TOWARDS A BETTER UNDERSTANDING OF
INFORMATION SYSTEMS STRATEGY OPTIONS
AND ITS LINK WITH BUSINESS STRATEGY

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Submitted in partial fulfilment of the requirements for the
Master's Degree in Business Administration,
MBA Unit, PE Technikon.

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January 2004
DECLARATION

I declare that the dissertation, which I hereby submit for the degree, Master of Business Administration, is my own work and all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

ACKNOWLEDGEMENTS

A special thank you to Dr Tim Hutton for being a role model, for his encouragement, direction and mentorship not only in the compilation of this dissertation, but also during my MBA studies.

Senior management at Volkswagen, especially Ashraf Karodia for all his time and input.

ABSTRACT

There is considerable evidence that the strategic use of Information Systems can lead to a competitive advantage. There is however, a marked lack of understanding of the options available, as well as the smooth coordination of Information Systems strategy with Business strategy.

This paper provides insight into the role of Information Systems and its link with business strategy. It focuses on Information Systems strategy options, and explores the criteria needed for successful Information Systems strategy and Business strategy alignment.

The paper presents and examines the results of a study of strategic alignment at Volkswagen of South Africa. Data was obtained from business and Information Technology executives. The result of the study enables Volkswagen not only to benchmark themselves, but also provides direction to enable successful business/IT alignment. It identifies specific actions necessary to ensure that IT is being used to appropriately enable or drive the business strategy.
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1.1 INTRODUCTION

Baker and Galliers (1995:9) introduce Information Technology (IT) in business as an area that has changed considerably over the last three decades. They continue in saying that the original concept and practice involved the automation of simple, and single, existing manual and pre-computer mechanical processes e.g. the payroll was automated to print payslips at month end. In these early days the Information Systems (IS) function was known as data processing (DP). Traditional data processing relates to accounting, order processing and other administrative tasks. This suggests that much of IS was being used in the backroom, support areas rather than in the frontline, key commercial areas.

The next stage saw Information Systems deployed to achieve integration and rationalisation of these separate, single systems. These were used to increase management effectiveness by satisfying their information requirements for decision making. Baker & Galliers (1995:9) describe these phases as “data processing” to “management information” to “information processing”.

In each of these approaches, IS was used primarily as an operational support tool.

Baker & Galliers (1995:27) state that Information Systems are moving out of the backroom, from a low level support position, to emerge as the nerve centres of organisations and competitive weapons at the front end of businesses.

Laudon and Laudon (2002:17) concur that over the years, Information Systems have come to play a larger role in organisations, and depict this evolution in Figure 1-1.

**Figure 1-1: The widening scope of Information Systems**

![Figure 1-1: The widening scope of Information Systems](image)

Source: Laudon and Laudon (2002:17)
Early systems brought about technical changes that were relatively easy to accomplish. Later systems affected managerial control and behaviour, and influenced core activities. Today Information Systems (IS) extend far beyond the boundaries of the firm to encompass vendors, customers and even competitors.

IS has therefore evolved from an efficiency to effectiveness to strategic advantage to an integrated portfolio focus. These are called strategic Information Systems. Peppard (1993:13) suggests that by using IS/IT strategically, organisations attempt to externally disturb competitive forces at work in an industry and in doing so change the industry structure.

Luftman (2003:v) states that a substantial shift has taken place, and that business people are beginning to understand the importance of IS. Many suggest that those competitors with the best Information Systems and intelligence will be the winners. In numerous cases it is impossible to distinguish business strategies from IS strategies. About half of all investments in Information Technology are driven by functional (line-of-business; e.g., marketing, finance, research and development) executives.

Luftman goes on to say that many CIO’s (Chief Information Officers) sit at executive board meetings where Information Technology is translated into business value.
Luftman (2003:v) suggests that more and more industries are recognizing that Information Technology can be instrumental in both integrating cross-organisational resources and shaping core business capabilities. An example would be that of ignoring the Internet as a fundamental part of the business strategy, is simply not an option. The Information age has opened new channels for selling products. Empowered by evolving technologies, customers are unforgiving.

Luftman concludes that misfortune awaits the organisation that does not meet the challenge.

Luftman (2003:vi) states that business is moving from technology as supporting the business to technology as an integral part of the business. As with all transformations, these changes do not come easily. Executives must take charge of their organisation’s future in the Information age. At a minimum, having a harmonious IT-business relationship is key. One thing that has not changed is the challenge of aligning IT and business strategies.

IS has certainly evolved over the years. Peppard (1993:2) suggests that no business strategy is now complete without an IS/IT strategy and that IS/IT must not only support business strategy but may also provide a strategic opportunity in its own right.

Thus today IS activities are being aimed at the frontline, customer oriented processes and activities relating to the production, marketing, delivery, and servicing of the product. Therefore, the IS function needs to enjoy more
exposure to senior management and should even influence business strategy so as to gain the maximum advantage that IS can provide in realising the business strategy.

Chapter one has quoted many sources that agree that the early stages of IS/IT saw IS being used primarily as an operational support tool. It is the researcher’s belief that this is largely still the case in South Africa, and that the significance of this dissertation can significantly add to current IS/IT operations and future opportunities.

This leads to the following problem, which will be addressed by this research:

1.2 MAIN PROBLEM
1.2.1 What is meant by Information Systems strategy and how is it linked to the business strategy?

1.3 SUB-PROBLEMS
1.3.1 What is the role of Information Systems in today’s organisation?

1.3.2 What strategy should an organisation follow to use their Information System to support and influence their corporate goals and objectives?
1.3.3 What do knowledgeable people feel is industry doing to ensure that IS strategy supports corporate goals and objectives?

1.4 DEMARCATION OF THE RESEARCH

As the role of Information Systems will differ from organisation to organisation, it was felt that focusing on a leading company in the automotive industry, would provide a detailed view into the success or failure of the strategic use of IS, and its business/IT alignment.

1.4.1 Management level

The study will be limited to senior business and IS/IT management. All other levels such as operational and supervisory staff will be excluded.

1.4.2 Organisations

The study will focus on Volkswagen South Africa.

According to many NAAMSA reports, Volkswagen constantly enjoys a top 2 position in passenger car sales. Volkswagen South Africa has more than doubled its market share since the 1980’s.
A recent survey conducted by the Corporate Research Foundation rated Volkswagen among the best and most promising companies to work for in South Africa.

Volkswagen’s IS/IT function is reputed to be one of the best in the country. In a Financial Mail (2001) article the IT General Manager says they were told that if they wanted to be part of the VW group, competing on equal footing with other VW plants, they needed to comply with the groups global systems. This fact could explain why they have a good IT reputation. It can be seen in the many systems they’ve developed to support their business strategy. An example of this is Volkswagen being the first vehicle assembler in Africa to offer build to order (www.volkswagen.co.za).

1.4.3 Subject of evaluation

The role of Information Systems, Information Systems strategy and the Alignment of Information Systems strategy to business strategy will be examined.

1.4.4 Basis for the model

It is intended in this study to develop and use a model based upon the one developed over many years by Prof. J. Luftman. The model will be made up from Luftman’s Strategic Alignment Maturity model. This model will assist in positioning IS and its alignment with the business strategy.
The model can then at any later stage be used to evaluate progress in IS alignment against the business strategy.

1.5 DEFINITION OF KEY TERMS

There are many conflicting and overlapping definitions of Information Technology and Information Systems. Both terms are often used interchangeably, but it is important to differentiate between the two. For the purposes of this study they are used interchangeably. Information Systems (IS) existed in organisations long before the advent of Information Technology (IT), and even today there are still many Information Systems present in organisations without any technology in sight.

1.5.1 Information Systems

Laudon and Laudon (2002:7) defines Information Systems as follows: Interrelated components working together to collect, process, store and disseminate Information to support decision making, coordination, control, analysis, and visualisation in an organisation.

Peppard (1993:4) defines an Information System as the flow of Information in an organisation and between organisations, encompassing the Information the business creates, uses and stores.
1.5.2 Information Systems strategy

Information Systems (IS) strategy was defined by Earl (1989:67) as the long-term, directional plan which decides what to do with Information Technology (IT). IS strategy is seen to be business-led and demand-orientated, and concerned with exploiting IT either to support business strategies or create new strategic options.

Luftman (2003:19) defines IS Strategy as a set of decisions made by IS and senior management. It includes the deployment of technology infrastructures, and an understanding of the relationship of technology choices to business choices.

Peppard (1993:18) states that IS strategy is concerned primarily with aligning IS development with business needs and with seeking strategic advantage from IT.

1.5.3 Aligned IS Strategy

Luftman (2003:25) states that when an IS strategy is aligned with the business strategy an intimate understanding of customers and evolving needs occurs. Managing knowledge and Information-based asset management is core to an aligned strategy. The strategy is continuously innovative and brings about strategically relevant new processes.
1.5.4 Strategic Information System

Laudon and Laudon (2002:85) define a Strategic Information System as a computer system at any level of the organisation that change goals, operations, products, services, or environmental relationships to help the organisation gain a competitive advantage.

