BUSINESS VALUE OF STRATEGIC INFORMATION SYSTEMS OF SMALL AND MEDIUM ENTERPRISES (SMEs) WITHIN WESTLANDS DIVISION OF NAIROBI

BY

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DECLARATION

This research project is my original work and has not been presented to any university for any award or anywhere else for academic purposes.

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DEDICATION

This project is dedicated to my lovely son Samuel Toni Otieno Ogutu (Barry), my wife and best friend Diana Olenja and my wonderful mother Clarice Ogutu. May GOD bless and protect you always.

ABSTRACT

Information systems have been praised to be the most important ingredient of competitiveness and success in the modern knowledge economy. This study aimed at investigating the business value of Strategic Information Systems within SMEs in Westlands Division of Nairobi. Strategic Information Systems are viewed as very valuable tools for enhancing effectiveness and attractiveness of any business organization that has embraced ICT technology it its operations and planning.

SMEs play a vital role in development of the Kenyan economy. However, despite the fact that successful businesses use strategic information systems for effective competitiveness, little has been done to establish the real business value that these information systems can add to most businesses and SMEs in particular. Building on sparse literature regarding the business value of strategic information systems, the researcher embarked on a survey whose data was used to assess the business value that SMEs enjoy by adopting strategic information systems.

The research adopted a cross sectional study targeting SMEs in the Westlands Division of Nairobi. Stratified and simple random sampling techniques facilitated the choice of 105 SMEs from whom data was collected using self administered. Data was analyzed and presented using descriptive statistics, tables, graphs and pie charts, by the use of Statistical Package for Social Sciences (SPSS) version 12. The study found out that most SMEs are started and operated by largely youthful persons aged between 18-40 years who have formal education of up to at least secondary school level. The research also discovered that the most outstanding benefits SMEs enjoy by investing in strategic information systems include; improved communication and flow of information within the business, improved accuracy, reliability and easier access to information and customer satisfaction and loyalty. In conclusion, the findings of the study highlight the importance of strategic information systems to SMEs. It further proposes that for SMEs to fully enjoy the business value of strategic information systems they need to set up an IS strategy for the business, align the business strategy with the IS strategy and identify IS roles needed to make the adoption process successful.

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LIST OF ACRONYMS AND ABBREVIATIONS

CBD	Central Business District
CBS	Central Bureau of Statistics
CRM	Customer Relationship Management
DSS	Decision Support Systems
ERP	Enterprise Resource Planning
ESS	Executive Support Systems
GDP	Gross Domestic Product
ICEG	International Center for Economic Growth
ICT	Information and Communication Technology
IS	Information Systems
IT	Information Technology
KWS	Knowledge Work Systems
MIS	Management Information Systems
MSE	Medium and Small Enterprises
NZ	New Zealand
OAS	Office Automation Systems
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
SCM	Supply Chain Management
SIS	Strategic Information Systems
SISP	Strategic Information Systems Planning
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
TPS	Transaction processing systems

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CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

An information system (IS) can generally be described as a collection of computer hardware, software, people, procedures and communication devices used to capture business data, process it and disseminate information for the purposes of decision making within a business enterprise. Strategy on the other hand is the approach or plan that a business puts in place to achieve its core business objectives and goals. A strategic information system is therefore that information system that business firms use to execute their strategic goals and objectives at all levels of the business. Through the use of strategic information systems, businesses are capable of gaining competitive advantage and larger market share over their rivals in the market among other benefits.

1.1.1. The concept of Strategic Information Systems

A Strategic Information System is "an information system which supports an organisation in fulfilling its business goals", (Clarke, 2005). Such systems can be found at any level of management within a business enterprise provided it is capable of transforming the goals, processes, products and external relations of the business to produce competitive advantage. According to Ward and Peppard (2002), SIS functions in ways that are similar to data processing and management information systems, however, it is the impact it causes on the business due to the continual changes they enable or cause that makes the difference. SIS help improve business competitiveness by changing the way business is conducted. They are systems that fundamentally change the organization itself and add business value to the organisation.

1.1.2. The concept of Business Value

Generally, business value is the ability of an organisation to meet and/or exceed the needs and expectations of its customers, and do so efficiently in a manner that increases the profitability of the business. Business value is generated from the activities, processes and systems that positively contribute to the overall profitability of an organisation by either increasing its revenue or reducing its expenses. According to Porter (2008), today organisations in all spheres must compete to deliver business value. In management, business value is an informal term that includes all forms of value that determine the health and well-being of the firm in the long-run. A strong business value proposition

will offer an organization a strong differential between it and the competitors, increase not only the quantity but the quality of prospective leads, gain market share in the targeted segments, assist in enhancing tools that will help close more business and improve business operations efficiency.

1.1.3. Strategic Information Systems and Business Value

In the current competitive business environment, all businesses whether small, medium or large need access to timely, current, relevant, accurate and adequate strategic information in order to make strategic business decisions, deliver value to customers and enhance their competitiveness in the market place. To access this valuable information, businesses need to adopt strategic information systems (Higgins & Vincze, 1993). The concept of strategic information systems has gained acceptance, emphasizing the fact that information is a strategic resource. Strategic information systems (SIS) help improve business competitiveness by changing the way business is conducted (Ward and Peppard, 2002). They are systems that fundamentally change the organization itself. So viewed from this perspective, any type of information system (IS) can potentially be regarded as strategic information system if its impact transforms the goals, business processes, products and external relations of the company to produce competitive advantage. In fact strategic information systems can change the very nature of the business. In order to give outputs, a strategic information system uses technology to process the inputs. Like all other systems, SIS operating within an environment requires people, procedures and material facilities. According to Porter (2008), today organisations in all spheres must compete to deliver business value. Business value can be described as the ability of an organisation to meet and/or exceed the needs and expectations of its customers, and do so efficiently in a manner that increases the profitability of the business. Oganisations have to deliver value to their customers. This is now just as true for a hospital delivering health care, or a foundation making charitable contributions, as it is for a business organisation producing and selling a product or a service.

1.1.4. Small and Medium Enterprises

There is no universal definition of small and medium-sized enterprises (SMEs) that is widely acknowledged. However, various definitions of the concept appear especially in business, commerce, economics and development literature. For example, the common definition adopted by the Organisation for Economic Co-operation and Development (OECD) countries is based on employment figures; correspondingly an SME has less

than 500 employees (OECD, 2004). The South African SME Act, on the other hand, defines SMEs as having up to 100-200 employees or a turnover of five million Rand (Kshs 6 Million), while micro enterprises have up to five employees (Gordon, 2003). In Egypt, the Ministry of Trade has unified definitions based on three criteria: The number of workers, fixed assets and Annual turnover (Rizk, 2004). According to the European Union definition, the category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million (Kshs.5,000,000,000), and/or an annual balance sheet total not exceeding EUR 43 million (Kshs.4,000,000,000).

In the UK, sections 382 and 465 of the Companies Act 2006 define an SME for the purpose of accounting requirements. According to the Act, a small company is one that has a turnover of not more than £6.5 million, a balance sheet total of not more than £3.26 million and not more than 50 employees. A medium-sized company has a turnover of not more than £25.9 million, a balance sheet total of not more than £12.9 million and not more than 250 employees. It is worth noting that even within the UK this definition is not universally applied. In its ongoing research program that collects data on SMEs in Canada, Statistics Canada defines an SME as any business establishment with 0 to 499 employees and less than $50 million in gross revenues.

The world over, SMEs are increasingly regarded as vital for diversifying economies through the creation of employment (Machacha, 2002). The OECD (2000) notes that small and medium-sized enterprises account for 60-70 percent of jobs created in member countries. Southwood (2004), in discussing the status of the SME sector in Africa, observed that governments and large corporations dominated economies of the countries; yet, the real engine of economic growth lay with SMEs. South Africa, Egypt, Morocco, Kenya, Uganda, Botswana, Zambia and Tanzania have prioritized their investment in SMEs (Gordon, 2003; Maksoud and Youseff, 2003 and Republic of Botswana, 2003). Muuka (2002), in discussing the SME sector in Africa, noted that the informal sector (largely made up of SMEs) is huge due to the large numbers of employees it absorbs as a consequence of inadequate jobs and opportunities in the formal sector. He points out that in many African countries; the informal sector is estimated to employ from three to six

times the number of employees in the formal sector. However, very little has been documented through research about this important sector.

In Kenya, the government and donor agencies are increasingly emphasizing the key role played by the SME sector in promoting economic and social development. Consequently, they are jointly providing financial assistance in an attempt to encourage and assist SMEs in the country (Machacha, 2002). Similarly, the government has realised that it is not sensible to depend largely on the agricultural sector for the long-term economic development of the country. Consequently, it is encouraging the development of the SME sector as a way to diversify its economy (Amani and Mbaga-Kida, 2001). Furthermore, the importance attached to the SME sector in a developing economy like Kenya from a scholarly point of view is reflected increasingly in the number of studies that are being undertaken about the sector (Lisenda, 1997; Duncombe and Heeks, 2001; Shemi and Magembe, 2002, Machacha, 2002).

National baseline surveys were carried out in the country in 1993, 1995 and 1999. These surveys were to ascertain the magnitude of MSEs in the country and the extent to which they provided employment and income. The 1993 survey revealed that there were 910,000 MSEs employing up to 2 million people (Parker and Torres, 1993). In 1995, the survey ascertained that there were 708,000 MSEs employing 1.2 million people and that this sector provided more employment than the formal sector (Daniels et. al, 1995). The average income of these MSEs was 2.5 times higher than the minimum legislated monthly wage for general labourers (Daniels et. al, 1995). Today there are approximately 1.3 million MSEs in the country employing up to 2.4 million people and providing on average 18% of the country's GDP (CBS et. al, 1999). Sectoral distributions of MSEs show that 64% of all enterprises are in the trade sector (CBS et. al, 1999). Services and manufacturing sectors have 15% and 13% respectively whereas construction sector accounts for less than 2% of the total (CBS et. al, 1999). Regional distribution of MSEs is not specified even though the 1999 survey covered most parts of the country. It is only mentioned that a large proportion of MSEs are in the rural areas i.e. 74% of manufacturing, 70% of construction and 67% of trade (CBS et. al, 1999).

