	11.88	11.66	2.92

As with the average dimension scores, prior to the calculation of alignment (see
Figure 7.3), 'aggressiveness' emerged as the dimension on which the average score
was highest, and 'futurity' as the dimension on which the alignment between heads of
IT and marketing was lowest.

With regard to the average alignment scores on the market orientation dimensions, the
results are shown in Figure 7.6 and Table 7.20 below.
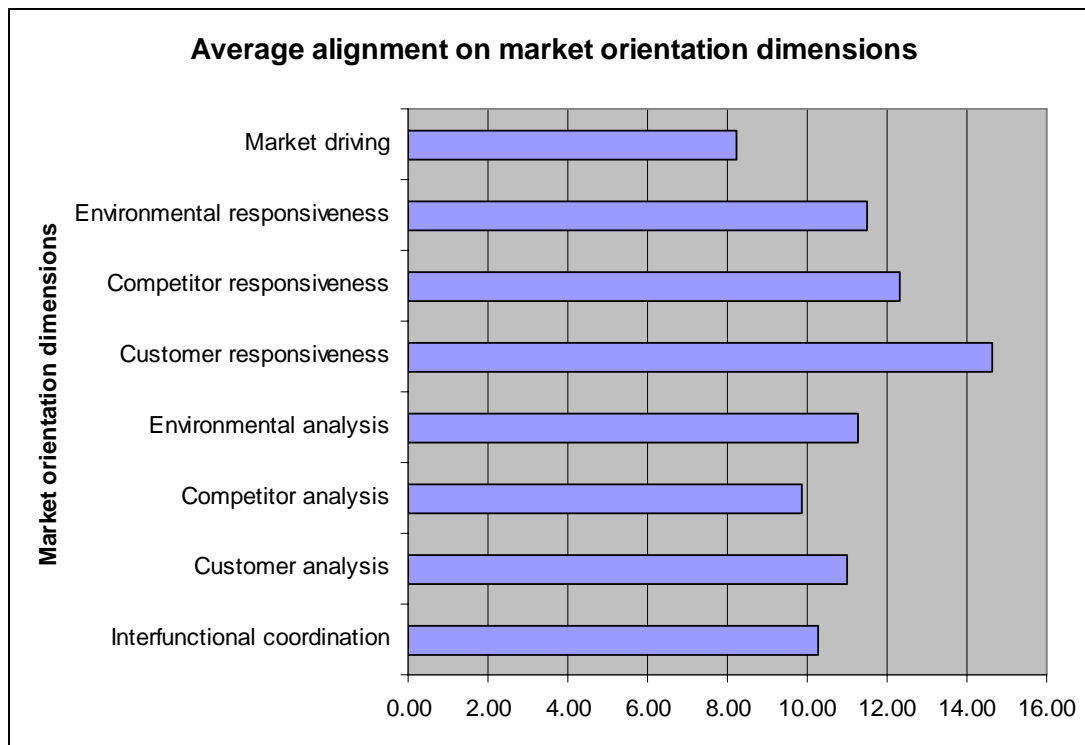
Figure 7.6 .   Alignment on market orientation: Average score per dimension

Table 7.20.   Alignment on market orientation: Descriptive statistics per dimension

Dimension	Min.	Max.	Median	Mean	Std dev.
Interfunctional coordination	0	17.58	10.08	10.34	2.65
Customer analysis	0	19.00	11.13	11.07	3.08
Competitor analysis	0	17.90	9.80	9.94	2.60
Environmental analysis	0	16.08	11.58	11.33	2.49
Customer responsiveness	0	20.00	15.00	14.71	3.24
Competitor responsiveness	0	18.38	12.88	12.40	2.78
Environmental responsiveness	0	17.00	11.63	11.56	2.50
Market driving	0	15.38	8.38	8.26	2.30

The average alignment scores presented a similar distribution pattern to the average dimension scores prior to the calculation of alignment (see Figure 7.4). 'Customer responsiveness' emerged strongly as the dimension on which average alignment was greatest, while 'market driving' appeared to be the dimension on which there was the least alignment.

7.6   Structural Equation Modeling

The third stage of the analysis consisted of testing the conceptual model. Structural equation modeling (SEM) was the preferred technique for conducting this analysis. In the following sections, the technique is first discussed before the actual analysis of the data.

SEM is a multivariate technique which simultaneously executes both factor analysis and aspects of multiple regression in order to estimate interrelated dependent relationships (Hair et al., 1998, p.583). It also allows this path analytic modeling to be performed with latent (unobserved) variables. As a result this method is referred to as a second generation (of multivariate) analysis (Chin, 1998).

The second generation techniques of SEM have substantial advantages over first generation techniques such as principal components analysis and path analysis. Not only are they more flexible in constructing unobservable latent variables, but they are more flexible in modeling relationships between predictor and criterion variables. Consequently, they provide stronger evidence for generalizations and make extensions of first generation procedures possible (Chin, 1998).

Packages such as LISREL and Amos have been frequently used for SEM, the first becoming synonymous with the technique. However, an underlying assumption of SEM is that all the indicators used to measure a construct are reflective (Chin, 1998). Reflective, or "effect", indicators are used when a construct is deemed to have existed before it is measured and the indicators reflect the latent variable. On the other hand, some latent variables are comprised of formative indicators. These constructs are seen to have been formed or caused by the indicators (Chwelos, Benbasat & Dexter, 2001).

In the case of this research, the constructs of business performance and marketing performance were seen to have been comprised of reflective factors. However, the construct of alignment was seen to have been formed by a single factor – the calculated alignment. As it was considered necessary in the composition of the construct, it was treated as a formative factor.

The inclusion of formative measures presents a challenge but the application of a components-based approach, partial least squares (PLS), which can model formative indicators provides a solution (Chin, 1998). PLS analysis accommodates both reflective and formative indicators, and being a components-based approach, it can model formative indicators for some constructs and use them in conjunction with reflective indicators for other constructs (Chin, 1998). PLS is a regression-based technique that can analyze structural models with multi-item constructs. It consists of two stages: an assessment of the measurement model; and an assessment of the structural model (Compeau & Higgins, 1995). The advantages of PLS are that it does not depend on a normal distribution of multivariate data, it can be used with non-interval-scaled data, and it can be used with small samples (Igbaria, Guimaraes & Davis, 1995). However, because it doesn't make distribution assumptions, traditional significance tests and model evaluation techniques are inappropriate. Thus, there are no proper overall goodness-of-fit measures in PLS. Rather, the size of the R-square of the dependent constructs and the significance of the paths are used to evaluate the structural model. A bootstrap procedure estimates the t-statistics of the latter (Ashill, Carruthers & Kisjanous, 2005). Unlike the jackknife method which divides the original sample into subsets and then computes the parameter of interest, excluding a different subset each time, the bootstrap draws multiple independent random samples, with replacement. (Colugnati, Louzada-Neto & Taddei, 2005). It is useful when assumptions of normality cannot be made (Chin & Todd, 1995).

PLS has gained acceptance in both the IS and marketing fields (Compeau & Higgins, 1995; Ashill et al., 2005). It appears to be well suited to analysis when the focus is on theory development (Chwelos et al., 2001) or where there is low theoretical information and high complexity (Chin, 1997).

It was thus decided to use a PLS approach and specifically the PLS-Graph, version 3.0, package. Although packages such as LISREL and AMOS can accommodate formative indicators, the process is more complex than with PLS-Graph.

In this instance, as opposed to the sample for the factor analysis, only pairs of responses were used. In other words, both the heads of IT/IS and Marketing of a

company needed to have responded in order to be included. In total 350 individual responses, or 175 pairs, were used.

For PLS, the sample size can be smaller than for other SEM techniques such as LISREL. It is suggested that it be at least equal to the larger of (1) ten times the scale with the largest number of formative indicators, or (2) ten times the largest number of structural paths directed at a particular construct in the model (Chin, 1997). As (2) would apply in this research with business performance being the particular construct, the sample was deemed more than sufficient.

7.6.1 Validity and Reliability

As there are two components of a PLS analysis, the measurement model analysis and the structural model analysis, different aspects of validity and reliability are tested for each. For the measurement model, the two important assessments are of convergent validity, which is sometimes regarded as including internal consistency (reliability), and discriminant validity (Igbaria, et al., 1995). For the structural model nomological, or predictive, validity is assessed. Each is expanded upon in the following sections.

7.6.1.1 Convergent Validity and Internal Consistency (Reliability)

Convergent validity can be regarded as the extent to which multiple measures of a construct are in agreement (Bagozzi at al., 1992), while internal consistency is the extent to which repeated measures are consistent (Goodhue, 1998). The latter is usually measured by Cronbach's alpha at an item and factor level, but in confirmatory factor analysis the composite reliability of the constructs and their average variance extracted (AVE) also provide an indication of reliability (Hair et al., 1998) and convergent validity. These two measures are also used to assess discriminant validity, and will be dealt with under that section as well.

Although the prior factor analysis provided a good indication of the convergent validity and internal consistency of the various items and factors, a differentiation was not made between the reflective and formative indicators. With the former, because

each factor reflects the same latent variable, the construct is unidimensional, and the factors should thus be correlated (Chwelos et al., 2001). Their internal consistency is thus determined by the level and significance of their loadings onto each construct. However, formative indicators need not be correlated. Because they form or cause the latent variable which is, in effect, a summative index of the factors, unidimensionality cannot be used to assess the quality of the measurement model, nor does the internal consistency have to be as high as what is usually required for Cronbach's alpha (Chin, 1998). Thus, one examines weights which require smaller absolute values than item or factor loadings (Chwelos et al., 2001).

In PLS, item loadings of greater than 0.7 are desirable for reflective constructs. It is recommended that these items be retained because such a loading accounts for almost 50% of the variance in a particular construct (Igbaria et al., 1995; Howell & Higgins, 1990). Many authors, such as Compeau and Higgins (1995) and Chwelos et al. (2001) have supported this argument but Aubert et al. (1995), following Rivard and Huff (1988), suggest that a loading of 0.5 should be considered adequate for initial theory testing. Goo et al. (2004) also support 0.5 as the lower limit of adequacy, as do Hair et al. (1998, p. 612). This is acceptable if the measures are theoretically grounded and other measures exist in the block for comparison purposes (Falk & Miller, 1992). This research filled both those conditions. This lower limit would also be more consistent with the 0.5 item loading that was used with the factor analysis. Consequently, 0.5 was the level selected for this analysis.

On the other hand, the weights which apply to the formative factors, need not be as high as the item loadings (Chwelos et al., 2001). However, what is important with both loadings and weights is the significance, or level of confidence, of each (Tetiwat, 2003). These are reflected in the t-statistic values where 3.090 is regarded as highly significant and anything below 1.282 is not significant.

With regard to the measurement of internal consistency, or reliability, at construct level, the composite reliability coefficient and AVE help to determine the adequacy of the measures. The composite reliability coefficient represents the composition of the reliability of all the individual items or factors. The values of the composite reliability coefficient are regarded as being low at 0.3, moderate at 0.7, and high at 0.9. (Tetiwat,

2003). The value of AVE should be higher than 0.5 (Aubert et al., 1994; Goo et al., 2004; Hair et al., 1998, p. 612).

7.6.1.2 Discriminant Validity

Discriminant validity is the extent to which an instrument can distinguish between separate constructs, or indicate a difference between them (Compeau & Higgins, 1995). Factor loadings provide good evidence of discriminant validity (Segars & Grover, 1993). The items which measure a certain construct should load more highly onto that construct than onto any others, and the average variance shared between a construct and its measures should exceed the variance shared between the different constructs in the model themselves (Compeau & Higgins, 1995). In other words, items should correlate more highly with those measuring the same dimension than with those measuring a different dimension (Goodhue, 1998).

In addition to the factor loadings and weightings already described, at a construct level discriminant validity is usually determined by checking that the square root of the AVE of a construct is greater than the correlations between the construct and other constructs (Chwelos et al., 2001; Aubert et al., 1994).

7.6.1.3 Nomological Validity

Nomological validity refers to the extent to which the relationship of a concept to other concepts can be predicted by a theoretical network (Bagozzi, 1980). In areas where theories and measurements are still being developed, "predictive validity" might be used instead. This is frequently the case in IS research (Goodhue, 1998).

In determining the nomological, or predictive, validity of a model, the structural model aspect of SEM gets tested. This is done in two ways: the strength of the paths between the constructs is assessed; and the impact of one construct on another – sometimes referred to as the "causal relationship" – is assessed. It is these two aspects which are ultimately used to test the hypotheses.

In testing the impact of one construct on another, or the explanatory power of the model, the model fit is assessed. This is done by examining the explained variance in the dependent constructs (Compeau & Higgins, 1995; Goo et al., 2004). It provides an indication of the fit between the theoretical model and the data gathered. This explained variance should be higher than 0.1 (Chan, 1992; Tetiwat, 2003).

In order to determine the predictive ability of the model, special attention needs to be paid to the structural paths between the constructs, whether or not the loadings are statistically significant, and the strength of the loadings. The structural paths are assessed by examining the estimated path coefficients between constructs (Goo et al., 2004; Compeau & Higgins, 1995).

The conceptual model, indicating the relationships between the constructs is represented in Figure 7.7, together with an indication of the hypotheses which they will be testing.

Figure 7.7.   Conceptual model
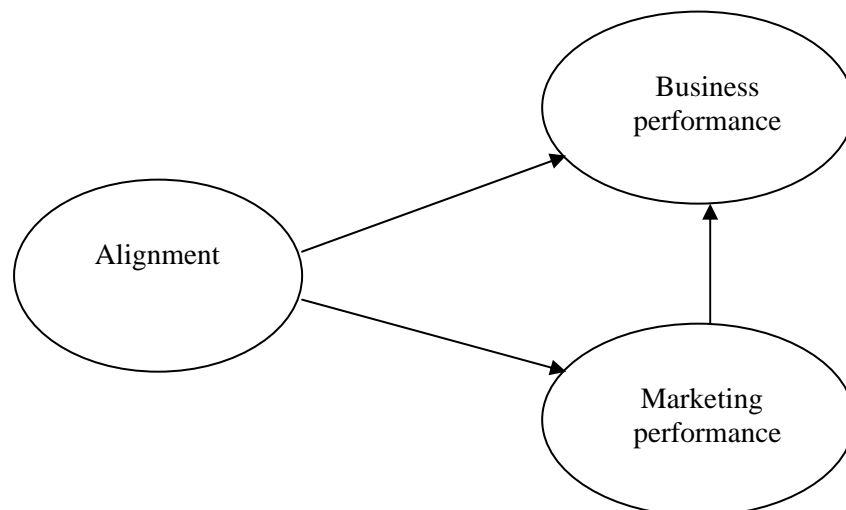
H1:   The stronger the alignment between IS and Marketing,
          the stronger the business performance

H2:   The stronger the alignment between IS and Marketing,
          the stronger the marketing performance

H3:   The stronger the marketing performance,
        the stronger the business performance

As the influence of the independent, or endogenous, variable on the dependent, or exogenous, variable in each hypothesis was expected to be positive and thus unidirectional, one-tailed t-tests were used to ascertain the significance of the paths (Goo et al., 2004).

In describing the findings, the measurement model and the structural model are first addressed from the perspective of measuring alignment according to strategic orientation. They are then addressed from the perspective of measuring alignment according to market orientation.

7.6.2   The Findings according to Alignment on Strategic Orientation

7.6.2.1   Measurement Model

Convergent validity and internal consistency at factor level

In order to obtain an indication of the convergent validity and the extent to which the reflective factors were internally consistent, the level of their loadings onto their respective constructs was determined, as well as the significance of these loadings. Although loadings of above 0.5 would be acceptable, they should preferably be above 0.7.

Normally, to ascertain the internal consistency of formative factors and whether they display convergent validity, the level of their weights with regard to their construct, as well as the significance of these weights is usually ascertained. The weights need not be as high as those required for reflective factors, and more reliance is placed on the significance of the factors.

However, as the alignment construct only consisted of one formative factor, the alignment index, this would thus necessarily have a perfect weight of 1.00.

Theoretically, nevertheless, the requirements for convergent validity and internal consistency at factor level would have been met.

The loadings of the reflective factors, as well as their significance, are provided in the following table.

Table 7.21.   Alignment on strategic orientation: Loadings of reflective factors

Reflective factors	Loading	Significance	t-statistic
Business performance			
Net profits	0.8613	****	22.0405
ROI	0.8572	****	24.8729
Revenue growth	0.8748	****	30.1217
Sales growth	0.8528	****	23.0768
Market share gains	0.7489	****	12.5105
Overall performance	0.9334	****	58.3854
Marketing performance			
Customer satisfaction	0.6919	****	6.0095
Customer retention	0.7931	****	8.7435
Customer loyalty	0.7686	****	7.4148
ROMI	0.4971	****	3.7387
Promotional efficiency	0.6775	****	6.5839
Overall marketing performance	0.8640	****	19.9788

p values **** <0.001, *** <0.010, ** <0.05, * <0.100

As can be seen, the loadings of the business performance factors were all above the 0.7 level, indicating that these measures all demonstrated convergent validity. In addition, they all achieved a very high significance level (p value <0.001) which indicated that, not only were they significant, but also at a high level. While most factors loaded more or less equally highly, 'market share gains' (0.7489) was slightly below the rest. This might reflect the fact that not all companies see increasing their market share as being as important a goal as growing their revenue or getting a good return on investment. This would be the case, for instance, where the company might be operating in a global market of which they held a very small share but which, in the New Zealand context, yielded high returns. It could also be the case with regard to monopolies or duopolies. The high loading of 'overall performance' (0.9334) is understandable. Not only is it a more general measure which could encompass certain aspects of the other measures, but it most certainly would include additional aspects which might be more company specific.

Three of the loadings for the marketing performance factors were above the 0.7 level, indicating a high level of acceptability. The loading of 'promotional efficiency' at 0.6775 was slightly below the 0.7 level but, nevertheless, was acceptable. However, the loading of 'return on marketing investment' (ROMI) at 0.4971 was slightly below even the 0.5 acceptability level. What this could imply is that the latter is simply not regarded as an important indicator of marketing performance, or it is one which is regarded as important but avoided because it is too difficult to measure. On the other hand, all the factors, including 'return on marketing investment', reflected a high degree of significance (p-values <0.001), indicating a high level of confidence in them all. It was thus deemed advisable to retain all the factors of the construct, including ROMI which was only slightly below the 0.5 level. Although the 'overall marketing performance' demonstrated the highest loading, this was to be expected in the light of the same reason given for the high loading for 'overall performance' of business. It is noticeable that the three customer focused factors, 'customer satisfaction', 'customer retention' and 'customer loyalty', demonstrated higher loadings than the more general 'return on marketing investment' and 'promotional efficiency'. This could reflect the general business trend towards greater emphasis on the customer.

Convergent validity and internal consistency at construct level

To determine the convergent validity, or internal consistency, of the measures at construct level, the composite reliability coefficient values and the AVE of each construct were assessed. The composite reliability coefficients should be at least 0.3, but the higher the value, the more internally consistent and reliable the measure. To be meaningful the AVE should be higher than 0.5. These values are depicted in Table 7.22. Because alignment only consisted of one factor, determining convergent validity or internal consistency of that construct was inappropriate.

Table 7.22.   Alignment on strategic orientation: Composite reliability coefficients and AVE

Construct	Composite reliability coefficient	AVE
Business performance	0.943	0.734
Marketing performance	0.866	0.525

As indicated in the table, the composite reliability coefficients of business performance and marketing performance were just above and just under 0.9 at 0.943 and 0.866 respectively, thus indicating that these were highly reliable constructs.

In terms of AVE, both those for the marketing performance and business performance constructs were above 0.5 thus indicating an acceptable level of average variance of all measures within each construct.

It is worth noting that if ROMI had been excluded, the composite reliability and AVE of marketing performance would have increased to 0.894 and 0.629 respectively.

Discriminant validity

The discriminant validity of the measurement model was determined by examining the correlations between constructs and ensuring that the square root of the AVE of a construct was greater than the correlations between the construct and other constructs. These are shown in the Table 7.23 below.

Table 7.23.   Alignment on strategic orientation: Inter-construct correlations and square root of AVE

Construct	Alignment	Business performance	Marketing performance
Alignment	*1.000*		
Business performance	0.360	*0.857*	
Marketing performance	0.264	0.257	*0.725*

Note: Bold, italicized values are the square root of AVE

As is evident from the table, in all instances, the square root of the AVE was greater than the correlations between the other constructs, thus demonstrating the discriminant validity of each of the constructs. Not surprisingly, given that alignment was always treated as a single factor construct, the 'composite reliability coefficient' was always 1.00 and thus so was its square root.

Summary of the measurement model

As a whole, the measurement model paints a consistent and logical picture. The individual factor measures for both business performance and marketing performance were highly significant, despite the loadings of 'return on marketing investment' not meeting the required threshold level. At a factor level, the constructs could thus be regarded as being internally consistent and reliable, and displaying convergent validity. At a construct level, both of the constructs demonstrated high convergent validity and reliability, as well as discriminant validity.

Because it consisted of a single factor, it was not applicable to calculate the convergent validity or internal consistency of the alignment construct. However, in relation to the other two constructs, it did demonstrate discriminant validity.

7.6.2.2   Structural Model

Nomological, or predictive, validity

In order to ascertain whether or not the model's predictive ability was valid, both the strength of the impact of the independent variable upon the dependent variables and the strength or significance of the paths between them were assessed. In this instance, the variables were constructs and the impact was assessed by the explained variance in the dependent construct which should be above 0.1 (Falk & Miller, 1992). The relationships between the constructs should all be significant.

Figure 7.8.　　　Alignment on strategic orientation: Structural model
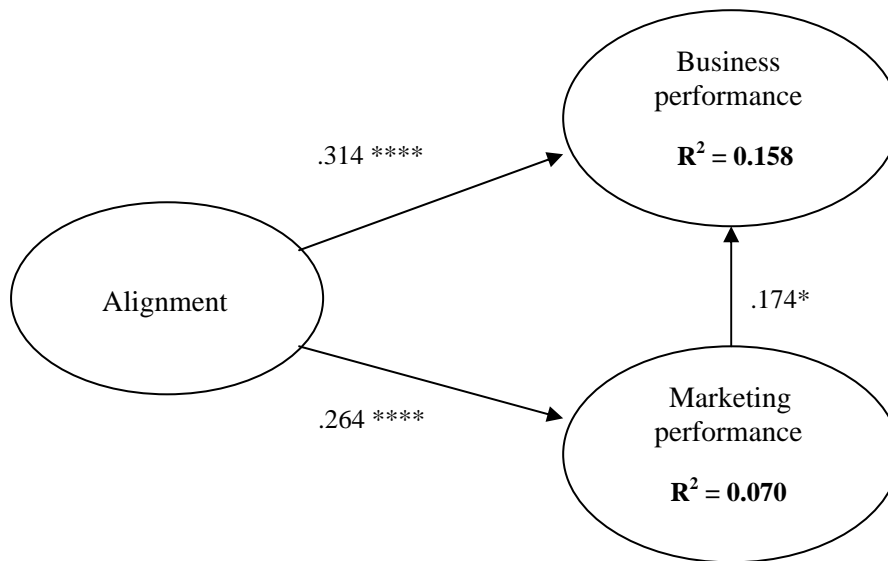
As is depicted in Figure 7.8, the explained variance in business performance was above the 0.1 level, and thus denoted an adequate predictive ability of the model in this regard. In the case of marketing performance ($R^2 = 0.070$), it was below the 0.1 level. It indicated that only 7.0% of the variance in that construct was accounted for by alignment. However, given that many influences, over and beyond the alignment between IS and marketing, impact on marketing performance, this amount of explained variance was understandable and should not, in and of itself, necessarily suggest inadequacy in the model. In the case of business performance ($R^2 = 0.158$) it indicated that 15.8% of the variance in that construct was accounted for by alignment and marketing performance. The higher explained variance is to be expected, given the dual influence of both alignment and marketing performance.

With regard to the significance of the paths between the constructs, a bootstrap procedure was applied. Convergence occurred within six iterations. This is within the acceptable range of up to 20 to indicate how well the model fits the data (Hulland et al., 1996). The paths from alignment to both business performance and marketing performance were significant with path coefficients of 0.314 (p-value <0.001) and 0.264 (p-value <0.001) respectively. Hypotheses 1 and 2 were thus supported.

The path coefficient between marketing performance and business performance was low at 0.174 but significant at p-value <0.100.level. Although the path coefficient was

not as strong as that of the other two paths in the model, it did, nevertheless, also indicate significance. Hypothesis 3 was thus also supported.

In addition, the model was evaluated by examining the Q^2 predictive relevance for the dependent constructs. Q^2 of greater than 0 implies that the model has predictive relevance, whereas less than 0 that it does not (Eom, Ashill & Wen, 2006). A blindfolding procedure was employed, using communality measures. The Q^2 of business performance was 0.6191 and that of marketing performance was 0.3261, indicating that the model possessed predictive relevance. This added further support to all three the hypotheses.

7.6.3   The Findings according to Alignment on Market Orientation

7.6.3.1   Measurement Model

Convergent validity and internal consistency at factor level

As already indicated, the loadings of the reflective factors onto their constructs should be above 0.5, but preferably be over 0.7, while the weights of formative factors need not be as high. However, both loadings and weights should be significant.

As with the calculation of alignment according to strategic orientation, the alignment construct only consisted of one factor and therefore the perfect weight of 1.00 was to be expected. Theoretically, the requirements for convergent validity and internal consistency at factor level would have been met.

The loadings of the reflective factors, as well as their significance, are provided in Table 7.24.

Table 7.24. Alignment on market orientation: Loadings of reflective factors

Reflective factors	Loading	Significance	t-statistic
Business performance			
Net profits	0.8462	****	20.1587
ROI	0.8498	****	22.7957
Revenue growth	0.8667	****	28.0655
Sales growth	0.8649	****	31.0871
Market share gains	0.7703	****	15.7727
Overall performance	0.9248	****	37.4975
Marketing performance			
Customer satisfaction	0.7395	****	8.6989
Customer retention	0.8252	****	13.5671
Customer loyalty	0.8162	****	13.2340
ROMI	0.4278	****	4.8280
Promotional efficiency	0.6529	****	6.0472
Overall marketing performance	0.8403	****	15.3968

p values **** <0.001, *** <0.010, ** <0.05, * <0.100

As is manifested in the table, the loadings of the business performance factors were all above 0.7 which meant that they were all demonstrated convergent validity. Furthermore, they were all significant at a less than 0.001 level (p value <0.001) which indicated a high confidence level. 'Overall performance' demonstrated the highest loading (0.9248) which is understandable, given that it would not only encompass certain aspects of the other measures, but also probably other aspects which might be more specific to an individual company. While most of the other factors loaded more or less similarly onto the construct, 'market share gains' demonstrated a lower loading of 0.7703. This could be because an increase in market share might not be a priority goal of all companies, for instance, in the case of monopolies or duopolies.