1.5.5 Information Technology

The Free On-line Dictionary of Computing defines Information Technology as follows: (IT) Applied computer systems - both hardware and software, and often including networking and telecommunications, usually in the context of a business or other enterprise.

Peppard (1993:5) defines IT as representing the technical perspective and includes telecommunications, computers and automation techniques.

1.5.6 Information Technology Strategy

Peppard (1993:18) states that the IT strategy relates to how the IS strategy requirements are going to be delivered. It determines the technology that will be used, to deliver the IS strategy.

1.6 SIGNIFICANCE OF THE RESEARCH

The research is significant in the fact that to compete in today’s marketplace, factors like location economies are not suffice to remain
Many international companies exploit IS/IT to gain competitive advantage. Many international companies have IS directors at board level that influence future strategy.

Rapp (2002:23) states that a good business strategy includes IS/IT as an integral element. He proposes that there should be no freestanding IS/IT strategy or a purely IS/IT-based business strategy. Rapp concludes that the firm’s general business strategy (and thus its IS/IT component) emerges from the firm’s competitive environment and reflects the need to differentiate its products and services from its rivals.

The research will assist South African companies in understanding the benefits that can be achieved by focusing more on IS/IT, and its involvement in strategy. This will enable them not only to remain competitive, but possibly increase their share of the global market.

The research also focuses on the area of IS/IT and business alignment. The questionnaire will assist companies in understanding the current alignment in their organisations and expose areas and opportunities to strengthen their alignment. This will result in the use of IS/IT to maximise the business strategy and therefore profits.

1.7 RESEARCH DESIGN

In this section the methodology to be followed in the research project is described:
1.7.1 Research Methodology

In conducting the research for this project it was decided to adopt the following procedure to solve the main and sub-problems.

1.7.2 Literature Study

A literature study will be conducted to identify the key focus areas for IS/IT. This will be expanded upon in studying the fields of IS/IT strategy, the role of IS/IT and the alignment of IS/IT and business strategies.

1.7.3 Empirical Study

The empirical study will focus on the field of alignment of the IS strategy with the business strategy. Luftman’s Strategic Alignment Maturity model will be used as a basis in the evaluation of the IT-business strategy alignment.

1.8 PROGRAM OF STUDY

Chapter One  The problem statement and the definition of key terms.

Chapter Two  The literature study focusing on the role of Information Systems, IS Strategy options and IS/IT – business strategy alignment.

Chapter Three  The design of the empirical study.
Chapter Four  The discussion of the results, conclusion and further research recommendations.

1.9 SUMMARY

In this chapter, the subjects under assessment were introduced. The main problem together with the sub-problems were identified. Key terms were defined to enable better understanding. The research was demarcated in order to make the study manageable. The proposed program of study was set out. The next chapter handles the literature study into the role of Information Systems, IS Strategy options and IS/IT / business strategy alignment.
2.1 THE STRATEGIC ROLE OF INFORMATION SYSTEMS

2.1.1 Introduction

Chapter One provided background into the development and role of Information Systems over the years.

Chapter two focuses on what current literature reveals on the role of Information Systems, IS/IT strategy options and IT - business alignment.

Section 2.1 examines current literature and answers Sub Problem 1.3.1 - What is the role of Information Systems in today’s organisation? The significance of this question lies in the fact that for IS/IT to deliver business value, an understanding of its role and potential is crucial.

Section 2.2 examines current literature and answers Sub Problem 1.3.2 – What strategy should an organisation follow to use their Information System to support and influence their corporate goals and objectives.
Section 2.3 examines current literature and answers Sub Problem 1.3.3 – What do knowledgeable people feel is industry doing to ensure that IS strategy supports corporate goals and objectives.

### 2.1.2 The Changing Role of IS

The role of IS/IT has changed over the years. It no longer just serves a business, but is integral in business strategy. IS/IT unlike other functional areas, impacts every area of business. The role of IS/IT is of practical interest mainly due to the linkages that are said to exist between that of IS/IT and competitive advantage. Competitive advantage is what every organisation strives for in today's business environment.

One of the most well known frameworks for analysing competitiveness is Porter’s competitive forces model. The model recognises five major forces that could endanger a company’s position in a given industry. The model can be used to demonstrate how IS/IT can enhance the competitiveness of corporations as depicted in Figure 2-1.
2.1.3 The impact of competitive forces and the role of IS/IT

Peppard (1993:13) proposes that with the strategic use of IS/IT, organisations attempt to disturb the competitive forces at work in an industry and in doing so change the industry structure.

McLean, Turban and Wetherbe (2002:99) refer to Porter and Miller (1985) in that they cite that the influence of IS/IT has been so far reaching, as to alter fundamentally the rules by which firms in an industry compete with each other. They advocate that IS/IT is changing the nature of competition in three particular ways. Firstly, industry structure and the rules of competition have changed as a result of IS/IT. Secondly, organisations have outperformed their competitors by using IS/IT. Finally, organisations have created new businesses by using IS/IT.
Griffiths and Ward (1997:86) offers the following potential for IS/IT when examining the five forces.

2.1.3.a Threat of new entrants

The business implications of the threat of new entrants are that the business will probably need to provide additional capacity. The market will be exposed to reduced prices and there will be a new basis for competition. Potential IS/IT responses could be to provide entry barriers and to reduce access by exploiting existing economies of scale, using IS/IT to differentiate its products and/or services, to control the distribution channels and to segment the market.

2.1.3.b Buyer power high

The business implications are that prices will be forced down, higher quality will be demanded. Service flexibility will become a requirement and competition will be encouraged. Potential IS/IT responses could be to differentiate its products and/or services and improve the price/performance ratios. IS/IT can be used to increase the switching costs of buyers and to facilitate buyer product selection.

2.1.3.c Supplier power high

The business implications are that the supplier could easily raise prices/costs, reduce the quality and availability its products and/or services. Potential IS/IT
responses could be to implement supplier sourcing systems, to extend quality control into the supplier's operation, and to do forward planning with the suppliers.

2.1.3.d Substitute products threatened

The business implications are that the potential market and profits will be limited, and that price ceilings will be imposed. Potential IS/IT responses could be to improve the price/performance ratios, to redefine products and/or services to increase value and to redefine the market segments.

2.1.3.e Intense competition from rivals

The business implications are that price competition will be increased, product development will become a necessity, service and distribution will become critical and customer loyalty will become a requirement. Potential IS/IT responses could be to differentiate its products and/or services in the distribution channel and consumer market, to improve the price/performance ratios, and to get closer to the end consumer and hence fully understanding their usage requirements.

McFarlan (1984:91) claims that when analysing the five competitive forces, if a company answers yes to any one or more of the questions below, then IS/IT represents a strategic resource to that company.

- Can IS/IT build barriers to entry?
- Can IS/IT build in switching costs?
• Can IS/IT change the basis of competition?
• Can IS/IT change the balance of power in supplier relationships?
• Can IS/IT generate new products?

The following table highlights the differences between those of a traditional IS/IT system and a strategic IS/IT system as observed in a study of 150 cases by John Ward of the Cranfield School of Management.

<table>
<thead>
<tr>
<th>Strategic IS/IT</th>
<th>Traditional IS/IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>External focus on customers, suppliers, competition, and other stakeholders.</td>
<td>Focus on internal processes.</td>
</tr>
<tr>
<td>Adding value - differentiation via better products &amp; services.</td>
<td>Cost reduction.</td>
</tr>
<tr>
<td>Sharing the benefits - within the company and with all stakeholders.</td>
<td>Localised benefits.</td>
</tr>
<tr>
<td>Understanding customer needs and delivering value and solutions to problems.</td>
<td>Solving internal problems.</td>
</tr>
<tr>
<td>Business-driven innovation without emphasis on the latest technology.</td>
<td>Technology-led development.</td>
</tr>
<tr>
<td>Incremental development - stepped approach, often by trial and error or prototyping.</td>
<td>Total system defined and developed.</td>
</tr>
<tr>
<td>Exploiting the Information to develop the business.</td>
<td>No exploitation beyond initial system.</td>
</tr>
</tbody>
</table>

Source: Adapted from Peppard (1993:15)

In Table 2.1 Peppard (1993:15) shows that there is still a place for traditional IS/IT systems. Many strategic systems supplement existing systems and in many cases derive from them.
Turban, Mclean and Wetherbe (2002:90) quotes Porter (1985 and 1996) by suggesting that a strategy needs to be developed aiming at establishing a profitable and sustainable position against these five forces. To do so, a company needs to develop a strategy of performing activities differently than a competitor. Porter proposed the following strategies:

2.1.4 Generic business strategies

There are a number of business strategies that are used as a matter of course by most organisations. These are discussed below.

a  Cost Leadership

Cost leadership involves competing with lowest cost in the industry.

b  Differentiation

Differentiation involves competing with value and uniqueness that the industry does not currently offer.

c  Focus

Focus involves competing by restricting one’s market, with the selection of a niche, and achieve either a cost leadership or differentiation strategy in the chosen segment.