All SMEs today are competing not only with each other locally but also with global companies for the same market. They therefore need to explore new ways and approaches in reaching out to both local and global markets in order to increase their market share. Thus, they need to adopt more competitive strategies in order to survive and thrive in the market. The choice of Westlands Division was mainly informed by its recent development into a major commercial and economic hub outside the Central Business District of Nairobi (CBD) and the high likelihood that most of the businesses in the area have embraced ICT to support their business operations and processes. The Baseline survey of 1999 showed that there were approximately 92,160 SMEs in Nairobi in 1999 and a total of 1.3 million SMEs in the entire country employing 2.4 million people. Westlands division of Nairobi had a human population of 290,517 in the 1999 national census. Using the projected growth rate of 4.8% per annum, the current population of Westlands is approximately 429,965 people {290,517 + [(4.8%*290,517)10]}. According to CBS, ICEG and K-Rep (1999) MSE Baseline survey results, the total number of enterprises per 1,000 residents of the Kenyan population is 43 SMEs. Hence, the population of all SMEs in Westlands is approximately 18,488 (429,965 ÷1,000 x 43); assuming a steady growth rate.

This study was aimed at finding out what business value strategic information systems add to SMEs. The researcher looked into the strategic role of information systems in enhancing the productivity, competitiveness and profitability of the SMEs. The important aspect of the study was to identify the extent of alignment in the businesses based on the use of information systems (IS) to support business operations and strategic decisions of the SMEs and how the information systems are used to solve real business problems affecting business enterprises hence providing business value to the business. The research findings were used to understand the effective utilization of the various IS for business value addition within SMEs.

1.1.5. Westlands Division

Westlands is a suburb of Nairobi that was until the early 1980s composed of residential homes and a few shops which has now developed into a major commercial and economic area outside the Central Business District of Nairobi. Apart from being a commercial centre, Westlands is also one the eight administrative divisions in Nairobi. The division consists of the following six subdivisions (locations): Parklands, Kitisuru, Highridge,

Kangemi, Kilimani, and Lavington. Westlands is also an electoral constituency, the Westlands Constituency which has the same borders with Westlands division. According to the 1999 census results, Westlands division had a population of 290,517 people distributed among the various locations as follows: Highridge 65,268, Kangemi 82,964, Kilimani 61,290, Kitisuru 38,424, Lavington 26,540 and Parklands 16,031.

1.1. Statement of the Research Problem

Strategic information systems play an important role in providing organizations with a competitive edge in a competitive business environment. They may deliver a product or service that is at a lower cost, that is differentiated, that focuses on a particular market segment, or is innovative. These systems also provide organisations with timely information with regard to: customer tastes and preferences, needs and wants, supplier availability, competition, markets etc. thus strengthening their competitiveness in the market place. Strategic information systems like e-commerce have for instance enabled businesses to penetrate global markets thus generating more revenue. Strategic Information Systems therefore add business value to business organizations across different sectors, SMEs included. According to Higgins & Vincze (1993), strategic information systems are the combination of those parts of an organisation's cluster of information systems which provide information into its strategic planning processes. They perform the functions of gathering, maintaining and analysing data concerning internal resources, and intelligence about competitors, suppliers, customers, government and other relevant stakeholders.

SMEs have become an important contributor to the Kenyan economy. The sector contributes to the national objective of creating employment opportunities, training entrepreneurs, generating income and providing a source of livelihood for the majority of low to middle income households in the country (Republic of Kenya, 1989, 1992, 1994), accounting for 12–14% of GDP. The sector is therefore of great significance to economic growth and development. There is currently a major focus on SMEs in the development strategy. The SME sector is seen as a key entry point for development initiatives (Alila and Pedersen, 2001). Given the sectors important contribution to the economic development and employment creation, it is important to know the extent of information systems application within the SMEs for improved performance and profitability,

particularly with regard to the use of strategic information systems to support their business strategies.

Traditionally, businesses have relied on generic strategies like the porter's five forces model to achieve competitive advantage. This is no longer promising due to the increasing complexity of the business environment and intense competition by businesses for the same markets hence the need to adopt more modern ways of improving their competitiveness in the market. Wiseman (1988) emphasizes that companies need to use information systems strategically to reap significant competitive advantage. Wiseman points out that although the use of information systems may not always lead to competitive advantage, it can serve as an important tool in the firm's strategic plan. This study therefore aimed at finding out how SMEs have aligned their information systems with business strategies in order to gain and maintain competitive advantage.

SMEs need to take advantage of the power of SIS in order to take on the competition, whether small, medium or big, local or global. Both the traditional and the modern tools for instance strategic information systems are very important for the competitiveness of the business. However, most SMEs might not implement SIS due to such reasons as; limited funds, lack of knowledge, lack of skilled staff, lack of tools etc. Consequently, there is a need for an effective approach to adoption of SIS that matches the current position of business organisations. Currently there is very little research reporting about the alignment of the business and IT in Kenya to increase business performance. Hence there is a need for more literature about Strategic Information Systems Planning and the way organisations integrate their IT/business strategies. Tan (1999) explored the views of executives with respect to business-IT alignment and suggests that for business-IT alignment to succeed, relationship between the people is more important rather than the strategy.

The main purpose of this research was to focus on the strategy and the type of information systems used to support the business' long term objectives and strategies. Norman and Scadden (2005) conducted the study on a suitable strategic model for small and medium enterprises in New Zealand. They developed an IT strategic plan for an electrical contract company to explore the application of theory in real-life. The study

concluded that the Small and Medium Enterprise (SME) business operators do not recognize strategic planning as relevant to day-to day running of business activities.

Studies that have been done on SMEs in Kenya have not concentrated on strategic information systems. Kinyanjui, M. (2000) investigated the opportunities in enterprise clusters in Kenya with a focus on Ziwani and Kigandaini. Wanjohi, A.M. and Mugure, A. (2008) on the other hand looked at the factors affecting the growth of MSEs in rural Kenya basing their study on ICT firms in Kiserian Township of Kajiado District. Njeru, E.H.N. and Njoka J.M. (1998) conducted a survey on the socio-cultural factors influencing investment patterns among informal sector women entrepreneurs while McCormick, D. and Kinyanjui, M.N. (2004) investigated capacity building of Micro and Small Enterprises. The government of Kenya also did a survey in 2005 to establish how the development of Micro and Small Enterprises facilitates Wealth and Employment Creation for Poverty Reduction. There is therefore no local study that has been carried out so far, specifically to establish the business value addition of strategic information systems to SMEs either within the country in general or Westlands division in particular. This study therefore aimed to fill this gap by developing the necessary information on the business value of strategic information systems in small and medium enterprises (SMEs) in Westlands Division of Nairobi, Kenya.

1.2. Objective of the Study

The objective of this study was to determine the business value of strategic information systems in small and medium enterprises (SMEs) within Westlands division of Nairobi, Kenya.

1.3. Justification of the Study

The Kenya government considers the SME sector as a key industrial player and future source of employment for many of the graduates leaving colleges and universities every year. However, most Kenyan SMEs do not fully realize their business vision. This in most cases is as a result of lack of valuable strategic information to facilitate effective decision making within the business. Since effective decision making is at the heart of SMEs business success, use of SIS can lead to access of timely, current, relevant and adequate information for informed decision making and strategic planning. The findings

of this study are of great importance to SMEs in Kenya as it will enlighten them on the business value of strategic information systems which can provide them with the much needed competitive edge in the market. The business managers will get to know how they can generate strategic and valuable business information relating to forces within the external business environment which require urgent attention and response in timely manner.

Recent years have seen the growth of SMEs due to shrinking national economies. SMEs have become important avenues for employment and income generation in Kenya. The sector absorbs most of the labour force and this means creation of income for those involved. Any effort to study this important sector is vital and more so, on the use of SIS for business value addition within the sector cannot be underestimated. In Kenya, there is a dearth of literature and work done on the effects of SIS on the SME sector. This deficiency is inexcusable considering that about 26% of the total households in Kenya are involved in entrepreneurial activities (CBS, et. at, 1999). It is therefore important to develop information on the business value of SIS in this sector. A study of this kind sheds light on the SIS SMEs use in order to reap maximum business benefits. This study contributes to the existing literature of the very central issue of use of SIS among SMEs in Kenya

This study is of benefit to the stakeholders and developers of information systems for businesses because the information gathered will enable them develop tailor-made and relevant business information systems that provide business value to SMEs. Information Systems developers will be informed of the unique characteristics of SMEs and thus develop the appropriate Information Systems to meet their specific strategic needs. The Government of Kenya on the other hand will ensure that any formulated ICT policies promote the growth of the SME sector. It will also come up with the appropriate measures to improve the business environment for the SME sector in Kenya. As for students and future researchers interested in this area, the findings of this study will add on to the knowledge base of SIS and the SME sector in Kenya.

1.4. Scope of the Study

The subject area of this study was Strategic information systems (SIS) and the business value they create for small and medium businesses. The strategic Information systems that this study focused on were the type that enhance the competitiveness of a business enterprise or changes the way a business operates at various strategy levels such as corporate level strategy IS, business level strategy IS, operations-Level Strategy IS and Strategic Transitions IS that are available to a cross-section of SMEs in Westlands, Nairobi. The integration of information and Communications technology (ICT) with business processes i.e. how ICT is being used to deliver business value and how strategically it is being used to achieve competitive edge was the focus of this research. In this study, the researcher took the strategic perspective of the various business managers and studied how these small and medium firms get more strategic value from there IS/ICT investments. This is because every business manager needs to know the importance of IS/ICT in driving business strategy and bringing more business value since they are the ones who make strategic decisions and authorize capital spending.

The study mainly focused on the strategic impact and business value that can be achieved rather than the details of the technology. The study adopted a cross-sectional approach covering SMEs located in Westlands Division of Nairobi, whose population is a mixture of sole traders, partnerships and joint stock companies from across industries. The research mainly targeted the business managers or the ownership of the selected businesses since they are the people who influence and shape the strategic direction these businesses take. Selected ICT staffs were also interviewed in order to understand their knowledge and understanding of the business and area of alignment with ICT. The choice of Westlands division of Nairobi was mainly due to the likelihood of majority of SMEs in the area having embraced ICT to support their business operations and strategies.

1.5. Limitations of the Study

The study was limited to Westlands division covering mainly SMEs in the trade/retail and services sector. Lack of published work on SMEs in the area has led to information gap; therefore this limited the study's comparisons and generalizations since there is no similar study. Time and financial constraints were also a challenge to the researcher because of limited resources and busy work schedule.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examined the relevant literature written in the field of strategic information systems (SIS) and their business value to small and medium business enterprises in general. It basically covered relevant contributions in the area of business value addition of strategic information systems and how they support an organisation in fulfilling its business objectives and enhancing its competitiveness in the marketplace.