The loadings of all the marketing performance factors, apart from 'return on marketing investment' and 'promotional efficiency' were above 0.7 and therefore highly acceptable. The loading for 'promotional efficiency' was 0.6529 which was acceptable, but not as high as the other factors which had more of a focus on the customer. This could possibly reflect a general emphasis on the customer as opposed to what could be perceived as operational efficiencies. The low loading of 'return on marketing investment' (0.4278) could be reflective of a lack of emphasis placed on that measure – either because of uncertainty of how to measure it, because the task might be too onerous, or because it might be regarded as being too time-consuming.

However, all factors displayed a high significance level. All factors could thus be regarded as reliable and possessing convergent validity. They were thus all retained. Despite the loading for ROMI being below the 0.5 level, it was not too far below it to warrant exclusion.

Convergent validity and internal consistency at construct level

In order to ascertain reliability and internal consistency at the construct level, the composite reliability coefficients were expected to be 0.3 at the very least, but preferably much higher and the AVE to be higher than 0.5.

Table 7.25.   Alignment on market orientation: Composite reliability coefficients and AVE

Construct	Composite reliability coefficient	AVE
Business performance	0.942	0.731
Marketing performance	0.869	0.539

As is evident in Table 7.25, the composite reliability coefficients of all the constructs were above 0.80, indicating a high level of reliability of each, with business performance at 0.942 indicating a very high level of reliability. As with alignment according to strategic orientation, because alignment only consisted of one factor, it was not applicable to assess its convergent validity or internal consistency.

With regard to the AVE, marketing performance and business performance both demonstrated levels over 0.5, implying an acceptable level of average variance of all measures within each construct.

If ROMI had been excluded from the marketing performance measure, the composite reliability coefficient would have increased to 0.895 and the AVE to 0.633.

Discriminant validity

In order to assess the discriminant validity of the measurement model, the correlations between the constructs and in comparison with the square root of AVE were examined. The latter should be higher than the inter-construct correlations.

Table 7.26.   Alignment on market orientation: Inter-construct correlations and square root of AVE

Construct	Alignment	Business performance	Marketing performance
Alignment	*1.000*		
Business performance	0.340	*0.856*	
Marketing performance	0.378	0.255	*0.731*

Note: Bold, italicized values are the square root of AVE

As is evident from Table 7.26, in all cases the square root of the AVE was greater than the inter-construct correlations. Each construct thus met the criterion of discriminant validity. As expected, considering that alignment was always treated as a single factor construct, the 'composite reliability coefficient' was always 1.00 and thus so was its square root.

Summary of the measurement model

In all measures of validity and reliability, the construct of business performance and its indicators met, and in fact considerably exceeded, the requisite criteria. It is thus a highly reliable and valid construct.

In all the measures of validity and reliability the marketing performance construct met the same criteria. However, at factor level, the 'return on marketing investment' demonstrated an unacceptably low loading onto the construct, indicating questionable reliability. Nevertheless, the acceptable significance level of the indicator counteracted the low loading, rendering the internal consistency acceptable. At a construct level, alignment also displayed discriminant validity, application of the other criteria of validity and reliability not being appropriate.

7.6.3.2   Structural Model

Nomological, or predictive validity

The predictive validity of the model was assessed by examining the strength of the impact of the independent variable upon the dependent variables and the strength or significance of the paths between them. The impact was assessed by the explained variance in the dependent constructs which should be above 0.1. The relationships between the constructs should all be significant.

Figure 7.9.   Alignment on market orientation: Structural model
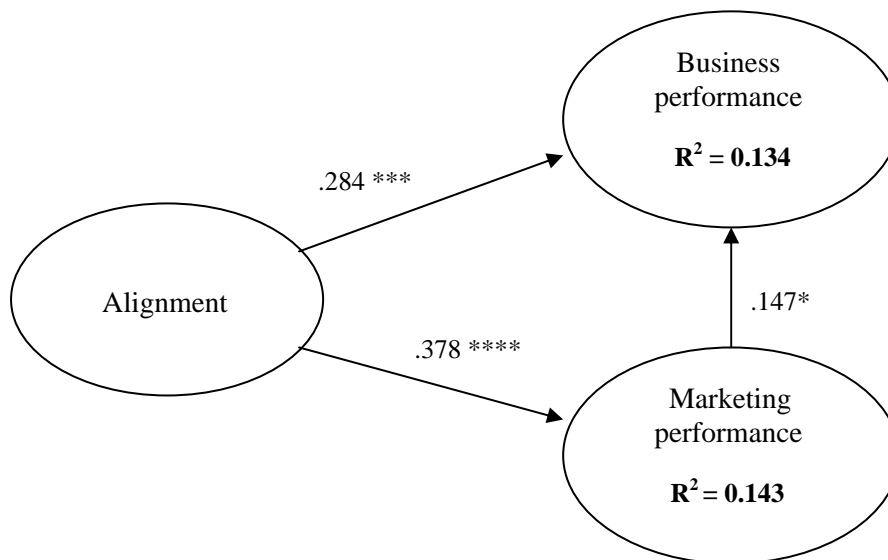
Figure 7.9 depicts the paths between the constructs, or variables, the significance of those paths and the explained variance in the dependent constructs attributable to the independent variable. Both marketing performance and business performance manifested an explained variance of over 0.1, and thus denoted that the predictive ability of the model was adequate. However, neither was particularly high. The explained variance in marketing performance, attributable to alignment was 14.3% ($R^2 = 0.143$), and the explained variance in business performance was slightly lower at 13.4% ($R^2 = 0.134$) which was attributable to both alignment and marketing performance.

With regard to the significance of the paths between the constructs, a similar bootstrap procedure as before was applied. Convergence occurred within six iterations. The paths from alignment to business performance and from alignment to marketing performance were both significant. Their path coefficients were 0.284 (p-value <0.005) and 0.378 (p-value <0.001) respectively. Hypotheses 1 and 2 were thus supported.

Hypothesis 3 was also supported. The path between marketing performance and business performance was significant with a path coefficient of 0.147 (p-value <0.100). Although neither the path coefficient nor the level of significance was as strong as those of the other two paths in the model, adequate support for the hypothesis was provided.

A further validation of the model was conducted by examining the Q^2 predictive relevance for the dependent constructs. Following a blindfolding procedure and using communality measures, a Q^2 of 0.6089 for business performance and a Q^2 of 0.3501 for marketing performance emerged. This indicated that the model possessed predictive relevance, thereby adding further support to all three the hypotheses.

7.6.4 Summary of SEM Analysis

In assessing and comparing the two measurement models, there appears to be a large amount of similarity between the strategic orientation to alignment approach and the market orientation approach. In both instances, the individual factors of business performance and marketing performance were internally consistent and reliable, and demonstrated convergent validity. However, in both instances, 'return on marketing investment' demonstrated a lower than acceptable factor loading – with the loading on the model of alignment according to market orientation, being the lower of the two models. Despite this, all factors of both models were significant.

At construct level, the two models performed similarly. Both business performance and marketing performance demonstrated reliability, convergent validity and

discriminant validity. The construct of alignment also demonstrated discriminant validity.

As far as the structural aspect of both models is concerned, in both cases all three hypotheses received support. Table 7.27 presents a summary of the structural paths according to each model.

Table 7.27. Comparison of paths of structural models using strategic orientation and market orientation

Path	Alignment according to strategic orientation			Alignment according to market orientation		
	Path coeff.	p-values	t-stat	Path coeff.	p-values	t-stat
Alignment – Bus. Perf.	0.314	****	3.5067	0.284	***	2.8410
Alignment – Mark.Perf.	0.264	****	3.1726	0.378	****	3.9414
Mark. Perf. – Bus. Perf.	0.174	*	1.5433	0.147	*	1.3685

Table 7.28 presents a comparative summary of the explained variance in the dependent variables according to each model.

Table 7.28. Comparison of explained variance in dependent variables in structural models using strategic orientation and market orientation

	Alignment according to strategic orientation	Alignment according to market orientation
Business Performance	0.158	0.134
Marketing Performance	0.070	0.143

As is evident, the models presented very similar results in terms of all the paths. When alignment was calculated according to strategic orientation, the path between alignment and business performance was strongest of all three paths. It was also stronger than the same path when alignment was calculated according to market orientation. However, when alignment was calculated according to market orientation, the strongest path of all three was between alignment and marketing performance. This was also the strongest path evident in the research. These findings could have been expected, given the more general business approach of strategic orientation and the more market-focused approach of market orientation. The weakest path in both models was between marketing performance and business performance. Although, like all the other paths, these paths were significant, stronger paths between marketing performance and business performance could have been expected.

The explained variance (R^2) in the dependent construct, business performance, was above 0.1 with regard to both models. It was also above 0.1 in the dependent construct, marketing performance, with the model according to market orientation. However, the explained variance in marketing performance was below 0.1 with the model according to strategic orientation. Nevertheless, given the fact that the alignment between IS and marketing would be only one of a number of important influences on marketing performance, this lower explained variance is understandable and should not be dismissed.

As could be expected, and as with the paths of the two models, the explained variance in business performance was stronger when the model was executed according to strategic orientation. The explained variance in marketing performance was stronger when the model was executed according to market orientation.

The fit between the theoretical model and the data could thus be regarded as acceptable in both models.

7.6.5 Further Consideration

Consideration was also given to running the model with marketing performance being split into two constructs, 'marketing function performance' and 'customer-related performance'. This had been indicated by the prior factor analysis where the analysis had been unconstrained in terms of number of factors or their component items. An exploration was thus conducted with both a 5-path and a 6-path analysis being run for alignment on strategic orientation and on market orientation. The five paths consisted of one from alignment to each of the business performance, marketing function performance, and customer-related performance constructs, and one from each of the marketing function performance and the customer-related performance constructs to business performance. This 6-path analysis included an extra link between customer-related performance and the marketing function performance. The results did not yield any additional insights, and neither the customer-related performance nor the marketing function performance demonstrated a more significant path to business performance.

7.7   Regression Analysis

In this research design, strategic alignment was regarded as a single formative factor consisting of a calculated index which comprised a number of dimensions. However, the resultant findings might have been restrictive in terms of the insights which could have been gained into the relative importance of alignment on each dimension in determining the dependent variable, alignment. A multiple regression analysis was thus run, using the SPSS package version 12, in order to ascertain the importance of each. Although the index had been calculated with each dimension being weighted equally, their values would differ and these would thus each have a different impact on the determination of alignment.

It was recognized that this was an unusual use of regression analysis but the application of such an analysis served as a tool to obtain a rough idea of the rank order or relative importance of each dimension in determining alignment.

Consideration was also given to determining the relative contribution of each dimension by running the model with alignment on each dimension acting as a formative factor of the overall alignment construct, and then determining the relative weightings of each. However, that would have resulted in the inequality of the dimensions impacting on the dependent variables, business performance and marketing performance. This would have been contrary to the premise of the equality of the dimensions of this dissertation.

7.7.1   Regression Analysis of Alignment on Strategic Orientation Dimensions

With reference to Table 7.29, the relative importance of each dimension of alignment in determining the overall construct can be ascertained from the values of their standardized regression coefficients (betas). The closer the absolute values of the standardized betas to 1.00, the greater the importance of that factor (dimension) in determining the dependent variable (Hair et al., 2003, pp, 297–298). Given the

components of alignment, all the t-statistics could have been expected to be highly significant. (p value <0.001). This was the case.

Table 7.29. Alignment on strategic orientation: Contribution of individual dimensions

Alignment on:	Standardized Beta	t-statistic	Significance
Aggressiveness	0.303	21.203	****
Analysis	0.266	17.387	****
Futurity	0.262	16.733	****
Innovativeness	0.241	16.284	****
Proactiveness	0.229	16.437	****
Risk aversion	0.223	16.676	****
Defensiveness	0.215	14.989	****

p values **** <0.001, *** <0.010, ** <0.05, * <0.100

Alignment on 'aggressiveness' emerged as the most important dimension in determining the overall alignment. The rest of the dimensions were slightly lower in terms of importance. However, the relative importance of each dimension was more or less similar. Alignment on 'defensiveness' appeared to be least important in determining alignment. Defensiveness is traditionally seen as the counterpoint to aggressiveness and it therefore stands to reason that they emerged as the dimensions that were the most and least important. The emergence of alignment on 'aggressiveness' as the most important determinant of alignment is understandable in the light of the volatile and fast moving economic changes worldwide in the current time.

These findings do not outweigh the equal importance or weighting of alignment on the various dimensions. They simply reflect the greater attention to, and success at achieving, alignment on the dimension of 'aggressiveness'.

7.7.2   Regression Analysis of Alignment on Market Orientation Dimensions

Table 7.30 depicts the relative contributions of each dimension of alignment to determining alignment according to market orientation. These can be ascertained from the values of their standardized betas.

Table 7.30.   Alignment on market orientation: Contribution of individual dimensions

Alignment on:	Standardized Beta	t-statistic	Significance
Customer responsiveness	0.240	13.173	****
Customer analysis	0.226	11.951	****
Competitor analysis	0.199	11.538	****
Environmental analysis	0.196	11.060	****
Competitor responsiveness	0.181	9.937	****
Interfunctional coordination	0.177	10.785	****
Environmental responsiveness	0.172	9.887	****
Market driving	0.158	10.378	****

p values **** <0.001, *** <0.010, ** <0.05, * <0.100

From the table, it is evident that, as was expected, all the standardized betas were highly significant (p value <0.001). Alignment on 'customer responsiveness' appeared to be the most important determinant of alignment, while alignment on 'market driving' emerged as the least important. Nevertheless, the standardized betas of all the dimensions were fairly similar – an expected outcome given the equal weighting of each in the alignment construct.

The relative importance of alignment on 'customer responsiveness' reflects the strong loadings of the customer focused factors of the 'marketing performance' construct. It is also indicative of the focus of New Zealand companies on the importance of being appropriately responsive to customer needs.

The relatively low importance of 'market driving' and the second least important dimension of 'environmental responsiveness' reflect the low reliability of both factors that emerged during the factor analysis. Given that they were both newly formed constructs, developing more robust measures might increase their importance in determining alignment. However, it might well not have been due to lack of robustness of the measures but more due to the fact that 'market driving' is proactive whereas 'customer responsiveness' is reactive, and that the companies sampled were more reactively oriented to their marketplaces than proactively. Secondly, focus on the customer might have been to the detriment of attention to other aspects of the business such as the external environment.

Discussions of the findings and conclusions of the research will be presented in the next chapters.

7.8   Chapter Summary

This chapter provided a detailed description of the analysis of the second phase data. It initially outlined the general criteria which apply to data analysis, and then expanded on each of the four stages of the analysis.

The first stage consisted of factor analysis. The four constructs of strategic orientation, market orientation, business performance, and marketing performance were thus assessed. In the case of strategic orientation, the factor analysis was confirmatory, and in the case of the other three constructs it was exploratory. One item was eventually deleted from the strategic orientation measure, but no items were deleted from the other measures.

The second stage consisted of the calculation of alignment. This calculation used the factors identified in the first stage. A formula was devised according to which this proceeded.

The third stage consisted of two parts - testing the measurement model and testing the structural model. The latter provided the means for testing the three hypotheses. The hypotheses were tested using alignment according on strategic orientation and alignment according to market orientation. In both cases, a stronger alignment resulted in a stronger business performance and a stronger marketing performance, although the impact of alignment according to strategic orientation was stronger on business performance, whereas the impact of alignment according to market orientation was stronger on marketing performance.

All three hypotheses were thus supported, irrespective of whether the model was executed with alignment according to strategic orientation or with alignment according to market orientation.

The fourth stage consisted of a regression analysis of the impact of alignment on the various dimensions of both strategic orientation and market orientation on the alignment construct.

Chapter 8: Discussion and Interpretation of Research Findings

8.0 Chapter Overview

This chapter presents a discussion of the findings of the research and the interpretation of the significance of the findings. It first explores the constructs of the model and their component dimensions. This includes the calculation of alignment. Next the conceptual model and the hypotheses which were tested are discussed. Pulling together the findings from all the phases of the research, the results of the hypothesis testing are explored. Finally, a comparison is drawn between the results when the model was tested according to strategic orientation, and when the model was tested according to market orientation.

Chapter contents

In the following sections the individual constructs of the model(s) are first discussed in terms of their components and then the testing of each of the three hypotheses is expanded upon.

First, the independent variable of alignment is examined, and then the dependent variables of business performance and marketing performance.

8.1   The Measures of the Constructs

8.1.1   Alignment

The construct of alignment was a calculated index, as opposed to being a measured construct. It was a single-factor construct – with each of the dimensions being weighted equally. It was also calculated in two different ways – according to the strategic orientation of IS and the strategic orientation of marketing, and according to the market orientation of IS and the market orientation of marketing. Therefore, not only the calculation of alignment required careful attention but also the components of the constructs used for that calculation.

The formula used for the calculation was new. This had not been among the objectives of the research but it emerged as an additional outcome. Although this built on the moderation approach adopted by Chan (1992), it also incorporated elements of the matched approach which had been considered by her. In addition, it included the aspect of the synergy derived from similar matching as well as from moderation. In other words, both the extent of similarity of the IS and marketing ratings of any item, and consequently the dimensions, as well as the strength of the ratings for that item, were accommodated in the formula.

As already stated, out of interest, the SEM analysis was also executed according to Chan's (1992) formula and according to four others. The results displayed an overall similarity with the formula used in this research – some formulae more so than others. However, the rationale for the selected formula had been carefully explored, and presented the most convincing argument of all the formulae which were considered. Consequently, business managers who use the formula to calculate alignment can be assured of its validity and reliability, irrespective of whether alignment is calculated according to strategic orientation or market orientation.

One point about which business managers might be curious is which dimensions they should focus on to achieve greater business and marketing performance. Because all dimensions of either strategic orientation or market orientation are important, none

should be ignored. Given that it could be assumed that both functions would be guided by the overall strategic approach of the company, what is important, is that both functions should focus similarly on the various dimensions. The similarity and the strength of focus are captured in the formula. However, although equal weighting of the dimensions of both strategic orientation and of market orientation respectively were applied in the formula calculations, the regression analysis did provide some insight into which dimensions appeared to have received a greater focus. The specific dimensions will be highlighted in the following sections.

With regard to the dimensions of the constructs used to calculate alignment, those of strategic orientation are discussed first, and then those of market orientation.

8.1.1.1   Strategic Orientation

The dimensions of strategic orientation which were used, drew heavily on the work of Venkatraman (1985) and Chan (1992). Chan had used Venkatraman's (1985) measure of strategic orientation as the basis for her research. This had consisted of the dimensions of 'aggressiveness', 'futurity', 'innovativeness', 'proactiveness', 'riskiness', 'analysis' and 'defensiveness'. However, Chan (1992) had used eight dimensions instead of seven, splitting the 'defensiveness' dimension into two – 'external defensiveness' and 'internal defensiveness'. Chan (1992) had also chosen to retain the dimension of 'innovativeness' which Venkatraman (1985) had first included but later (Venkatraman, 1989b) excluded.

Chan (1992) had noted that future research could explore alternative dimensions of the constructs as well as the exclusion or rewording of specific items.
After due consideration, this research used the single measure of 'defensiveness' and retained 'innovativeness'. There were thus seven dimensions: 'aggressiveness', 'futurity', 'innovativeness', 'proactiveness', 'risk aversion' (according to the Chan et al., 1997 renaming), 'analysis', and 'defensiveness'.

The findings of the first phase – the interviews - indicated that the interviewees had more queries regarding the meaning of the names of the strategic orientation dimensions than those that had been used for the market orientation dimensions.

'Defensiveness' was one which required most clarification. On top of which, the numeric ratings for the strategic orientation dimensions demonstrated greater differences between the responses from the heads of IT and the heads of marketing than did the market orientation dimensions. Furthermore, the average numeric ratings of these dimensions demonstrated a greater difference with the actual descriptions of alignment, than the average numeric ratings of the market orientation dimensions. Although these names were not used to denote the dimensions in the survey, and would thus not have impacted on the results, the lack of clarity as to their meanings might well impact on the way in which a report on the findings is received by the business community.

The items used to operationalize the dimensions replicated Chan's (1992). Although the names of the dimensions appeared unclear to some of the first phase interviewees, the meanings of the items measuring each dimension did not provide any problems for the respondents in the card sorting exercise, the questionnaire pre-testing, or in the survey. In fact, the respondents in the card sorting exercise grouped together items belonging to the strategic orientation construct and its dimensions relatively easily – much more so than they did with the market orientation items.

The factor analysis of the results of the second phase – the survey - indicated that all the dimensions demonstrated both convergent and discriminant validity. However, one 'risk aversion' item reduced the reliability of that factor considerably and it was thus excluded – with a marked improvement in the reliability of the factor.

The measure for strategic orientation was shown to be both reliable and valid. With the exclusion of one item and the combination of the two 'defensiveness' dimensions, it lends support to Chan's (1992) measure of strategic orientation. It also supports the application of her measure across a variety of industries, as opposed to only technology intensive industries in which she had originally tested her instrument and model.

The regression analysis provided additional insights into the construct in that it identified 'aggressiveness' as being the most important dimension in determining alignment, with a counterpoint dimension, 'defensiveness', being the least important.

In the light of the current turbulent economic climate worldwide, this balance of emphasis is logical, and is indicative of the sampled companies adopting a strongly assertive attitude with regard to their dealings with their marketplaces. It is notable, however, that 'defensiveness' was the dimension which required most clarification in the first phase interviews. This could either be indicative of 'defensiveness' receiving the least attention or being the least well understood dimension. Managers might need to ensure that the latter is not the case.

8.1.1.2   Market Orientation

The measures for the market orientation construct were not as clear-cut as those for strategic orientation. No prior measure of market orientation presented a sufficiently comprehensive coverage of the concept and thus a combination of the most valid and reliable measures from prior instruments was used. The items used were rearranged so that they represented the analysis and responsiveness dimensions with regard to customers, competitors and the environment. More rearrangement occurred with the dimensions of 'environmental analysis' and 'environmental responsiveness' than with the other dimensions. A few new items were added to the dimensions. An additional, new dimension, 'market driving', was added. The eight dimensions thus used were: 'customer analysis', 'customer responsiveness', 'competitor analysis', 'competitor responsiveness', 'environmental analysis', 'environmental responsiveness', 'interfunctional coordination' and 'market driving'.

The findings from the first phase of the research indicated that the market orientation dimensions prompted fewer queries than those of strategic orientation. The implication was that these were easier to understand. A further interesting finding was that the holistic, one-off numeric ratings which respondents assigned to the perceived alignment between the IS and marketing functions, demonstrated a greater similarity with the average market orientation ratings than with the average strategic orientation ratings. This might have indicated that the interviewees had a greater understanding of the market orientation dimensions and were more easily able to assess the market orientation of the company. It might also have indicated that these dimensions lent themselves more easily to an assessment of alignment.

However, the individual items which were selected for the different market orientation dimensions presented some problems. With the card sorting exercise, the respondents did not group the items together according to the different dimensions as easily as they did the strategic orientation items. This could have been because the items were ambiguous in terms of focus, for instance, whether 'customer analysis' items belonged with items that focused on the customer, or whether they belonged with items that focused on analysis. Although the purpose of the card sorting was not to provide an indication of construct validity, it nevertheless provided an insight into the apparent grouping of items according to the different dimensions. The dimension of 'environmental responsiveness' appeared to be least obvious to the respondents, irrespective of the instructions applied. It had possibly been too broadly conceived.

Findings from the factor analysis indicated that the majority of the dimensions were both valid and reliable. 'Interfunctional coordination' and 'market driving' emerged clearly as factors in each of the various analyses conducted. 'Customer responsiveness' emerged fairly cleanly. The fact that 'customer analysis' and 'competitor analysis' tended to group together unless constrained might have indicated a general analytical approach of companies to the external environment, rather than one which focused separately on customers or competitors. This would also depend on the type of company and industry so that a fast-moving consumer goods retailer might tend to separate the two while a multinational fuel supplier might prefer to adopt a more all-encompassing analytical approach to the external environment. Both 'market driving' and 'environmental responsiveness' demonstrated low reliability. While the former was just below the acceptability level, being a new dimension, this was tolerable. The concern regarding 'environmental responsiveness' echoed that raised in the card sorting exercise. However, for reasons explained in Section 7.4.1.2, it was decided to proceed with these dimensions for the calculation of alignment.

The regression analysis identified 'market driving' and 'environmental responsiveness' as being the least important dimensions in the determination of alignment. These findings echoed the prior problems experienced with these dimensions in the factor analysis. The emergence of 'customer responsiveness' as the

most important predictor of alignment reflected the strong focus on customers in the marketing performance measures.

In general, it appears that the measure for market orientation would benefit from further attention. Although it can be regarded as both valid and reliable, dimensions such as 'environmental responsiveness' and 'market driving' could be explored further for ways in which to improve them.

8.1.2 Business Performance

With regard to the dependent variable, business performance, it was clear from the literature that the business performance measures fell into four groups: absolute financial, relative financial, absolute market and relative market measures. These different groups also received support in the findings from the interview phase, although the absolute financial measures were more prominently mentioned than the other types of measures. Given that the companies were all legally bound to financial reporting, this was not surprising. However the heads of IT appeared to be much more focused on the financial measures. This might have been because, in a number of companies, the head of IT reported to the head of finance. As a consequence, there might have been an over-awareness of financial issues.

Both the factor analysis and the testing of the measurement model using SEM indicated high reliability and validity of the construct. However, the factor analysis did bring to light the possibility that 'market share gains' might be seen as a marketing performance measure. Although it could be construed as such, it was felt that it was more a measure of the overall company performance, rather than a measure of a specific function, marketing.

8.1.3   Marketing Performance

Marketing performance measures had not been prominent in market orientation studies. The dependent variable used, albeit sometimes in conjunction with other dependent variables, had been business performance. This would have lent substantiation to the marketing concept.