IS/IT can be applied directly to achieving competitive advantage by giving organisations new ways to outperform their rivals. It can also be used either
as a weapon to combat competitive forces or to act directly in support of the business strategy.

Peppard (1993:65) proposes that IS/IT can be used to support the three generic business strategies. IS/IT can support the overall cost leadership strategy by permitting major cost reductions or cost containment, particularly in clerical and other support staff. He goes on to say IS/IT can also help achieve better utilisation of resources, decrease in inventory, reduction of shrinkage and waste in raw material use etc. These items will directly influence the company’s value chain.

**Figure 2-2: Porter’s Generic Value Chain**

A firm’s value chain as depicted in Figure 2-2, is part of a larger stream of activities, which Porter calls a value system. Turban et al (2002:96) explains that a value system includes the suppliers that provide the inputs necessary to the firm and their value chains. Once the firm creates products, they pass
through the value chains of distributors (who also have their own value chains), all the way to the buyers (customers), who also have their own value chains. All parts of these chains are included in the value system.

Gaining and sustaining a competitive advantage, and supporting the advantage by means of IS/IT, requires an understanding of this entire value system.

O’Brien (1997:341) identifies a variety of strategic Information Systems that can be applied to a firm’s basic activities for competitive advantage.

**Figure 2-3: Strategic Information Systems and the Value Chain**

These strategic Information systems applied to primary business activities include an automated warehouse system to support inbound logistic activities involving storage of inventory, computer-aided manufacturing (CAM) systems for manufacturing operations, and online order entry systems to improve
outbound logistics. Information Systems can also support marketing and sales activities by providing analyses of present and potential markets, and can improve customer service by offering expert system diagnostic services to customers.

Parsons (1987:198) links the generic business strategies to the value chain by suggesting potential IS/IT application areas:

**Table 2-2: Potential IS/IT application areas**

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Low Cost</th>
<th>Differentiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Design and Development</td>
<td>• Product engineering systems</td>
<td>• Project control systems</td>
</tr>
<tr>
<td></td>
<td>• Integrated systems to manufacturing</td>
<td>• R&amp;D databases</td>
</tr>
<tr>
<td></td>
<td>• Professional workstations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Electronic mail</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Computer aided design (CAD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Custom engineering systems</td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td>• Processing engineering systems</td>
<td>• Computer aided manufacturing for flexibility</td>
</tr>
<tr>
<td></td>
<td>• Inventory management</td>
<td>• Quality assurance systems</td>
</tr>
<tr>
<td></td>
<td>• Process control systems</td>
<td>• Systems to suppliers</td>
</tr>
<tr>
<td></td>
<td>• Labour control systems</td>
<td>• Quality monitoring systems for suppliers</td>
</tr>
<tr>
<td>Marketing</td>
<td>• Streamlined distribution system</td>
<td>• Sophisticated marketing system</td>
</tr>
<tr>
<td></td>
<td>• Modelling capabilities</td>
<td>• Market databases</td>
</tr>
<tr>
<td></td>
<td>• Centralised control systems</td>
<td>• IT displays and promotion</td>
</tr>
<tr>
<td></td>
<td>• Econometric modelling systems</td>
<td>• Telemarketing</td>
</tr>
<tr>
<td></td>
<td>• High service level distribution system</td>
<td>• Competition analysis systems</td>
</tr>
<tr>
<td>Sales</td>
<td>• Sales control systems</td>
<td>• Differential pricing systems</td>
</tr>
<tr>
<td></td>
<td>• Advertising monitoring system</td>
<td>• Office-field communication</td>
</tr>
<tr>
<td></td>
<td>• Systems to consolidate sales function</td>
<td>• Customer-sales support</td>
</tr>
<tr>
<td></td>
<td>• Strict incentive-monitoring systems</td>
<td>• Dealer support systems</td>
</tr>
<tr>
<td>Administration</td>
<td>• Cost control systems</td>
<td>• Systems to customers</td>
</tr>
<tr>
<td></td>
<td>• Quantitative planning and budgeting systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Office automation for staff reduction</td>
<td>• Office automation for integration of functions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Environment scanning and nonquantitative planning systems</td>
</tr>
</tbody>
</table>

Source: Adapted from Parsons (1987:198)
2.1.5 Other views on the role of IS/IT

Over and above the roles mentioned, IS/IT also has other roles to play in today’s modern organisation. These include the company being totally built on and around IS/IT (e.g. Amazon.com), IS/IT being regarded as an intangible asset, to that of it being a strategic necessity.

a The digital firm view

Laudon and Laudon (2002:6) view today’s modern organisation as a digital firm. The digital integration within and outside of the firm, from the warehouse to the executives, from suppliers to customers, is changing the way firms are organised and managed. These changes have significant impact on business strategy and the role of IS/IT in the delivery of the strategy.

Henning (1999:1) also views digitisation as the greatest influence on the firm. Labelled the Information revolution, the electronic age, the digital revolution, the silicon age or post modernism, the world has evolved from a previous industrial society to a predominantly digital society.

Linking the digital enterprise to intangible assets - the digital enterprise can forge and seize innovative opportunities that will be the core business skills of the future.
b The Intangible Asset (Competence) view

The International Data Corporation (IDC) in an article titled IS and the Power of Intangible Assets (Tanaszi:2002), proposes that what gives organisations a competitive edge in an uncertain economy is not something they can see or touch. Today's competitive weapons are intangible assets, and IS/IT plays a critical role in generating, developing, and tracking them.

Businesses have always had intangible assets - management talent, organisational capability, and intellectual capital - but these are now being valued as never before. Today, the primary drivers of value in an organisation are non-financial assets, such as brands, innovation, customer loyalty, and research and development.

Technology is at the very heart of intangible value. It provides:

- The connectivity, speed, flexibility, reach, and economical value-creating activities that underly intangible value;
- The structure and the engine for Information flow that feeds creativity;
- The transactional excellence that enables a host of "soft" assets related to customers and operations to emerge and drive value for the firm.

IS/IT makes a huge contribution to intangible assets, and those assets have a huge influence on gaining advantage in today's markets. The challenge for organisations is to assess intangible asset value and the IS/IT role in it.
c The Strategic Necessity Hypothesis

April and Cradock (2000:33) quote Clemons and Row as concluding that a company’s IS/IT application is a strategic necessity rather than a source of competitive advantage.

April and Cradock state that this notion of baseline requirement, has been agreed upon by many IT researches (Floyd and Woodridge: 1990, Kettinger, Grover, Guha and Segars: 1994 and Powell and Dent-Micallef: 1997). It consists of two propositions:

(1) Technology resources provide value to the company by increasing internal and external co-ordinating efficiencies, and companies that do not adopt them will have higher cost structures and therefore competitive disadvantage (April and Cradock: 2000:33) and

(2) Notwithstanding (1), firms cannot expect technology resources alone to produce sustainable advantages because most technology resources are readily available to all companies in competitive factor markets. (April and Cradock 2000:34)
2.1.6 Other IS/IT business specific roles

IS/IT can also be used to assist and accomplish other specific business roles. These include those of being a transformation driver, change agent, enabler of globalisation and that of an inhibitor. These are discussed in more detail below:

a  Transformation driver

IS/IT can be used to create and exploit new markets, link customers to the firm and define new standards of excellence. Luftman (2003:55) suggests that as an enabler of transformation, IS/IT can interconnect people and processes, span organisation boundaries and bridge geographical distances.

b  Change agent

Luftman (2003:56) says that IS/IT can be used to achieve dynamic stability, by having IS/IT supporting business in dynamic changes with no change to business processes. IS/IT can enable or inhibit incremental and radical changes. Innovation within the business may also depend on IS/IT. More recently IS/IT has become an enabler of e-business.

c  Enabler of globalization

IS/IT has and can be utilised to expand business presence beyond current borders. It has become necessary for firms to evaluate their positions in the global marketplace. Robson (1997:276) states that globalisation has removed national shelters for inefficiency. Peppard (1993:29) shows that a key reason
to accelerate product and process development is increased domestic and global competition. Peppard (1993:50) goes on to conclude that IS/IT does offer significant opportunities to survive and prosper to those organisations that are willing to invest the time and effort in utilising what IS/IT has to offer. Laudon and Laudon (2002:4) sum it up by saying that today IS/IT provide the communication and analytical power that firms need for conducting trade and managing businesses on a global scale. To be competitive participants in international markets, firms need powerful information and communication systems.

**d Inhibitor**

Luftman (2003:56) proposes that IT can also be an inhibitor, if it is not strategically aligned with the business strategy, if there is an over-emphasis on technology or from a failure to recognize effective use of IS/IT requires business process change.

**2.1.7 SUMMARY**

In Section 2.1 the strategic role of IS/IT was examined. The topics of generic business strategies, competitive forces and the value chain were expanded upon to highlight areas in which IS/IT can add value and achievement of business goals.