2.2 Business Value

According to Porter (2008), today organisations in all spheres must compete to deliver business value. Business value can be described as the ability of an organisation to meet and/or exceed the needs and expectations of its customers, and do so efficiently in a manner that increases the profitability of the business. Oganisations have to deliver value to their customers. This is now just as true for a hospital delivering health care, or a foundation making charitable contributions, as it is for a business organisation producing and selling a product or a service. A strong business value proposition will offer an organization a strong differential between it and the competitors, increase not only the quantity but the quality of prospective leads, gain market share in the targeted segments, assist in enhancing tools that will help close more business and improve business operations efficiency. Due to the intense competition in the business environment most business managers are continuously searching for ways of staying ahead of the competition by offering the market superior products at an affordable price and still remaining profitable.

2.3 Strategic Information Systems

Clarke (2005) defines strategic information system (SIS) as “an information system which supports an organisation in fulfilling its business goals”. According to Ward and Peppard (2002), SIS functions in ways that are similar to data processing and management information systems, however, it is the impact it causes on the business due to the continual changes they enable or cause that makes the difference. SIS help improve business competitiveness by changing the way business is conducted. They are systems

that fundamentally change the organization itself. So viewed from this perspective, each of the six types of systems; Transaction Processing Systems (TPS), Knowledge Work Systems (KWS), Office Automation Systems (OAS), Management Information Systems (MIS), Decision Support Systems (DSS) and Executive Support Systems (ESS) can potentially be regarded as strategic information systems if their impact transforms the goals, business processes, products and external relations of the company to produce competitive advantage. In fact strategic information systems can change the very nature of the business.

For the purposes of this research and based on the various definitions of strategic information systems gathered from the available literature, strategic information systems will be defined as a computer based system that collects, processes, analyzes, stores, and disseminates information that support the attainment of shared business goals and assist in effective management decision making and problem solving.

2.4 Strategic Information Systems and Business Value

The concept of strategic information systems has gained acceptance, emphasizing the fact that information is a strategic resource. Strategic information systems can be at any level of management. They are systems that fundamentally change the organisation itself and the way it conducts its business. For almost as long as computers have been used in business, the strategic potential of automated information systems has been recognised. Kriebel (1968) and Whisler (1970) were among the first to identify the strategic importance of information systems and to discuss the necessary linkage between the information systems and a business framework. Ciborra (1991), Krcmar and Lucas (1991), say that strategic information systems are those systems which enable firms to deliver business value and achieve strategies of sustained *competitive advantage* over their rivals. Some authors have attempted to draw a distinction between strategic and competitive' systems (Huff and Beattie 1985). The distinction centers upon the supposition that strategic systems help senior managers to create and monitor the strategic plan, whereas competitive systems help them to make the strategy operational. Therefore, the definition of strategic information system used here is an information system which is intended to enable its operator to deliver business value and achieve

sustain competitive advantage and over its rivals under a variety of environmental conditions.

2.5 Strategic Information Systems and Small & Medium Enterprises

Information is the lifeblood of any business enterprise. Business managers and employees need timely information for effective decision making to ensure improved productivity, profitability, customer satisfaction and improved cycle times, hence the need for an efficient and effective system to avail the required information. Clarke (2005) defines strategic information system (SIS) as "an information system which supports an organisation in fulfilling its business goals". According to Ward and Peppard (2002), SIS functions in ways that are similar to data processing and management information systems, however, it is the impact it causes on the business due to the continual changes they enable or cause that makes the difference. SIS help improve business competitiveness by changing the way business is conducted. They are systems that fundamentally change the organization itself. So viewed from this perspective, each of the six types of systems; Transaction Processing Systems (TPS), Knowledge Work Systems (KWS), Office Automation Systems (OAS), Management Information Systems (MIS), Decision Support Systems (DSS) and Executive Support Systems (ESS) can potentially be regarded as strategic information systems if their impact transforms the goals, business processes, products and external relations of the company to produce competitive advantage. In fact strategic information systems can change the very nature of the business.

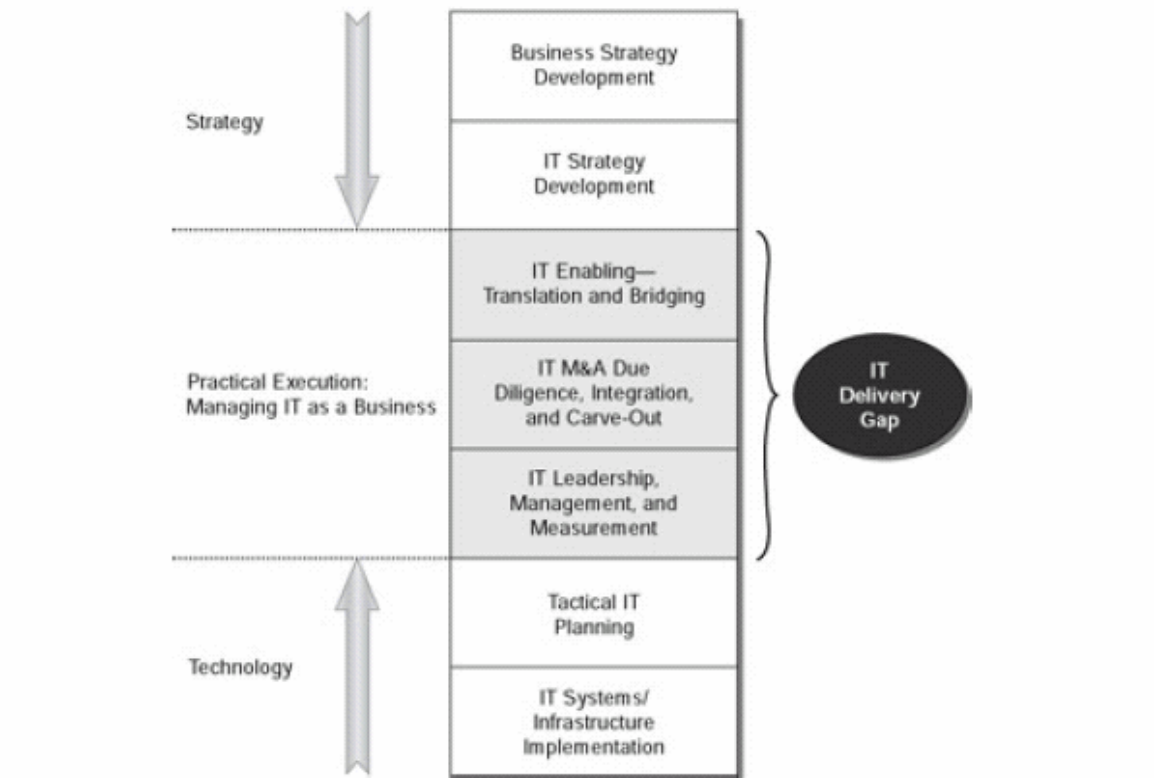
In the recent past, the importance of the information systems and technology has changed and the need to manage IS/IT strategically has increased. Many business organisations small or large are looking at IS/IT and are concerned about obtaining acceptable rate of returns from the investments. They are concerned about meeting the current and future business requirements and delivering business value to their customers. These concerns require effective planning and management in the changing business environment. Consequently, strategic information systems planning (SISP) is a critical issue.

2.6 IS/IT - Business Alignment

For an organisation to achieve competitive advantage it is important that the business use IS/IT to support the main business processes and become dependent on IS/IT. It is also important that there is IT participation in business planning (BP) and vice-versa. Chan and Huff (1993) say alignment of an IS plan and the business plan is very important and it leads to IS efficiency and value. A closer look at the aims for adopting an IS/IT strategy according to Ward and Peppard (2002), the Strategic Information Systems Planning (SISP) process is used for aligning IS/IT with business to gain competitive advantage from business opportunities created by using IS/IT. Ingevaldson (2004) claims that alignment of IT with the company strategies is not easy, it requires the senior management to take a different approach towards IT and devote certain amount of time, understanding the usage of IS and IT in the business. It is important for them to understand that IT is not only important for the corporate strategy, at times it is the strategy. On the other side, Telesca (2001) suggest that, to improve the IS/IT –business alignment, it is important for IT to understand its business industry. The author further suggests, "Sometimes, creating an understanding of the business means creating an atmosphere that reflects the business focus."

However, not all IT projects are implemented and many factors have been identified that contribute to IT failures. One of the main failures that have been highlighted is that the failure to implement is due to the planning process and its practices (Hartono et al., 2003). Another major problem that has been seen in SISP is "failure to translate goals and objectives into action plans" (Teo and Ang, 2001 in Hartono et al., 2003) and lack of support for IT architecture and also the duration of SISP have been viewed as factors contributing to low rate of implementation. In the words of Lutchen (2004), "The main reason IT organisations and CIOs fail to deliver value to the business is their inability to focus sufficient attention and resources on the area in the middle—the *IT Delivery Gap*."

Figure 1: IT Delivery Spectrum



Source: Lutchen (2004); *Managing IT as a business: a survival guide for CEOs.*

As mentioned above both IS/IT and business executives should work closely to ensure strategic IT alignment, which according to Reich and Benbasant (1996) is a process. It is unique to each organisation and uses both the IT and business knowledge to support business objectives. Thus, it is important to bring IT into the main business stream and let IT function as an entity in the business. For this to happen, the senior executives in the companies must work together and define the business needs and frame an IS/IT and business strategy to support the business goals and objectives. Thus, for an organisation to achieve competitive advantage and improve business performance it is important to align its IS/IT plan with the business plan, and IS/IT systems should be used in accordance with the resources and the capabilities of the organisation in times of environmental changes. SISP is a way to implement those IS/IT systems not only to achieve competitive advantage but also for proper functioning in the ever-changing business environment. As Kearns and Lederer (2004) have suggested that there is a need to align the IT plans with the business plans to improve the organisational performance.

Powell (1993) suggests that the main aim of the information systems and the SISP is to influence the organisation positively. Lederer and Salmela (1996) (citing King, 1988; Venkatraman, Henderson and Oldach, 1993; Chan, 1992) say, “Indication of such favourable effect is that the implemented projects fit organisation’s objectives”. This fit may be termed as an alignment. The next section outlines the systems that can be used for satisfying the organisational requirements.