However, based on the studies of alignment according to strategic orientation, the indications were that marketing performance, like the IS effectiveness of Chan's (1992) model, would be a meaningful inclusion in the model. Measures for marketing performance were thus sought in the more general marketing literature. Strong overlaps were evident between business performance measures and marketing performance measures, and these were reflected in the first phase interviews. However, when focusing on the more specific marketing performance measures, these could be divided into absolute and relative measures, as was the case with the measures for business performance.

The factor analysis and the testing of the measurement model using SEM both indicated a high reliability and validity of the construct. However, the marketing performance factor analysis also indicated a potential split between 'marketing function performance' and 'customer-related performance'. As was explained in Section 7.4.2, this ran counter to the logic of measuring overall marketing performance and the single construct was retained. Nevertheless, because both these aspects are important, marketing managers might ensure that both are appropriately planned before being measured.

However, as opposed to the factor analysis, with the testing of the measurement model using SEM, the 'return on marketing investment' item demonstrated low item loadings. This might have indicated that the companies did not attach particular importance to such a measure, or that they avoided measuring it because it was too difficult to do so, or that the measure was simply inappropriate and needed reconsideration. The fact that a large number of respondents (46) failed to respond to this item provides further evidence of its problematic nature. Companies would be

advised to determine what their position in this regard is because, in many instances, investment in marketing activities can be considerable and any company would need to ensure that they were getting a suitable return on that investment.

More generally, it could also reflect the lack of clarity regarding the distinction between measures of business performance and marketing performance. As such, it reflects the concern that Pulendran et al. (2000) expressed regarding the variety of measures used to assess the performance effects of market orientation.

8.2 The Model

The model portrayed the essence of the research and that was to ascertain the impact of the alignment between IS and marketing on business performance and marketing performance.

The research design, which emanated from the model, tested three hypotheses. All three of them were supported by the data. This was the case, irrespective of whether alignment was calculated according to strategic orientation or according to marketing orientation.

8.2.1 Hypothesis 1: The Stronger the Alignment between IS and Marketing, the Stronger the Business Performance

The findings from the research supported this hypothesis. The hypothesis addressed the essential research question which was to determine whether the strategic alignment between IS and marketing exerted a statistically significant impact on business performance.

Although indications from the literature had been that the impact would be positive, this outcome provided more substantial evidence for such an hypothesis. Chan (1992), Chan et al. (1997), and Reich and Benbasat (2000) had all found a positive impact on business performance when IT/IS was strategically aligned with business. Furthermore, exploratory research by Hooper and Van Erkom Schurinck (2002, 2003)

had indicated that an alignment between IT/IS and marketing might also have a positive impact on business performance.

The findings of the first phase of this research – the interviews - lent support to this proposition. All the respondents indicated that they believed a close alignment would have a positive influence on business performance and that where there was a weak alignment, a negative influence would be exercised.

The findings from the second phase of the research – the survey – provided positive, empirical support for the hypothesis. However, although the alignment between IS and marketing was shown to have a positive impact on business performance, irrespective of whether alignment was calculated according to strategic orientation or market orientation, alignment according to strategic orientation exerted a stronger influence on business performance than alignment according to market orientation.

Some might argue that this could have been expected, given the more general strategic dimensions of strategic orientation, as opposed to the more specifically focused market orientation dimensions. While strategic orientation reflects the general attitude towards conducting business, market orientation is more focused on specific target groups, such as customers and competitors. Market orientation might thus be a more suitable basis for assessing the alignment when the impact on marketing performance is assessed – as indeed seemed to be the case.

Moreover, the slightly stronger influence of alignment according to strategic orientation might be indicative of the more robust measure of the latter, in comparison with the measure for market orientation. Improvement in the robustness of the measure for market orientation might result in alignment according to it demonstrating a much stronger influence on business performance.

A further point to consider, from a business manager's perspective, is that the choice of whether to measure alignment according to strategic orientation or market orientation, would also depend on the type of company, the type of industry and the various influences from the external environment. For example, a fast-moving consumer goods retailer with many suppliers might prefer to calculate alignment

according to market orientation, whereas an energy provider which focuses less on the constant fluctuations in customer needs and more on long-term stability, might prefer a strategic orientation approach.

The selection would also depend on the decision domain. Accordingly, aspects such as the planning focus need consideration. For instance, if the focus were on a take-over of a competitor, then alignment according to strategic orientation might be preferred. However, if the focus were on a marketing issue such as strengthening customer focus, then alignment according to market orientation might be more appropriate.

An obvious question which would arise from business managers, once they had ascertained the alignment between IS and marketing, would be how the alignment could be improved. Although this was not the topic of this research, there are a number of examples in the literature (see Reich & Benbasat, 2000; Papp et al., 1996, for example) which address the question. However, the responses from the first phase interviews provided insight into a number of inhibitors of alignment which, if removed, would in all likelihood improve alignment. They were: lack of speedy delivery by IT; lack of sufficient funds for IT; imposition of standardized IT systems from overseas head offices; size of the organization; physical separation of the IT and marketing functions; unclear roles; and the 'newness' of the head of either IT or marketing.

Results from the Phase 1 interviews also indicated that collaborative planning between IT and marketing; the existence of a liaison position /unit; and enhanced communication and mutual understanding of one another's function and objectives could enhance the alignment between them.

8.2.2 Hypothesis 2: The Stronger the Alignment between IS and Marketing, the Stronger the Marketing Performance

This hypothesis was also supported by the findings of the research.

Although this relationship had never been measured previously, a positive relationship had been implied in the exploratory work by Hooper and Van Erkom Schurinck (2002, 2003). In addition, the work by Chan (1992) and Chan et al. (1997) had identified 'IS effectiveness' as a dependent variable alongside 'business performance' in much the same way as 'marketing performance' was conceptualized in this research. The implication was that if alignment had a positive impact on IS effectiveness, so, too, might alignment have a positive impact on marketing performance.

The findings from the first phase indicated this outcome. Although respondents felt that a close alignment between IS and marketing would have a positive impact on business performance, many, especially the heads of marketing, interpreted business performance as consisting more of customer-focused or customer relations-type dimensions than the more typical components of business performance, as reported by the heads of IT. In the light of the measures used for marketing performance in this research, these responses could be interpreted as an impact on marketing performance rather than an impact on business performance.

The results of the second phase demonstrated with statistical significance that alignment had a positive impact on marketing performance. This was the case, irrespective of whether alignment was calculated according to strategic orientation or market orientation, but the effect was stronger when alignment was calculated according to market orientation. Logically this makes sense, given the more specific market focus of market orientation and marketing performance.

However, it does appear that alignment according to market orientation exerts a stronger influence on marketing performance than alignment according to strategic orientation.

As with the impact of the alignment between IS and marketing on business performance, what this research demonstrated very clearly was that the alignment between IS and marketing exerts a positive impact on marketing performance. Business managers would thus have a choice of measuring alignment according to strategic orientation or market orientation and, as with the assessment of the impact of alignment on business performance, that choice would be influenced by the type of company, type of industry, influences from the external environment, and decision domain.

Furthermore, this research also indicated the relative ease with which the impact of the alignment between two functions on the performance of one of those functions could be assessed. Although it could be argued that IS, in this instance, was a support function, and marketing the line function, and that the impact on marketing performance seemed a logical dependent variable, there seems no reason why business managers might not choose to assess the impact of the alignment between other functions on one another's performance, provided that such an assessment made logical sense. In other words, in such a relationship, one function would usually be in support of the other, and that other's performance would be the dependent variable.

8.2.3   Hypothesis 3: The Stronger the Marketing Performance, the Stronger the Business Performance

The third hypothesis also received support from the data. This was in line with the findings of much previous research (see Jain, 1997 & McDonald, 1995) which had found that marketing performance contributes to business performance.

This research provided strong evidence for business managers that, when assessed at a strategic level, marketing performance impacted positively on business performance. Although it is usually assumed that marketing performance contributes significantly to business performance, stronger substantiation of that assumption/perception would be welcome. Often the marketing performance is assessed according to non-strategic criteria, such as a month-end discount promotion on a certain item, and this is then

linked directly to higher level strategic business performance measures such as profit. The important aspect to note is that both marketing performance and business performance should be measured according to strategic criteria as was the case in this research.

Although the support for this hypothesis was not as strong as that for the other two hypotheses, the impact of marketing performance on business performance, irrespective of whether alignment was calculated according to strategic orientation or market orientation, was statistically significant.

Although one would expect the marketing function to be one which would directly impact the business performance because marketing is normally responsible for, amongst others, sales which is usually the main source of income of a company, it might be argued that not only marketing is responsible for business performance. Other functions, such as production or logistics might also play an important role, to say nothing of the support functions which would help reduce company costs and enhance efficiency. Nevertheless, some effect of marketing should be evident.

It is important to note the lack of clarity in the literature regarding the distinction between business performance measures and marketing performance measures. This was also apparent in the findings from the first phase of the research.

The fact that this hypothesis was supported, irrespective of whether alignment was calculated according to strategic orientation or according to market orientation, highlights the merit of having included marketing performance as an additional dependent (in fact, intermediary) variable. The majority of the studies on market orientation had used business performance as the dependent variable. Although this had sometimes been accompanied by other dependent variables such as employees (Jaworski & Kohli, 1993), marketing performance had not been used. This might have been indicative of a perceived similarity of the measures and the lack of need to include both business performance and marketing performance. Business performance was thus preferred. It might also have been indicative of the marketing concept, according to which market orientation was seen as the responsibility of the whole

organization. Any measure of the outcome of the performance could thus been seen as a business performance measure rather than a marketing performance measure.

From a business manager's perspective, it would be important to distinguish between the measures of marketing performance and those for business performance. A clear delineation of the two would clarify responsibilities, and while responsibility for good performance is usually happily owned, confusion regarding responsibility for less than desirable outcomes would not help in providing an effective and efficient means of addressing them.

8.2.4   The Explanatory Power of the Model

As assessed by the explained variance in the dependent variables, the model demonstrated good overall explanatory power. Whether calculated according to strategic orientation or according to market orientation, alignment exerted a considerable impact on business performance and marketing performance, especially considering the probability that other factors would also impact on them.

Understandably the impact on business performance was stronger when alignment was calculated according to strategic orientation, and the impact on marketing performance was stronger when alignment was calculated according to market orientation.

8.3   Comparison of Models measuring Alignment according to Strategic Orientation and Market Orientation

By way of comparison of the two models, in summary, alignment according to strategic orientation appeared to have a stronger impact on business performance than alignment according to market orientation. On the other hand, alignment according to market orientation had a stronger impact on marketing performance than alignment according to strategic orientation. However, irrespective of how alignment was

calculated, it exercised a significant influence on both business performance and marketing performance.

While there was a strong correlation (0.63) between the two measures of alignment, which provides an indication of the commonality between the two measures, it also provides an indication that they are, in fact, not measuring exactly the same thing and that one or the other might be more suitable. This would depend on the type of company and type of industry, as well as on the context and decision domain.

Furthermore, irrespective of whether alignment was calculated according to strategic orientation or market orientation, marketing performance exerted a significant influence on business performance.

Although the measure for strategic orientation appeared to be slightly more robust than that for market orientation, managers are, nevertheless, provided with two sound alternatives according to which the alignment between IS and marketing can be measured and the impact of that alignment on business performance and marketing performance assessed.

8.4   Chapter Summary

This penultimate chapter has comprised a discussion of the findings of the research and an interpretation of their significance. As a point of departure, each construct and their component dimensions were explored. The findings from the various phases of the research were drawn together for the discussion. First the calculation of alignment was examined and then the constructs of strategic orientation and market orientation. In particular, a couple of the measures of market orientation were identified as possibly having room for improvement. Then the constructs of business performance and marketing performance were explored.

Next the testing of the three hypotheses was discussed. As with the discussion of the constructs, the discussion included a consolidation of findings of the various phases of the research and whether the eventual testing using SEM demonstrated support for the

hypotheses or not. All three hypotheses were supported, irrespective of whether alignment was calculated according to strategic orientation or market orientation. A stronger alignment between IS and marketing resulted in stronger business performance and stronger marketing performance, and stronger marketing performance resulted in stronger business performance. All these findings were according to expectations.

Chapter 9: Conclusion: Contributions of the Research, Limitations, and Directions for Future Research

9.0 Chapter Overview

In this last chapter of the dissertation, the research is drawn to a close. Firstly, an overview of the research process, from the identification of the research gap to the main findings, is presented. Next, the main contributions of the research, both in terms of academic value and practitioner value as well as more general implications are identified and discussed. The limitations of the research are then examined. These limitations pertain to the conceptual model, the research design, and the research instrument. Finally, directions for future research are explored.

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9.5 Chapter summary

9.1 Overview of the Research

In order to facilitate an understanding of the conclusions that were drawn from this research, an overview of the preceding research process is first provided.

9.1.1 Research Gap

The research was prompted by prior studies which had demonstrated that IS and marketing, individually, had a positive impact on business performance. There were also indications that if IS and marketing were 'aligned', that impact would be

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significantly enhanced. However, these were only indications and assumptions and had never been specifically explored in a rigorous manner.

For this reason, the research question which this research aimed to address was: "What is the impact of the strategic alignment between IS and marketing on business performance?"

9.1.2 Research Objective and Conceptual Model

A comprehensive review of both the IS and marketing literature revealed a paucity of measures for strategic alignment. One measure, developed by Chan (1992), to assess the strategic alignment between IS and business, stood out as a possible point of departure for this research. A measure for strategic orientation had been developed by Venkatraman (1985, 1989b) and used by Chan (1992) as a basis for measuring alignment.

Explorations in the marketing literature did not reveal any measure for alignment. However, various measures existed for market orientation (e.g. Kohli et al., 1993; Narver & Slater, 1990; Deng & Dart, 1994; Gray et al, 1998; Dawes, 2000) which appeared to be the approximate marketing equivalent of strategic orientation. Given the strategic nature of market orientation and its focus on the whole organization and not simply marketing, the question thus arose as to which approach – strategic orientation or market orientation - should be adopted to assess the alignment between IS and marketing. After due consideration, it was decided to use both. They would be used in two separate tests which were identical in design.

With regard to the dependent variable, the market orientation research had mainly used business performance as the dependent variable. Going a step further in calculating alignment according to strategic orientation, in her research into the alignment between business and IS, Chan (1992) had used business performance as the dependent variable with IS effectiveness as the intermediate variable. Business performance and marketing performance thus seemed the logical dependent variables for this research, and the research was expanded to include them both.

The research objectives thus were to determine:

- whether the alignment between the strategic orientation of IS and the strategic orientation of marketing exerted an impact on business performance, and what the extent of that impact was;
- whether the alignment between the strategic orientation of IS and the strategic orientation of marketing exerted an impact on marketing performance, and what the extent of that impact was;
- whether the alignment between the market orientation of IS and the market orientation of marketing exerted an impact on business performance, and what the extent of that impact was; and
- whether the alignment between the market orientation of IS and the market orientation of marketing exerted an impact on marketing performance, and what the extent of that impact was.

Another consequential objective of calculating alignment according to either strategic orientation or market orientation was to determine whether marketing performance exerted an impact on business performance.

A conceptual model was subsequently devised which could be applied to the assessment of alignment according to either strategic orientation or market orientation. It consisted of three constructs: alignment, marketing performance and business performance. The model would be applied to test the hypotheses which were that:

- the stronger the alignment between IS and marketing, the stronger the business performance;
- the stronger the alignment between IS and marketing, the stronger the marketing performance; and
- the stronger the marketing performance, the stronger the business performance.

Implicit in this model was the calculation of alignment based either on strategic orientation or on market orientation. Two versions of the model would thus be tested.

9.1.3 The Research Design

A mixed methods approach was adopted for the research. First, a qualitative phase of interviews with 36 respondents (the heads of IT/IS and the heads of marketing of 18 companies) was conducted. Incorporated in each interview was a short quantitative questionnaire. The purpose of this first phase was to obtain a deeper understanding of perceptions of alignment between IS and marketing, and also to ascertain the different measures that were used for marketing performance and business performance. These findings, together with those from additional instrument validation tests, helped to inform the development of the second phase survey.

The second phase was quantitative and consisted of a postal survey of heads of IT and heads of marketing of large New Zealand companies. In total 415 responses were received, 350 of them being pairs from 175 companies. Pairs of responses were a requirement for the calculation of alignment.

A new formula was developed for the calculation. This was applied to each company's pair of responses, according to each item of either the strategic orientation or the market orientation constructs.

The data collected in the second phase of the research, plus the construct of alignment which had been calculated from some of them, were used to test the model.

9.1.4 The Research Findings and Model Evaluation

After an analysis consisting of both factor analysis and SEM, the following findings came to the fore:

- The alignment between the strategic orientation of IS and the strategic orientation of marketing exerts a positive impact on business performance (path coefficient = 0.314, p<0.001).
- The alignment between the strategic orientation of IS and the strategic orientation of marketing exerts a positive impact on marketing performance

(p.c.= 0.264, p<0.001). However, this impact is not as strong as the impact exerted on business performance.

- Marketing performance exerts a positive impact on business performance when alignment is calculated according to strategic orientation (p.c.= 0.174, p<0.100).
- The alignment between the market orientation of IS and the market orientation of marketing exerts a positive impact on business performance (p.c.= 0.284, p<0.005).
- The alignment between the market orientation of IS and the market orientation of marketing exerts a positive impact on marketing performance (p.c.= 0.378, p<0.001). The strength of this impact is stronger than that exerted on business performance, and stronger than the impact of strategic orientation on either business performance or marketing performance.
- Marketing performance exerts a positive impact on business performance when alignment is calculated according to market orientation (p.c.= 0.147, p<0.100).

9.2 Contributions of the Research

This research has made a number of meaningful contributions to the existing body of knowledge. They can be divided into contributions which provide academic value and contributions which provide practitioner value.

9.2.1 Academic Value of the Research

The first major contribution in terms of academic value is the development of a parsimonious model to measure alignment between IS and marketing and the impact of that alignment on business performance and on marketing performance, as well as the consequent impact of marketing performance on business performance. The measures of constructs in the model demonstrated its validity and reliability, irrespective of whether alignment was calculated according to strategic orientation or market orientation.

It thus further extended the work of Chan (1992), indicating the robustness of her original approach to the calculation of alignment according to strategic orientation. However, it produced a more concise model which, nevertheless, managed to incorporate the critical constructs and accommodate their various dimensions.

The second major contribution is the development of a formula for the calculation of alignment which more accurately captures the nuances of alignment than do previous formulae. This formula demonstrated its stability, irrespective of whether alignment was calculated according to strategic orientation or market orientation.

A third contribution of the research is the further enhancement of a measure of market orientation. Although not demonstrating the same degree of validity and reliability as the measure for strategic orientation, it introduced new dimensions to the construct and a more balanced approach to applying the marketing concept. For the first time the dimension of 'market driving' was incorporated, as well as the need to not only analyse, but also to respond to, the various components of the marketplace.

An important feature of this research is the fact that it was cross-disciplinary. While electronic commerce is pulling IS and marketing closer together, as are practices such as customer relationship management, academic research into the strategic aspects of each discipline has tended to pursue a discipline-specific path. The fact that each pursued their own conceptualization of a strategic orientation with scant reference to the other is evidence of this. This research demonstrated how strategic conceptualizations of one discipline can, indeed, be applied to another – so long as they are true to the research demands of validity and reliability.

The fifth contribution is the comparison of two different approaches to the assessment of a strategic orientation. By means of this comparison, the strengths of each could be highlighted and while the measure for market orientation is not yet as robust as that for strategic orientation, such a comparison provides researchers with a choice of approaches and implicit benchmarking.

A sixth important aspect of the research is the development of a survey instrument which incorporates measures of four constructs – strategic orientation and market

orientation as independent variables, and marketing performance and business performance as dependent variables. Either or both of the independent constructs can be used with either or both of the dependent constructs. While the development of the strategic orientation measure is attributable to Venkatraman (1985) and Chan (1992), the other constructs were largely newly created as different combinations of, and additions to, prior existing measures or instruments.

A seventh noteworthy contribution is the focus which this research has placed on the need to address the measurement of marketing performance. Raised as an issue by Pulendran et al. (2000), this remains a research challenge. The application of business performance measures to reflect marketing performance needs serious consideration. This research has attempted to show a distinction between the two measures.

Finally, with regard to the research methodology, this study successfully applied a mixed methods approach. This approach was sequential in that a qualitative phase was followed by a quantitative phase. However, it also introduced a 'nested' aspect with the inclusion of a short quantitative questionnaire in the qualitative phase. The research demonstrated how each method enhanced the other and facilitated the triangulation of findings.

Another important result of the research is the demonstration of how high response rates can be achieved in survey research. Although it could be argued that New Zealand business people are particularly amenable to participating in research, other research in New Zealand, for example that of Gray et al (1998), has not demonstrated such high response rates. In addition, they suffer the same pressures as business people all over the world. It is more likely that the way in which the respondents were recruited, the content of the survey, the physical format of the questionnaire, and the follow-up procedures were influential.

These last two contributions of academic value will also provide value to practitioners who wish to conduct research in the business environment. The other contributions of practical value are discussed below.

9.2.2   Practitioner Value of the Research

The most valuable contribution for practitioners is the evidence that a closer or stronger alignment between IS and marketing leads to both stronger business performance and stronger marketing performance**.** While it had been postulated that this would be the case, this research has provided positive evidence that it is indeed so. All companies are desirous of these outcomes, and should not fail to recognize the value of IS-marketing alignment.

Secondly, a valid and reliable instrument is provided according to which companies can assess their alignment. This is very important to companies because although they are often encouraged to adopt a certain strategic approach that would benefit them, they do not have the necessary tools by which to assess their status or progress. This research has provided such a tool.

Thirdly, companies are provided with a choice of two versions of the instrument with which to assess their situation. They can either choose to assess alignment according to strategic orientation or according to market orientation. Such a choice would depend, to a large extent, on the type of company, type of industry and external environmental factors. Thus, a fast-moving consumer goods retailer with a very strong customer focus would probably choose the market orientation approach while an energy provider with a focus on long-term stability would probably opt for a strategic orientation approach. The choice would also depend on the decision domain so that if the company emphasis were on strengthening customer focus, then a market orientation approach would be preferred. If the emphasis were on a take-over bid, then the preference might be for a strategic orientation approach.

Fourthly, New Zealand companies are provided with an indication of which dimensions of alignment may be more (or less) influential in determining stronger business performance and marketing performance. However, this should be treated with some caution, with companies being aware that the influence of the various dimensions can change, depending of the situation, the size of the company, and the context at the current time.

Fifthly, company managers are also presented with an indication of which aspects can act as inhibitors of the alignment between IS and marketing and how a closer alignment between the two functions can be facilitated. It is quite possible that managers would want to know what to avoid and what to promote and this research provides that guidance. Although similar to the inhibitors and enablers of the alignment between IS and business, there are also more specific pointers for the alignment between IS and marketing.

A sixth important outcome of the research is that it has highlighted the lack of distinction that still exists between business performance measures and marketing performance measures. Clarity in this regard is especially necessary when it comes to the ownership of certain results and the means of achieving them. Responsibility needs to be specifically allocated.

A seventh noteworthy contribution of this research is that it has demonstrated how the alignment between two functions can be determined, as opposed to a function (IS) with the overall business. This then opens up the possibility of assessing the alignment between other functions. Obviously the dependent variable of marketing performance would not always be appropriate and a relevant dependent variable would need to be used in its stead.

Finally, and not least important, this research has addressed a matter of consistent concern to all areas of business – that of alignment. Not only has it advanced an understanding of the measurement of alignment, but it has also presented two optional approaches to doing so. Furthermore, it has provided practical insights into what comprises alignment and how to assess the impact of it on business performance.

9.2.3   Implications of the Research

In addition to the benefits for both researchers and practitioners, a number of more general implications of the impact of the strategic alignment between IS and marketing on business performance have been uncovered.

Firstly, the research has highlighted the benefit of different functions of a business striving towards a common purpose. Rather than each proceeding in a generally forward fashion with the potential to eventually drift far apart, concerted alignment between functions would serve to harness the strengths of each and would result in the synergistic benefits being reflected in improved business performance. Alignment would thus ensure a more concentrated focus on that common purpose.

Closer alignment also places greater emphasis on teamwork, especially cross-functional teams. These would not only be project teams but could also be permanent teams such as the cross-functional liaison units established in some companies.

A related implication is that a tighter connection between functions emphasizes the need for, and encourages, greater understanding of different functions. Companies might well choose to address this by means of formal training, job rotation, career path planning or simply rely on the establishment of cross-functional teams and units to enhance this understanding. They might also focus on appointing staff who have expertise in more than one function.

The result of this would be the breaking down of the functional silos which have developed in many companies – often exacerbated by the individual functions' developments or acquisitions of IT applications.

The closer alignment between functions could well impact on organisational structure. Not only could this result in the establishment of cross-functional units but it could also impact on the level of reporting of the heads of, in this instance, IS and marketing, in order to facilitate greater opportunity for combined planning and cooperation.

Furthermore, it could influence the way in which senior managers are assessed in terms of a few well-defined common metrics, as opposed to more functionally specific metrics.

All of these activities also hold implications for organizational cultures. Instead of the silo approach, the emphasis on alignment could lead to a greater sharing and flow of information and knowledge throughout the organization so that the culture changes to one of sharing and greater proactivity with regard to the common purpose.

9.3   Limitations of the Research

While the findings of the research provide considerable value, there were certain limitations which need to be recognized. They fall into three areas: limitations with regard to the conceptual model, the research design, and the research instrument. Each is discussed below.

9.3.1   Limitations of the Conceptual Model

In 2000 Dawes raised the concern regarding the lagged effect of alignment on business performance. This remains a concern. It was not addressed in this research model. A longitudinal study would be required to determine whether or not this was the case. However, even then it would be difficult to ascertain because so many variables could exercise a confounding influence on the findings. Industry changes, economic swings, and staff turnover are just some of them.

9.3.2   Limitations of the Research Design

One matter of concern is the possible consultation of the respondents with one another. Although patterns of duplication across a number of questions could have been detected had they been evident, duplication of responses to individual questions could not. Apart from requesting participants not to consult with one another – which might alert some to the possibility of trying it – the approach adopted was one of trust in the personal confidence of the respondents in their knowledge and understanding of the strategic direction of their function.