The strategic role of IS/IT is crucial in today’s businesses as it encompasses the entire enterprise, affects all business functions, extends beyond the
business boundaries, affects every level of management, has impact affects on the entire value chain, including suppliers and customers and can be used to create synergy between departments to exploit the full business potential. In today’s world, no business strategy is complete if there is no IS/IT strategy. Planning for IS/IT should be an integral part of any business’s competitive strategy development.

O’Brien (1997:334) proposes that the strategic role of IS involves using IT to develop products, services and capabilities that give a company strategic advantages over the competitive forces it faces in the global marketplace.

The next Section 2.2 takes a look at the various IS/IT strategy options available and possible best-fits with the business strategy.

### 2.2 IS STRATEGY OPTIONS

#### 2.2.1 Introduction

In Section 2.1 the role of Information Systems was researched. Section 2.2 introduces IS/IT strategy options, and examines current literature and answers sub problem 1.2.2 - What strategy should an organisation follow to use their Information System to support and influence their corporate goals and objectives?
The IS strategy should not be formulated without considering and influencing the business strategy, and the fit with the goals of the business strategy. Organisations today realise the importance of IS/IT and the new opportunities that they present.

Companies devote so much time and energy into their business strategies that they rarely come up with a good solid IS/IT strategy. IS/IT strategy is seen to be a subset of business strategy when it should probably take a life unto itself. The role of IS/IT (and therefore IS/IT strategies) as seen in section 2.1, are crucial if a firm is going to maintain competitive advantage in the marketplace. Irrespective of the nature of a business, IS/IT and its related strategy is perceived as the vital driving force to sustain and improve their competitive position.
2.2.2 IS/IT Strategy distinction

Figure 2-4: IS/IT Strategy in context

The above figure shows the distinction between IS and IT strategy. Peppard (1993:18) states that business managers are involved in the IS strategy formulation stage, and that to identify IS opportunities an understanding of IT developments is required.

Peppard (1993:19) expands on this, by suggesting that a lack of an IS strategy results in IT investments that do not support business objectives, inferior management Information, competitor, suppliers and customers gaining advantages over the organisation, localised justification of investments producing benefits which are counter-productive in the overall business
context, loss of control of IS/IT leading to individuals often striving to achieve incompatible objectives through IS/IT, implementations being late, over budget and unsuccessful, continual changes, causing conflict and reducing productivity. It would be fair to assume that if any of the above exist that there is either no IS strategy or the IS strategy is not linked to the business strategy.

**Figure 2-5: Success probability matrix**

<table>
<thead>
<tr>
<th>Execution of the plan is GOOD</th>
<th>IS strategy/business strategy ARE consistent</th>
<th>IS strategy/business strategy ARE NOT consistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success is LIKELY</td>
<td>Success is LIKELY</td>
<td>Failure is EXPECTED</td>
</tr>
<tr>
<td>Problems are LIKELY</td>
<td>Problems are LIKELY</td>
<td>Problems are LIKELY</td>
</tr>
<tr>
<td>Failure is EXPECTED</td>
<td>Failure is EXPECTED</td>
<td>Success is POSSIBLE</td>
</tr>
</tbody>
</table>

Source: Adapted from Robson (1997:174)

Robson (1997:173) states that empirical research shows that IS strategies that have been ‘crafted’ and implemented, represents an organisations chances of success from IS as depicted in Figure 2-5. It shows that the execution of the plan is a major factor in realising success.
2.2.3 Generic IS Strategies

Figure 2-6: Generic IS strategies

![Diagram showing six IS strategies: Centrally planned, Leading edge, Free market, Monopoly, Scarce resource, Necessary evil.]

Source: adapted from text (Robson 1997:136)

Just as Porter’s analysis leads to the identification of three possible generic business postures so Gregory Parsons (1983), as quoted by Robson (1997:137), suggested that all possible IS strategies can be summarized on a six member classification list, this is depicted in Figure 2-6 above. Just like business strategies these are either deliberate or emergent. A discussion of the six member classification list follows below:

a Centrally planned

Management believe that this strategy has a larger overall view and therefore makes for better decisions.

The Centrally planned strategy requires that:

- the strategic significance of IS/IT is well understood and fully acknowledged;
- a significant degree of involvement and knowledge from senior management;
- the planning cycles of the business and IS are closely integrated.

The role of the IS function becomes that of service provider, closely linked to the user community in order to deliver to the business demands. The user role is of opportunity spotter to identify the appropriate demand to make upon
the IS function to ensure full exploitation of the IS potential throughout the business.

A centrally planned strategy is not a centrally controlled strategy. The centrally planned logic is that of strategic direction understanding and co-ordination rather than on control.

b  Leading edge

This strategy is adopted in the belief that innovative technology use can create business gains. The role of IS in one of experimenter and promoter. IS pushes forward the boundaries of technical capabilities throughout the organisation. The user role is that of willing user of new advances in order to assess their current and future business potential. With this technology-led strategy there is a tendency to result from distorted internal power relationships, rather than business motivated choices.

c  Free market

This strategy is adopted because of the belief that the “market” makes the best decisions. The role of IS is of a competitive business unit, probably a profit centre. The user role is one of service negotiation since they must identify and acquire IS services and manage that choice, acquisition and contract process.
d **Monopoly**

This strategy, the opposite of the free market, is adopted because of a belief that Information is a corporate asset produced across functional boundaries and hence can only be cross-functionally available if controlled by a single service source. The role of IS is a reactive one of satisfying requirements as soon as they arise rather than directing future developments. The user role is one of articulation of needs and negotiating the provisioning of them from the single source.

e **Scarce resource**

This strategy is adopted or often emerges, because of the belief that Information is finite and hence a limited resource whose development requires a clear justification. These justifications require tight financial controls over all IS expenses. The role of IS is to make the best use of their limited resource by effective cost control of projects and the adoption of all cost saving measures. The user role is to bid for a slice of the budget via project justifications in terms of cost/benefit presentations.

f **Necessary evil**

Organisations that believe that Information is not important to their business adopt this strategy. The IS role is to provide a minimum level of resource and skills and to encompass only those projects that have been identified to have a good return on investment. The user role is very passive since they take no part in the development or management of IS.
Robson (1997:139) cites Ward and Griffiths (1986) as believing that this option is not viable for today’s business model and as such have removed this from their model.

### 2.2.4 The link between generic business strategy and IS strategy

Robson (1997:185) states that Ward (1987) proposes that for any given generic business strategy there is a default relationship to Parson’s generic IS strategies, that is given a particular business approach, certain IS approaches would be expected to emerge where there is perhaps no conscious direction of the pattern of IS resource allocations.

Robsons (1997:186) states that Ward (1987) suggests that the default relationship is as follows:

- **Low cost** tends to: Scarce resource
  - Free market
  - (Less likely to necessary evil)
- **Differentiation** tends to: Monopoly
  - Leading edge
  - (less likely to be centrally planned)
- **Focus/niche** tends to: a secondary business strategy

Robson (1997:186) quotes Ward (1987) in that he suggests that the default might not always match, and that the level of maturity should be considered.
The application of Figure 2-7 is to establish at what stage an organisation is at with respect to a specific form of IS, then the suggested IS strategy can be “read off”.

Robson (1997:185) relates Ward as offering that IS strategies are going to be consistent with different stages of maturity of use and management of IS. She goes on to suggest that it would be inappropriate to adopt the same strategies for managing well understood technologies and newly emerging technologies.
The next step is Ward’s model is to consult the strategic importance grid. This is used to define two things. The strategic importance of IS to the business and its link to the business strategy, and secondly the business value weightings of different elements of the IS portfolio. Each segment has a best fit IS strategy.

Figure 2-8: Strategic importance grid and ‘best fit’ IS strategies

Ward suggests that the generic IS strategies have a relationship to the four segments on the strategic importance grid. Each segment has a “best fit” IS strategy (Robson 1997:186).
2.2.5 SUMMARY

Section 2.2 examined various IS strategies open to an organisation as well as looking at the link between IS and business strategy. It can also be seen that the IS/IT - business alignment is critical. To enable this alignment the application of IS/IT must be done in an appropriate and timely manner, in harmony with business goals, strategies, and needs. Section 2.3 deals with this by examining strategic alignment in more detail.

2.3 STRATEGIC ALIGNMENT

2.3.1 Introduction

Section 2.3 examines current literature and answers sub problem 1.3.3 – What do knowledgeable people feel is industry doing to ensure that IS strategy supports corporate goals and objectives?

The IS/IT strategy should not be formulated without considering and possibly influencing the business strategy, along with the fit with the goals of the business strategy.

Today’s business environment faces increased globalization, increased competitive pressure, frequent mergers, rapidly changing technology and evolving patterns of consumer demand.
To gain competitive advantage businesses need unsurpassed relationships with their customers and suppliers. Business processes need to be unique and adaptable. The company must have the ability to harness Information and knowledge of employees. Businesses today need to become change leaders.