2.7 Organisational Applications

With the improvement of computer-based solutions, many organisations are implementing IS/IT applications to improve the efficiency and effectiveness of the business operations. The implementation ranges from the use of small functional information systems to large enterprise-wide systems such as Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM). ERP is “a process of planning and managing all resources and their use in the entire enterprise. The software is comprised of a set of applications that automate routine back-end operations, such as financial, inventory management and scheduling” (O’Leary, 2000 as cited by Turban, McLean and Wetherbe, 2004). Koch (2006) suggests that ERP has nothing to do with resource and planning. The most important part is enterprise. “The software attempts to integrate all departments and functions across a company onto a single computer system that can serve all those departments’ particular needs” (Koch, 2006). Turban, Mclean and Wetherbe (2004) also imply that the “term *Enterprise Resource Planning* is misleading because the software does not concentrate on either planning or resources”. As Stratman and Roth (2002) say, the main objective of ERP is to “integrate all departments and functions across a company” on a single computer system to serve organisational needs. The implementation of ERP allows organisations to work around business processes and thus, making the alignment of IT and business goals more likely. Kansal (2006) argues that, the implementation of ERP is “usually large, complex projects, involving large groups of people and other”. Thus, ERP’s are suitable for large organisations. Organisations also use another type of IS that helps in sufficing the business objectives. Customer Relationship Management is a “corporate wide approach to understanding customer behaviour, influencing it through continuous relevant communication and developing long-term relationships to enhance customer loyalty, acquisition, retention, and profitability” (Sharp, 2003). CRM identifies customers at the core of the business.

Ward and Peppard (2002) conclude, “The main operational processes of the business such as customer order entry and fulfillment should be well designed both in business process and technical terms”. Transaction processing systems (TPS) provide support to the operational business processes. TPS “monitors, collects, stores, processes and disseminates information for all routine core business transactions” (Turban, McLean and Wetherbe, 2004). The concept of supply and demand was combined under a single name as supply chain. As the purpose of supply chain increased, the concept of adding value came into existence.

Nowadays organisations use Supply Chain Management (SCM) to serve the business direction. SCM is the “design, maintenance, and operation of supply chain processes for satisfaction of end-user needs” (Ayers, 2002). SCM software supports specific segments of the supply chain. These segments include manufacturing, inventory control, scheduling and transportation. The main goal of implementing SCM software is to minimise the risks in the supply chain and maximise the value in the supply chain.

There is extensive use of high potential systems such as ERP, CRM and SCM. Most of these systems are being used across the industry. Nowadays, customer satisfaction is becoming the main goal for many organisations, thus CRM helps the organisations to view customers as the core of the business and company’s success depends on the relationship with them (Brown, 2000 in Turban, McLean and Wetherbe, 2004).

2.8 Research Gaps

There is a need for an effective approach to adoption of SIS that matches the current position of organisations. There is very little research reporting about the alignment of the business and IT in Kenya to increase business performance. There is a need for more literature about Strategic Information Systems Planning and the way organisations integrate their IT/business strategies. Tan (1999) explored the views of executives with respect to business-IT alignment. Tan (1999) suggests that for business-IT alignment to succeed, relationship between the people is more important rather than the strategy. The main purpose of this research is to focus on the strategy and the type of systems used to support the business' long term objectives. Norman and Scadden (2005) conducted the study on a suitable strategic model for small and medium enterprises in New Zealand. They developed an IT strategic plan for an electrical contract company to explore the application of theory in real-life. The study concluded that the Small and Medium Enterprise (SME) business operators do not recognize strategic planning as relevant to day-to day running of business activities. Very little research has been conducted for the development of planning in SMEs. The NZ State Service Commission (SSC) provides the guidelines for managing and monitoring major IT projects. The guidelines lay an importance of alignment of major IT projects to the government direction and not providing an outline for the NZ business operators (State Service Commission, 2002).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section describes the methodology that was adopted for the study. It highlights the research design, population of study, sampling techniques, data collection methods and instruments and data presentation and analysis.

3.2 Research Design

To ensure greater variety of the data collected, the researcher adopted a cross-sectional survey method covering SMEs in selected locations within Westlands division. Selected participants' views (people involved in the processes of aligning IS with strategic business plans) from the SMEs was the focus of interest. The research design involved collecting and analyzing data and then reporting it accordingly. The exploratory study was done using a questionnaire to collect data to answer the research objective on the subject of business value of strategic information systems within SMEs in Westlands Division. The questionnaires were personally delivered to the selected respondents. The survey method was selected owing to the fact that different SMEs adopt various kinds of information systems depending on their strategic objectives and plans, the nature of product offered and level of competition within the industry among other environmental forces. This design therefore ensured a wide range of data that was be very useful in comprehensively answering the research questions.

3.3 Population of the Study

According to Cooper and Schindler (2001), a population is the total collection of elements about which we wish to make some inferences. In this study, the population consisted of all SMEs in Westlands division of Nairobi. However, the study covered only selected SMEs within the area of study. The choice of Westlands Division was mainly informed by its recent development into a major commercial and economic hub outside the Central Business District of Nairobi (CBD) and the high likelihood that most of the businesses in the area have embraced ICT in their business operations and processes.

The Baseline survey of 1999 results showed that there were approximately 92,160 SMEs in Nairobi in 1999 and a total of 1.3 million SMEs in the entire country employing 2.4

million people. Westlands division of Nairobi had a human population of 290,517 in the 1999 national census. Using the projected growth rate of 4.8% per annum, the current population of Westlands is approximately 429,965 people {290,517 + [(4.8%*290,517)10]}. According to CBS, ICEG and K-Rep (1999) MSE Baseline survey results, the total number of enterprises per 1,000 residents of the Kenyan population is 43 SMEs. Hence, the population of all SMEs in Westlands is approximately 18,488 (429,965 ÷1,000 x 43); assuming a steady growth rate.

3.4 Sampling and Sampling Techniques

A combination of cluster, stratified and random sampling methods combined with Snowball sampling was used in selecting the enterprises. According to Thietart, Xuereb, Zarlowski, Royer, Perret, Milano, et al (2001), cluster sampling makes repeated selections at different levels with the first stage corresponding to the selection of elements called primary units. In cluster sampling, the population is divided into mutually exhaustive subsets. Pervez and Kjell (2002) argue that using all the sample elements in all the selected clusters may be prohibitively expensive or not necessary. Under these circumstances, cluster sampling becomes useful. Instead of using all the elements contained in the selected clusters, the researcher randomly selects elements from each cluster. Constructing the clusters is the first stage. Deciding what elements within the cluster to use is the second stage. The technique is used frequently when a complete list of all members of the population does not exist. Snowball sampling is defined as a technique for finding research subjects. One subject gives the researcher the name of another subject, who in turn provides the name of a third, and so on (Vogt, 1999).

The targeted subjects were business managers and/or owners since they are the ones who make strategic decisions in the SMEs or because they can direct the researcher to the relevant people. Getting the decision maker was important in gaining a better understanding of the issues. The other group of people that were targeted comprised the IT head and/or personnel sue to their knowledge of the relatively technical aspects of the study. In this study, administrative locations of Westlands division (Highridge, Kangemi, Kilimani, Kitisuru, Lavington, Parklands) were clustered to form the primary sampling units (PSUs). Out of the six administrative locations, three (Parklands, Kangemi, Lavington) were randomly selected to form approximately half of the population. The

sample enterprises were randomly picked from within the three locations after stratifying the SMEs by type. The SMEs were stratified into Manufacturing, Trade/Retail, Services, Bar/Hotel/Restaurant and Construction. In this study, the sampling frame comprised of selected SMEs in the Westlands division of Nairobi. This area was selected due to its recent development into a major commercial and economic area outside the Central Business District of Nairobi (CBD) and the high likelihood that most of the businesses in the area have embraced ICT to support their business operations, processes and strategies.

3.4.1 Sample Size

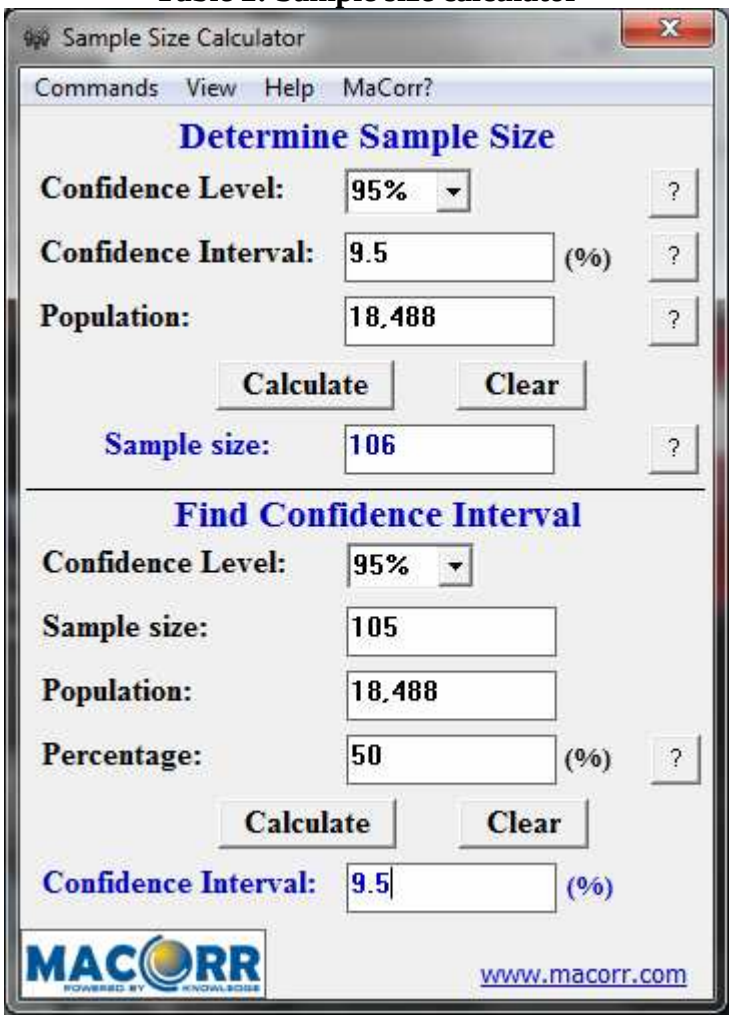
A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Merriam, 2003). Thietart et al, (2001) defines a sample as the set of elements from which data is collected. When determining sample size, the degree of confidence associated with the estimate needs to be taken into account (Pervez and Kjell, 2002). A total of 105 businesses; 35 each from the locations picked (Parklands, Kangemi and Lavington) formed the sample. Table 3.1 below shows the sample as per each location.