A concern might be raised about the research sample being comprised of New Zealand companies, and the consequent generalizability of the findings to other

countries. A number of arguments counter this concern. Firstly, the instrument was based, to a very large extent, on instruments developed in North America but tested in various other parts of the world. Secondly, these instruments were based on free market economic conditions, rather than on specific country conditions. Thirdly, many New Zealand companies are affiliated with foreign companies which would exert an internationalizing influence. Lastly, the majority of large New Zealand companies operate internationally and could thus be expected to reflect consideration of international aspects in their strategic plans.

9.3.3   Limitations of the Research Instrument

The content of the questionnaire and, more specifically, the scale for measuring the constructs, can always be regarded as a form of research limitation. Even a construct such as that of strategic orientation, the measures of which demonstrated very good validity and reliability, can still be improved. First developed in 1992 by Chan but based on an even older instrument (Venkatraman, 1985), one could question whether these dimensions were still appropriate in the current economic climate. This will be discussed in the next section.

The measures of a couple of the market orientation dimensions showed weak psychometric properties. 'Environmental responsiveness' and 'market driving' showed unacceptable, or barely acceptable, reliability and validity. These weaknesses most probably impacted on the assessment of both the strength of the paths between alignment and business performance and between alignment and marketing performance, as well as the strength of the impact on these two dependent variables. Consequently, if the measure for market orientation were improved, it might demonstrate even stronger results than those of strategic orientation.

Another limitation was the use of subjective measures in the survey. Although authors such as Narver and Slater (1990) have indicated the acceptability of subjective measures, and the probability of acquiring objective measures from companies of what might be regarded as confidential information is low, there is still the concern of respondent bias with subjective measures.

A last possible limitation, and a point of concern, is the disparity between numeric ratings of a concept and the descriptions of the concept. This issue became apparent in the first phase, but did not impact on the ultimate outcomes of this research. While the disparity could be attributable to a lack of face validity of the construct, it might reflect the application of different standards in the two types of ratings. The reason that the difference did not impact on the outcomes of this research, was that only numeric ratings were used in the survey. However, future researchers need to be aware of such a disparity and the possible implications for their research.

Although these limitations are indicative of areas of future research, additional areas exist and are discussed in the following section as well.

9.4   Directions for Future Research

Being basic components of the research model, it would be necessary to ensure that the measures of all the constructs were as rigorous as possible. Particular attention needs to be given to the measure for market orientation. The suitability of dimensions such as 'environmental responsiveness' and 'market driving' and the items which measure these dimensions need to be explored.

The measure for strategic orientation also needs reassessment and although demonstrating very good validity and reliability, it possibly needs to be updated to reflect the modern business environment. As flexibility and agility of organizations become more and more important, an inclusion of either of these aspects in the measures of proactiveness, or as an individual measure, might be investigated as an addition to the measure for strategic orientation.

Clarification is required for the distinction between the measures of marketing performance and business performance. The ambiguity of the measures used would confound comparisons of research using marketing performance as a dependent variable. It also has a potentially confusing effect on perceived responsibilities in an organization. For example, should profitability be regarded as only the responsibility of marketing or of the company as a whole?

The measure for marketing performance needs to be carefully assessed. It can be argued that measurements such as 'customer retention' and 'customer satisfaction' are antecedents to marketing performance rather than actual measures of the performance. The resultant number of sales per customer, return visits per customer, different categories of purchase per customer, for example, might be more appropriate measures. In addition, the suitability of 'return on marketing investment' needs consideration.

A combination of strategic orientation and market orientation might be explored. Although this research has adopted an 'either … or …' approach, there might well be merit in combining the two measures. Exploratory research was conducted in this direction by simply combining the items of the two measures. However, that resulted in a very large and cumbersome overall measure which required refinement. It also lacked the philosophical assessment of the merits of such a combination. Not being the objective of this research, it was not pursued further but it might be worthwhile as an area for research in the future.

An additional area of future research is an exploration of the relationships between alignment and the individual dimensions of business performance and marketing performance. This would provide a more specific indication of the impact of alignment. However, it might be influenced by the industry in which a company operates. For instance, market share gains might be more important in a growing industry than in a more mature industry where profit might be more important.

Another aspect which could be explored is the application of the alignment measure, whether according to strategic orientation or market orientation, to exploring alignment between other pairs of functions in the organization. The dependent variable would then only be business performance, unless it was deemed desirable to include the performance of those other functions as well.

In addition, it might provide even greater insights to explore alignment between more than two functions, for instance, IS, marketing and finance. However, the dependent variables would need to be carefully determined.

Further research is also warranted into the differences or similarities between descriptions of a concept, such as alignment, and numeric ratings allocated to such a concept. This was prompted by the fact that the numeric ratings for alignment provided in the first phase interviews, differed so much from the descriptions of the alignment. The consequences of different standards applying, coupled with the fact that such measures are usually subjective, could prove a confounding issue for much qualitative research.

Lastly, a considerable deal of contingency information was acquired during the course of this research and although it was not all directly pertinent to the topic of this dissertation, it lends itself to exploration in the future. Such areas could include the impact on alignment of the difference in tenure of the heads of IT and marketing, and the impact of the recency of changes in the company strategy.

9.5   Chapter Summary

In this concluding chapter of the dissertation, a brief overview of the research process was first provided in order to summarize the important aspects which led up to the main findings of the research. The research gap, the research objective and conceptual model, the research design, and the research findings and model evaluation were all recapitulated.

The contributions of the research were then discussed, both with regard to the academic value of the research and the practitioner value, as well as the more general implications of the research. The limitations of the research were noted. These fell into three main groups: limitations of the conceptual model, limitations of the research design, and limitations of the research instrument. Each of them was explored in detail. A number of them gave rise to areas for future research.

Finally, directions for future research were identified and discussed.

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Appendix 1

Market orientation research: Chronological overview

Market orientation research, base models and measures of performance: chronological overview

Author	Date	Models / Basis	(Business) performance measure
Narver & Slater	1990		ROI, ROA, RO net assets in relation to competitors in main markets - over the past year
Kohli & Jaworski	1990		ROI, profits, sales volume, market share, sales growth
Jaworski & Kohli	1993		Overall performance, overall performance relative to major competitors
Kohli et al. (MARKOR)	1993	J&K (93)	
Slater & Narver	1994	N&S	ROA, sales growth, new product success - all relative to competitors over past 5 years
Deng & Dart	1994	N&S	
Liu	1995	Own	ROI, profit growth
Pitt et al	1996	MARKOR	
Pelham	1997	N&S base	
Menon et al.	1997	MARKOR part	Product quality
Appiah-Adu	1997	Pelham & Wilson (96) base	Sales growth, new product success rate, ROI (N&S (93)
Gray et al.	1998	D&D, J&K, N&S	Profit (4 questions)
Morgan & Strong	1998	N&S (complete MKTOR)	
Chang & Chen	1998	N&S (MKTOR) base	Service quality (SERVQUAL)
Han et al	1998	N&S base	Technical innovation, administrative innovation
Deng & Dart	1999	D&D (94) from N&S	Profit - per customer, sales territory, distribution method, product line; customer K, fulfil govt quota, K of sales potential of markets
Caruana	1999	MARKOR	
Baker & Sinkula	1999	J&K (93), MARKOR, N&S	Change in relative market share, new product success, overall performance
Dawes	2000	MARKOR, MKTOR, D&D (94), Deshpande, Farley & Webster (1993)	Profitability (sales growth, profit margins)
Matsuno et al.	2000	MARKOR+	Market share growth, sales growth, % of new product sales, ROS, ROA, ROI
Matsuno & Mentzer	2000	MARKOR+	Market share growth, sales growth, % of new product sales, ROI - all relative to main competitors
Slater & Narver	2000	N&S	
Voss & Voss	2000	N&S base	Market share, sales, financial performance, innovation, perceived - overall performance, sales growth, financial performance, product/innovation

Homburg & Pflesser	2000	K&J, MARKOR	Market performance - customer satisfaction, providing value for customers, keeping current customers
Harris	2000	MARKOR+	
Pelham	2000	MARKOR, MKTOR bases	MS effectiveness, Growth/share, profitability
Raju & Lonial	2001	MARKOR base	Financial performance, market product development, quality outcomes (hospital)
Cervera et al.	2001	MARKOR base	Citizen participation (public organizations)
Prasad et al.	2001	N&S	Marketing competencies - price competitiveness, product quality, product variety, marketing support, customer service, technology
Harris & Ogbonna	2001	N&S	
Lado & Maydeu-Olivares	2001	Lado, Maydeu-Olivares & Martinez (98)	Innovation
Kumar	2002	Kumar, Subramanian & Yauger (98) from N&S	Marketing efficiency, operating efficiency
Noble et al.	2002	N&S	
Matsuno et al. (a)	2002	MARKOR+	Market share, % of new product sales to total sales, ROI
Gainer &Padanyi	2002	MARKOR+(modified)	24 performance items (cultural organizations)
Gonzalez et al.	2002	MARKOR	MO
Brown et al.	2002	N&S	

Legend

+ - With additions

D&D – Deng & Dart (1994)

J&K – Jaworski & Kohli (1993)

MARKOR – measure of Kohli et al. (1993)

MKTOR – measure of Narver & Slater (1990)

N&S – Narver & Slater (1990) (MKTOR)

Appendix 2

Marketing outcomes and their measures

Marketing outcomes and their measures

Authors	Date	Type of research	Outcome measures
Marketing performance			
Bhargava, Dubbelaar & Ramaswami	1994	C	Market share (%), effectiveness (% growth in market share), FE (% contribution margin), adaptability (% growth in sales volume/% growth in market and product variables)
Bonoma & Clark	1988	C	Management's satisfaction with results (results, expectations), effort expended to get obtain results (skills, structures), impact of external action (quality of competitive response, quality of marketing partner response, other environmental factors)
Hansotia & Rukstales	2002	C	Cost per incremental sale, incremental sales per dollar of direct marketing investment, incremental ROI, incremental NPV
Hart & Tzoka.	1999	ER	Export performance - % of total sales accounted for by exports, % of total profits accounted for by exports
Hunt & Morgan	1997	C	Financial performance - superior, parity, inferior
James & Hatten	1994	ER	Average performance over five years on ROA and ROE, and the variance of ROA and ROE over the five years
Kotler	1977	C	Customer philosophy, integrated marketing organization, adequate marketing information, strategic orientation, operational efficiency
Leong, Randall & Cote	1994	ER	Self-rating of performance - poor to excellent
Little	1998	C	Disaggregated sales, distribution and merchandising
Morgan, Clark & Gooner	2002	C	Market performance - customer perceptions, customer behaviours, sales responses, market share; financial performance - revenue, cash flow, margin
Rayburn	1977	C	Payback calculations, ROI, ROA committed, contribution margin, variance analysis, zero based budgeting
Tansuhaj, Randall & McCullough	1988	C	Customer attitudes and behaviour - customer loyalty, customer's perception of quality, customer satisfaction
Theodorakioglou & Wright	1998	ER	Profits, market size, growth
Walker & Ruekert	1987	C	Effectiveness (sales growth relative to competitors, market share changes) efficiency (profitability as % of sales, ROI), adaptability (number of successful new products compared to competitors, % of sales from new products)
Wasilewski	2002	ER	International marketing strategy - perceived level of performance
Marketing productivity			
Bush, Smart & Nichols	2002	C	Cycle time performance

Dubelaar, Bhargava & Ferrarin	2002	ER	Pharmaceutical sales, pharmaceutical margins, retail transactions, retails sales, retails margins
Irwin, Zwick & Sutton	1999	ER	Team marketing index
Pullig, Maxham & Hair	2002	ER	Enhanced firm productivity - better prospecting, better account development, enhanced buyer profiles
Sheth & Sisodia	2002	C	Effectiveness, then efficiency
Marketing effectiveness			
Appiah-Adu, Fyall & Singh	2001	ER	Customer retention, sales growth, profit margins
Bhargava, Dubbelaar & Ramaswami	1994	ER	Profitability, market growth, adaptability
Doyle & Wong	1998	C	Return on capital employed, market share, sales growth, managers' assessment of overall performance
Dunn, Norburn & Birley	1985	ER	Customer philosophy, integrated marketing organization, adequate marketing information, strategic orientation, operational efficiency
Howard	1988	ER	Market share; purchase preceded by intention (and before that attitude, confidence, brand recognition)
Kim	1995	ER	Market share
Lai, Huang, Hooley, Lynch & Yau	1992	ER	Profitability, sales volume, market share, brand awareness, ROI, coverage of market segment
Llonch, Eusebio & Ambler	2002	ER	Financial, non-financial, customer, competitive - all compared with previous year or a benchmark
Moutinho & Phillips	2002	ER	Likelihood that: marketing objectives will be attained, that performance sales and cost analyses will be carried out, and that competition based measures will be used as control yardsticks
Norburn, Birley & Dunn	1988	ER	Customer philosophy, integrated marketing organization, marketing information, strategic orientation, operational efficiency
Norburn, Birley, Dunn & Payne	1990	ER	Customer philosophy, integrated marketing organization, adequate marketing information, strategic orientation, operational efficiency
Qureshi	1989	ER - case	Customer philosophy, integrated marketing organization, adequate marketing information, strategic orientation, operational efficiency
Ranchhod, Zhou & Tinson	2001	ER	Online effectiveness - difference between online results and management expectations with regard to broadcasting to a large audience number, attracting customers, improving company image and online customer relations
Reim	2002	C	Change in consumer behaviour
Sherman	1998	ER - case	Sales of new products and new accounts
Tezinde, Smith & Murphy	2002	ER	Response rates
Yukselen	1997	ER	Customer philosophy, integrated marketing organization, adequate marketing information, strategic orientation, operational efficiency

Marketing success			
Baines & Egan	2001	ER	Level of turnout at political campaigns
Berman & Duboff	2003	Position	Increasing sales/revenue
Sashittal & Tankersley	1997	ER	Security, sound working environmental goals - sales, revenue, profits; psychological objectives - employee and customer satisfaction, job sec
Wyner	2002	Position	Customer recall, preferences, and purchase intentions

<u>Legend</u>
C – Concept paper
ER – Empirical research

Appendix 3

Measures to be applied to proposed model

Measures to be applied to proposed model

Construct	Components	Source
Strategic orientation: (STROMAR STROIS)	Assertiveness	Venkatraman (1989); Chan (1992); Chan & Huff (1993); Chan et al.(1997);
	Aggressiveness	Venkatraman (1989); Chan (1992); Chan & Huff (1993); Chan et al.(1997);
	Futurity	Venkatraman (1989); Chan (1992); Chan & Huff (1993); Chan et al.(1997);
	Proactiveness	Venkatraman (1989); Chan (1992); Chan & Huff (1993); Chan et al.(1997);
	Innovativeness	Venkatraman (1985); Chan (1992); Chan & Huff (1993); Chan et al.(1997);
	Defensiveness	Derived from Venkatraman (1989) by Chan & Huff (1993); Chan et al.(1997);
	Risk aversion	Venkatraman (1989); Chan (1992); Chan & Huff (1993); Chan et al.(1997);
Market orientation: (MOMAR MOIS)	Customer analysis	Based on Narver & Slater (1990), but including elements of Kohli et al. (1993), Deng & Dart (1994), Dawes (2000), Gray et al. (1998)
	Customer responsiveness	Based on Narver & Slater (1990), but including elements of Kohli et al. (1993), Deng & Dart (1994), Dawes (2000), Gray et al. (1998)
	Competitor analysis	Based on Narver & Slater (1990), but including elements of Kohli et al. (1993), Deng & Dart (1994), Dawes (2000), Gray et al. (1998)
	Competitor responsiveness	Based on Narver & Slater (1990), but including elements of Kohli et al. (1993), Deng & Dart (1994), Dawes (2000), Gray et al. (1998)
	Interfunctional coordination	Based on Narver & Slater (1990), but including elements of Kohli et al. (1993), Deng & Dart (1994), Dawes (2000), Gray et al. (1998)
	Environmental responsiveness	New measure
Marketing performance	Customer satisfaction	Tansuhaj et al. (1988) - conceptual
	Customer retention	Appiah -Adu et al. (2001)
	Customer loyalty	Tansuhaj et al. (1988) - conceptual
	Customer base growth	New measure
	Marketing efficiency	Bonoma & Clark (1988)
Business performance	ROI	Narver & Slater (1990); Kohli et al. (1993)
	Profit	Gray et al (1998); Kohli & Jaworski (1993)
	Sales	Kohli & Jaworski (1990)
	Market growth	Chan & Huff (1993)
	Profit growth	Liu (1995)
	Sales growth	Prasad et al. (2001)
	Market share	Kohli & Jaworski (1990); Matsiuno et al. (2002)
	Market position	New measure
	% of new products relative to competition	Matsuno & Mentzer (2000)
	Product/service innovation	Voss & Voss (2000); Chan& Huff (1993)

Appendix 4

Phase 1: Interview protocol

[Initial introductions, and indication of appreciation of participation.]

As already indicated, I'm exploring the alignment between IS and marketing** and the impact of that alignment on marketing and business performance.

Essentially alignment refers to the relationship, fit or link between different groups and the way they work together. This covers all aspects of their activities but focuses particularly on the more strategic aspects. In this case, the relevant groups would be IS and marketing.

With that in mind, how would you describe the relationship between your IS and marketing departments? [Probe for responses to the following questions*, if not addressed here]

*How are they organized with regard to each other?

*Is there any integration in the planning of IS and marketing?

*Are any aspects of either IS or marketing outsourced?

*How would you describe the working relationship between IS and marketing?

*How do you think the two departments get on with one another?

*What do you think their perceptions are of one another?

*In general then, how well aligned do you think the IS and marketing departments in your company are with one another?

If you had to indicate that on a scale of 1-7, seven indicating very well aligned, where would you place the relationship between your IS and marketing departments?

Have you any idea of how this compares with other companies in your industry?

If you had two companies and one could be regarded as having a really good alignment between IS and marketing and the other not, what do you think the difference would be in terms of overall company performance?

To what, particularly, would you attribute that? [Explore for a specific aspect of alignment]

Let's turn our attention to the company as a whole.   Companies have been shown to display different approaches, or characteristics if you like, to the way in which they operate in their business environment.

Some of these characteristics are the following:
- **Aggressiveness**
- **Analysis**
- **Defensiveness**
- **Futurity**
- **Proactiveness**
- **Innovativeness**
- **Risk aversion**

[Explain each dimension and show card with them on.]

Are there any other characteristics or approaches which you can think of that you would like to add to this list?

If you had to rate your company on a score of 1-7, seven being the highest and 1 being the lowest, for the extent to which they manifest each of these characteristics, including your suggestions [if applicable], how would you rate your company? [Use pre-printed form to facilitate response.]

Apart from the above, other ways in which companies approach their environments, is to orientate themselves to focus on following aspects – to a greater or lesser extent:

- **Customer analysis**
- **Customer responsiveness**
- **Competition analysis**
- **Competition responsiveness**
- **Interfunctional coordination**
- **Responsiveness to the environment, in general**

[Explain each dimension and show card with them on.]

Are there any other aspects which you would suggest be added to this list?

As with the previous list, if you had to rate your company on a score of 1-7 for the extent to which it focuses on each of these aspects, including your own suggestions [if applicable], how would you rate your company? [Use pre-printed form to facilitate response.].

[For heads of marketing only]
Now let's look at your marketing department specifically

How would you rate them on this same list?

Given that many of the items on this list appear to have a strong connection to the sort of things that are assumed to be the responsibility of marketing, would you say your company, as a whole, should be focusing on these aspects or are they only the responsibility of the marketing department?

[For heads of marketing only]
Let's turn our attention to marketing performance.

How is marketing department's performance assessed in your company?

How is it measured?
[If not mentioned, probe for measures such as customer satisfaction, customer retention, customer loyalty and marketing efficiency]

Are specific marketing performance goals set?

How frequently does this occur?

Do these goals change, and if so, how frequently?

Are the goals and measurements similar to those of other companies in your industry?
[Probe to expand on any differences]

And finally, looking at the end-result….

How is business performance assessed in your company?

How is it measured?

Are specific business performance goals set?

How frequently does this occur?

Do these goals change, and if so, how frequently?

Are the goals and measurements similar to those of other companies in your industry?
 [Probe to expand on any differences]

As we've explored the various areas, have any aspects occurred to you which we've not touched on but which you'd like to expand upon?

[Conclusion of interview, reiterating appreciation, sight of the transcript for checking, and promise of the company report of final dissertation and optional presentation.]

** For interviews with the heads of marketing, the order of IS and marketing will be reversed in any statement.

Appendix 5

Phase 1: Human Ethics Committee application

HUMAN ETHICS COMMITTEE
Application for Approval of Research Projects
Please write legibly or type if possible. **Applications must be signed by supervisor (for student projects) and Head of School**

Note: The Human Ethics Committee attempts to have all applications approved within three weeks but a longer period may be necessary if applications require substantial revision.

1   NATURE OF PROPOSED RESEARCH:

(a) Student Research

(b) If Student Research   Degree …**PhD**…………Course Code **INFO 690**

(c) Project Title:

The Impact of the Alignment between Information Systems and Marketing on Business Performance

2   INVESTIGATORS:

(a) Principal Investigator

Name: **Val Hooper**

e-mail address :   **val.hooper@vuw.ac.nz**

School/Dept/Group: **School of Information Management**

(b) Other Researchers   Name   Position

……………………………………………………..
………………………

……………………………………………………..
………………………

(c) Supervisor (in the case of student research projects)

Prof. Sid Huff
Prof. Peter Thirkell

3   DURATION OF RESEARCH

(a) Proposed starting date for data collection**: February 2004**
(Note: that NO part of the research requiring ethical approval may commence prior to approval being given)

(b)Proposed date of completion of project as a whole   **August 2005**

4   PROPOSED SOURCE/S OF FUNDING AND OTHER ETHICAL CONSIDERATIONS

(a) Sources of funding for the project
Please indicate any ethical issues or conflicts of interest that may arise because of sources of funding
e.g. restrictions on publication of results

As a staff member, the normal School support in terms of stationery, postage, etc. No other funding
……………………………………………………………………………… ………………...

(b) Is any professional code of ethics to be followed   **Y**

If yes,
The Association for Information Systems Code of Research Conduct
…………………………………………………………………………………….

(c) Is ethical approval required from any other body   **N**

If yes, name and indicate when/if approval will be given

……………………………………………………………………………… ………………...

5   DETAILS OF PROJECT

Briefly Outline:

(a) The objectives of the project

To determine what the impact of the alignment between IS and marketing is on marketing performance and on business performance; and to determine

- **whether the alignment between the strategic orientation of IS and the strategic orientation of marketing exerts an impact on marketing performance and on business performance, and what the extent of that impact is; and**

- **whether the alignment between the market orientation of IS and the market orientation of marketing exerts an impact on marketing**

performance and on business performance, and what the extent of that impact is

(b) Method of data collection

The research will consist of two phases:
1) **Exploratory. Personal, indepth interviews – mainly qualitative, with some quantitative questions**
2) **Validation of model which will be derived from the literature review and the first phase. Postal or web-based survey – mainly quantitative, with some qualitative questions**

However, this HEC application is only for the first, exploratory phase. A second application will be made for the second, validation phase.

(c) The benefits and scientific value of the project

The academic value of the research will be the development of a model which integrates the IS and marketing disciplines. It will also incorporate elements of strategic management. As such it will expand the relevant fields of knowledge of these disciplines. The research will furthermore highlight the distinctions between strategic orientation and market orientation, as well as those between marketing performance and business performance.

Practitioners will benefit from an enhanced understanding of the impact that the alignment between IS and marketing can have on business performance and marketing performance. As such, all businesses which have an IS and a marketing function will be able to improve their performance.

Businesses will also be able to determine whether they should be focusing more on the alignment between the strategic orientation or the market orientation of the IS and marketing functions or whether they should be focusing on both.

(d) Characteristics of the participants

Participants for the first phase will be the heads of IS and marketing from each sampled company. If there is a special e-commerce/m-commerce function, then the head of that function will be interviewed/surveyed as well.

(e) Method of recruitment

The selected companies for the first phase of the research will be approached initially by means of an introductory telephone call to the CEO, followed by an introductory letter and a copy of the participant

form which interviewees will be required to sign. If the CEO agrees to the company's participation, introductory telephone calls will be made to the heads of IS and marketing. By implication, if the CEO agrees to the company's participation, these officials should also agree. Each participant will then be sent the introductory letter and participant forms for completion.

The interviews will subsequently be conducted with those respondents who indicated willing. Agreement by both the head of IS and the head of marketing of a company will be required.

(f) Payments that are to be made/expenses to be reimbursed to participants

………………**None**…………………………………………………………………………

(g) Other assistance (e.g. meals, transport) that is to be given to participants

………………**None**…………………………………………………………………………

(h) Any special hazards and/or inconvenience (including deception) that

   participants will encounter

………………**None**…………………………………………………………………………

……………………………………………………………………………………………………

(i) State whether consent is for (delete where not applicable):

   (i)   the collection of data
   (iv) use for a conference report or a publication
   (v)   use for some particular purpose (specify)

PhD dissertation

……………………………………………………………………………………………………

Attach a copy of any questionnaire or interview schedule to the application

(j) How is informed consent to be obtained (see sections 4.1, 4.5(d) and 4.8(g) of the Human   Ethics Policy)

   (i)   the research is strictly <u>anonymous</u>, an information sheet is supplied and informed consent is implied by voluntary participation in filling out a questionnaire for example (include a copy of the information sheet)

N

(ii) the research is <u>not anonymous</u> but is confidential and informed consent will be obtained through a signed consent form (include a copy of the consent form and information sheet)

Y

(iii) the research is <u>neither anonymous or confidential</u> and informed consent will be obtained through a signed consent form (include a copy of the consent form and information sheet)

N

(iv) informed consent will be obtained by some other method (please specify and provide details)

N

……………………………………………………………………………………

……………………………………………………………………………………

With the exception of anonymous research as in (i), if it is proposed that written consent will not be obtained, please explain why

……………………………………………………………………………………

……………………………………………………………………………………

……………………………………………………………………………………

(k) If the research will not be conducted on a strictly anonymous basis state how issues of confidentiality of participants are to be ensured if this is intended. (See section 4..1(e) of the Human Ethics Policy). (e.g. who will listen to tapes, see questionnaires or have access to data). <u>Please ensure that you distinguish clearly between anonymity and confidentiality</u>. Indicate which of these are applicable.