Fox and Papp (2002:1322) state that traditional methods of developing business strategies have failed to take full advantage of IS/IT. Fox and Papp expand on this by quoting Henderson and Venkatraman (1993) saying that IS/IT was typically treated as a cost centre or viewed as an expense. Strategic alignment sheds new light on IS/IT and its role in the development of business strategies. It considers both the strategic fit between the strategy and infrastructure as well as the functional integration between business and IS (Fox and Papp: 2002:1322).

The 14th annual survey of critical issues of Information Management (North America) - CSC 2001 found alignment to remain a top IS issue. Aligning IS and corporate goals were ranked 1st or 2nd, 9 times in the last 11 years.

In 1990 a strategic alignment report in the United Kingdom by Ernst and Young found that only 2 out of the 86 organisations they surveyed had IT and business strategy aligned.

The notion of IS/IT - business strategic alignment has been the focus of much research by academics such as Earl (1996) with his work on the
organisational fit framework (OFF) and by Henderson and Venkatraman (1989, 1993) through their strategic alignment model (SAM).

2.3.2 The Henderson and Venkatraman Strategic Alignment Model

The Strategic Alignment Model identifies the need to specify two types of integration between business and IS/IT domains. Henderson and Venkatraman (1999:476) have called them strategic integration and operational integration.

Strategic integration is the link between business strategy and IS/IT strategy reflecting the external components. It deals with the capability of the IS/IT functionality to both shape and support business strategy.
**Operational integration** is the internal link between organisational infrastructure and processes with IS/IT infrastructure and processes.

Henderson and Venkatraman (1999:477) state that the model is the effective management of IS/IT, and requires a balance among the choices made across all four domains. They ask the question – how do we conceptualise and achieve this alignment?

### 2.3.3 Four dominant alignment perspectives

#### a Business strategy as the driver

The first two cross-domain relationships arise when business strategy serves as the driving force.
This perspective is that a business strategy has been articulated and is the driver of both organisational design choices and IS/IT infrastructure.

The role of Top management is that of strategy formulator to articulate the logic and choices pertaining to business strategy.

The role of the IS/IT Manager/CIO is that of strategy implementor, one who efficiently and effectively designs and implements the required IS/IT infrastructure and processes that support the chosen business strategy.

The performance criteria for assessing the IS/IT function is based on financial parameters reflecting a cost centre focus.
(ii) **Perspective Two: Technology transformation**

Figure 2-11: Technology transformation alignment perspective

This alignment perspective involves the assessment of implementing the chosen business strategy through appropriate IS/IT strategy and the articulation of the required IS/IT infrastructure and processes. In contrast to the strategy execution logic, this perspective is not constrained by the current organisational design. It seeks out to identify the best possible IS/IT competencies through appropriate positioning in the IS/IT marketplace, as well as identifying the corresponding internal IS/IT architecture.

The role of executive management is to provide technology vision that would best support the chosen business strategy.

Source: Henderson and Venkatraman (1999:478)
The role of the IS/IT Manager/CIO should be that of technology architect, who efficiently and effectively designs and implements the required IS/IT infrastructure that is consistent with the IS/IT vision.

The performance criteria are based on technology leadership, often utilising a benchmarking approach to assess the position of the firm in the IS/IT marketplace.

b IS/IT strategy as the enabler

The following two cross-domain relationships arise when management explore how IS/IT might enable new or enhanced business strategies with corresponding organisational implications.

(i) **Perspective Three: Competitive potential**

*Figure 2-12: Competitive potential alignment perspective*

<table>
<thead>
<tr>
<th>DRIVER</th>
<th>IS/IT STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROLE OF TOP MANAGEMENT</td>
<td>BUSINESS VISIONARY</td>
</tr>
<tr>
<td>ROLE OF IS/IT MANAGEMENT</td>
<td>CATALYST</td>
</tr>
<tr>
<td>PERFORMANCE CRITERIA</td>
<td>BUSINESS LEADERSHIP</td>
</tr>
</tbody>
</table>

Source: Henderson and Venkatraman (1999:479)
This alignment perspective is concerned with the exploitation of emerging IS/IT capabilities to impact new products and services (business scope), influence the key attributes of strategy (distinctive competencies), and develop new forms of relationships (business governance).

This perspective allows the adaptation of business strategy via emerging IS/IT capabilities.

The role of top management is that of business visionary, one who articulates how the emerging IS/IT competencies and functionality as well as the changing governance patterns in the IS/IT marketplace would impact the business strategy.

The role of the IS/IT Manager/CIO is one of catalyst, one who identifies and interprets the trends in the IS/IT environment to assist the business managers to understand the potential opportunities and threats from an IS/IT perspective.

The performance criteria are based on business leadership with qualitative and quantitative measurements pertaining to product leadership such as market share, growth or new product introduction.
(ii) **Perspective Four: Service level**

**Figure 2-13: Service level alignment perspective**

This perspective requires the understanding of external dimensions of IS/IT strategy with corresponding internal design of the IS/IT infrastructure and processes. The strategic fit of IS/IT creates the capacity to meet the needs of IS customers.

The role of business strategy is indirect and is viewed as providing the direction to stimulate customer demand. This perspective is often viewed as necessary (but not sufficient) to ensure the effective use of IT.

The role of top management is that of prioritiser, the one who articulates how best to allocate the scarce resources both within the organisation and IT marketplace (in terms of joint ventures, licensing, minority equity investments).

Source: Henderson and Venkatraman (1999:479)
The role of the IS/IT manager/CIO is one of executive leadership, with the specific tasks of making the internal service business succeed within the operating guidelines from top management. The performance criteria are based on customer satisfaction obtained with qualitative and quantitative measurements using internal and external benchmarking.

2.3.4 The Luftman IS-Business Alignment Model

Luftman’s methodology was modelled after the Capability Maturity Model developed by Carnegie Mellon’s Software Engineering Institute. It is focused on a more strategic set of business practices, making it ideal for assessing a company’s alignment. Luftman’s model has been successfully tested at more than 50 Global 2000 companies.

a Alignment Categories

Luftman’s model explores alignment under the following six categories – communication, competency/value measurements, governance, partnership, technology scope and skills. They are discussed in more detail below.

(i) Communication Maturity

The exchange of ideas, knowledge and information among the IT and business organisations, enabling both to have a clear understanding of the
company's strategies, business and IT environments, priorities and what must be done to achieve them.

(ii) Competency/Value Measurements Maturity

The use of measures that demonstrate the contribution of IT and the IT organisation to the business, in terms that the business understands and accepts.

(iii) Governance Maturity

The degree to which the authority for making IT decisions is defined and shared among management, and the processes managers in both IT and business organisations apply in setting IT priorities and the allocation of IT resources.

(iv) Partnership Maturity

The relationship among the business and IT organisations, including IT’s involvement in defining business strategies, the degree of trust between the two organisations, and how each perceives the contribution of the other.

(v) Technology Scope Maturity

The extent to which IT is able to provide a flexible infrastructure, evaluate and apply emerging technologies, enable or drive business processes, and provide customized solutions to meet customer and internal needs.
(vi)  **Skills Maturity**

This includes practices such as training, performance feedback, encouraging innovation and providing career opportunities, as well as the IT organisation's readiness for change, capability for learning and ability to leverage new ideas.

**b  IS as Architects of Alignment**

Luftman proposes that for IS to be architects of alignment they need to be knowledgeable about new technologies, exposed to tactical and strategic plans, participate in corporate strategy discussions and an understanding of technology strengths and weaknesses.

Luftman and Brier (1999:110) quote a survey conducted by executives attending classes at IBM’s Advanced Business Institute over 500 firms in 15 industries showed the following as the most important enablers and inhibitors in achieving alignment as depicted in Table 2-3.
Table 2-3: Enablers and Inhibitors of Alignment

<table>
<thead>
<tr>
<th>Enablers</th>
<th>Inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior executive support for IS</td>
<td>IS/business lack close relationships</td>
</tr>
<tr>
<td>IS involvement in strategy development</td>
<td>IS does not prioritise well</td>
</tr>
<tr>
<td>IS understands the business</td>
<td>IS fails to meet its commitments</td>
</tr>
<tr>
<td>Business-IT partnership</td>
<td>IS does not understand business</td>
</tr>
<tr>
<td>Well prioritized IS projects</td>
<td>Senior executives do not support IS</td>
</tr>
<tr>
<td>IS demonstrates leadership</td>
<td>IS management lacks leadership</td>
</tr>
</tbody>
</table>

Source: Adapted from Brier and Luftman (1999:109)

2.3.5 Attributes of successfully aligned organisations

Luftman & Brier (1999:118) state that successfully aligned organisations are those that concentrate on:

- allowing for IS/IT and business capabilities to be weighed equally;
- developing the skills necessary for success;
- empowering workers in team-based environments;
- gaining agreement on outcomes required from the business processes;
- instilling a sense of urgency in managing IS/IT enabled projects;
- leading in the deployment of IS/IT to create customer value;
- nurturing a culture of open human communication.
2.3.6 Summary

Section 2.3 explored the topic of IS – business strategy alignment. The Henderson and Venkatraman Strategic Alignment Model as well as the Luftman Strategic Alignment Maturity Model were presented.