Table 1: Sample Size

Location of Business	**Totals**
Parklands	35
Kangemi	35
Lavington	35
Totals	**105**

This sample size was derived from Macorr sample size calculator on **http://www.macorr.com/ss_calculator.htm** using the estimated population discussed in the population sub-chapter above. The calculation is as indicated here below:

Table 2: Sample size calculator



Source: *Macorr sample size calculator on http://www.macorr.com/ss_calculator.htm*

Sample Size Formula

$$ss = \frac{Z^2 * (p) * (1-p)}{C^2}$$

where:
Z = Z value (e.g. 1.96 for 95% confidence level)
p = percentage picking a choice, expressed as decimal
(.5 used for sample size needed)
c = confidence interval, expressed as decimal
(e.g., .04 = ±4)

3.5 Data Collection Method

According to Creswell (1994), “the data collection steps involve (a) setting the boundaries for the study, (b) collecting information through observations, interviews, documents, and visual materials, and (c) establishing the protocol for recording information.” The research investigated the business value of strategic information systems (SIS) and the extent of alignment of IS and business strategies in the 105 selected SMEs.

3.5.1 Data Collection Instruments

Data was collected through pre-designed questionnaires filled in by the target group of the top business and IT people within the selected SMEs. The questions were closed ended and specifically addressed the topic and the objective of the study. The researcher first developed a draft questionnaire and pre-tested it on three SMEs within the area of study. The refined questionnaires were then filled by the respondents at the business premises of the selected SMEs and collected a few days later as agreed.

3.5.2 Research Respondents

The targeted subjects were business managers and/or owners of the SMEs since they make strategic decisions for their businesses or because they could direct the researcher to the relevant people within the business. Getting the decision maker was important in gaining a better understanding of the core business issues. The other group of people that were targeted comprised of the IT head and/or personnel since they were in a much better position to respond to the technical aspects of the study. Getting the input from the IT Head and/or personnel was very critical because they are the ones who develop ICT solutions that are intended to add business value to the SMEs.

3.5.3 Administration of Data Collection Instruments

The researcher used self administered questionnaires which the respondents filled in independently with little assistance from the researcher. These contained written down closed ended questions to which the respondents were required to fill in writing. The specific reasons for choosing self-administered questionnaires was because the target groups were expected to have reasonable education level for them to read, interpret and provide relevant answers to the questions. It was also the cheapest and easiest method of

collecting large amounts of data. The questionnaires were delivered personally by the researcher to the selected respondents.

3.6 Research Procedures

The questionnaires were prepared in advance and first tested on a pilot sample of three firms representing each of the locations. They were then revised as accordingly before being hand delivered to the respondents by the researcher. This enabled the researcher to validate the instrument before the final data collection. The questionnaires (together with the letter of introduction) were addressed to the business owner/manager or to the chief executive officer. On delivery, the researcher agreed with the interviewee on the appropriate date of collecting the filled questionnaires which was within a period of three days. The researcher asked for the interviewee's telephone number and communicated with the interviewee the day before collecting the filled questionnaire to confirm on the appropriate time of collecting the questionnaire. This was also to ensure the interviewee does not push aside the questionnaire.

3.7 Data Analysis and Presentation

This involved the preparation of data collected into useful, clear and understandable information. The data collected from the field was analysed and processed into meaningful and relevant information. It was coded, edited and tabulated. It was also accorded percentages to facilitate analysis. Statistical Package for Social Science (SPSS) version 15 was used to analyse the primary data that was collected. Content analysis technique was used to process secondary and qualitative data for the study. Qualitative was analysed by comparison to findings already known and conclusions made depending on how the findings related to the research questions. Findings were then presented in headings and raw data then transformed into information. To better the understanding of the findings, the information was then presented into percentages, pie charts and tables with an analysis as discussed in chapter four.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

4.1. Introduction

This chapter presents a detailed analysis and discussion of the data that was collected from the respondents. The data was collected by use of questionnaires which were filled in by the business managers/owners and IT personnel of the selected SMEs in Westlands Division. A total of 75 out of the targeted 105 respondents successfully completed and returned the questionnaires, representing a 71.4% response rate. This demonstrates that the respondents were largely cooperative to the researcher hence contributing to the success of the research process. This chapter is divided into sub-headings that reflect the objective of the study.

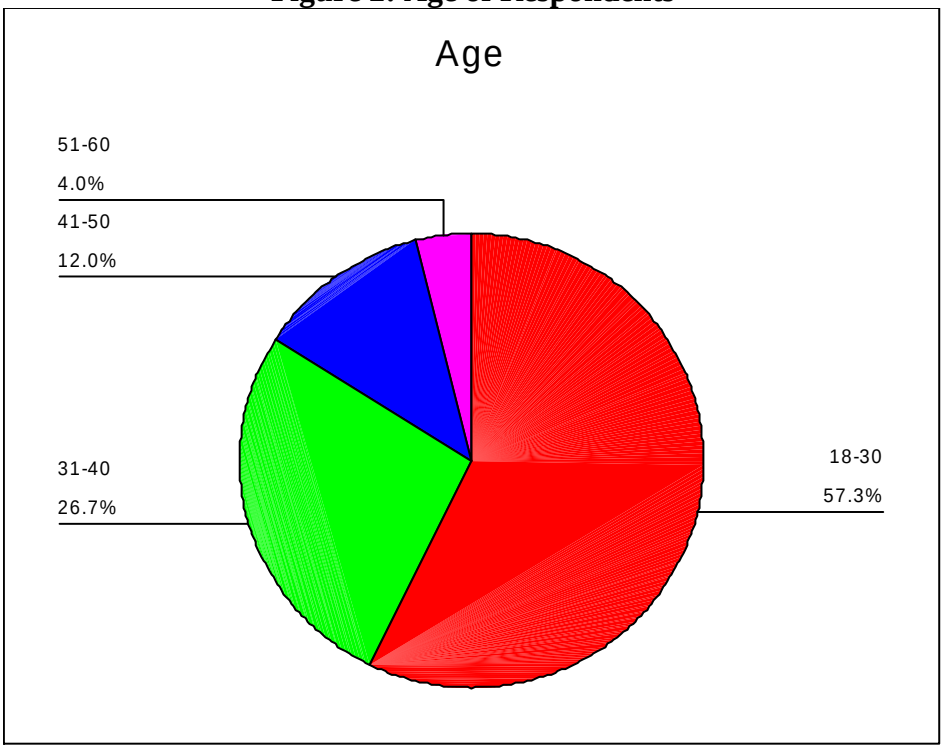
4.2. Demographic Information of Respondents

Adoption and use of strategic information systems by SMEs can be affected by demographics. The demographic information of the respondents covered in this study was: age, level of education, position occupied within the organisation and the numbers of years in the current position.

4.2.1. Age of Respondents

The age of the respondents ranged from 18-60 years. From table 4.1 it can be seen that 57.3% of the respondents were between 18-30 years. 26.7% of the respondents were aged between 31-40 years, 12% of the respondents belonged to 41-50 years age bracket, while only 4% was in the 51-60 years age group. The age of the respondents was mainly concentrated between the ages of 18-40 years with 57% of the respondents falling in this bracket. Figure 4.1 below gives an overview of the age of the respondents.

Figure 2: Age of Respondents



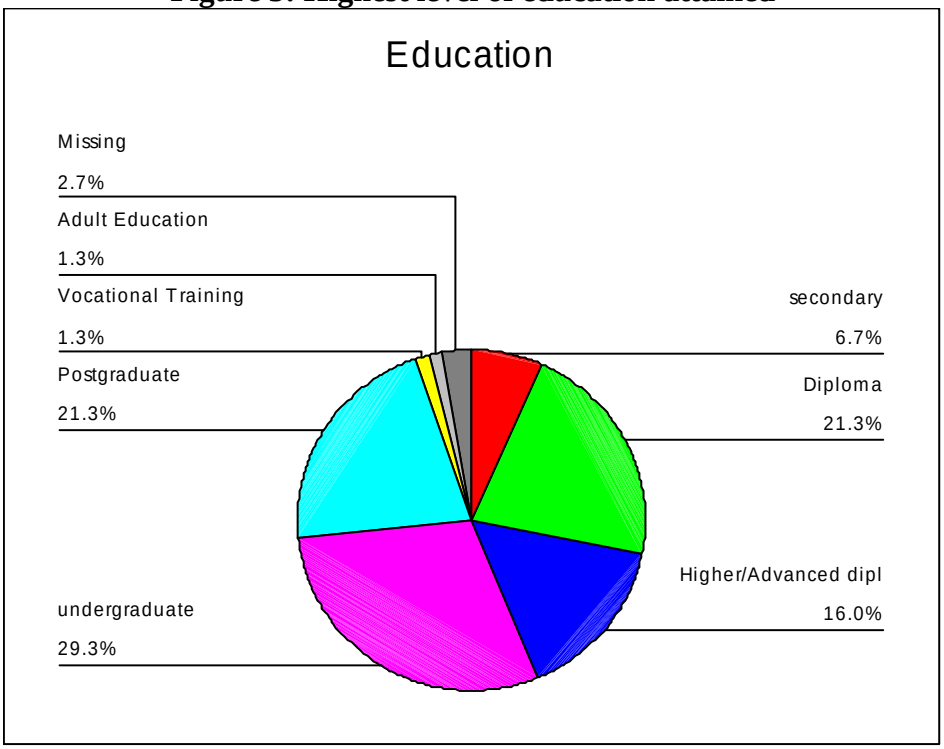
Source: *Research data*

Due to the personal effort and intensity of the work that is involved in setting up and operating a small or medium business, it may be assumed that age is a determinant for entry or operation in this sector. From the responses received, most of the employees in this sector are of a youthful age and highly active and their adoption of IT/IS is assumed to be easier as would have been the respondents of more advanced years of 50 and above. Most of the respondents are of a youthful age and have grown during the development of IT.

4.2.2. Highest Level of Education Attained

In terms of the highest level of education attained, 6.7% of the respondents indicated having completed secondary education; 21.3% had achieved diploma education; 16% had successfully completed advanced diploma courses, 29.3% had undergraduate degrees and 21.3% were holders of postgraduate degrees. A very small percentage of 1.3% had gone through vocational training and adult education respectively. The findings are summarized in figure 4.2 shown below.