(i) access to the research data will be restricted to the investigator

N

(ii) access to the research data will be restricted to the investigator and their supervisor (student research)

N

(iii) all opinions and data will be reported in aggregated form in such a way that individual persons or organisations are not identifiable   **Y**

(iv) Other (please specify)

Access to the research data will be restricted to the researcher, her supervisors and possibly transcriber(s) if use is made of the latter

(l)   Procedure for the storage of, access to and disposal of data, both during and at the conclusion of the research. (see section 4.12 of the Human Ethics Policy). Indicate which are applicable:

(i)　　　　　**all written material (questionnaires, interview notes, etc)**

　　　　　will be kept in a locked file and access is restricted to the

　　　　　investigator　　　　Y

(ii)　　　all electronic information will be kept in a password-protected file and access will be restricted to the investigator
　　　　　Y

(iii) all questionnaires, interview notes and similar materials will be destroyed:
(a) at the conclusion of the research　　　　　**N**
or (b) two years after the conclusion of the research　　　**Y**
(iv) any audio or video recordings will be returned to participants and/or electronically wiped
　　　　Y
(v) other procedures (please specify):

……………………………………………………………………………… ………………...

……………………………………………………………………………… ………………...

If data and material are not to be destroyed please indicate why and the procedures envisaged for ongoing storage and security

……………………………………………………………………………… ………………...

……………………………………………………………………………… ………………...

……………………………………………………………………………… ………………...

(m) Feedback procedures (See section 7 of Appendix 1 of the Human Ethics Policy). You should indicate whether feedback will be provided to participants and in what form.　If feedback will not be given, indicate the reasons why.

Participating companies will be provided with a summary copy of the PhD research
……………………………………………………………………………… ………………...

(n) Reporting and publication of results. Please indicate which of the following are appropriate. The proposed form of publications should be indicated on the information sheet and/or consent form.

Appendix 6

Phase 1: Letter of invitation to participate

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui

The Chief Executive Officer
Company
PO Box.......
Wellington
6015

17 February 2004

Dear …..

Re: The Impact of the Alignment between Information Systems and Marketing on Business Performance:

Invitation to Participate in Research

I am a Lecturer at the School of Information Management at Victoria University. I am also a PhD student and it is for the purposes of this degree that I am undertaking this study.

My research aims to explore the alignment between information systems (IS) and marketing in New Zealand companies. Essentially it will examine the relationship between the IS and marketing departments - what their working relationship is, how they are organized vis-a-vis one another, the extent of their interaction, how they perceive one another, and so on. It will also determine the extent to which that relationship impacts, firstly, on the marketing performance and, secondly, on the overall business performance of a company.

This is an area of research which promises to yield important results and insights, especially for the business community. The knowledge gained from the study will help companies improve both their marketing and their business performance.

The study will consist of two major sections: an exploratory first phase and a confirmatory second phase. It is with the first phase in mind that I am approaching you.

I am inviting medium and large New Zealand companies in a variety of industries to participate in the study. In each company, two individuals will be interviewed separately. They will be the head of the IS function and the head of the marketing function. It is essential that both are interviewed. Where there is also a head of e-

commerce or m-commerce, and that individual is different from the heads of IS or marketing, then an interview will also be sought with that individual.

Upon completion of the study, a written report on the findings will be provided to each company participating in the first phase. In addition, a presentation of these findings will be available on request.

I would thus be very grateful if you would consent to your company's participation in this first phase of my research. I'm attaching a short information sheet, indicating the guidelines of the research.

I shall phone you within a week to ascertain your response and to discuss any questions you might have. If you have any queries in the interim, please contact me at telephone 04-463-5020. Alternatively, either of my supervisors may be contacted at the same institution at the following telephone numbers: Prof Huff: 04-463-5819; Prof Thirkell: 04-463-5086.

I look forward to speaking with you further regarding this study.

Yours sincerely

Val Hooper

PARTICIPANT INFORMATION SHEET

The Impact of the Alignment between IS and Marketing on Business Performance

Researcher: Val Hooper
School of Information Management
Victoria University of Wellington

1. Each interview will last between 45 minutes and one hour. They will be recorded and then transcribed. These transcriptions will subsequently be made available to interviewees for verification.

2. Interviewees are free to withdraw at any stage of the interview should they so desire. What has thus been recorded of the interview will be destroyed.

3. The data will be kept strictly confidential. No other person, apart from the researcher and her two supervisors, Prof. Sid Huff and Prof. Peter Thirkell, will have access to the data. Only summarized/grouped responses or anonymous quotes will be presented in the report of this phase and in the final dissertation. It will be impossible to identify any of the participants or companies.

4. The electronic recordings and the transcriptions will be destroyed within two years of the completion of the study.

5. The completed thesis will be submitted for marking to the School of Information Management. A copy will also be deposited in the University Library.

6. It is envisaged that the findings from the study will be reported upon at relevant IS and marketing conferences and in journal articles pertinent to those disciplines.

7. The University Human Ethics Committee has granted approval for this study. This is required for research requiring human participation.

<u>Appendix 7</u>

Phase 1: Participant information sheet

PARTICIPANT INFORMATION SHEET

The Impact of the Alignment between IS and Marketing on Business Performance

Researcher: Val Hooper
School of Information Management
Victoria University of Wellington

8. Each interview will last between 45 minutes and one hour. They will be recorded and then transcribed. These transcriptions will subsequently be made available to interviewees for verification.

9. Interviewees are free to withdraw at any stage of the interview should they so desire. What has thus been recorded of the interview will be destroyed.

10. The data will be kept strictly confidential. No other person, apart from the researcher and her two supervisors, Prof. Sid Huff and Prof. Peter Thirkell, will have access to the data. Only summarized/grouped responses or anonymous quotes will be presented in the report of this phase and in the final dissertation. It will be impossible to identify any of the participants or companies.

11. The electronic recordings and the transcriptions will be destroyed within two years of the completion of the study.

12. The completed thesis will be submitted for marking to the School of Information Management. A copy will also be deposited in the University Library.

13. It is envisaged that the findings from the study will be reported upon at relevant IS and marketing conferences and in journal articles pertinent to those disciplines.

14. The University Human Ethics Committee has granted approval for this study. This is required for research requiring human participation.

Appendix 8

Phase 1: Participation consent form

Phase 1

CONSENT TO PARTICIPATION IN RESEARCH

The Impact of the Alignment between IS and Marketing on Business Performance

I have been given and have understood an explanation of this project. I have had an opportunity to ask questions and have them answered to my satisfaction.

I understand that any data or information which I provide will be kept confidential and accessible only to the researcher and her supervisors (and potentially an individual hired to transcribe interview recordings) I understand that the tape recordings of the interviews and the transcripts will be destroyed two years after completion of the dissertation. If, however, I wish to withdraw from the interview at any stage, what has thus been recorded of the interview will be destroyed immediately.

The published results will not use my name and no opinions will be attributed to me in any way that will identify me or my company.

I understand that my company will receive a company report of the findings of the dissertation upon completion.

I agree to take part in this research.

Signed

--   -------------------------------------
Name of participant   (Please print clearly)   Date

Position of participant (Please print clearly and avoid abbreviations if possible)

Appendix 9

Phase 1: Letter of thanks

Position
Company
P.O.Box ....
Wellington
6015

Dear…..

Re: **The Impact of the Alignment between Information Systems and Marketing on Business Performance**

Thank you so much for participating in the first phase of my research. Your preparedness to be interviewed, the time you gave up for it, and your input are all greatly appreciated.

In total, twenty companies took part in the interviews. Most of the recordings have already been transcribed so you will be receiving a copy of the transcription of your interview shortly. This will be for verification purposes. If, however, as some respondents have indicated, you do not wish to receive a copy, please send me an e-mail to val.hooper@vuw.ac.nz or else phone me at 463-5020.

In due course, your company will be receiving a company report version of the findings of the complete study. I look forward to providing you with this feedback.

Regards

Val Hooper

Appendix 10

Phase 1: Strategic orientation dimension form

Aggressiveness	1	2	3	4	5	6	7
	Very low						Very high
Analysis	1	2	3	4	5	6	7
Defensiveness	1	2	3	4	5	6	7
Futurity	1	2	3	4	5	6	7
Proactiveness	1	2	3	4	5	6	7
Innovativeness	1	2	3	4	5	6	7
Risk aversion	1	2	3	4	5	6	7
	Very low						Very high

Appendix 11

Phase 1: Market orientation dimension form

Customer analysis   1   2   3   4   5   6   7

Very low   Very high

Customer responsiveness   1   2   3   4   5   6   7

Competitor analysis   1   2   3   4   5   6   7

Competitor responsiveness   1   2   3   4   5   6   7

Interfunctional coordination   1   2   3   4   5   6   7

Responsiveness to the environment, in general

                         1   2   3   4   5   6   7

Very low   Very high

Appendix 12

Phase 1: Differences between IT's and marketing's ratings of company

Differences between IT and marketing ratings of company

Company	Ag	An	De	Fu	Pr	In	RA	Av	Abs av	CA	CR	Co A	Co R	IC	ER	Av	Abs av
1	0	1	0	2	2	3	-1	1	1.29	3	0	3	1	0	0	1.17	1.17
2	0	1	0	1	3	2	0	1	1	0	2	0	1	0	2	0.83	0.83
3	-2	2	2	0	-2	-3	2	-0.21	1.79	0	0	1	-2	1	-2	-0.33	1
4	1	0	3	-1	-1	0	4	0.86	1.43	1	-1	-1	3	-1	1	0.33	1.33
5	1	2	4	3	1	-1	1	1.57	1.86	2	0	2	-1	0	2	0.83	1.17
6	0	2	-1	0	1	2	1	0.71	1	-1	1	-1	-1	-1	-4	-1.17	1.5
7	1	0	0	1	1	0	2	0.71	0.71	2	1	0	1	2	1	1.17	1.17
8	1	3	-1	1	2	0	0	0.86	1.14	2	0	0	2	1	2	1.17	1.17
9	-1	-2	2	-1	-2	0	-2	-0.86	1.43	1	0	0	0	-1	0	0	0.33
10	-2	0	-2	0	1	2	-2	-0.43	1.14	0	-2	-1	-2	-1.5	-0.5	-1.17	1.33
11	2	-1	-3	2	2	2	-3	0.14	2.14	-1	0	-4	-1	1	2	-0.5	1.5
12	2	2	1	0	-1	2	0	0.86	1.14	2	-1	1	2	0	1	0.83	1.17
13	1	2	4	-2	-2	0	2	0.71	1.86	2	-1	3	2	0	-1	0.83	1.5
14	-2	0	-3	2	2	-1	3	0.14	1.86	0	-2	1	0	0	0	-0.17	0.5
15	1	1	-1	1	3	0	0	0.71	1	0	1	0	2	2	2	1.17	1.17
16	3	1	-2	1	0	3	-3	0.43	1.86	-3	0	2	3	0	2	0.67	1.67
17	0	0	-2	2	4	1	2	1	1.57	0	2	0	0	-1	1	0.33	0.67
18	3	0	0	2	-1	1	1	0.86	1.14	0	1	2.5	2.5	-0.5	1	1.08	1.33
Av	0.50	0.75	0.08	0.78	0.69	0.72	0.39	0.56		0.56	0.06	0.47	0.69	0.06	0.53	0.39	
Abs av	1.28	1.08	1.72	1.22	1.69	1.28	1.61		1.41	1.11	0.83	1.25	1.47	0.78	1.39		1.14

Legend

Ag - Aggressiveness
An - Analysis
De - Defensiveness
Fu - Futurity

Pr - Proactiveness
In - Innovativeness
RA - Risk aversion

CA - Customer analysis
CR - Customer responsiveness
CoA - Competitor analysis

CoR - Competitor responsiveness
IC - Interfunctional coordination
ER - Environmental responsiveness

Appendix 13

Phase 1: Differences between marketing's ratings of the company and the marketing function

Differences between marketing's rating of the company and the marketing function

Company	Ag	An	De	Fu	Pr	In	RA	Av	Abs av	CA	CR	Co A	Co R	IC	ER	Av	Abs av
1	0	-1	1	0	-1	0	1	0	0.57	-1	0	-1	1	0	0	-0.17	0.5
2	1	0	-1	-1	-1	0	-1	-0.43	0.71	-1	-2	0	0	0	-1	-0.67	0.67
3	0	-2	0	0	0	0	0	-0.21	0.29	0	-2	-1	-1	0	-1	-0.83	0.83
4	0	0	0	0	0	1	0	0.14	0.14	-1	-1	1	-2	-1	-1	-0.83	1.17
5	1	0	-1	0	0	0	-1	-0.14	0.43	1	1	-1	0	0	0	0.17	0.5
6	1	0	-1	3	0	-1	1	0.43	1	-1	0	-1	1	1	0	0	0.67
7	0	0	0	0	1	2	0	0.43	0.43	-1	1	0	1	0	1	0.33	0.67
8	2	-2	2	0	-1	2	2	0.71	1.57	-1	1	0	0	0	0	0	0.33
9	0	-1	-1	1	-1	0	0	-0.29	0.57	-1	0	0	0	-1	0	-0.33	0.33
10	-1	-1	-1	0	-2	-1	0	-0.71	0.86	0	0	-1	0	-0.5	0	-0.25	0.25
11	-4	2	4	-2	-3	-4	5	-0.29	3.43	0	-4	3	2	-3	-3	-0.83	2.5
12	-2	-2	2	0	-1	-3	3	-0.43	1.86	-4	0	-1	0	-1	-1	-1.17	1.17
13	0	-2	-2	-2	0	1	-2	-1	1.29	-1	-1	-1	0	-2	0	-0.83	0.83
14	2	2	-1	-2	0	0	-2	-0.14	1.29	0	0	1	-1	2	0	0.33	0.67
15	-1	-1	2	-2	-1	-2	1	-0.57	1.43	-2	0	-1	0	-2	-2	-1.17	1.17
16	-3	-1	1	-2	-1	-2	2	-0.86	1.71	-2	-2	-2	-1	-2	-2	-1.83	1.83
17	2	2	0	0	-2	-2	3	0.43	1.57	-2	-3	-3	-3	-3	2	-2	2.67
18	0	0	-1	0	1	-1	1	0	0.57	-1	0	0	-1	0	0	-0.33	0.33
Av	-0.08	-0.36	0.17	-0.39	-0.64	-0.56	0.72	-0.163		-1	-0.667	-0.44	-0.22	-0.69	-0.44	-0.58	
Abs av	1.11	1.06	1.17	0.83	0.89	1.22	1.39		1.10	1.11	1.00	1.00	0.78	1.03	0.78		0.95

Legend

Ag - Aggressiveness
An - Analysis
De - Defensiveness
Fu - Futurity

Pr - Proactiveness
In -   Innovativeness
RA - Risk aversion

CA -   Customer analysis
CR -   Customer responsiveness
CoA - Competitor analysis

CoR - Competitor responsiveness
IC -   Interfunctional coordination
ER -   Environmental responsiveness

Appendix 14

Phase 1: Comparison of ratings by heads of IT

Comparison of one-off and average strategic and market orientation dimension ratings by the heads of IT

Company	Head	Original rating	Ave. SO	Ave. MO	Original – Ave. SO	Original - Ave. MO
1	IT	3	5.14	5.50	-2.14	-2.50
2	IT	6	6.14	5.67	-0.14	0.33
3	IT	2	4.57	4.67	-2.57	-2.67
4	IT	5.5	5.43	5.67	0.07	-0.17
5	IT	5	5.57	5.83	-0.57	-0.83
7	IT	5	4.71	6.33	0.29	-1.33
8	IT	6.5	6.71	6.67	-0.21	-0.17
9	IT	4.5	3.43	4.5	1.07	0.00
10	IT	4	4.93	4.58	-0.93	-0.58
11	IT	3	4.43	3.50	-1.43	-0.50
12	IT	6	5.57	5.67	0.43	0.33
13	IT	7	5.14	5.55	1.86	1.45
14	IT	5	4.29	4.5	0.71	0.50
16	IT	6	4.14	4.33	1.86	1.67
17	IT	2	5.71	3.67	-3.71	-1.67
18	IT	4	5.14	5.25	-1.14	-1.25
Av	IT	4.66	5.07	5.12	-0.41	-0.46

Appendix 15

Phase 1: Comparison of ratings by heads of marketing

Comparison of one-off and average strategic and market orientation dimension ratings by the heads of marketing

Company	Head	Original rating	Ave. SO	Ave. MO	Original – Ave. SO	Original – Ave. MO
1	M	3	4.14	4.33	-1.14	-1.33
2	M	5	5.14	4.83	-0.14	0.17
3	M	3.5	4.79	5	-1.29	-1.50
4	M	5.5	4.57	5.33	0.93	0.17
6	M	5	4.43	5.33	0.57	-0.33
7	M	5	4	5.17	1.00	-0.17
8	M	5.5	5.86	5.50	-0.36	0.00
9	M	4.5	4.29	4.50	0.21	0.00
10	M	7	5.36	5.75	1.64	1.25
11	M	3	4.29	4.00	-1.29	-1.00
12	M	6	4.71	4.83	1.29	1.17
13	M	6	4.43	4.67	1.57	1.33
14	M	3	4.14	4.67	-1.14	-1.67
16	M	4	3.71	3.67	0.29	0.33
17	M	3	4.71	3.33	-1.71	-0.33
18	M	5	4.29	4.17	0.71	0.83
Av	M	4.63	4.55	4.69	0.07	-0.07

Appendix 16

Phase 2: List of proposed items and their sources

Items and their sources

Item		Source(s)
Business approach		
1	We strive to be one of the top three firms in each of our markets	Chan (A-I-9, Agg)
2	We constantly try to be ahead of the competition	Chan (A-II-1, Agg)
3	We tend to act aggressively in our marketplace	Chan (A-III-1, Agg)
4*	Our criteria for budget allocations generally reflect short-term considerations	Chan (A-I-8, Fut)
5	We carry out long-term research to provide us with a future competitive edge	Chan (A-I-10, Fut)
6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	Chan (A-III-5, Fut)
7	We usually come up with innovative and imaginative solutions for most business problems	Chan (A-II-5, Inn)
8	We tend to be early adopters of innovations.	Chan (A-II-11, Inn)
9	We tend to be creative and original	Chan (A-III-3, Inn)
10	We are continually seeking to identify new business opportunities.	Chan (A-I-1, Proact) Chan (A-III-6, Proact)
11	We are continually on the lookout for new business units to acquire	Chan (A-I-20, Proact)
12	We generally expand capacity ahead of our competitors	Chan (A-I-21, Proact)
13*	In general, our mode of operations is riskier than our competitors'	Chan (A-I-3, Risk)
14	We adopt a rather conservative view when making major decisions	Chan (A-I-12, Risk)
15	Business operations generally following 'tried and true' paths	Chan (A-II-6, Risk)
16	We tend to be risk averse	Chan (A-III-2, Risk)
Internal management approach		
17	We devote a great deal of attention to improving the efficiency of our business operations	Chan (A-III-7, I Def) Chan (A II-4, I Def)
18	All departments are involved in the preparation of the company's strategic plans	D&D (22)
19	We optimise coordination among our functions (e.g. finance and marketing)	Chan (A-III-7, I Def)
20	Market information is shared with all departments	D&D (23) Gray et al. (IC 6)
21	The marketing people in our organization interact frequently with other departments on an informal basis	
22*	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	MARKOR (18) Dawes (MIS 1)
23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements.	MO

24	The IT people in this business unit share a lot of information about technology with other departments.	MO

Analytical approach

25	We require a great deal of factual information to support our day-to-day decision making	Chan (A-I-16, Anal)
26	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced	Chan (A-I-18, Anal)
27	We tend to be highly analytical in our decision-making	Chan (A-III-4, Anal)
28	A key strength is effective customer analysis	Dawes (CuA 6)
29	The firm regularly researches customer needs and preferences	D&D (3) Gray et al. (CuO 2) Dawes (CuA 3)
30	The firm studies underlying trends or patterns in its customer behaviour	Dawes (CuA 5)
31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	MARKOR (10) MO Dawes (CuA 1)
32	We regularly collect data on our competitors' activities	New
33	All company staff are alert to monitoring and reporting on competitive activity.	D&D CoA 15) Gray et al. (CpO 3)
34	We regularly analyse our competitors' marketing programs	D&D CoA 13) Gray et al. (CpO 1)
35	Our top management team regularly discuss competitors' activities	D&D (17) Dawes (CpO 1)
36	We have a special competitive intelligence unit in our organization.	MO
37*	We are slow to detect fundamental shifts in our industry (e.g. technology)	MARKOR (9)
38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	Derived from MO
39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	Derived from MO
40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	Derived from MO
41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	Derived from MO
42	We spend time gaining an understanding of our various stakeholder groups' needs	Derived from MO

Approach to the external environment

43	We have a strong commitment to our customers	D&D (CuO 6) Gray et al. (CuO 3)
44	We put a lot of emphasis on building relationships with major customers	Chan (A-I-13, E Def) Chan (A-III-8, E Def)

45	Concerted efforts are made to help meet the needs of our customers	New
46	We look for ways to create customer value in our products	D&D (CuO 7) Gray et al. (CuO 4)
47	A high priority is placed on increasing customer satisfaction	Derived from Dawes (CuR 5)
48*	We tend to turn a deaf ear to customer complaints	Derived from MARKOR (28) MO Dawes (CuR 3)
49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	Chan (A-III-9, E Def)
50*	We are slow to start business with new suppliers even though they are better than existing ones	MO
51	We don't hesitate to compete with our suppliers to gain, e.g. increased cost position	New
52	We seek opportunities for either forward or backward integration	New
53	We respond rapidly to competitors' actions	D&D (16)
54	We target opportunities based on competitive advantage	D&D (18) Dawes (CpO 2)
55	We target customers and customer groups where we have or can develop, a competitive advantage	Dawes (CpO 4)
56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	MARKOR (26) MO Dawes (CpO 3)
57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	New
58	We seek to influence the market by building in competitor constraints, e.g. lobbying for regulations	New
59*	We tend to take longer than our competitors to respond to a change in regulatory policy	MO
60	We consider all our stakeholders in our strategies	Derived from MO
61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	Derived from Chan (A-I-14, E Def)
62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	MO

Asterisk indicates items that require reverse coding

Legend:
Chan – Chan (1992)
- Agg – Aggressiveness
- Fut – Futurity
- Inn – Innovativeness
- Pro – Proactiveness
- Risk – Risk aversion
- Anal – Analysis

- I Def – Internal defensiveness
- E Def – External defensiveness

D&D – Deng and Dart (1994)
- CuO – Customer orientation
- CpO – Competitor orientation
- IC – Interfunctional coordination

Gray et al. – Gray et al. (1998)
- CuO – Customer orientation
- CpO – Competitor orientation
- IC – Interfunctional coordination
- R – Responsiveness

MARKOR – measure from Kohli et al. (1993)

MO – measure of market orientation from Matsumo et al. (2000)

<u>Note</u>:

Chan (1992) had initially prepared 62 questions to measure the strategic orientation dimensions. Through three iterations (Round 1 testing, Round 2 testing, Initial model testing) these were refined to 59, 46 and 27 respectively. These remaining 27 questions were those presented in her final model, and which were considered for this study.

Appendix 17

Phase 2: List of proposed items

Proposed set of items according to their groups

The two right-hand columns in the first part of the questionnaire will be removed. They are only for identification of the measures and dimensions of the original sources.

- SO – Strategic orientation
    - Agg - Aggressiveness
    - Anal - Analysis
    - I Def – Internal defensiveness
    - E Def – External defensiveness
    - Fut - Futurity
    - Inn - Innovativeness
    - Pro - Proactiveness
    - RA – Risk aversion
- MO – Market orientation
    - CuA – Customer analysis
    - CuR – Customer responsiveness
    - CoA – Competitor analysis
    - CoR – Competitor responsiveness
    - IC – Interfunctional coordination
    - EA – Environmental analysis
    - ER – Environmental responsiveness
    - MD – Market driving

The following statements will help us understand your company's strategic orientation and approach to your market place. Please indicate, by circling the appropriate number, the extent to which you agree with each of the following statements as they refer to your company (or strategic business unit).