Strategic alignment is an ongoing process. There is no single strategy or single combination of activities that will enable a firm to achieve and sustain alignment. Technology and the business climate change far too quickly. The components of alignment are in constant flux.

Luftman and Brier (1999:120) contend that the enablers and inhibitors to achieving alignment have remained constant over the past 5 years. They therefore propose that executives should work toward minimising those activities that inhibit alignment and maximise those activities that bolster it. They suggest that executives should concentrate on improving the relationships between the business and IS/IT functional areas, working toward mutual cooperation and participation in strategy development, maintaining executive support, and prioritising projects more effectively.

Achieving alignment is evolutionary and dynamic. It requires strong support from senior management, good working relationships, strong leadership, appropriate prioritization, trust, and effective communication, as well as a thorough understanding of the skills required. All these are tested by the application of the Strategic Alignment Maturity Model.
This research has highlighted the significance of IS/IT and its role within business. It is hoped that through this a contribution has been made to the understanding of the IS/IT function and its corresponding link to business strategy.

The research culminated in a model, designed to measure and so improve the business IS/IT link that should give direction into how to improve so as to exploit the benefits of IS/IT, before the competition do.

The empirical study design is discussed in more detail in chapter Three.
Chapter 3

EMPIRICAL STUDY DESIGN

3.1 INTRODUCTION

Chapter 3 aims to explain the process used during the empirical study. The research design will be documented in order to explain all the steps undertaken during the study. The planning of the study is discussed in detail below.

3.2 RESEARCH DESIGN

The research undertaken attempted to solve the following problem:

What is meant by Information Systems strategy and how is it linked to business strategy?

In order to assist in resolving the main problem the following three sub-problems were identified:

- What is the role of Information Systems in today’s organisation?
- What strategy should an organisation follow to use their Information System to support and influence their corporate goals and objectives?
- What do knowledgeable people feel is industry doing to ensure that IS strategy supports corporate goals and objectives?
The procedure used to solve the main problem and sub problem was as follows:

- The problem statement was expanded upon and key terms identified (Chapter 1);

- A literature study was conducted focusing on the role of Information Systems (section 2.1). This provided insight into how the role of IS has changed over the years, the forces present in competition and how IS can assist in gaining competitive advantage. Generic business strategies were examined. The IS role in the value chain was looked into. Other roles like that of the digital firm, intangible asset view and strategic necessity were explored. All this aided in the understanding of the many roles that Information Systems has to play and its contribution to competitive advantage. This answered sub-problem 1 – What is the role of Information Systems in today’s organisation?

- The literature study then looked at IS strategy options (section 2.2). The distinction between IS and IT strategy was made. Generic IS strategies were examined. The relationship between IS strategy and IS maturity and “best fit” options with business strategy were explored. The understanding gleaned enabled the answer to sub-problem 2 – What strategy should an organisation follow to use their Information System to support and influence their corporate goals and objectives?

- The literature study was concluded by looking at IS – business strategy alignment (section 2.3). The Henderson and Venkatraman Strategic Alignment Model and the Luftman Strategic Alignment Maturity model were set out. This aided in the understanding of how IS-business
alignment could be achieved and answered sub-problem 3 – What do knowledgeable people feel is industry doing to ensure that IS strategy supports corporate goals and objectives?

3.3 PLANNING THE EMPIRICAL STUDY

The empirical study was conducted by means of a survey with the use of a questionnaire developed from the literature based on the Luftman Strategic Alignment Maturity model. The results were set out in graphical format.

3.3.1 The questionnaire

The questionnaire was developed by analysing Luftmans Strategic Alignment Maturity Model table. The questions were selected to aid in the understanding in the interpretation of the various alignment criteria. The questionnaire focused on business-IT alignment, using a five point Likert scale as developed by Prof. Luftman.

A cut-off date for the collection of all completed questionnaires was set for the 30th November 2003. Thereafter in order to complete the research, on site assistance was provided. The final cut off date was extended to the 12th December 2003 (Volkswagen factory shutdown).
3.3.2 The population

A list of senior IS and business staff was obtained from the IS General Manager. The population eventually chosen with the IS General Manager consisted of the six heads of the various functional divisions – finance, marketing, production, human resources, purchasing and IS.

3.3.3 The response rate

The initial response rate was poor, with only one questionnaire being completed. After follow-up, the response rate was 100%, i.e. all the questionnaires originally sent out were obtained to compile the resultant Volkswagen of South Africa Strategic Alignment Maturity chart.

3.3.4 Reliability and validity of the measuring instrument

As the measuring instrument was 100% based upon Luftman’s Strategic Alignment Maturity model, which had a proven track record and still continues to prove itself as a reliable measure of IS – business alignment, it was felt that it provided the reliability required.

3.3.5 Summary

The aim of this chapter was to document the planning and the process used in the empirical study. The questionnaire, population, response rate and reliability were expanded upon. The following Chapter Four will discuss the results, conclude and make recommendations for further research.
4.1 INTRODUCTION

Chapter Four will present the results of the study conducted at Volkswagen of South Africa. It expands upon the questions to provide more insight to what the results mean.

Luftman in an Optimize magazine article (2003:8) states that Global 1000 executives who have used this tool for the first time have rated their organisations, on average, at Level 2 (Beginning Process), although they typically score at Level 3 for a few alignment practices.

4.2 ALIGNMENT METRIC RESULTS AND ANALYSIS

4.2.1 Communications maturity: VW SCORE 3.42

Communications maturity explores how well the technical and business people understand each other. It tests how easily they connect and how frequently. It looks at how effectively Volkswagen communicates with consultants, vendors, and partners. Finally it tests the level of its ability to disseminate organisational learning internally.
In an article in Optimize magazine Luftman (2003:8) states that over the past forty years, most companies have used computing technology to improve operations. He continues to say that now and in the future, technology will be used to innovate businesses, products, and services. For example, many of today's innovative companies are using IT to differentiate their products and services or to fill a market niche.

An example of this is Progressive Insurance, which has used technology and data mining to track new Harley-Davidson registrations. While most insurance companies consider motorcyclists risky to insure, Progressive realized that Harley owners represent a unique market niche. The typical Harley owner is more than 40 years old, earns a good income, and rides the motorcycle for recreational purposes only. Since Harley riders don't pose the same insurance risks as other motorcyclists, the company offers attractive insurance rates to Harley riders whom it can then up sell with other insurance policies.

4.2.2 Competency/value-measurement maturity: VW SCORE 3.29

Competency/value-measurement maturity examines how well the company measures its own performance and the value of its projects. It asks questions to establish if after projects are completed, are they evaluated to determine what went right and what went wrong. It tests to see if internal processes are improved upon to enable the next project to be better.

Setting priorities for IT projects and effectively allocating resources to align IT and business strategies have become fundamental aspects of corporate
success. IT and business managers should share in the evaluation of the company's project portfolio. It's important to recognize that the ultimate value of projects won't come from the technology alone.

4.2.3 Governance maturity: VW SCORE 3.31

This dimension deals with how well the company connects its business strategy to IT priorities, technical planning, and budgeting. It asks if projects that are undertaken flow from an understanding of the business strategy and if they support the strategy. If not, there may be conflict between the technical and business organisations. IT governance is about who makes the decisions (power), why they make them (alignment), and how they make them (decision process).

Ideally, business and IT management make these decisions jointly. Underlying the principles of IT governance is the theme of effective and efficient communications between IT and business. This is critical, but hasn't always been put into practice. For example, IT managers often launch initiatives on their own to enable business processes because of a perceived lack of interest on the part of business management. The unfortunate result of many of these IT-sponsored initiatives, such as CRM, document-management systems, E-commerce, ERP, and supply-chain management, is that they fail to generate the best possible return on the company's overall IT investment.

The common theme of these disconnects between business and IT is
governance, or the lack of it, and how that affects the company's ability to make informed decisions about the direction and use of IT. This type of disconnect exists most frequently when the company's IT governance isn't clearly defined or is under political threat by internal constituencies.

4.2.4 Partnership maturity: VW SCORE 3.5

Partnership maturity explores to what an extent business and IT departments have forged true partnerships based on mutual trust and sharing risks and rewards.

It's not enough to have excellent IT strategies and implementation plans on paper. CIO's must convince peer executives of the corporate value of their strategies. Some CIO's are very influential, and several factors contribute to this: CIO's should have an intimate knowledge of the business and industry they're working in, thereby improving their interactions with business executives, and they should have personal relationships with the other executives in their companies.

4.2.5 Scope and architecture maturity: VW SCORE 3.38

Scope and architecture maturity sheds light upon the extent to which technology use has evolved to become more than just business support. It checks to see if it has helped the business to grow, compete, and profit.
This concept is critical as corporations grow and the need for integration across the enterprise and its external partners increases. Integration is a business need, and the technology mechanisms won't help without the proper organisational structures, goals, and incentives. Business processes are the vital link between the technical and organisational infrastructures of a company.