Figure 3: Highest level of education attained



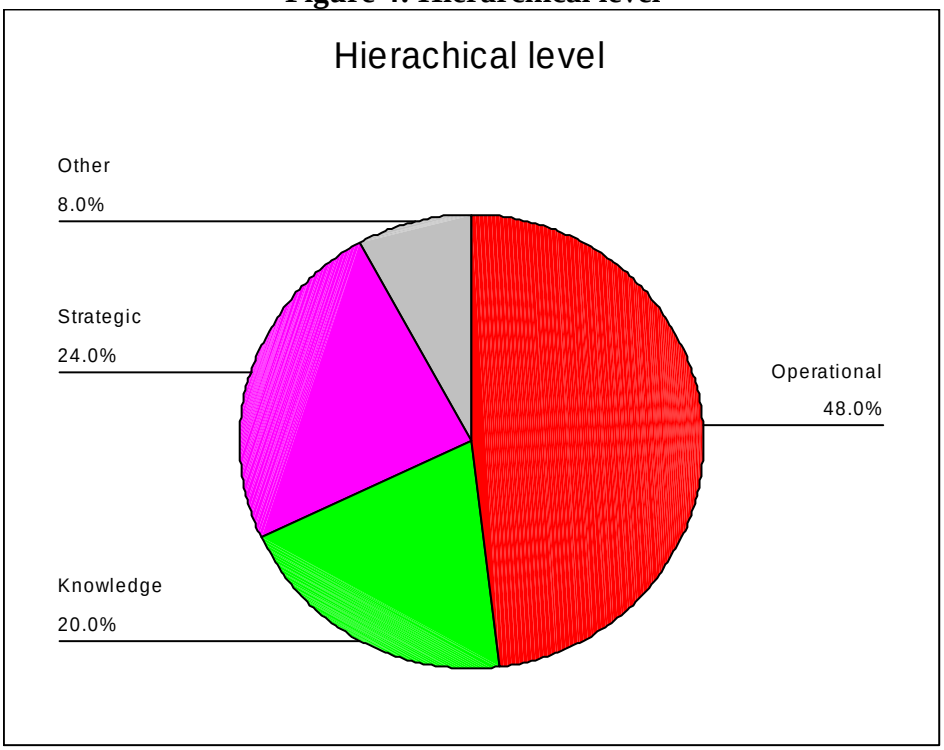
Source: *Research data*

From the responses on the age factor, a relationship was drawn indicating that most of those aged between 18-40 years had also completed secondary education, with all the holders of undergraduate degrees falling in the 18-30 years age bracket. This implied that for one to operate a small or medium business some formal education is very important and that is why majority of the respondents had at least a secondary education.

4.2.3. Position in the Organisation

In terms of organizational hierarchy; 36% of the respondents were in the operational level, 15 % in the knowledge level, 3% in the tactical level and 18% in the strategic level of management as captured in figure 4.3 below.

Figure 4: Hierarchical level



Source: *Research data*

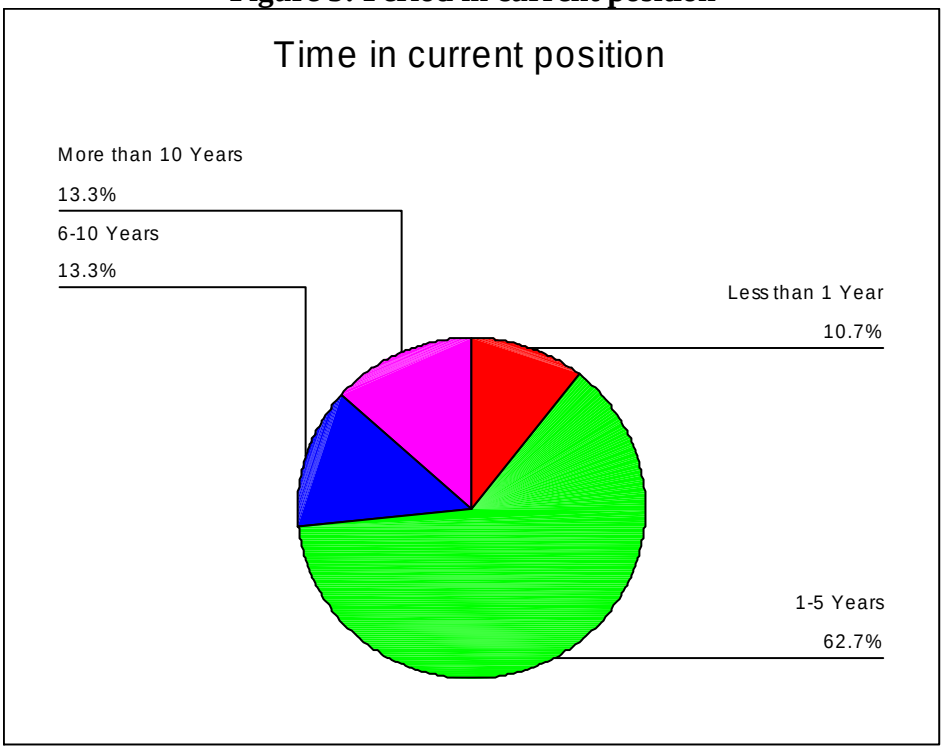
From the above findings, most of the respondents were either from the operational level or strategic level of the organizational hierarchy. The respondents from the operational level were mainly the IT personnel who are responsible for overseeing the organisations' information systems. On the other hand, majority of the respondents from the strategic level were either managers or owners who are responsible for setting the organisations' strategic direction.

4.2.4. Number of Years in Current Position

In relation to the amount of time the respondents had been in their current positions within the organisations; it was found that 10.7% of the respondents had been in their current position for less than 1 year; 62.7% between 1-5 years; 13.3 indicated 6-10 Years and 13.1% had stayed in their current level for over 10 years. Table 4.4 and figure 4.4 gives a summary of the number of years the respondents had stayed in their current positions in the organisations. About two thirds of the respondents had worked in their current positions for more than one. This gave the researcher sufficient confidence in the

information given since the respondents had stayed in their jobs long enough to be able to competently respond to the questions asked. See figure 4.4 for the summary.

Figure 5: Period in current position



Source: *Research data*

4.3. General Information on the Respondents' Organisations

The study sought general information about the businesses where the respondents worked. Among the areas of interest were; number of employees, business ownership, period of time within which the organisation has been in business, monthly turnover, main products the business deals in and the general benefits of using IT/IS in the business.

4.3.1. Number of Employees

The number of employees within the targeted organisations varied as follows; 48% of the businesses had less than 10 employees, 25.3% had from 10-50 staff, 14% employed between 50-100 people and only 12% had more than 100 employees. These statistics largely conform to the common definitions of an SME. According to the European Union definition, the category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons. In the UK, sections 382 and 465 of

the Companies Act 2006 define an SME for the purpose of accounting requirements. According to the Act, a small company is one that not more than 50 employees and a medium-sized company not more than 250 employees. In its ongoing research program that collects data on SMEs in Canada, Statistics Canada defines an SME as any business establishment with 0 to 499 employees. See table 4.5 below for the break down of the findings.

Table 3: Number of employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 10	36	48.0	48.0	48.0
	10-50	19	25.3	25.3	73.3
	50-100	11	14.7	14.7	88.0
	more than 100	9	12.0	12.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

4.3.2. Business Ownership

38.7% of the businesses were Sole Proprietorships and another 38.7% were partnerships. 14% were family owned businesses while a paltry 6% were joint stock companies. These findings underscore the various definitions given by some scholars that consider SMEs as largely part of the informal sector consisting of businesses such as sole proprietorship, partnerships, or family owned. Muuka (2002), in discussing the SME sector in Africa, noted that the informal sector (largely made up of SMEs) is huge due to the large numbers of employees it absorbs as a consequence of inadequate jobs and opportunities in the formal sector. He points out that in many African countries; the informal sector is estimated to employ from three to six times the number of employees in the formal sector. Daniels et. al, (1995), ascertained that there were 708,000 MSEs employing 1.2 million people and that this sector provided more employment than the formal sector (1995). The table 4.6 here-under gives a summary of the ownership as found out during the research.

Table 4: Type of business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sole Proprietorship	29	38.7	39.2	39.2
	Partnership	29	38.7	39.2	78.4
	Joint Stock Company	5	6.7	6.8	85.1
	Family Owned	11	14.7	14.9	100.0
	Total	74	98.7	100.0	
Missing	System	1	1.3		
Total		**75**	**100.0**		

Source: *Research data*

4.3.3. Duration of Operation

4% of the businesses visited had been in operation for less that 1 year; 14.7% had existed for between 1-2 years; 33.3% had been in operation for 3-5 years; 22.7% were 6-10 year old and 25.3% had been in existence for more than 10 years. A large majority, 81.3% of the organisations visited had been in operation for more than three years. This meant that whatever information they gave was based on practical experience particularly the secret behind there success so far. For summary of the findings, see table 4.7 shown below.

Table 5: Age of the business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 Year	3	4.0	4.0	4.0
	1-2 Years	11	14.7	14.7	18.7
	3-5 Years	25	33.3	33.3	52.0
	6-10 Years	17	22.7	22.7	74.7
	More than 10 Years	19	25.3	25.3	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

4.3.4. Business Turnover

The question on monthly turnover raised jitters amongst most of the respondents who were concerned about its importance to the study; nevertheless after understanding that the study was exclusively meant for academic use, 98.7% of the respondents gave their monthly turnovers as follows: 16% indicated that their monthly turnover was less than Kshs.50,000; 25.3% of the respondents gave their monthly turnover as between Kshs 50,000-100,000; 36% said their turnover ranged from Kshs. 100,00-500,000 and 21.3%

of the businesses visited had a monthly turnover of more than Kshs. 500,000. The break down of the monthly sales is as shown in table 4.8 here-below.

Table 6: Monthly Turnover

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below Kshs.50000	12	16.0	16.2	16.2
	Kshs.50000-100000	19	25.3	25.7	41.9
	Kshs.100001-500000	27	36.0	36.5	78.4
	Above Kshs. 5000000	16	21.3	21.6	100.0
	Total	74	98.7	100.0	
Missing	System	1	1.3		
Total		**75**	**100.0**		

Source: *Research data*

4.3.5. Products/Services

Majority of businesses visited were in the services and trade sectors and only a meager 1.3% were in the manufacturing business. This could imply that it is much easier to start and operate a service or trade business than it is to start a manufacturing business. This may be because starting a service or trade business requires much less capital outlay than setting up a manufacturing plant. The other reason could be that since Kenya is largely a service based economy, most SMEs will find it easier to set up a service or trade business. Formal education could also be playing a role in which business one sets up since most people will tend to start businesses they have adequate knowledge and technical competence in. The table 4.9 below gives a summary of the products offered by all the businesses visited.