		Strongly agree	Agree	Neither agree nor dis-agree	Dis-agree	Strong-ly dis-agree	Mea-sure	Di-men-sion
Business approach								
1	We strive to be one of the top three firms in each of our markets	5	4	3	2	1	SO	Agg
2	We constantly try to be ahead of the competition	5	4	3	2	1	SO	Agg
3	We tend to act aggressively in our marketplace	5	4	3	2	1	SO	Agg
4	Our criteria for budget allocations generally reflect short-term considerations	5	4	3	2	1	SO	Fut
5	We carry out long-term research to provide us with a future competitive edge	5	4	3	2	1	SO	Fut
6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	5	4	3	2	1	SO	Fut
7	We usually come up with innovative and imaginative solutions for most business problems	5	4	3	2	1	SO	Inn
8	We tend to be early adopters of innovations.	5	4	3	2	1	SO	Inn
9	We tend to be creative and original	5	4	3	2	1	SO	Inn
10	We are continually seeking to identify new business opportunities.	5	4	3	2	1	SO	Pro
11	We are continually on the lookout for new business units to acquire	5	4	3	2	1	SO	Pro
12	We generally expand capacity ahead of our competitors	5	4	3	2	1	SO	Pro
13	In general, our mode of operations is riskier than our competitors'	5	4	3	2	1	SO	RA
14	We adopt a rather conservative view when making major decisions	5	4	3	2	1	SO	RA
15	Business operations generally following 'tried and true' paths	5	4	3	2	1	SO	RA
16	We tend to be risk averse	5	4	3	2	1	SO	RA
Internal management approach								
17	We devote a great deal of attention to improving the efficiency of our business	5	4	3	2	1	SO	I Def

	operations							
18	All departments are involved in the preparation of the company's strategic plans	5	4	3	2	1	MO	IC
19	We optimise coordination among our functions (e.g. finance and marketing)	5	4	3	2	1	SO	I Def
20	Market information is shared with all departments	5	4	3	2	1	MO	IC
21	The marketing people in our organization interact frequently with other departments on an informal basis	5	4	3	2	1	MO	IC
22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	5	4	3	2	1	MO	IC
23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements.	5	4	3	2	1	MO	IC
24	The IT people in this business unit share a lot of information about technology with other departments.	5	4	3	2	1	MO	IC
Analytical approach								
25	We require a great deal of factual information to support our day-to-day decision making	5	4	3	2	1	SO	Anal
26	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced	5	4	3	2	1	SO	Anal
27	We tend to be highly analytical in our decision-making	5	4	3	2	1	SO	Anal
28	A key strength is effective customer analysis	5	4	3	2	1	MO	CuA
29	The firm regularly researches customer needs and preferences	5	4	3	2	1	MO	CuA
30	The firm studies underlying trends or patterns in its customer behaviour	5	4	3	2	1	MO	CuA
31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	5	4	3	2	1	MO	CuA

32	We regularly collect data on our competitors' activities	5	4	3	2	1	MO	CoA
33	All company staff are alert to monitoring and reporting on competitive activity.	5	4	3	2	1	MO	CoA
34	We regularly analyse our competitors' marketing programs	5	4	3	2	1	MO	CoA
35	Our top management team regularly discuss competitors' activities	5	4	3	2	1	MO	CoA
36	We have a special competitive intelligence unit in our organization.	5	4	3	2	1	MO	CoA
37	We are slow to detect fundamental shifts in our industry (e.g. technology)	5	4	3	2	1	MO	EA
38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	5	4	3	2	1	MO	EA
39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	5	4	3	2	1	MO	EA
40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	5	4	3	2	1	MO	EA
41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	5	4	3	2	1	MO	EA
42	We spend time gaining an understanding of our various stakeholder groups' needs	5	4	3	2	1	MO	EA
Approach to the external environment								
43	We have a strong commitment to our customers	5	4	3	2	1	MO	CuR
44 *	We put a lot of emphasis on building relationships with major customers	5	4	3	2	1	MO	CuR
45	Concerted efforts are made to help meet the needs of our customers	5	4	3	2	1	MO	CuR
46	We look for ways to create customer value in our products	5	4	3	2	1	MO	CuR
47	A high priority is placed on increasing customer satisfaction	5	4	3	2	1	MO	CuR
48	We tend to turn a deaf ear to customer complaints	5	4	3	2	1	MO	CuR
49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	5	4	3	2	1	SO	E Def

50	We are slow to start business with new suppliers even though they are better than existing ones	5	4	3	2	1	MO	ER
51	We don't hesitate to compete with our suppliers to gain, e.g. increased cost position	5	4	3	2	1	MO	MD
52	We seek opportunities for either forward or backward integration	5	4	3	2	1	MO	MD
53	We respond rapidly to competitors' actions	5	4	3	2	1	MO	CoR
54	We target opportunities based on competitive advantage	5	4	3	2	1	MO	CoR
55	We target customers and customer groups where we have or can develop, a competitive advantage	5	4	3	2	1	MO	CoR
56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	5	4	3	2	1	MO	CoR
57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	5	4	3	2	1	MO	MD
58	We seek to influence the market by building in competitor constraints, e.g. lobbying for regulations	5	4	3	2	1	MO	MD
59	We tend to take longer than our competitors to respond to a change in regulatory policy	5	4	3	2	1	MO	ER
60	We consider all our stakeholders in our strategies	5	4	3	2	1	Mo	ER
61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	5	4	3	2	1	SO	E Def
62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	5	4	3	2	1	MO	ER

Please indicate, by circling the appropriate number, your best estimate of the company's (business unit's) average performance over the past three years

		Very good	Good	Average	Not so good	Not good at all
Business performance						
63	Net profits	5	4	3	2	1
64	Return on investment	5	4	3	2	1
65	Revenue growth	5	4	3	2	1
66	Sales growth	5	4	3	2	1
67	Market share gains	5	4	3	2	1
68	Overall performance	5	4	3	2	1

	Marketing performance (to appear on the questionnaire for the heads of marketing only)					
69	Customer satisfaction	5	4	3	2	1
70	Customer retention	5	4	3	2	1
71	Customer loyalty	5	4	3	2	1
72	Return on marketing investment	5	4	3	2	1
73	Efficiency of marketing promotions generally, including advertising, sales promotions, etc.	5	4	3	2	1
74	Overall marketing performance	5	4	3	2	1

* Derived from two items of Chan's (1992) instrument for measuring strategic orientation, Chan (A-I-3, E Def; A-III-8, E Def)

Appendix 18

Phase 2: Details of card sorting results

Although the analysis of the card sorting was based, to a large extent, on Moore and Benbasat's (1991) scale development procedure, there were a number of deviations which will be explained as they arise.

Instruction set A

The respondents to Instruction set A took longer to form their groups than the respondents to the other instruction sets. The numbers of groups formed by the respondents are presented in Table 1 and ranged from four to eight.

Table 1   Instruction set A responses: group name and numbers

Respondent	Number of groups	Names of groups
Student 1	8	None
Student 2	6	A; B; C; D; E; F
Student 3	7	None
Student 4	8	Strategy; Research/Analysis/Development; Environment; Competition & Market; Customers; Internal communications; Business operations; Suppliers
Academic 1	4	1; 2; 3; 4
Academic 2	6	Innovative; Analytical; External integration; Aggressive; Leader; Internal integration

Only two of the six respondents provided names for their groups. Of the remainder, one provided alphabetical letters and the other numbers to indicate the different groups. This could possibly have been because of an inability to find a suitable name for each group, to do so easily and quickly, or because it was difficult to find a name which was succinct and yet encompassed all that the group of items covered.

Table 2 depicts the total number of items that were placed in groups which most closely resembled the proposed groups of items. It should be noted that only one respondent formed four groups. Therefore, for the majority, the table below is not exhaustive in terms of item allocation.

Table 2   Responses to instruction set A: matches between proposed groups and
       actual groupings by respondents

Proposed group	Actual allocation of items						Target no. of items
	Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	
BA	9	6	7	9	8	12	16
IMA	5	3	6	5	7	3	8
AA	8	5	8	6	13	6	18
AEE	6 6*	8	10	7	8 8*	9	20

*   Two actual groups correlated to one proposed group

Ten groups suggested by the respondents matched those proposed for the questionnaire on 50% or more of the items (lightly shaded cells), while three of those

groups - two on 'internal management approach' and one on 'business approach' - matched on 75% or more of the items.

Generally, the names of the groups that were suggested held a strong resemblance to the names of the proposed dimensions. 'Internal communications' was exact, while 'research/analysis/development', 'competition and market'; 'customers'; 'innovative'; 'analytical'; and 'aggressive' all captured key elements of dimension names. The remaining names were in line with a number of the foci of the questions, such as 'suppliers'. 'Strategy' and 'competition and market' also alluded to the two independent variables of strategic orientation and market orientation.

Apart from the noted matches, no patterns appeared evident in the distribution of all the items amongst the proposed groups. These took into account those items not presented in Table 3.

To ascertain which of the proposed dimensions the respondents identified as belonging to the same group, and whether they identified which items belonged to each proposed dimension, a breakdown of responses is provided in Table 3. The sub-totals are introduced before the column indicating two items missing because of the splits that could occur with dimensions consisting of four items and the consequent double counting which might lead to erroneous deductions.

Table 3   Instruction set A: correlations between proposed dimensions and groupings by respondents (total of six respondents)

Construct	Proposed dimension (& number of items)	All items	1 item missing	Sub-total	2 items missing
Strategic orientation	Aggressiveness (3)	1	4	5	
	Futurity (3)	2	3	5	
	Innovativeness (3)	4	2	6	
	Proactiveness (3)	1	2	3	
	Risk aversion (4)	1	1	2	4
	Analysis (3)	4	2	6	
	Defensiveness (4)			0	5
Market orientation	Internal communications (6)	1	3	4	
	Customer analysis (4)	2	2	4	2
	Competitor analysis (5)	3	1	4	2
	Environmental analysis (6)	1		1	2
	Customer responsiveness (6)	3	2	5	
	Competitor responsiveness (4)	2	1	3	2
	Environmental responsiveness (4)			0	2
	Market driving (4)		3	3	1

The dimensions on which there were the strongest correlations were 'innovativeness' and 'analysis', and those on which there were weakest correlations were 'defensiveness', 'environmental analysis' and 'environmental responsiveness'. While 'defensiveness' improved in terms of correlations with two items missing – probably due to the split of the dimension into internal and external dimensions, the two environmental dimensions remained the lowest, together with 'proactiveness'.

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The groupings of the dimensions indicated a fairly distinct division between groups pertaining to strategic orientation dimensions and those pertaining to market orientation dimensions. However, there appears to have been some cross-grouping of the dimensions which comprise the analysis-focused dimensions.

No respondents commented on unclear wording or ambiguities of the items.

Instruction set B

As with the former group of respondents, the names of the groups supplied by the respondents to instruction set B reflected the proposed dimensions and the two independent variables of strategic orientation and market orientation. The names of the groups are presented in Table 4 in the same order as they were supplied by the respondents.

Table 4   Instruction set B responses: group names

Respondent	Groups			
Student	Entrepreneurial vision	Risk	Competitive advantage	Strategy
Student	Customer, Market, Business environment	Stakeholders, Suppliers	Market / Competitors / Competition	Organization itself
Student	Communication	Company behaviour	Customer focus	Competitor focus
Academic	Operational	Relationship	Market	Customer
Academic	Strength	Weakness	Opportunity	Threat

Group names that included 'risk', 'customer', 'competitor', 'competition' and 'communication' relate to the dimensions while names such as 'strategy' and 'market' relate to the independent constructs. Although the remaining group names could reflect a strategic orientation, the grouping according to a typical SWOT analysis did not indicate links with the different dimension names or with strategic orientation or market orientation.

The following table depicts the responses to instruction set B.

Table 5   Responses to instruction set B: matches between proposed groups and actual groupings by respondents

Proposed group	Actual allocation of items					Target no. of items
	Resp. 7	Resp. 8	Resp. 9	Resp. 10	Resp. 11	
BA	7	10	14	8	7	16
IMA	3	6	7	4	4	8
AA	8	8	10	5 5*	13	18
AEE	7	8	10	10	9	20

* Two actual groups correlated to one proposed group

Eleven groups suggested by the respondents matched the proposed questionnaire groups on 50% or more of the items, with three – two on 'internal management approach' and one on 'business approach' – matching on 75% or more of the items.

Further than these matches, there did not appear to be any specific patterns in the distribution of all the items between the proposed groups.

The extent to which the groupings suggested by the respondents correlated with the proposed dimensions is depicted in Table 6.

Table 6   Instruction set B: correlations between proposed dimensions and groupings by respondents (total of five respondents)

Construct	Proposed dimension (& number of items)	All items	1 item missing	Sub-total	2 items missing
Strategic orientation	Aggressiveness (3)	1	4	5	
	Futurity (3)	2	2	4	
	Innovativeness (3)	3	1	4	
	Proactiveness (3)	1	4	5	
	Risk aversion (4)	1	4	5	
	Analysis (3)	2	3	5	
	Defensiveness (4)	2		2	4
Market orientation	Internal communications (6)	1		1	2
	Customer analysis (4)	1	3	4	1
	Competitor analysis (5)	1		1	2
	Environmental analysis (6)		2	2	1
	Customer responsiveness (6)	1		1	2
	Competitor responsiveness (4)		5	5	
	Environmental responsiveness (4)		2	2	1
	Market driving (4)	2	1	3	2

The dimensions with which there were the strongest correlations were 'aggressiveness', 'proactiveness', 'risk aversion', 'analysis' and 'competitor responsiveness', while those with the weakest were 'internal communications', 'competitor analysis' and 'customer responsiveness'. If the counts in the last column were added to the sub-totals 'environmental analysis' and 'environmental responsiveness' would join the weakest group. As with the responses to instruction set A, while 'defensiveness' improved in terms of correlations with two items missing, this was probably due to the split of the dimension into internal and external dimensions.

It is noticeable from the above that the strategic orientation dimensions were most closely identified. However, the market orientation dimensions, on average, contained more items than the strategic orientation dimensions and would thus be more challenging to match completely.

No respondents commented on unclear wording or ambiguities of the items.

Instruction set C

As was to be expected with a more constraining set of instructions, the number of groups provided by the respondents that correlated with the groups proposed for the

questionnaire was much higher than with the responses to the other two sets of instructions. These are demonstrated in Table 7.

Table 7 Responses to instruction set C: matches between proposed groups and actual groupings by respondents

Proposed group	Business appr.	Internal manage-ment appr.	Analytical appr.	Appr. to external environm't	Target total	Actual total correct	Actual Total %
BA	**69**	28	8	8	112	69	61.9%
IMA	7	**39**	4	5	56	39	87.5%
AA	11	11	**66**	37	126	66	52.4%
AEE	**77**	10	0	**52**	140	77	26.9%

The group where the greatest number of item matches occurred was 'internal management approach', with 'business approach' and 'analytical approach' displaying acceptable and only just acceptable percentages of matching items. 'Approach to external environment' demonstrated a poor matching percentage, with more items matching the 'business approach' group. These tended to be the items which belonged to the market orientation dimensions of 'customer responsiveness', and 'competitor responsiveness', and, to a slightly lesser extent, 'environmental responsiveness' and 'market driven'.

Table 8 depicts the extent to which the responses correlated with the proposed dimensions.

Table 8 Instruction set C: correlations between proposed dimensions and groupings by respondents (total of seven respondents)

Construct	Proposed dimension (& number of items)	All items	1 item missing	Sub-total	2 items missing
Strategic orientation	Aggressiveness (3)	3	3	6	
	Futurity (3)		2	2	
	Innovativeness (3)	1	6	7	
	Proactiveness (3)	4	1	5	
	Risk aversion (4)	2	4	6	1
	Analysis (3)	4	3	7	
	Defensiveness (4)			0	7
Market orientation	Internal communications (6)	2	1	3	2
	Customer analysis (4)		3	3	3
	Competitor analysis (5)	1	1	2	2
	Environmental analysis (6)			0	3
	Customer responsiveness (6)	2	1	3	2
	Competitor responsiveness (4)	1	5	6	1
	Environmental responsiveness (4)	1	4	5	1
	Market driving (4)	1	3	4	5

The proposed dimension that demonstrated the strongest correlation with those suggested by the respondents was 'analysis', with 'innovativeness' following closely behind. With 'analysis', 'proactiveness' was the dimension which fell completely within a proposed group. 'Futurity' and 'competitor analysis' displayed the least number of correlations. One again, 'defensiveness' demonstrated a high number of

correlations when two items were missing - probably due to the split into internal and external defensiveness.

The strategic orientation dimensions demonstrated more matches between the proposed dimensions and the groupings suggested by the respondents, than the market orientation dimensions. However, as before, the larger number of items in the market orientation dimensions, needs to be taken into account.

Three respondents commented on wording or ambiguities of the items or proposed groups. Two found the wording of item 53 - 'We seek opportunities for either forward or backward integration' – ambiguous. One found it too general while the other questioned whether it referred to within the firm or with customers and suppliers. The third respondent found the names of the groups too general and felt that they should reflect the main item(s) in those groups. He suggested names such as 'internal processes', 'extent of analysis' and 'business personality'.

Appendix 19

Phase 2: Invitation to pre-test questionnaire

E-mail invitation

Dear…….

Earlier this year you were kind enough to grant me an interview for the first phase of my PhD research into the alignment between IT and marketing and the impact of that on business performance. The findings from those interviews were very valuable and helped to expand my understanding of the alignment as well as of the different measures of business performance.

I am now entering the second phase of the research which will consist of a nation-wide survey of the heads of IT and Marketing of hundreds of large New Zealand companies. The findings from the interviews which I conducted with you and others have helped to inform the questionnaire which will be distributed to the participants.

Because of your involvement I would very much appreciate it if you would cast your eye over the attached draft questionnaire and let me know if there is anything which is ambiguous or unclear.

I realize that you hold a very responsible and consequently busy position, so please do not feel pressured to respond. However, I would be very grateful for your input.

As a matter of interest, I am also attaching a copy of a paper which I presented at the Pacific-Asia Conference on Information Systems in Shanghai in July this year. This was based on the findings from the interviews, and although it does not by any means capture the full range of responses, it does provide some insight into what emerged.

As promised, upon completion of the whole study, all participating companies will receive a report of all the findings of the research.

Thank you, in advance.

Regards

Val Hooper

Appendix 20

Phase 2: Draft questionnaire for heads of IT

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui

THE IMPACT OF THE ALIGNMENT BETWEEN INFORMATION SYSTEMS AND MARKETING ON BUSINESS PERFORMANCE

Questionnaire

**School of Information Management
Victoria University of Wellington**

Val Hooper

(Tel: 04-463-5020; Fax: 04-463-5446; E-mail: val.hooper@vuw.ac.nz)

INTRODUCTION

The alignment of all functions within a company is of vital importance for the optimal performance of that company. This research explores the alignment between Information Systems/Information Technology and Marketing, and the impact of that alignment on business performance. It is an area of research which promises to yield meaningful results and insights, not only for each participating company, but also for the business community as a whole. By taking part in this study, your company will gain insight into how best to align these two functions in order to optimise your business performance.

It would thus be appreciated if you would answer each of the following questions in the booklet and, when complete, return it to me in the envelope provided. The questionnaire consists of three sections, A, B and C, and comprises 68 questions in total. Please ensure that you answer all three sections, and all the questions. All you are required to do is to circle the appropriate answer to each question. There are no right or wrong answers.

Your responses will be treated with the strictest confidence. In no instance will you or your company be identified as having given a particular response. Any data provided will only be used for statistical calculations. All questionnaires will be destroyed two years after completion of the study in order to allow for any publications on the findings to be compiled and published.

If you have any questions, do not hesitate to contact me at tel: 04-463-5020 or via e-mail at **val.hooper@vuw.ac.nz**, or either of my supervisors. My supervisors are Professor Sid Huff, Head of the School of Information Management and Professor Peter Thirkell, Head of the School of Marketing and International Business, both of Victoria University.

I hope you will find the questionnaire itself interesting and thought-provoking. A report of the findings will be made available to your company as soon as they are finalized.

Thank you for your participation. It is highly valued.

Val Hooper

SECTION A

The following statements will help us understand your company's strategic orientation and approach to your marketplace. Please indicate, by circling the appropriate number, the extent to which you agree with each of the following statements as they refer to you company (or strategic business unit)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Business approach						
1	We strive to be one of the top three firms in each of our markets	5	4	3	2	1
2	We constantly try to be ahead of the competition	5	4	3	2	1
3	We tend to act aggressively in our marketplace	5	4	3	2	1
4	Our criteria for budget allocations generally reflect short-term considerations	5	4	3	2	1
5	We carry out long-term research to provide us with a future competitive edge	5	4	3	2	1
6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	5	4	3	2	1
7	We usually come up with innovative and imaginative solutions for most business problems	5	4	3	2	1
8	We tend to be early adopters of innovations.	5	4	3	2	1
9	We tend to be creative and original	5	4	3	2	1
10	We are continually seeking to identify new business opportunities.	5	4	3	2	1
11	We are continually on the lookout for new business units to acquire	5	4	3	2	1
12	We generally expand capacity ahead of our competitors	5	4	3	2	1
13	In general, our mode of operations is riskier than our competitors'	5	4	3	2	1
14	We adopt a rather conservative view when making major decisions	5	4	3	2	1
15	Business operations generally following 'tried and true' paths	5	4	3	2	1

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		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
16	We tend to be risk averse	5	4	3	2	1

Internal management approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
17	We devote a great deal of attention to improving the efficiency of our business operations	5	4	3	2	1
18	All departments are involved in the preparation of the company's strategic plans	5	4	3	2	1
19	We optimise coordination among our functions (e.g. finance and marketing)	5	4	3	2	1
20	Market information is shared with all departments	5	4	3	2	1
21	The marketing people in our organization interact frequently with other departments on an informal basis	5	4	3	2	1
22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	5	4	3	2	1
23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	5	4	3	2	1
24	The IT people in this business unit share a lot of information about technology with other departments	5	4	3	2	1

Analytical approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
25	We require a great deal of factual information to support our day-to-day decision making	5	4	3	2	1
26	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced	5	4	3	2	1
27	We tend to be highly analytical in our decision-making	5	4	3	2	1
28	A key strength is effective customer analysis	5	4	3	2	1
29	The firm regularly researches customer needs and preferences	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
30	The firm studies underlying trends or patterns in its customer behaviour	5	4	3	2	1
31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	5	4	3	2	1
32	We regularly collect data on our competitors' activities	5	4	3	2	1
33	All company staff are alert to monitoring and reporting on competitive activity	5	4	3	2	1
34	We regularly analyse our competitors' marketing programs	5	4	3	2	1
35	Our top management team regularly discuss competitors' activities	5	4	3	2	1
36	We have a special competitive intelligence unit in our organization	5	4	3	2	1
37	We are slow to detect fundamental shifts in our industry (e.g. technology)	5	4	3	2	1
38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	5	4	3	2	1
39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	5	4	3	2	1
40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	5	4	3	2	1
41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	5	4	3	2	1
42	We spend time gaining an understanding of our various stakeholder groups' needs	5	4	3	2	1
Approach to the external environment						
43	We have a strong commitment to our customers	5	4	3	2	1
44	We put a lot of emphasis on building relationships with major customers	5	4	3	2	1
45	Concerted efforts are made to help meet the needs of our customers	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
46	We look for ways to create customer value in our products	5	4	3	2	1
47	A high priority is placed on increasing customer satisfaction	5	4	3	2	1
48	We tend to turn a deaf ear to customer complaints	5	4	3	2	1
49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	5	4	3	2	1
50	We are slow to start business with new suppliers even though they are better than existing ones	5	4	3	2	1
51	We don't hesitate to compete with our suppliers	5	4	3	2	1
52	We seek opportunities for either forward or backward integration	5	4	3	2	1
53	We respond rapidly to competitors' actions	5	4	3	2	1
54	We target opportunities based on competitive advantage	5	4	3	2	1
55	We target customers and customer groups where we have or can develop, a competitive advantage	5	4	3	2	1
56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	5	4	3	2	1
57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	5	4	3	2	1
58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	5	4	3	2	1
59	We tend to take longer than our competitors to respond to a change in regulatory policy	5	4	3	2	1
60	We consider all our stakeholders in our strategies	5	4	3	2	1
61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	5	4	3	2	1
62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	5	4	3	2	1

SECTION B

Please indicate, by circling the appropriate number, your best estimate of your company's (business unit's) average performance over the past three years

		Very good	Good	Average	Not so good	Not good at all
Business performance						
63	Net profits	5	4	3	2	1
64	Return on investment	5	4	3	2	1
65	Revenue growth	5	4	3	2	1
66	Sales growth	5	4	3	2	1
67	Market share gains	5	4	3	2	1
68	Overall performance	5	4	3	2	1

SECTION C

Please complete the following questions for our background information.

Please print clearly and avoid the use of acronyms.

Name………………………………………………………………………………

Company (or business unit) name…………………………………………………

……………………………………………………………………………………….

Position in the company (or business unit)……………………………………….

……………………………………………………………………………………….

Number of years you have been in this position…………………………………..

Number of years you have been with this company (or business unit)…………………

Has the company's (or business unit's) strategy changed markedly over the last three years? (Please tick the appropriate box)

Yes	No

Please check that you have answered all the questions, then return the completed questionnaire to me in the envelope provided.

Thank you for your participation. It is much valued.

Val Hooper

Appendix 21

Phase 2: Draft questionnaire for heads of marketing

THE IMPACT OF THE ALIGNMENT BETWEEN INFORMATION SYSTEMS AND MARKETING ON BUSINESS PERFORMANCE

Questionnaire

School of Information Management
Victoria University of Wellington

Val Hooper

(Tel: 04-463-5020; Fax: 04-463-5446; E-mail: val.hooper@vuw.ac.nz)

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It would thus be appreciated if you would answer each of the following questions in the booklet and, when complete, return it to me in the envelope provided. The questionnaire consists of three sections, A, B and C, and comprises 74 questions in total. Please ensure that you answer all three sections, and all the questions. All you are required to do is to circle the appropriate answer to each question. There are no right or wrong answers.

Your responses will be treated with the strictest confidence. In no instance will you or your company be identified as having given a particular response. Any data provided will only be used for statistical calculations. All questionnaires will be destroyed two years after completion of the study in order to allow for any publications on the findings to be compiled and published.

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SECTION A

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		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
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4	Our criteria for budget allocations generally reflect short-term considerations	5	4	3	2	1
5	We carry out long-term research to provide us with a future competitive edge	5	4	3	2	1
6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	5	4	3	2	1
7	We usually come up with innovative and imaginative solutions for most business problems	5	4	3	2	1
8	We tend to be early adopters of innovations.	5	4	3	2	1
9	We tend to be creative and original	5	4	3	2	1
10	We are continually seeking to identify new business opportunities.	5	4	3	2	1
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14	We adopt a rather conservative view when making major decisions	5	4	3	2	1
15	Business operations generally following 'tried and true' paths	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
16	We tend to be risk averse	5	4	3	2	1

Internal management approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
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20	Market information is shared with all departments	5	4	3	2	1
21	The marketing people in our organization interact frequently with other departments on an informal basis	5	4	3	2	1
22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	5	4	3	2	1
23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	5	4	3	2	1
24	The IT people in this business unit share a lot of information about technology with other departments	5	4	3	2	1

Analytical approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
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Approach to the external environment						
43	We have a strong commitment to our customers	5	4	3	2	1
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49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	5	4	3	2	1
50	We are slow to start business with new suppliers even though they are better than existing ones	5	4	3	2	1
51	We don't hesitate to compete with our suppliers	5	4	3	2	1
52	We seek opportunities for either forward or backward integration	5	4	3	2	1
53	We respond rapidly to competitors' actions	5	4	3	2	1
54	We target opportunities based on competitive advantage	5	4	3	2	1
55	We target customers and customer groups where we have or can develop, a competitive advantage	5	4	3	2	1
56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	5	4	3	2	1
57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	5	4	3	2	1
58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	5	4	3	2	1
59	We tend to take longer than our competitors to respond to a change in regulatory policy	5	4	3	2	1
60	We consider all our stakeholders in our strategies	5	4	3	2	1
61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	5	4	3	2	1
62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	5	4	3	2	1

SECTION B

Please indicate, by circling the appropriate number, your best estimate of your company's (business unit's) average performance over the past three years

		Very good	Good	Average	Not so good	Not good at all
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66	Sales growth	5	4	3	2	1
67	Market share gains	5	4	3	2	1
68	Overall performance	5	4	3	2	1
Marketing performance						
69	Customer satisfaction	5	4	3	2	1
70	Customer retention	5	4	3	2	1
71	Customer loyalty	5	4	3	2	1
72	Return on marketing investment					
73	Efficiency of marketing promotions generally, including advertising, sales promotions, etc.	5	4	3	2	1
74	Overall marketing performance	5	4	3	2	1

SECTION C

Please complete the following questions for our background information.