4.2.6 Skills maturity: VW SCORE 3.71

Skills maturity examines whether the staff have the skills needed to be effective, and tests their ability to understand business drivers and speak the language of business. It also examines how well the business staff understand relevant technology concepts.

IT is becoming less expensive, while IT labour is becoming more expensive, especially as a portion of the total IT budget. But if IT is to rise to the challenge of being an enabler and a shaper of overall business strategy, the role of skilled IT professional becomes more critical than in the past.

Luftman in an Optimize magazine article (2003:9) concludes by saying that experience shows that no single activity will enable a company to attain and sustain alignment. There are too many variables, and the technology and business environments are too dynamic. The strategic-alignment maturity assessment provides a vehicle to evaluate where a company is and where it needs to go to achieve and build business-IT alignment. The careful assessment of a company’s alignment maturity is an important step in
identifying the specific actions necessary to ensure that IT is used appropriately.

Figure 4-1: Volkswagen business-IT strategy maturity alignment scores

![Graph showing the alignment maturity scores](image)

source: adapted from the VW Strategic Alignment Assessment Tally Sheet

Figure 4-1 presents the results obtained from the Volkswagen survey in graphical format.

It shows a fairly even score over all the alignment criteria analysed. When questioned as to why this might be the case, the IS General Manager suggested that it was probably as a result of a Gallup process that had been implemented in the group in the past two years.

The results put Volkswagen above the average for first time respondents. More importantly it has made Volkswagen of South Africa aware of the factors that will aid them in achieving IS – business strategy alignment.
4.3 CONCLUSIONS

The aim of the research has been to contribute towards the understanding of Information Systems Strategy options and its link with business strategy.

To this end, the researcher set out to resolve the main problem of the study: **What is meant by Information Systems strategy and how is it linked to business strategy?**

In order to help resolve the main problem sub-problems were developed and addressed in chapter two by means of a literature study.

A brief discussion and conclusions of the three sub-problems is given below:

- **What is the role of Information Systems in today's organisation?**
  
  The literature study revealed that IS has evolved over the years, and continues to at a rapid rate, and that IS has a major role to play in the success of companies today. IS is crucial in today's business as it encompasses the entire enterprise and beyond.

  Porter’s 5 forces model showed that IS could be used to disturb these competitive forces and in doing so change the industry structure, and hence gain competitive advantage.

  Porters generic value chain could be enhanced with the strategic use of IS in every area of the value chain, and once again achieve competitive advantage.

  Other roles that IS could greatly assist in included the digital firm view, the intangible asset view, a strategic necessity, that of a transformation
driver, a change agent, an enabler of globalisation and lastly that of an inhibitor.

Ignoring IS could seriously hamper any business from achieving success.

• What strategy should an organisation follow to use their Information System to support their corporate goals and objectives?

Parson’s generic IS strategies were examined. These would greatly influence the position IS would have to play in the overall business strategy. e.g. a leading edge strategy would have IS come up with new innovations almost on a daily basis, whilst a necessary evil strategy would see IS playing a backroom role.

Possible best fit strategies were given that match the business strategy to the IS strategy.

IS strategy should not be done in isolation and much of the latest literature suggests that the IS and business strategy should be one.

• What do knowledgeable people feel is industry doing to ensure that IS strategy supports corporate goals and objectives?

This question examined the area of IS – business strategy alignment. For the IS strategy to support corporate goals and objectives it is imperative that it is aligned with the business strategy.
The Henderson and Venkatraman Strategic Alignment Model identified four dominant alignment perspectives, with either the business strategy as the driver or the IS strategy as the enabler.

The Luftman IS – business alignment model explores the maturity of the alignment under various alignment categories. The model has the advantage of a score per category, that can be used to aid the direction in which IS and business need to move in order to maximise the alignment between their strategies.

The resultant output from the research was that of a better understanding of the role IS has to play, the strategy options it has, IS’s link with business strategy and a model to measure and improve on its deliverable to the business.
REFERENCE LIST


Annexure 1 - Strategic Alignment Maturity Assessment
Instructions

Choose only one per question. The levels are as follows:

1 = Doesn’t fit the company, or the company is very ineffective
2 = Low level of fit for the company
3 = Moderate fit for the company, or the company is moderately effective
4 = Fits most of the company
5 = Strong level of fit throughout the company, or the company is very effective

Communications maturity:

• How well do the technical and business folks understand each other? Do they connect easily and frequently? Does your company communicate effectively with consultants, vendors, and partners? Does it disseminate organisational learning internally?

Competency/value-measurement maturity:

• How well does your company measure its own performance and the value of its projects? After projects are completed, do you evaluate what went right and what went wrong? Do you improve your internal processes so the next project will be better?

Governance maturity:

• This dimension deals with how well the company connects its business strategy to IT priorities, technical planning, and budgeting. Do the projects you undertake flow from an understanding of the business strategy? Do they support that strategy?

Partnership maturity:

• To what extent have business and IT departments forged true partnerships based on mutual trust and sharing risks and rewards?

Scope and architecture maturity:

• To what extent has technology evolved to become more than just business support? How has it helped the business to grow, compete, and profit?

Skills maturity:

• Does the staff have the skills needed to be effective? How well does the technical staff understand business drivers and speak the language of business? How well does the business staff understand relevant technology concepts?
## Annexure 2 - Questionnaire