Table 7: Nature of business

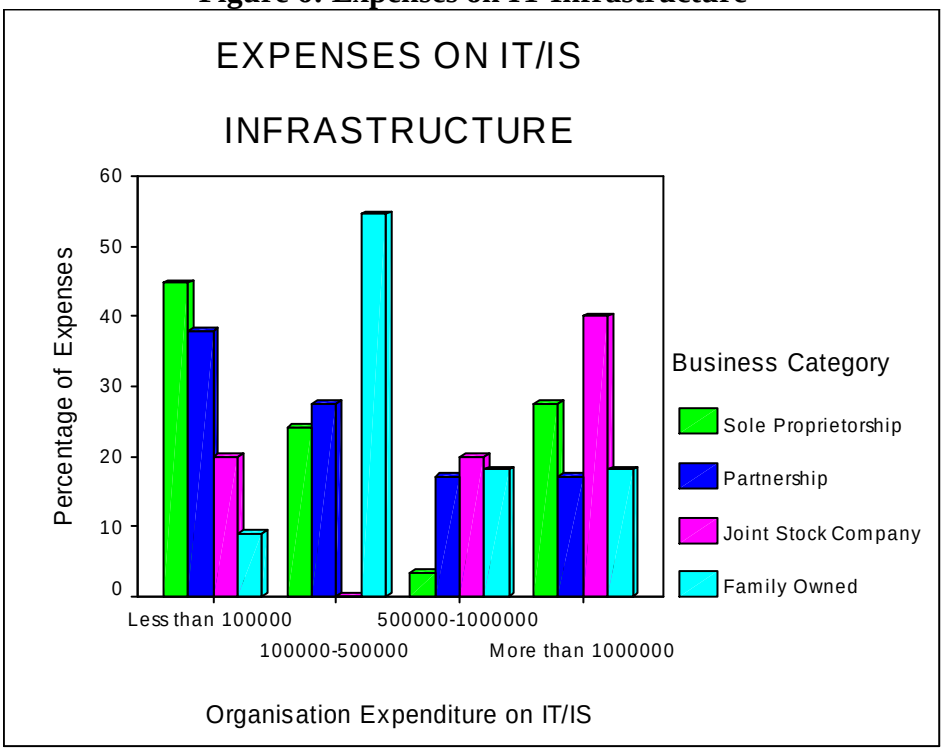
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Insurance	4	5.3	5.3	5.3
	Education	11	14.7	14.7	20.0
	Airline	1	1.3	1.3	21.3
	6	7	9.3	9.3	30.7
	Telecommunication	4	5.3	5.3	36.0
	Transport	10	13.3	13.3	49.3
	Retail	8	10.7	10.7	60.0
	Legal	2	2.7	2.7	62.7
	Manufacturing	1	1.3	1.3	64.0
	Automobile	8	10.7	10.7	74.7
	Auditing/Accountancy	9	12.0	12.0	86.7
	ICT	3	4.0	4.0	90.7
	Pharmaceuticals	4	5.3	5.3	96.0
	Real Estate	3	4.0	4.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

4.3.6. IT Expenditure

From the study, it was found out that the amount of investment that went into IT projects depended on the size of the business. Sole proprietorships and partnerships spent between Kshs. 100,000 – 1,000,000 on their IT projects over the past five years while some joint stock companies spent more than Kshs. 1 Million over the same period of time. However, most family owned businesses had spent between Kshs. 100,000 and 500,000 in five years on IT projects. Sole proprietorships and partnerships are usually relatively small businesses with small capital base hence the less investment in IT while joint stock businesses will often have larger capital base giving them the muscle to invest more in IT. Figure 4.5 below captures the expenditure on IT projects by the various categories of businesses visited during the research.

Figure 6: Expenses on IT Infrastructure



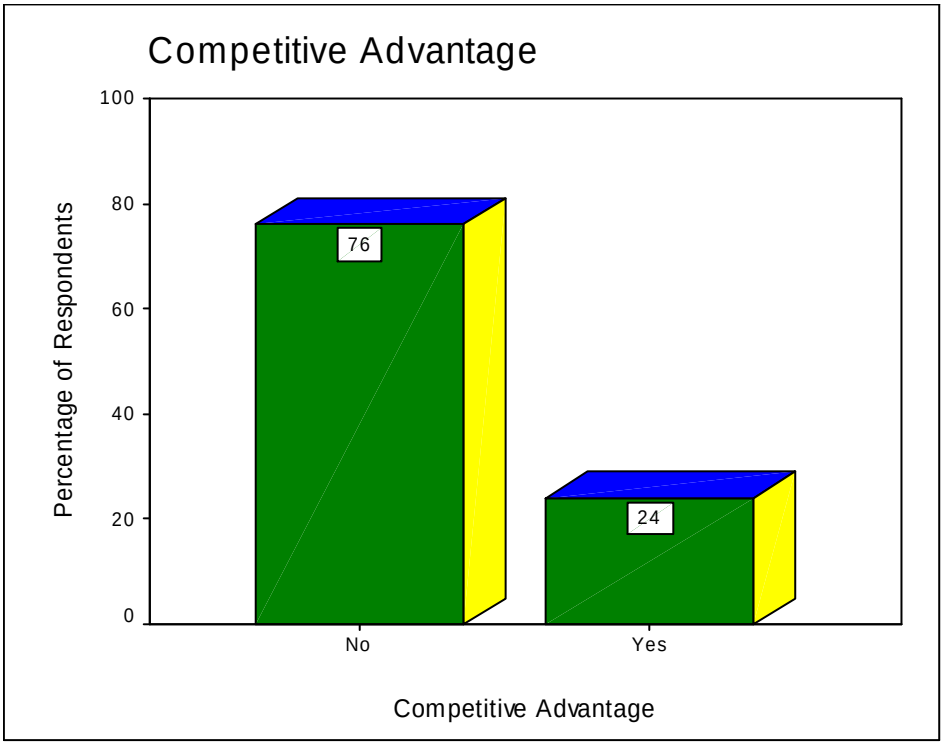
Source: *Research data*

4.3.7. General Benefits of IT/IS

56% of the respondents indicated that improved communication and flow of information within the business while 68% reckoned that improved accuracy, reliability and easier access to information for decision making and problem solving were the main benefits they are enjoying as a result of using IT. This shows that many SMEs are more interested in having information systems that will facilitate communication within the business and with their customers. They also need information systems that will enable them easily access timely, accurate and reliable information in order to make effective decisions and solve problems within the business. The rest of the IT benefits were rated by the respondents as shown in the bar charts below.