Please print clearly and avoid the use of acronyms.

Name……………………………………………………………………………

Company (or business unit) name………………………………………………

………………………………………………………………………………….

Position in the company (or business unit)…………………………………….

………………………………………………………………………………….

Number of years you have been in this position………………………………..

Number of years you have been with this company (or business unit)…………………

Has the company's (or business unit's) strategy changed markedly over the last three years? (Please tick the appropriate box)

Yes	No

Has the company's (or business unit's) marketing strategy changed markedly over the last three years? (Please tick the appropriate box)

Yes	No

Please check that you have answered all the questions, then return the completed questionnaire to me in the envelope provided.

Thank you for your participation. It is much valued.

Val Hooper

Appendix 22

Phase 2: Human Ethics Committee application

HUMAN ETHICS COMMITTEE
Application for Approval of Research Projects
Please email School of Information applications to your supervisor who will then
email it to an Informatics HEC member for a preliminary review.

Note: The Human Ethics Committee attempts to have all applications approved within three weeks but
a longer period may be necessary if applications require substantial revision.

1 NATURE OF PROPOSED RESEARCH:

(a) Staff Research/ Student Research (delete one)

(b) If Student Research Degree …PhD…… Course Code… INFO 690………

(c) Project Title:

The Impact of the Alignment between Information Systems and Marketing on
Business Performance……………………………………………

2 INVESTIGATORS:

(a) Principal Investigator

Name…Val Hooper

e-mail address …val.hooper@vuw.ac.nz………………………………

School/Dept/Group School of Information Management…………………

(b) Other Researchers   Name   Position

………………………………………………   ..…………………….
………………………………………………   ……………………….

(c) Supervisor (in the case of student research projects)

Prof. Sid Huff
Prof. Peter Thirkell

3 DURATION OF RESEARCH

(a) Proposed starting date for data collection – After HEC approval has been granted.

(Note: that NO part of the research requiring ethical approval may commence prior to approval being given)

(b) Proposed date of completion of project as a whole **Mid-2005**………………………

4 PROPOSED SOURCE/S OF FUNDING AND OTHER ETHICAL CONSIDERATIONS

(a) Sources of funding for the project

Please indicate any ethical issues or conflicts of interest that may arise because of sources of funding

e.g. restrictions on publication of results

As a staff member, the normal School of Information Management support for PhD studies of $2500 will cover stationery, postage, telephone costs, etc. ……………………………………………………………………………… ……………...

(b) Is any professional code of ethics to be followed   **Y**

If yes, **name**

The Association for Information Systems Code of Research Conduct

(c) Is ethical approval required from any other body   **N**

If yes, name and indicate when/if approval will be given

………………………………………………………………………………… ………………...

5 DETAILS OF PROJECT

Briefly Outline:

(a) The objectives of the project

To determine what the impact of the alignment between IS and marketing is on marketing performance and on business performance; and to determine

- **whether the alignment between the strategic orientation of IS and the strategic orientation of marketing exerts an impact on marketing performance and on business performance, and what the extent of that impact is; and**

- **whether the alignment between the market orientation of IS and the market orientation of marketing exerts an impact on marketing performance and on business performance, and what the extent of that impact is**

(b) Method of data collection

The research consists of two phases:
3) **Exploratory. Personal, indepth interviews – mainly qualitative, with some quantitative questions**
4) **Validation of model which was be derived from the literature review and findings from the first phase.**

This HEC application pertains to the second phase, HEC approval already having been granted for the first phase, and that research already having been conducted.

The second phase will consist of a quantitative, postal survey.

(c) The benefits and scientific value of the project

The academic value of the research will be the development of a model which integrates the IS and marketing disciplines. It will also incorporate elements of strategic management. As such it will expand the relevant fields of knowledge of these disciplines. The research will furthermore highlight the distinctions between strategic orientation and market orientation, as well as those between marketing performance and business performance.

Practitioners will benefit from an enhanced understanding of the impact that the alignment between IS and marketing can have on business performance and marketing performance. As such, all businesses which have an IS and a marketing function will be able to improve their performance.

Businesses will also be able to determine whether they should be focusing more on the alignment between the strategic orientation or the market orientation of the IS and marketing functions or whether they should be focusing on both.

(d) Characteristics of the participants

Participants for the second phase will be the heads of IS and marketing - or the officials performing those functions - from each sampled company.

(e) Method of recruitment

Large companies (100FTE's+) operating in New Zealand will constitute the sampling frame. The heads of IS and marketing of each company will be telephoned in order to gain their agreement to participate in the research and be sent a questionnaire. They

will then be sent a copy of the relevant questionnaire, there being slightly different questionnaires for the heads of IS and those of marketing. Accompanying the questionnaire will be a covering letter, and an information sheet. A "consent to participate" form will be included in the questionnaire and will feature prominently on or opposite the first page. It will be necessary for this to have been completed in order to use any data supplied in the questionnaire. A self-addressed envelope will also accompany the documents.

(f) Payments that are to be made/expenses to be reimbursed to participants

………………None……………………………………………………… ………………...

(g) Other assistance (e.g. meals, transport) that is to be given to participants

Self-addressed envelopes for postal return of the questionnaire will be provided together with the questionnaire……………………………………………………...

(h) Any special hazards and/or inconvenience (including deception) that participants will encounter

None……………………………………………………………………...

(i) State whether consent is for: (Please indicate as many as it applies)

(i)   the collection of data   **Y N**
(iv) use for a conference report or a publication **Y N**
(v) use for some particular purpose (specify)   **Y N**

PhD dissertation……………………………………………………………………………

Attach a copy of any questionnaire or interview schedule to the application

(j) How is informed consent to be obtained (see paragraphs 4.31(g), 5.2, 5.5 and 5.61 of

   the Guidelines)

(i)   the research is strictly <u>anonymous</u>, an information sheet is supplied and informed consent is implied by voluntary participation in filling out a questionnaire for example (include a copy of the information sheet)   **N**
(ii) the research is <u>not anonymous</u> but is confidential and informed consent will be obtained through a signed consent form (include a copy of the consent form and information sheet)
                        Y

(iii) the research is <u>neither anonymous nor confidential</u> and informed consent will be obtained through a signed consent form (include a copy of the consent form and information sheet)

N

(iv) informed consent will be obtained by some other method (please specify and provide details) **N**

…………………………………………………………………………………… ………………...

…………………………………………………………………………………… ………………...

With the exception of anonymous research as in (i), if it is proposed that written consent will not be obtained, please explain why

…………………………………………………………………………………… ………………...

…………………………………………………………………………………… ………………...

…………………………………………………………………………………… ………………...

(k) If the research will not be conducted on a strictly anonymous basis state how issues of confidentiality of participants are to be ensured if this is intended. (See paragraph 4.3.1(e) of the Guidelines). (e.g. who will listen to tapes, see questionnaires or have access to data). <u>Please ensure that you distinguish clearly between anonymity and confidentiality</u>. Indicate which of these are applicable.

(i) access to the research data will be restricted to the investigator

N

(ii) access to the research data will be restricted to the investigator and their supervisor (student research) **Y**

(iii) all opinions and data will be reported in aggregated form in such a way that individual persons or organisations are not identifiable

Y

(iv) Other (please specify)

…………………………………………………………………………………… ………………...

…………………………………………………………………………………… ………………...

…………………………………………………………………………………… ………………...

(l) Procedure for the storage of, access to and disposal of data, both during and at the conclusion of the research. (see section 7 of the guidelines). Indicate which are applicable:

    (i)   all written material (questionnaires, interview notes, etc) will be kept in a locked file and access is restricted to the investigator   Y

(ii) all electronic information will be kept in a password-protected file and access will be restricted to the investigator
    Y

(iii) all questionnaires, interview notes and similar materials will be destroyed:
    (a) at the conclusion of the research   **N**
or (b) two years after the conclusion of the research   **Y**

(iv) any audio or video recordings will be returned to participants and/or electronically wiped   **Y**

(v) other procedures (please specify):

………………………………………………………………………………… ………………...

………………………………………………………………………………… ………………...

If data and material are not to be destroyed please indicate why and the procedures envisaged for ongoing storage and security

………………………………………………………………………………… ………………...

………………………………………………………………………………… ………………...

………………………………………………………………………………… ………………...

(m) Feedback procedures (See section 8 of the Guidelines). You should indicate whether feedback will be provided to participants and in what form. If feedback will not be given, indicate the reasons why.

Each participating company, from both the previous first phase and from this second phase, will be provided with a summary, company version of the PhD research, focussing especially on the findings

(n) Reporting and publication of results. Please indicate which of the following are appropriate. The proposed form of publications should be indicated on the information sheet and/or consent form.

(i)   publication in academic or professional journals   **Y**
(ii) dissemination at academic or professional conferences   **Y**
(iii) deposit of the research paper or thesis in the University Library (student research)   **Y**
(iv) a case study used for teaching purposes   **N**
(v)   other (please specify)

………………………………………………………………………………
………………...

………………………………………………………………………………
………………...

Appendix 23

Phase 2: Questionnaire covering letter

Position
Company
City
Code

Date

Dear….

The Impact of the Alignment between Information Systems and Marketing on Business Performance

Thank you very much for agreeing to participate in this research. As indicated, I am a Lecturer at the School of Information Management at Victoria University. I am also a PhD student and it is for the purposes of this degree that I am undertaking this study.

My research aims to explore the alignment between Information Systems/Information Technology and Marketing, and the impact of that on business performance. It is an area of research which promises to yield meaningful results and insights, not only for the participating companies but also for the business community as a whole. By taking part in this study, your company will gain insights into how best to align these two functions in order to optimize your business performance.

Over 250 New Zealand companies in a variety of industries have been invited to participate in this survey. In each company the head of the Information Systems/Information Technology function and the head of the Marketing function (or similar roles) will each be taking part. All information will be treated confidentially with no individual or company being able to be identified. At the end of the study, a report of the findings will be provided to each company taking part in the research.

Together with this letter I have enclosed a questionnaire booklet which contains a consent form at the front which will require your signature as a participant. I have also enclosed an information sheet indicating the guidelines of the research, and a self-addressed envelope in which you can return the completed questionnaire to me.

If you have any queries, please contact me at telephone 04-463-5020. Alternatively, either of my supervisors may be contacted at the same institution at the following telephone numbers: Prof Huff: 04-463-5819; Prof Thirkell: 04-463-5086.

Thank you, in advance for your participation and time. I look forward to receiving your completed questionnaire.

Yours sincerely

Val Hooper

Appendix 24

Phase 2: Questionnaire for heads of IT

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui

THE IMPACT OF THE ALIGNMENT BETWEEN INFORMATION SYSTEMS AND MARKETING ON BUSINESS PERFORMANCE

Questionnaire

School of Information Management
Victoria University of Wellington

Val Hooper

(Tel: 04-463-5020; Fax: 04-463-5446; E-mail: **val.hooper@vuw.ac.nz**)

PLEASE RETURN WITHIN TWO WEEKS OF RECEIPT

CONSENT TO PARTICIPATION IN RESEARCH

The Impact of the Alignment between IS and Marketing on Business Performance

I have been given and have understood an explanation of this project. I have had an opportunity to ask questions and have them answered to my satisfaction.

I understand that any data or information which I provide will be kept confidential and accessible only to the researcher and her supervisors. I understand that the questionnaires will be destroyed two years after completion of the dissertation.

The published results will not use my or my company's names and no opinions will be attributed to me in any way that will identify me or my company.

I understand that my company will receive a company report of the findings of the dissertation upon completion.

I agree to take part in this research. However, I understand that I am free to withdraw at any stage of participation, without explanation, but that it should be before 31 December 2004.

Signed

--   -------------------------------------
Name of participant   (Please print clearly)   Date

Position of participant (Please print clearly and avoid abbreviations if possible)

INTRODUCTION

The alignment of all functions within a company is of vital importance for the optimal performance of that company. This research explores the alignment between Information Systems/Information Technology and Marketing, and the impact of that alignment on business performance. It is an area of research which promises to yield meaningful results and insights, not only for each participating company, but also for the business community as a whole. By taking part in this study, your company will gain insight into how best to align these two functions in order to optimise your business performance.

It would thus be appreciated if you would answer each of the following questions in the booklet and, when complete, return it to me in the envelope provided. The questionnaire consists of three sections, A, B and C, and comprises 68 questions in total. Please ensure that you answer all three sections, and all the questions. All you are required to do is to circle the appropriate answer to each question. There are no right or wrong answers.

Your responses will be treated with the strictest confidence. In no instance will you or your company be identified as having given a particular response. Any data provided will only be used for statistical calculations. All questionnaires will be destroyed two years after completion of the study in order to allow for any publications on the findings to be compiled and published.

If you have any questions, do not hesitate to contact me at tel: 04-463-5020 or via e-mail at **val.hooper@vuw.ac.nz**, or either of my supervisors. My supervisors are Professor Sid Huff, Head of the School of Information Management and Professor Peter Thirkell, Head of the School of Marketing and International Business, both of Victoria University.

I hope you will find the questionnaire itself interesting and thought-provoking. A report of the findings will be made available to your company as soon as they are finalized.

Thank you for your participation. It is highly valued.

Val Hooper

SECTION A

The following statements will help us understand your company's strategic orientation and approach to your marketplace. Please indicate, by circling the appropriate number, the extent to which you agree with each of the following statements as they refer to your company (or strategic business unit)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Business approach						
1	We strive to be one of the top three companies in each of our markets	5	4	3	2	1
2	We constantly try to be ahead of the competition	5	4	3	2	1
3	We tend to act aggressively in our marketplace	5	4	3	2	1
4	Our criteria for budget allocations generally reflect short-term considerations	5	4	3	2	1
5	We carry out long-term research to provide us with a future competitive edge	5	4	3	2	1
6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	5	4	3	2	1
7	We usually come up with innovative and imaginative solutions for most business problems	5	4	3	2	1
8	We tend to be early adopters of innovations.	5	4	3	2	1
9	We tend to be creative and original	5	4	3	2	1
10	We are continually seeking to identify new business opportunities.	5	4	3	2	1
11	We are continually on the lookout for new business units to acquire	5	4	3	2	1
12	We generally expand capacity ahead of our competitors	5	4	3	2	1
13	In general, our mode of operations is riskier than our competitors'	5	4	3	2	1
14	We adopt a rather conservative view when making major decisions	5	4	3	2	1
15	Business operations generally following 'tried and true' paths	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
16	We tend to be risk averse	5	4	3	2	1

Internal management approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
17	We devote a great deal of attention to improving the efficiency of our business operations	5	4	3	2	1
18	All departments are involved in the preparation of the company's strategic plans	5	4	3	2	1
19	We optimise coordination among our departments (e.g. finance and marketing)	5	4	3	2	1
20	Market information is shared with all departments	5	4	3	2	1
21	The marketing people in our organization interact frequently with other departments on an informal basis	5	4	3	2	1
22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	5	4	3	2	1
23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	5	4	3	2	1
24	The IT people in this business unit share a lot of information about technology with other departments	5	4	3	2	1

Analytical approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
25	We require a great deal of factual information to support our day-to-day decision making	5	4	3	2	1
26	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced	5	4	3	2	1
27	We tend to be highly analytical in our decision-making	5	4	3	2	1
28	A key strength is effective customer analysis	5	4	3	2	1
29	The company regularly researches customer needs and preferences	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
30	The company studies underlying trends or patterns in its customer behaviour	5	4	3	2	1
31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	5	4	3	2	1
32	We regularly collect data on our competitors' activities	5	4	3	2	1
33	All company staff are alert to monitoring and reporting on competitive activity	5	4	3	2	1
34	We regularly analyse our competitors' marketing programs	5	4	3	2	1
35	Our top management team regularly discuss competitors' activities	5	4	3	2	1
36	We have a special competitive intelligence unit in our organization	5	4	3	2	1
37	We are slow to detect fundamental shifts in our industry (e.g. technology)	5	4	3	2	1
38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	5	4	3	2	1
39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	5	4	3	2	1
40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	5	4	3	2	1
41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	5	4	3	2	1
42	We spend time gaining an understanding of our various stakeholder groups' needs	5	4	3	2	1
Approach to the external environment						
43	We have a strong commitment to our customers	5	4	3	2	1
44	We put a lot of emphasis on building relationships with major customers	5	4	3	2	1
45	Concerted efforts are made to help meet the needs of our customers	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
46	We look for ways to create customer value in our products	5	4	3	2	1
47	A high priority is placed on increasing customer satisfaction	5	4	3	2	1
48	We tend to turn a deaf ear to customer complaints	5	4	3	2	1
49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	5	4	3	2	1
50	We are slow to start business with new suppliers even though they are better than existing ones	5	4	3	2	1
51	We don't hesitate to compete with our suppliers	5	4	3	2	1
52	We seek opportunities for either forward or backward integration, e.g. acquiring our distributors or suppliers	5	4	3	2	1
53	We respond rapidly to competitors' actions	5	4	3	2	1
54	We target opportunities based on competitive advantage	5	4	3	2	1
55	We target customers and customer groups where we have or can develop, a competitive advantage	5	4	3	2	1
56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	5	4	3	2	1
57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	5	4	3	2	1
58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	5	4	3	2	1
59	We tend to take longer than our competitors to respond to a change in regulatory policy	5	4	3	2	1
60	We consider all our stakeholders in our strategies	5	4	3	2	1
61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	5	4	3	2	1
62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	5	4	3	2	1

SECTION B

Please indicate, by circling the appropriate number, your best estimate of your company's (business unit's) average performance over the past three years

		Very good	Good	Average	Not so good	Not good at all
Business performance						
63	Net profits	5	4	3	2	1
64	Return on investment	5	4	3	2	1
65	Revenue growth	5	4	3	2	1
66	Sales growth	5	4	3	2	1
67	Market share gains	5	4	3	2	1
68	Overall performance	5	4	3	2	1

SECTION C

Please complete the following questions for our background information.

Please print clearly and avoid the use of acronyms.

Name……………………………………………………………………………

Company (or business unit) name…………………………………………………

………………………………………………………………………………….

Position in the company (or business unit)……………………………………….

………………………………………………………………………………….

Number of years you have been in this position………………………………..

Number of years you have been with this company (or business unit)…………………

Has the company's (or business unit's) strategy changed markedly over the last three years? (Please tick the appropriate box)

Yes	No

Please check that you have answered all the questions, then return the completed questionnaire to me in the envelope provided.

Thank you for your participation. It is much valued.

Val Hooper

Appendix 25

Phase 2: Questionnaire for heads of marketing

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui

THE IMPACT OF THE ALIGNMENT BETWEEN INFORMATION SYSTEMS AND MARKETING ON BUSINESS PERFORMANCE

Questionnaire

School of Information Management
Victoria University of Wellington

Val Hooper

Tel: 04-463-5020; Fax: 04-463-5446; E-mail: **val.hooper@vuw.ac.nz**)

PLEASE RETURN WITHIN TWO WEEKS OF RECEIPT

CONSENT TO PARTICIPATION IN RESEARCH

The Impact of the Alignment between IS and Marketing on Business Performance

I have been given and have understood an explanation of this project. I have had an opportunity to ask questions and have them answered to my satisfaction.

I understand that any data or information which I provide will be kept confidential and accessible only to the researcher and her supervisors. I understand that the questionnaires will be destroyed two years after completion of the dissertation.

The published results will not use my or my company's names and no opinions will be attributed to me in any way that will identify me or my company.

I understand that my company will receive a company report of the findings of the dissertation upon completion.

I agree to take part in this research. However, I understand that I am free to withdraw at any stage of participation, without explanation, but that it should be before 31 December 2004.

Signed

---   -------------------------------------
Name of participant   (Please print clearly)   Date

Position of participant (Please print clearly and avoid abbreviations if possible)

INTRODUCTION

The alignment of all functions within a company is of vital importance for the optimal performance of that company. This research explores the alignment between Information Systems/Information Technology and Marketing, and the impact of that alignment on business performance. It is an area of research which promises to yield meaningful results and insights, not only for each participating company, but also for the business community as a whole. By taking part in this study, your company will gain insight into how best to align these two functions in order to optimise your business performance.

It would thus be appreciated if you would answer each of the following questions in the booklet and, when complete, return it to me in the envelope provided. The questionnaire consists of three sections, A, B and C, and comprises 74 questions in total. Please ensure that you answer all three sections, and all the questions. All you are required to do is to circle the appropriate answer to each question. There are no right or wrong answers.

Your responses will be treated with the strictest confidence. In no instance will you or your company be identified as having given a particular response. Any data provided will only be used for statistical calculations. All questionnaires will be destroyed two years after completion of the study in order to allow for any publications on the findings to be compiled and published.

If you have any questions, do not hesitate to contact me at tel: 04-463-5020 or via e-mail at **val.hooper@vuw.ac.nz**, or either of my supervisors. My supervisors are Professor Sid Huff, Head of the School of Information Management and Professor Peter Thirkell, Head of the School of Marketing and International Business, both of Victoria University.

I hope you will find the questionnaire itself interesting and thought-provoking. A report of the findings will be made available to your company as soon as they are finalized.

Thank you for your participation. It is highly valued.

Val Hooper

SECTION A

The following statements will help us understand your company's strategic orientation and approach to your marketplace. Please indicate, by circling the appropriate number, the extent to which you agree with each of the following statements as they refer to you company (or strategic business unit)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Business approach						
1	We strive to be one of the top three companies in each of our markets	5	4	3	2	1
2	We constantly try to be ahead of the competition	5	4	3	2	1
3	We tend to act aggressively in our marketplace	5	4	3	2	1
4	Our criteria for budget allocations generally reflect short-term considerations	5	4	3	2	1
5	We carry out long-term research to provide us with a future competitive edge	5	4	3	2	1
6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	5	4	3	2	1
7	We usually come up with innovative and imaginative solutions for most business problems	5	4	3	2	1
8	We tend to be early adopters of innovations.	5	4	3	2	1
9	We tend to be creative and original	5	4	3	2	1
10	We are continually seeking to identify new business opportunities.	5	4	3	2	1
11	We are continually on the lookout for new business units to acquire	5	4	3	2	1
12	We generally expand capacity ahead of our competitors	5	4	3	2	1
13	In general, our mode of operations is riskier than our competitors'	5	4	3	2	1
14	We adopt a rather conservative view when making major decisions	5	4	3	2	1
15	Business operations generally following 'tried and true' paths	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
16	We tend to be risk averse	5	4	3	2	1

Internal management approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
17	We devote a great deal of attention to improving the efficiency of our business operations	5	4	3	2	1
18	All departments are involved in the preparation of the company's strategic plans	5	4	3	2	1
19	We optimise coordination among our departments (e.g. finance and marketing)	5	4	3	2	1
20	Market information is shared with all departments	5	4	3	2	1
21	The marketing people in our organization interact frequently with other departments on an informal basis	5	4	3	2	1
22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	5	4	3	2	1
23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	5	4	3	2	1
24	The IT people in this business unit share a lot of information about technology with other departments	5	4	3	2	1

Analytical approach

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
25	We require a great deal of factual information to support our day-to-day decision making	5	4	3	2	1
26	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced	5	4	3	2	1
27	We tend to be highly analytical in our decision-making	5	4	3	2	1
28	A key strength is effective customer analysis	5	4	3	2	1
29	The company regularly researches customer needs and preferences	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
30	The company studies underlying trends or patterns in its customer behaviour	5	4	3	2	1
31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	5	4	3	2	1
32	We regularly collect data on our competitors' activities	5	4	3	2	1
33	All company staff are alert to monitoring and reporting on competitive activity	5	4	3	2	1
34	We regularly analyse our competitors' marketing programs	5	4	3	2	1
35	Our top management team regularly discuss competitors' activities	5	4	3	2	1
36	We have a special competitive intelligence unit in our organization	5	4	3	2	1
37	We are slow to detect fundamental shifts in our industry (e.g. technology)	5	4	3	2	1
38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	5	4	3	2	1
39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	5	4	3	2	1
40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	5	4	3	2	1
41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	5	4	3	2	1
42	We spend time gaining an understanding of our various stakeholder groups' needs	5	4	3	2	1
Approach to the external environment						
43	We have a strong commitment to our customers	5	4	3	2	1
44	We put a lot of emphasis on building relationships with major customers	5	4	3	2	1
45	Concerted efforts are made to help meet the needs of our customers	5	4	3	2	1

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
46	We look for ways to create customer value in our products	5	4	3	2	1
47	A high priority is placed on increasing customer satisfaction	5	4	3	2	1
48	We tend to turn a deaf ear to customer complaints	5	4	3	2	1
49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	5	4	3	2	1
50	We are slow to start business with new suppliers even though they are better than existing ones	5	4	3	2	1
51	We don't hesitate to compete with our suppliers	5	4	3	2	1
52	We seek opportunities for either forward or backward integration, e.g. by acquiring our distributors or suppliers	5	4	3	2	1
53	We respond rapidly to competitors' actions	5	4	3	2	1
54	We target opportunities based on competitive advantage	5	4	3	2	1
55	We target customers and customer groups where we have or can develop, a competitive advantage	5	4	3	2	1
56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	5	4	3	2	1
57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	5	4	3	2	1
58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	5	4	3	2	1
59	We tend to take longer than our competitors to respond to a change in regulatory policy	5	4	3	2	1
60	We consider all our stakeholders in our strategies	5	4	3	2	1
61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	5	4	3	2	1
62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	5	4	3	2	1

SECTION B

Please indicate, by circling the appropriate number, your best estimate of your company's (business unit's) average performance over the past three years

		Very good	Good	Average	Not so good	Not good at all
Business performance						
63	Net profits	5	4	3	2	1
64	Return on investment	5	4	3	2	1
65	Revenue growth	5	4	3	2	1
66	Sales growth	5	4	3	2	1
67	Market share gains	5	4	3	2	1
68	Overall performance	5	4	3	2	1
Marketing performance						
69	Customer satisfaction	5	4	3	2	1
70	Customer retention	5	4	3	2	1
71	Customer loyalty	5	4	3	2	1
72	Return on marketing investment	5	4	3	2	1
73	Efficiency of marketing promotions generally, including advertising, sales promotions, etc.	5	4	3	2	1
74	Overall marketing performance	5	4	3	2	1

SECTION C

Please complete the following questions for our background information.

Please print clearly and avoid the use of acronyms.

Name……………………………………………………………………………………

Company (or business unit) name……………………………………………………………

……………………………………………………………………………………………….