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Understanding of Business by IT</strong></td>
<td>IT management lacks understanding</td>
<td>Limited understanding by IT management</td>
<td>Good understanding by IT management</td>
<td>Understanding encouraged among IT staff</td>
<td>Understanding required of all IT staff</td>
</tr>
<tr>
<td><strong>Understanding of IT by Business</strong></td>
<td>Managers lack understanding</td>
<td>Limited understanding by managers</td>
<td>Good understanding by managers</td>
<td>Understanding encouraged among staff</td>
<td>Understanding required of staff</td>
</tr>
<tr>
<td><strong>Organisational Learning</strong></td>
<td>Casual conversation and meetings</td>
<td>Newsletters, reports, group e-mail</td>
<td>Training, departmental meetings</td>
<td>Formal methods sponsored by senior management</td>
<td>Learning monitored for effectiveness</td>
</tr>
<tr>
<td><strong>Style and Ease of Access</strong></td>
<td>Business to IT only; formal</td>
<td>One-way, somewhat informal</td>
<td>Two-way, formal</td>
<td>Two-way, somewhat informal</td>
<td>Two-way, informal and flexible</td>
</tr>
<tr>
<td><strong>Leveraging Intellectual Assets</strong></td>
<td>Ad hoc</td>
<td>Some structured sharing emerging</td>
<td>Structured around key processes</td>
<td>Formal sharing at all levels</td>
<td>Formal sharing with partners</td>
</tr>
<tr>
<td><strong>IT–Business Liaison Staff</strong></td>
<td>None or use only as needed</td>
<td>Primary IT–Business link</td>
<td>Facilitate knowledge transfer</td>
<td>Facilitate relationship building</td>
<td>Building relationship with partners</td>
</tr>
<tr>
<td><strong>IT Metrics</strong></td>
<td>Technical only</td>
<td>Technical, cost metrics rarely reviewed</td>
<td>Review, act on technical, ROI metrics</td>
<td>Also measure effectiveness</td>
<td>Also measure business ops, HR, partners</td>
</tr>
<tr>
<td><strong>Business Metrics</strong></td>
<td>IT investments measured rarely, if ever</td>
<td>Cost/unit; rarely reviewed</td>
<td>Review, act on ROI, cost</td>
<td>Also measure customer value</td>
<td>Balanced scorecard, includes partners</td>
</tr>
<tr>
<td><strong>Link between IT and Business Metrics</strong></td>
<td>Value of IT investments rarely measured</td>
<td>Business, IT metrics not linked</td>
<td>Business, IT metrics becoming linked</td>
<td>Formally linked; reviewed and acted upon</td>
<td>Balanced scorecard, includes partners</td>
</tr>
<tr>
<td><strong>Service Level Agreements</strong></td>
<td>Use sporadically</td>
<td>With units for technology performance</td>
<td>With units; becoming enterprise-wide</td>
<td>Enterprisewide</td>
<td>Includes Partners</td>
</tr>
<tr>
<td><strong>Benchmarking</strong></td>
<td>Seldom or never</td>
<td>Sometimes benchmark informally</td>
<td>May benchmark formally, seldom act</td>
<td>Routinely benchmark, usually act</td>
<td>Routinely benchmark, act on, and measure results</td>
</tr>
<tr>
<td><strong>Formally Assess IT Investments</strong></td>
<td>Do not assess</td>
<td>Only when there is a problem</td>
<td>Becoming a routine occurrence</td>
<td>Routinely assess and act on findings</td>
<td>Routinely assess, act on, and measure results</td>
</tr>
<tr>
<td><strong>Continuous Improvement Practices</strong></td>
<td>None</td>
<td>Few, effectiveness not measured</td>
<td>Few, starting to measure effectiveness</td>
<td>Many, frequently measure effectiveness</td>
<td>Practices and measures well established</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td><strong>Formal Business Strategy Planning</strong></td>
<td>Not done, or done as needed</td>
<td>At unit functional level, slight IT input</td>
<td>Some IT input and crossfunctional planning</td>
<td>At unit and enterprise, with IT</td>
<td>With IT and partners</td>
</tr>
<tr>
<td><strong>Formal IT Strategy Planning</strong></td>
<td>Not done, or done as needed</td>
<td>At unit functional level, light business input</td>
<td>Some business input and crossfunctional planning</td>
<td>At unit and enterprise, with business</td>
<td>With partners</td>
</tr>
<tr>
<td><strong>Organisational Structure</strong></td>
<td>Centralized or decentralized</td>
<td>Central/ decentral; some collocation</td>
<td>Central/ decentral or Federal</td>
<td>Federal</td>
<td>Federal</td>
</tr>
<tr>
<td><strong>Reporting Relationships</strong></td>
<td>CIO reports to CFO</td>
<td>CIO reports to CFO</td>
<td>CIO reports to COO</td>
<td>CIO reports to COO or CEO</td>
<td>CIO reports to CEO</td>
</tr>
<tr>
<td><strong>How IT Is Budgeted</strong></td>
<td>Cost center, spending is unpredictable</td>
<td>Cost center by unit</td>
<td>Some projects treated as investments</td>
<td>IT treated as investment</td>
<td>Profit center</td>
</tr>
<tr>
<td><strong>Rationale for IT Spending</strong></td>
<td>Reduce costs</td>
<td>Productivity, efficiency</td>
<td>Also a process enabler</td>
<td>Process driver, strategy enabler</td>
<td>Competitive advantage, profit</td>
</tr>
<tr>
<td><strong>Senior-Level IT Steering Committee</strong></td>
<td>Do not have</td>
<td>Meet informally as needed</td>
<td>Formal committees meet regularly</td>
<td>Proven to be effective</td>
<td>Also includes external partners</td>
</tr>
<tr>
<td><strong>How Projects Are Prioritized</strong></td>
<td>React to business or IT need</td>
<td>Determined by IT function</td>
<td>Determined by business function</td>
<td>Mutually determined</td>
<td>Partners’ priorities are considered</td>
</tr>
<tr>
<td><strong>Business Perception of IT</strong></td>
<td>Cost of doing business</td>
<td>Becoming an asset</td>
<td>Enables future business activity</td>
<td>Drives future business activity</td>
<td>Partner with business in creating value</td>
</tr>
<tr>
<td><strong>IT’s Role in Strategic Business Planning</strong></td>
<td>Not involved</td>
<td>Enables business processes</td>
<td>Drives business processes</td>
<td>Enables or drives business strategy</td>
<td>IT, business adapt quickly to change</td>
</tr>
<tr>
<td><strong>Shared Risks and Rewards</strong></td>
<td>IT takes all the risks, receives no rewards</td>
<td>IT takes most risks with little reward</td>
<td>IT, business start sharing risks, rewards</td>
<td>Risks, rewards always shared</td>
<td>Managers incented to take risks</td>
</tr>
<tr>
<td><strong>Managing the IT–Business Relationship</strong></td>
<td>IT–business relationship is not managed</td>
<td>Managed on an ad hoc basis</td>
<td>Processes exist but not always followed</td>
<td>Processes exist and complied with</td>
<td>Processes are continuously improved</td>
</tr>
<tr>
<td><strong>Relationship/Trust Style</strong></td>
<td>Conflict and mistrust</td>
<td>Transactional relationship</td>
<td>IT becoming a valued service provider</td>
<td>Long-term partnership</td>
<td>Partner, trusted vendor or IT services</td>
</tr>
<tr>
<td><strong>Business Sponsors/Champions</strong></td>
<td>Usually none</td>
<td>Often have a senior IT sponsor or champion</td>
<td>IT and business sponsor or champion at unit level</td>
<td>Business sponsor or champion at corporate level</td>
<td>CEO is the business sponsor or champion</td>
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<tr>
<td><strong>Primary Systems</strong></td>
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<tr>
<td>Cost of doing business</td>
<td>Becoming an asset</td>
<td>Enables future business activity</td>
<td>Drives future business activity</td>
<td>Partner with business in creating value</td>
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<tr>
<td><strong>Standards</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Not involved</td>
<td>Enables business processes</td>
<td>Drives business processes</td>
<td>Enables or drives business strategy</td>
<td>IT; business adapt quickly to change</td>
<td></td>
</tr>
<tr>
<td><strong>Architectural Integration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT takes all the risks, receives no rewards</td>
<td>IT takes most risks with little reward</td>
<td>IT, business start sharing risks, rewards</td>
<td>Risks, rewards always shared</td>
<td>Managers incented to take risks</td>
<td></td>
</tr>
<tr>
<td><strong>How IT Infrastructure Is Perceived</strong></td>
<td>IT–business relationship is not managed</td>
<td>Managed on an ad hoc basis</td>
<td>Processes exist but not always followed</td>
<td>Processes exist and are complied with</td>
<td></td>
</tr>
<tr>
<td><strong>Innovative, Entrepreneurial Environment</strong></td>
<td>Discouraged</td>
<td>Somewhat encouraged at unit level</td>
<td>Strongly encouraged at unit level</td>
<td>Also at corporate level</td>
<td></td>
</tr>
<tr>
<td><strong>Key IT HR Decisions Made by</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top business and IT management at corporate</td>
<td>Same, with emerging functional influence</td>
<td>Top business and unit management; IT advises</td>
<td>Top business and IT management across firm</td>
<td>Top management across firm and partners</td>
<td></td>
</tr>
<tr>
<td><strong>Change Readiness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Tend to resist change</td>
<td>Change readiness programs emerging</td>
<td>Programs in place at functional level</td>
<td>Programs in place at corporate level</td>
<td>Also proactive and anticipate change</td>
<td></td>
</tr>
<tr>
<td><strong>Career Crossover Opportunities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Job transfers rarely occur</td>
<td>Occasionally occur within unit</td>
<td>Regularly occur for unit management</td>
<td>Regularly occur at all unit levels</td>
<td>Also at corporate level</td>
<td></td>
</tr>
<tr>
<td><strong>Cross-Functional Training and Job Rotation</strong></td>
<td>No opportunities</td>
<td>Decided by units</td>
<td>Formal programs run by all units</td>
<td>Also across enterprise</td>
<td></td>
</tr>
<tr>
<td><strong>Social Interaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal IT–business interaction</td>
<td>Strictly a business-only relationship</td>
<td>Trust and confidence is starting</td>
<td>Trust and confidence achieved</td>
<td>Attained with customers and partners</td>
<td></td>
</tr>
<tr>
<td><strong>Attract and Retain Top Talent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>No retention program; poor recruiting</td>
<td>IT hiring focused on technical skills</td>
<td>Technology and business focus; retention program</td>
<td>Formal program for hiring and retaining</td>
<td>Effective program for hiring and retaining</td>
<td></td>
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</table>
## Annexure 3 – Volkswagen Alignment Assessment Tally Sheet

<table>
<thead>
<tr>
<th>Practice Categories</th>
<th>Practices</th>
<th>Average Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications</strong></td>
<td>1 Understanding of business by IT</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2 Understanding of IT by business</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>3 Organisational learning</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4 Style and ease of access</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>5 Leveraging intellectual assets</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>6 IT–business liaison staff</td>
<td>3</td>
</tr>
<tr>
<td><strong>Competency/Value Measurements</strong></td>
<td>7 IT metrics</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>8 Business metrics</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>9 Link between IT and business metrics</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>10 Service level agreements</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>11 Benchmarking</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>12 Formally assess IT investments</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>13 Continuous improvement practices</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td>14 Formal business strategy planning</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>15 Formal IT strategy planning</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>16 Organisational structure</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>17 Reporting relationships</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>18 How IT is budgeted</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>19 Rationale for IT spending</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>20 Senior-level IT steering committee</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>21 How projects are prioritized</td>
<td>4</td>
</tr>
<tr>
<td><strong>Partnership</strong></td>
<td>22 Business perception of IT</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>23 IT’s role in strategic business planning</td>
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<tr>
<td></td>
<td>24 Shared risks and rewards</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>25 Managing the IT–business relationship</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>26 Relationship and trust style</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>27 Business sponsors and champions</td>
<td>4</td>
</tr>
<tr>
<td><strong>Technology Scope</strong></td>
<td>28 Primary systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>29 Standards</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>30 Architectural integration</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>31 How IT infrastructure is perceived</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td>32 Innovative, entrepreneurial environment</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>33 Key IT HR decisions made by</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>34 Change readiness</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>35 Career crossover opportunities</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>36 Cross-functional training and job rotation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>37 Social interaction</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>38 Attract and retain top talent</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Your Alignment Score:</strong></td>
<td></td>
<td>3.42</td>
</tr>
</tbody>
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Your Alignment Score: 3.43