Position in the company (or business unit)……………………………………………….

……………………………………………………………………………………………….

Number of years you have been in this position…………………………………………..

Number of years you have been with this company (or business unit)…………………

Has the company's (or business unit's) strategy changed markedly over the last three years? (Please tick the appropriate box)

Yes	No

Has the company's (or business unit's) marketing strategy changed markedly over the last three years? (Please tick the appropriate box)

Yes	No

Please check that you have answered all the questions, then return the completed questionnaire to me in the envelope provided.

Thank you for your participation. It is much valued.

Val Hooper

Appendix 26

Phase 2: Reminder letter

Name
Position
Company
P.O.Box ….
City
Code

21 October 2004

Dear …..

The Impact of the Alignment between Information Systems and Marketing on Business Performance

A few weeks ago you very kindly agreed to participate in my research, and I subsequently dispatched a questionnaire to you by post at the above address.

Having not yet received your completed questionnaire, I'm writing to ascertain whether you have, in fact, received the questionnaire and, if so, whether you have any queries regarding the questions or any other aspect of the research.

I realize that work pressures and/or leave requirements might well have caused the delay in response but If the questionnaire hasn't arrived, or if you need any clarification, please do not hesitate to contact me at tel: 04-463-5020 or via e-mail at val.hooper@vuw.ac.nz

This research is very meaningful, not only to the participating companies and myself but also to the economy as a whole. Each response counts, especially when the responses from both the head of IT and the head of marketing from each company are required. I would thus be more than happy to assist in any way possible.

Thank you, in advance for your participation and time. I look forward to receiving your completed questionnaire or hearing from you.

Yours sincerely

Val Hooper

Appendix 27

Independent variables: Initial unconstrained factor analysis groupings

Independent variables: Initial unconstrained factor analysis groupings

Item	Original factor	Questions
f45	CuR	We have a strong commitment to our customers
f47	CuR	Concerted efforts are made to help meet the needs of our customers
f46	CuR	We put a lot of emphasis on building relationships with major customers
f49	CuR	A high priority is placed on increasing customer satisfaction
f48	CuR	We look for ways to create customer value in our products
f50	CuR	We tend to turn a deaf ear to customer complaints
f30	CuA	A key strength is effective customer analysis
f36	CoA	We regularly analyse our competitors' marketing programs
f34	CoA	We regularly collect data on our competitors' activities
f37	CoA	Our top management team regularly discuss competitors' activities
f35	CoA	All company staff are alert to monitoring and reporting on competitive activity
f55	CoR	We respond rapidly to competitors' actions
f38	CoA	We have a special competitive intelligence unit in our organization
f32	CuA	The company studies underlying trends or patterns in its customer behaviour
f42	EA	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)
f41	EA	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)
f63	E Def	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)
f60	MD	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations
f7	Fut	We carry out long-term research to provide us with a future competitive edge
f33	CuA	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers
f8	Fut	We tend to be future-oriented (i.e. more focused on the long term than on the short term)
f40	EA	We frequently collect and evaluate general macro-economic information (e.g. interest rate)
f44	EA	We spend time gaining an understanding of our various stakeholder groups' needs
f62	ER	We consider all our stakeholders in our strategies

f21	I Def	We optimise coordination among our departments (e.g. finance and marketing)
f20	IC	All departments are involved in the preparation of the company's strategic plans
f26	IC	The IT people in this business unit share a lot of information about technology with other departments
f25	IC	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements
f22	IC	Market information is shared with all departments
f19	I Def	We devote a great deal of attention to improving the efficiency of our business operations
f28	Anal	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced
f29	Anal	We tend to be highly analytical in our decision-making
f27	Anal	We require a great deal of factual information to support our day-to-day decision making
f10	Inn	We tend to be early adopters of innovations.
f11	Inn	We tend to be creative and original
f9	Inn	We usually come up with innovative and imaginative solutions for most business problems
f3	Agg	We strive to be one of the top three companies in each of our markets
f4	Agg	We constantly try to be ahead of the competition
f5	Agg	We tend to act aggressively in our marketplace
f14	Pro	We generally expand capacity ahead of our competitors
f13	Pro	We are continually on the lookout for new business units to acquire
f59	MD	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.
f54	MD	We seek opportunities for either forward or backward integration, e.g. by acquiring our distributors or suppliers
f17	RA	Business operations generally following 'tried and true' paths
f16	RA	We adopt a rather conservative view when making major decisions
f18	RA	We tend to be risk averse
f43	EA	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)
f51	E Def	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)

f39	EA	We are slow to detect fundamental shifts in our industry (e.g. technology)
f61	ER	We tend to take longer than our competitors to respond to a change in regulatory policy
f23	IC	The marketing people in our organization interact frequently with other departments on an informal basis
f24	IC	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments
f56	CoR	We target opportunities based on competitive advantage
f57	CoR	We target customers and customer groups where we have or can develop, a competitive advantage
f53	MD	We don't hesitate to compete with our suppliers
f64	ER	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately
f58	CoR	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately
f15	RA	In general, our mode of operations is riskier than our competitors'

Legend

Agg - Aggressiveness
Fut – Futurity
Inn - Innovativeness
Pro - Proactiveness

RA – Risk aversion
Anal – Analysis
I Def – Internal defensiveness
E Def – External defensiveness

CuR – Customer responsiveness
CuA - Customer analysis
ER – Environmental responsiveness
CoA – Competitor analysis

CoR – Competitor responsiveness
EA – Environmental analysis
IC – Interfunctional coordination
MD – Market driving

Appendix 28

Phase 2: Reliability of initial factor analysis of strategic orientation items, according to predetermined factors

Strategic orientation: Reliability of initial factor analysis, according to predetermined factors

Item		Questions	Original factor	Alpha if item deleted	Factor alpha	Standardized alpha
f3	q1	We strive to be one of the top three companies in each of our markets	Agg	0.6476		
f4	q2	We constantly try to be ahead of the competition	Agg	0.5387		
f5	q3	We tend to act aggressively in our marketplace	Agg	0.6592		
					0.7022	0.7183
f6	q4	Our criteria for budget allocations generally reflect short-term considerations	Fut	0.6812		
f7	q5	We carry out long-term research to provide us with a future competitive edge	Fut	0.6608		
f8	q6	We tend to be future-oriented (i.e. more focused on the long term than on the short term)	Fut	0.5008		
					0.7063	0.7099
f9	q7	We usually come up with innovative and imaginative solutions for most business problems	Inn	0.7934		
f10	q8	We tend to be early adopters of innovations.	Inn	0.7548		
f11	q9	We tend to be creative and original	Inn	0.7334		
					0.8282	0.8326
f12	q10	We are continually seeking to identify new business opportunities.	Pro	0.5053		
f13	q11	We are continually on the lookout for new business units to acquire	Pro	0.4810		
f14	q12	We generally expand capacity ahead of our competitors	Pro	0.4764		
					0.5893	0.6027
f15	q13	In general, our mode of operations is riskier than our competitors'	RA	0.7267		
f16	q14	We adopt a rather conservative view when making major decisions	RA	0.0724		
f17	q15	Business operations generally following 'tried and true' paths	RA	0.0383		
f18	q16	We tend to be risk averse	RA	0.2277		
					0.4157	0.4069
f27	q25	We require a great deal of factual information to support our day-to-day decision making	Anal	0.8591		

f28	q26	When confronted with major decisions, we typically develop comprehensive analyses of the business situations faced	Anal	0.6816		
f29	q27	We tend to be highly analytical in our decision-making	Anal	0.7130		
					0.8230	0.8231
f19	q17	We devote a great deal of attention to improving the efficiency of our business operations	I Def	0.5282		
f21	q19	We optimise coordination among our departments (e.g. finance and marketing)	I Def	0.5101		
f51	q49	We put a lot of emphasis on building relationships with key suppliers (e.g. providers of key services, materials, finance)	E Def	0.5929		
f63	q61	We put a lot of emphasis on building relationships with major stakeholders (e.g. investors, community leaders)	E Def	0.6062		
					0.6318	0.6296

Legend

Agg - Aggressiveness   RA – Risk aversion
Fut – Futurity   Anal – Analysis
Inn - Innovativeness   I Def – Internal defensiveness
Pro - Proactiveness   E Def – External defensiveness

Appendix 29

Phase 2: Reliability of initial unconstrained factor analysis of market orientation items

Market orientation: Reliability of initial, unconstrained factor analysis

Item		Questions	Original factor	Alpha if item deleted	Factor alpha	Standardized alpha
f45	q43	We have a strong commitment to our customers	CuR	0.8537		
f46	q44	We put a lot of emphasis on building relationships with major customers	CuR	0.8637		
f47	q45	Concerted efforts are made to help meet the needs of our customers	CuR	0.8539		
f48	q46	We look for ways to create customer value in our products	CuR	0.8594		
f49	q47	A high priority is placed on increasing customer satisfaction	CuR	0.8518		
f50	q48	We tend to turn a deaf ear to customer complaints	CuR	0.8684		
f30	q28	A key strength is effective customer analysis	CuA	0.8659		
f31	q29	The company regularly researches customer needs and preferences	CuA	0.8696		
f62	q60	We consider all our stakeholders in our strategies	ER	0.8721		
					0.8755	0.8850
f30	q28	A key strength is effective customer analysis	CuA	0.8481		
f31	q29	The company regularly researches customer needs and preferences	CuA	0.8471		
f32	q30	The company studies underlying trends or patterns in its customer behaviour	CuA	0.8473		
f34	q32	We regularly collect data on our competitors' activities	CoA	0.8459		
f35	q33	All company staff are alert to monitoring and reporting on competitive activity	CoA	0.8504		
f36	q34	We regularly analyse our competitors' marketing programs	CoA	0.8412		
f37	q35	Our top management team regularly discuss competitors' activities	CoA	0.8531		

f38	q36	We have a special competitive intelligence unit in our organization	CoA	0.8619		
f55	q53	We respond rapidly to competitors' actions	CoR	0.8517		
					0.8642	0.8650
f32	q30	The company studies underlying trends or patterns in its customer behaviour	CuA	0.7712		
f33	q31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	CuA	0.7579		
f40	q38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	EA	0.7849		
f41	q39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	EA	0.7582		
f42	q40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	EA	0.7883		
f44	q42	We spend time gaining an understanding of our various stakeholder groups' needs	EA	0.7701		
f62	q60	We consider all our stakeholders in our strategies	ER	0.7740		
					0.7982	0.8016
f20	q18	All departments are involved in the preparation of the company's strategic plans	IC	0.6875		
f22	q20	Market information is shared with all departments	IC	0.6572		
f23	q21	The marketing people in our organization interact frequently with other departments on an informal basis	IC	0.7124		
f24	q22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	IC	0.7148		
f25	q23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	IC	0.7020		
f26	q24	The IT people in this business unit share a lot of information about technology with other departments	IC	0.7368		
					0.7398	0.7381

f53	q51	We don't hesitate to compete with our suppliers	MD	0.5370		
f54	q52	We seek opportunities for either forward or backward integration, e.g. by acquiring our distributors or suppliers	MD	0.3960		
f59	q57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	MD	0.3789		
f60	q58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	MD	0.4663		
					0.5220	0.5181
f56	q54	We target opportunities based on competitive advantage	CoR	0.4418		
f57	q55	We target customers and customer groups where we have or can develop, a competitive advantage	CoR	0.4667		
f58	q56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	CoR	0.7300		
					0.6412	0.6598
f61	q59	We tend to take longer than our competitors to respond to a change in regulatory policy	ER	n/a		
f39	q37	We are slow to detect fundamental shifts in our industry (e.g. technology)	EA	n/a		
					0.5013	0.5038
f52	q50	We are slow to start business with new suppliers even though they are better than existing ones	ER	n/a		
f43	q41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	EA	n/a		
					0.3511	0.3525
f58	q56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	CoR	0.2669		
f60	q58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	MD	0.3081		
f64	q62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	ER	0.3322		
					0.3964	0.3968

Note: Shaded rows highlight cross-loading of items

<u>Legend</u>

CuR – Customer responsiveness
CuA - Customer analysis
ER –   Environmental responsiveness
CoA – Competitor analysis

CoR – Competitor responsiveness
EA –   Environmental analysis
IC –   Interfunctional coordination
MD –   Market driving

Appendix 30

Phase 2: Reliability of initial factor analysis of market orientation items, according to predetermined number of factors

Market orientation: Reliability of initial factor analysis, according to predetermined number of factors

Item		Questions	Original factor	Alpha if item deleted	Factor alpha	Standardized alpha
f45	q43	We have a strong commitment to our customers	CuR	0.8537		
f46	q44	We put a lot of emphasis on building relationships with major customers	CuR	0.8637		
f47	q45	Concerted efforts are made to help meet the needs of our customers	CuR	0.8539		
f48	q46	We look for ways to create customer value in our products	CuR	0.8594		
f49	q47	A high priority is placed on increasing customer satisfaction	CuR	0.8518		
f50	q48	We tend to turn a deaf ear to customer complaints	CuR	0.8684		
f62	q60	We consider all our stakeholders in our strategies	ER	0.8721		
f30	q28	A key strength is effective customer analysis	CuA	0.8659		
f31	q29	The company regularly researches customer needs and preferences	CuA	0.8696		
					0.8755	0.8850
f30	q28	A key strength is effective customer analysis	CuA	0.8575		
f31	q29	The company regularly researches customer needs and preferences	CuA	0.8564		
f32	q30	The company studies underlying trends or patterns in its customer behaviour	CuA	0.8555		
f34	q32	We regularly collect data on our competitors' activities	CoA	0.8557		
f35	q33	All company staff are alert to monitoring and reporting on competitive activity	CoA	0.8590		
f36	q34	We regularly analyse our competitors' marketing programs	CoA	0.8519		
f37	q35	Our top management team regularly discuss competitors' activities	CoA	0.8625		
f38	q36	We have a special competitive intelligence unit in our organization	CoA	0.8673		
f41	q39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	EA	0.8642		
f55	q53	We respond rapidly to competitors' actions	CoR	0.8600		
					0.8713	0.8721
f20	q18	All departments are involved in the preparation of the company's strategic plans	IC	0.6875		
f22	q20	Market information is shared with all departments	IC	0.6572		

f23	q21	The marketing people in our organization interact frequently with other departments on an informal basis	IC	0.7124		
f24	q22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	IC	0.7148		
f25	q23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	IC	0.7020		
f26	q24	The IT people in this business unit share a lot of information about technology with other departments	IC	0.7368		
					0.7398	0.7381
f40	q38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	EA	0.7244		
f41	q39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	EA	0.6975		
f42	q40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	EA	0.7245		
f43	q41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	EA	0.7388		
f44	q42	We spend time gaining an understanding of our various stakeholder groups' needs	EA	0.7143		
f33	q31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	CuA	0.7064		
					0.7534	0.7558
f53	q51	We don't hesitate to compete with our suppliers	MD	0.5370		
f54	q52	We seek opportunities for either forward or backward integration, e.g. by acquiring our distributors or suppliers	MD	0.3960		
f59	q57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	MD	0.3789		
f60	q58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	MD	0.4663		
					0.5220	0.5181
f56	q54	We target opportunities based on competitive advantage	CoR	0.4418		

f57	q55	We target customers and customer groups where we have or can develop, a competitive advantage	CoR	0.4667		
f58	q56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	CoR	0.7300		
					0.6412	0.6598
f24	q22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	IC	0.4526		
f43	q41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	EA	0.4500		
f39	q37	We are slow to detect fundamental shifts in our industry (e.g. technology)	EA	0.3643		
f52	q50	We are slow to start business with new suppliers even though they are better than existing ones	ER	0.4844		
					0.5112	0.5121
f61	q59	We tend to take longer than our competitors to respond to a change in regulatory policy	ER	n/a		
f64	q62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	ER	n/a		
					0.3537	0.3539

Note: Shaded rows highlight cross-loading of items

Legend

CuR – Customer responsiveness
CuA - Customer analysis
ER –   Environmental responsiveness
CoA – Competitor analysis

CoR – Competitor responsiveness
EA –   Environmental analysis
IC –   Interfunctional coordination
MD – Market driving

Appendix 31

Phase 2: Reliability of initial factor analysis of market orientation items, according to predetermined factors

Market orientation: Reliability of initial factor analysis, according to predetermined factors

Item		Questions	Original factor	Alpha if item deleted	Factor alpha	Standardized alpha
f20	q18	All departments are involved in the preparation of the company's strategic plans	IC	0.6875		
f22	q20	Market information is shared with all departments	IC	0.6572		
f23	q21	The marketing people in our organization interact frequently with other departments on an informal basis	IC	0.7124		
f24	q22	When one department finds out something important about our competitors or suppliers, it is slow to alert other departments	IC	0.7145		
f25	q23	We regularly have interdepartmental meetings to update our knowledge of environmental issues, e.g. regulatory requirements	IC	0.7020		
f26	q24	The IT people in this business unit share a lot of information about technology with other departments	IC	0.7368		
					0.7398	0.7381
f30	q28	A key strength is effective customer analysis	CuA	0.7534		
f31	q29	The company regularly researches customer needs and preferences	CuA	0.7428		
f32	q30	The company studies underlying trends or patterns in its customer behaviour	CuA	0.7271		
f33	q31	We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers	CuA	0.8115		
					0.8094	0.8081
f34	q32	We regularly collect data on our competitors' activities	CoA	0.7297		
f35	q33	All company staff are alert to monitoring and reporting on competitive activity	CoA	0.7527		
f36	q34	We regularly analyse our competitors' marketing programs	CoA	0.7144		
f37	q35	Our top management team regularly discuss competitors' activities	CoA	0.7625		
f38	q36	We have a special competitive intelligence unit in our organization	CoA	0.7965		
					0.7915	0.7936

f39	q37	We are slow to detect fundamental shifts in our industry (e.g. technology)	EA	0.7064		
f40	q38	We frequently collect and evaluate general macro-economic information (e.g. interest rate)	EA	0.6568		
f41	q39	We collect and evaluate information concerning general social trends (e.g. environmental consciousness)	EA	0.6366		
f42	q40	We maintain contacts with officials of government and regulatory bodies (e.g. Dept of Agriculture)	EA	0.6588		
f43	q41	We spend time with our suppliers to learn more about various aspects of their business (e.g. manufacturing process)	EA	0.6624		
f44	q42	We spend time gaining an understanding of our various stakeholder groups' needs	EA	0.6421		
					0.7011	0.7016
f45	q43	We have a strong commitment to our customers	CuR	0.8407		
f46	q44	We put a lot of emphasis on building relationships with major customers	CuR	0.8569		
f47	q45	Concerted efforts are made to help meet the needs of our customers	CuR	0.8396		
f48	q46	We look for ways to create customer value in our products	CuR	0.8601		
f49	q47	A high priority is placed on increasing customer satisfaction	CuR	0.8455		
f50	q48	We tend to turn a deaf ear to customer complaints	CuR	0.8804		
					0.8754	0.8792
f52	q50	We are slow to start business with new suppliers even though they are better than existing ones	ER	0.3915		
f61	q59	We tend to take longer than our competitors to respond to a change in regulatory policy	ER	0.2652		
f62	q60	We consider all our stakeholders in our strategies	ER	0.3317		
f64	q62	If a special interest group (e.g. consumer group) were to publicly accuse us of harmful business practices, we would respond to the allegation immediately	ER	0.3714		
					0.4087	0.4109

f53	q51	We don't hesitate to compete with our suppliers	MD	0.5370		
f54	q52	We seek opportunities for either forward or backward integration, e.g. by acquiring our distributors or suppliers	MD	0.3960		
f59	q57	If necessary, we will eliminate our competitors by means of mergers, take-overs, etc.	MD	0.3789		
f60	q58	We seek to influence the market by helping to remove competitor constraints, e.g. by regulations	MD	0.4663		
					0.5220	0.5181
f55	q53	We respond rapidly to competitors' actions	CoR	0.6412		
f56	q54	We target opportunities based on competitive advantage	CoR	0.5987		
f57	q55	We target customers and customer groups where we have or can develop, a competitive advantage	CoR	0.6406		
f58	q56	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately	CoR	0.6863		
					0.7045	0.7133

Legend

IC – Interfunctional coordination   CuR – Customer responsiveness
CuA - Customer analysis   CoR – Competitor responsiveness
CoA – Competitor analysis   ER – Environmental responsiveness
EA - Environmental analysis   MD – Market driving

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Appendix 32

Phase 2: Comparison of three approaches towards factor analysis of market orientation items

Comparison of three approaches towards factor analysis of market orientation items

MO initial factors (ref.)

Factor	Question	Original factor	Factor alpha
f45	q43	CuR	
f46	q44	CuR	
f47	q45	CuR	
f48	q46	CuR	
f49	q47	CuR	
f50	q48	CuR	
			0.8754
f30	q28	CuA	
f31	q29	CuA	
f32	q30	CuA	
f34	q32	CoA	
f35	q33	CoA	
f36	q34	CoA	
f37	q35	CoA	
f38	q36	CoA	
f55	q53	CoR	
			0.8642
f33	q31	CuA	
f40	q38	EA	
f41	q39	EA	
f42	q40	EA	
f44	q42	EA	
f62	q60	ER	
			0.7712

MO 8 factors (ref.)

Factor	Question	Original factor	Factor alpha
f45	q43	CuR	
f46	q44	CuR	
f47	q45	CuR	
f48	q46	CuR	
f49	q47	CuR	
f50	q48	CuR	
f62	q60	ER	
			0.8698
f30	q28	CuA	
f31	q29	CuA	
f32	q30	CuA	
f34	q32	CoA	
f35	q33	CoA	
f36	q34	CoA	
f37	q35	CoA	
f38	q36	CoA	
f55	q53	CoR	
			0.8642
f40	q38	EA	
f41	q39	EA	
f42	q40	EA	
f43	q41	EA	
f44	q42	EA	
f33	q31	CuA	
			0.7534

MO predetermined factors (ref.)

Factor	Question	Original factor	Factor alpha
f45	q43	CuR	
f46	q44	CuR	
f47	q45	CuR	
f48	q46	CuR	
f49	q47	CuR	
f50	q48	CuR	
			0.8754
f30	q28	CuA	
f31	q29	CuA	
f32	q30	CuA	
f33	q31	CuA	
			0.8094
f34	q32	CoA	
f35	q33	CoA	
f36	q34	CoA	
f37	q35	CoA	
f38	q36	CoA	
			0.7915
f39	q37	EA	
f40	q38	EA	
f41	q39	EA	
f42	q40	EA	
f43	q41	EA	
f44	q42	EA	
			0.7011

f20	q18	IC	
f22	q20	IC	
f23	q21	IC	
f24	q22	IC	
f25	q23	IC	
f26	q24	IC	
			0.7398
f53	q51	MD	
f54	q52	MD	
f59	q57	MD	
f60	q58	MD	
			0.5220
f56	q54	CoR	
f57	q55	CoR	
			0.7300
f61	q59	ER	
f39	q37	EA	
f52	q50	ER	
f43	q41	EA	
f58	q56	CoR	
f64	q62	ER	
			0.5393

f20	q18	IC	
f22	q20	IC	
f23	q21	IC	
f24	q22	IC	
f25	q23	IC	
f26	q24	IC	
			0.7398
f53	q51	MD	
f54	q52	MD	
f59	q57	MD	
f60	q58	MD	
			0.5220
f56	q54	CoR	
f57	q55	CoR	
f58	q56	CoR	
			0.6412
f39	q37	EA	
f52	q50	ER	
			0.4500
f61	q59	ER	
f64	q62	ER	
			0.3537

f20	q18	IC	
f22	q20	IC	
f23	q21	IC	
f24	q22	IC	
f25	q23	IC	
f26	q24	IC	
			0.7398
f53	q51	MD	
f54	q52	MD	
f59	q57	MD	
f60	q58	MD	
			0.5220
f55	q53	CoR	
f56	q54	CoR	
f57	q55	CoR	
f58	q56	CoR	
			0.7045
f52	q50	ER	
f61	q59	ER	
f62	q60	ER	
f64	q62	ER	
			0.4087

Legend

Agg - Aggressiveness   RA – Risk aversion
Fut – Futurity   Anal – Analysis
Inn - Innovativeness   I Def – Internal defensiveness
Pro - Proactiveness   E Def – External defensiveness

Appendix 33

Phase 2: Reliability of initial unconstrained factor analysis of dependent variable items

Dependent variables: Reliability of initial, unconstrained factor analysis

Item		Questions	Original factor	Alpha if item deleted	Factor alpha	Standardized alpha
f65	q63	Net profits	BP	0.8829		
f66	q64	Return on investment	BP	0.8861		
f67	q65	Revenue growth	BP	0.8701		
f68	q66	Sales growth	BP	0.8817		
f69	q67	Market share gains	BP	0.9099		
f70	q68	Overall performance	BP	0.8657		
					0.9008	0.9021
f69	q67	Market share gains	BP	0.8402		
f74	q72	Return on marketing investment	MP	0.7129		
f75	q73	Efficiency of marketing promotions	MP	0.7638		
f76	q74	Overall marketing performance	MP	0.7198		
					0.808	0.8206
f71	q69	Customer satisfaction	MP	0.8107		
f72	q70	Customer retention	MP	0.7278		
f73	q71	Customer loyalty	MP	0.7417		
					0.8277	0.8274

<u>Legend</u>

BP – Business performance
MP – Marketing performance

Appendix 34

Phase 2: Reliability of initial factor analysis of dependent variable items, according to predetermined number of factors

Dependent variables: Reliability of initial factor analysis, according to predetermined number of factors

Item		Questions	Original factor	Alpha if item deleted	Factor alpha	Standardized alpha
f65	q63	Net profits	BP	0.8829		
f66	q64	Return on investment	BP	0.8861		
f67	q65	Revenue growth	BP	0.8701		
f68	q66	Sales growth	BP	0.8817		
f69	q67	Market share gains	BP	0.9099		
f70	q68	Overall performance	BP	0.8657		
					0.9008	0.9021
f69	q67	Market share gains	BP	0.8049		
f71	q69	Customer satisfaction	MP	0.7869		
f72	q70	Customer retention	MP	0.7900		
f73	q71	Customer loyalty	MP	0.7963		
f74	q72	Return on marketing investment	MP	0.7793		
f75	q73	Efficiency of marketing promotions	MP	0.8049		
f76	q74	Overall marketing performance	MP	0.7748		
					0.8154	0.8202

Legend

BP – Business performance
MP – Marketing performance