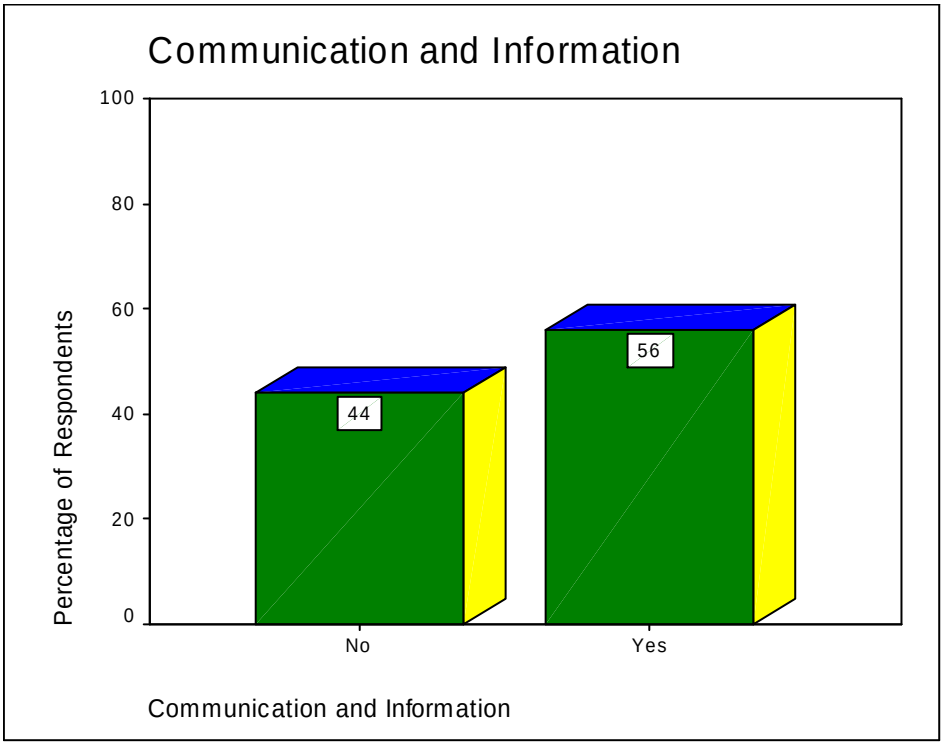
Figure 7: General benefits of IS

Competitive Advantage



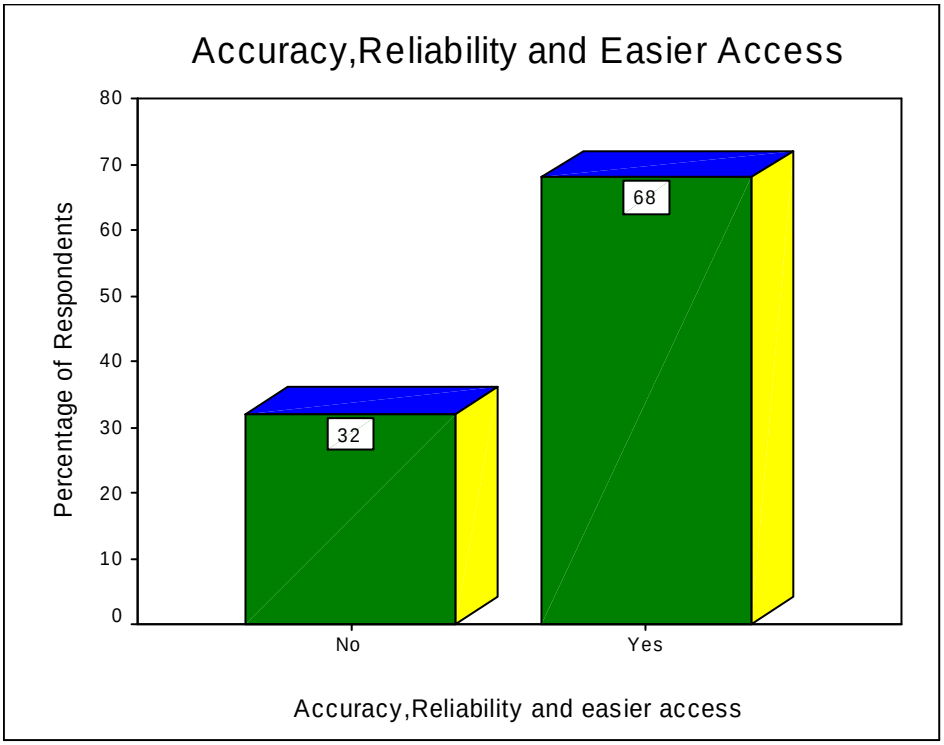
Source: *Research data*

Communication and Information flow



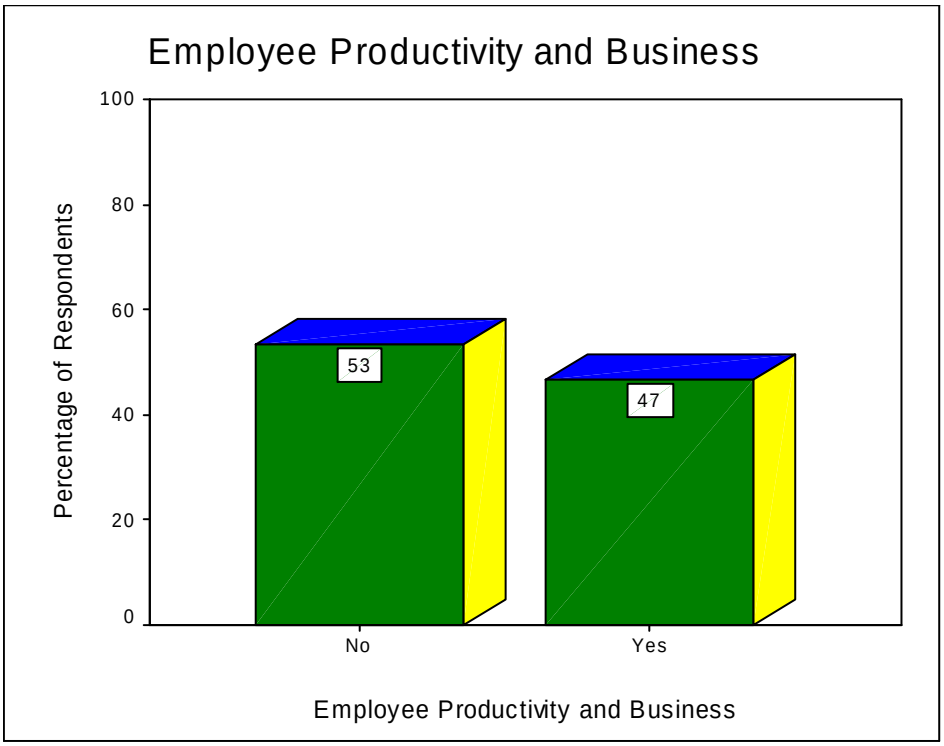
Source: *Research data*

Accuracy, Reliability and Easier access to information



Source: *Research data*

Employee productivity and business efficiency



Source: *Research data*

Improved customer satisfaction and loyalty

Source: *Research data*

4.4. Strategic Information Systems and SMEs

4.4.1. Strategic Objectives

On the question of the most important strategic objectives of the business, what came out clearly was that majority of the SMEs are in business for profit maximization and customer satisfaction & loyalty. Majority of the respondents reckoned that they do not have the financial might to undertake other expensive business strategies such as; barring new entrants, new product development, growth and expansion and diversification. Their main focus was therefore to concentrate on making profit and ensuring that their customers are happy by giving them excellent products and customer care. The tables below give a summary of the respondents' views on the various business objectives.

Table 8: Strategic business objectives

Profit Maximization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	28	37.3	37.3	37.3
	Yes	47	62.7	62.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Share holder wealth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	65	86.7	86.7	86.7
	Yes	10	13.3	13.3	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Barring new entrants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	71	94.7	94.7	94.7
	Yes	4	5.3	5.3	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Achieving Competitive advantage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	49	65.3	65.3	65.3
	Yes	26	34.7	34.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Develop new Products/Innovation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	76.0	76.0	76.0
	Yes	18	24.0	24.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Developing new business processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	62	82.7	82.7	82.7
	Yes	13	17.3	17.3	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Customer Satisfaction and Loyalty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	28	37.3	37.3	37.3
	Yes	47	62.7	62.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Growth and Expansion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	40	53.3	53.3	53.3
	Yes	35	46.7	46.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Increasing Market Share

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	54	72.0	72.0	72.0
	Yes	21	28.0	28.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Diversification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	58	77.3	77.3	77.3
	Yes	17	22.7	22.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

4.4.2. Business Strategies

Concerning what strategies they use to achieve their various business objectives, there was a wide variety of responses from the respondents. This may imply that most SMEs do not have any one common strategy for achieving their objectives but use whichever is suitable depending on the prevailing circumstances. However, majority of the respondents indicated that the most common strategies used in their businesses include; cost focus, business process value addition and enhancing core competencies of the business. These business strategies largely conformed to the business objectives given by the respondents as the most important i.e. maximizing profit and customer satisfaction and loyalty. This is because with cost focus they are able to focus on a particular target market and offer them the best prices to generate more sales. On the other hand, when they add value to their business processes and improve on what they do better than other businesses then they will be able to attract and retain more customers. The Tables below capture the variety of responses on business strategies.

Table 9: Business Strategies

Cost Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	76.0	76.0	76.0
	Yes	18	24.0	24.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Differentiation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	76.0	76.0	76.0
	Yes	18	24.0	24.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Focused Differentiation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	60	80.0	80.0	80.0
	Yes	15	20.0	20.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Cost Focus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	51	68.0	68.0	68.0
	Yes	24	32.0	32.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Supply Chain Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	56	74.7	74.7	74.7
	Yes	19	25.3	25.3	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Business Processes Value Addition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	46	61.3	61.3	61.3
	Yes	29	38.7	38.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Enhancing Core Competencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	42	56.0	56.0	56.0
	Yes	33	44.0	44.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Information Partnership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	58	77.3	77.3	77.3
	Yes	17	22.7	22.7	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

Restructuring/BPR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	65	86.7	86.7	86.7
	Yes	10	13.3	13.3	100.0
	Total	**75**	**100.0**	**100.0**	

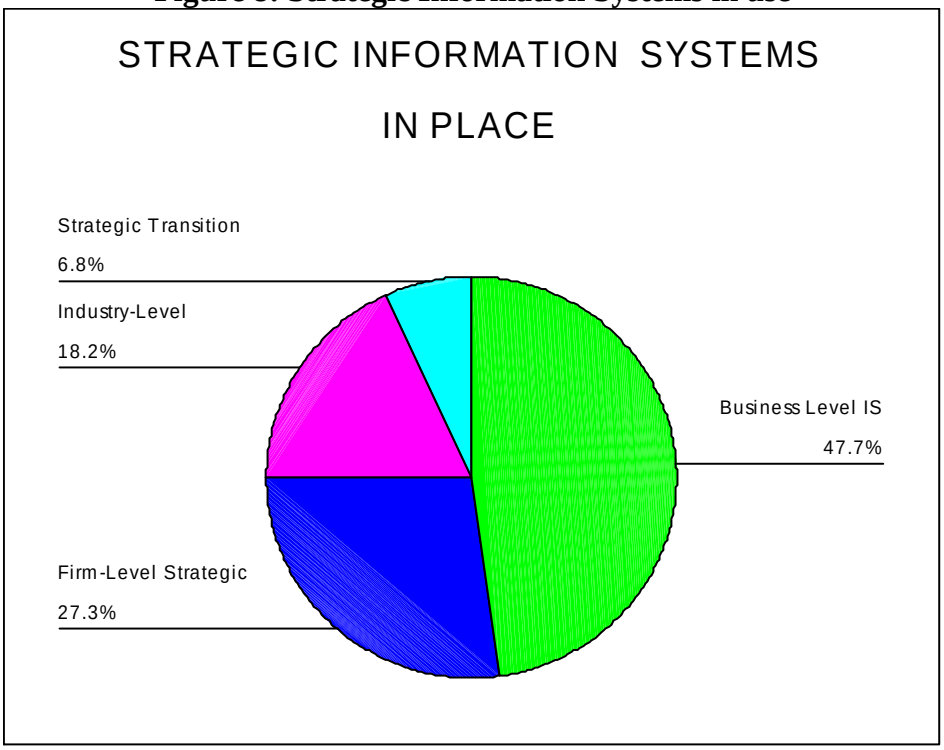
Source: *Research data*

4.4.3. Types of Information Systems

In relation to the type of Information Systems that SMEs use to support their strategies, 47.7% of all the respondents indicated that they have employed business level information systems which enable them carry out business activities e.g. Payroll System and Stock Control System. 27.3% of the firms visited use firm level strategic information systems which are mainly meant for integrating the operations of different business units and enhancing core competencies e.g. Enterprise Resource Planning systems and Intranet among others. Industry level information systems were used by 18.2% of the organizations and a small number of only 6.8% had adopted strategic transition IS. The findings indicate that majority of the SMEs will adopt information systems that will help them do business better in order to make profit and also satisfy their customers since those are their main objectives as an organization. The chart and table below gives a

breakdown of the usage level of the various kinds of information systems in the SMEs visited.

Figure 8: Strategic Information Systems in use



Source: *Research data*

4.4.4. Importance of Strategic Information Systems

On the subject matter of importance of strategic information systems, 79% of all the respondents concurred that strategic information systems were very important to the business. 14.4% agreed that they are important and only a combined total of 6.6% felt they were less or not important at all. These findings show the seriousness with which majority of the SMEs regard the use of information systems to support their business objectives and strategies. The findings also confirm the earlier conclusion that most of the SMEs are operated by young people (18 – 40 years of age) who have grown up during the development of IT hence their high regard of using IT in business. The table below summarizes the importance of SIS in SMEs as found out by the researcher.

Table 10: Importance of Strategic Information Systems

		Frequency	Percent	Cumulative Percent
Valid	Not Important	1	1.3	1.3
	Less Important	4	5.3	6.6
	Important	11	14.4	21.0
	Very Important	59	79.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.5. Information Systems Investment Decisions

On the question of when the organizations consider investing in strategic information systems, 38% indicated that for them it is an on going process throughout the year while 24% said that they do it annually after the preparation of the budget. A further 21.3 % reported that they invest in strategic IS only when there is a business opportunity. Only 14.7% said that they consider investing in IS to react to external environmental forces such as competitors' moves. These findings explain that majority of SMEs (62%) have made investing in information systems an integral part of the business and they either do it continuously throughout the year or factor it in their annual budgets. So they do not have to wait for a business opportunity or some external pressures for them to invest in IS. However, this may not mean that they cannot consider adopting an IS to respond to external opportunities and threats. A detailed summary of the findings is as captured in the table here-below.

Table 11: Investing in strategic IS

	Frequency	Percent	Cumulative Percent
Continually throughout the year	29	38.6	38.6
After an Annual IT budget is prepared	18	24.0	62.6
when there is a business opportunity	16	21.3	84.9
Reaction to environmental forces e.g. Competition	11	14.7	98.0
Other	1	1.3	100.0
Total	**75**	**100.0**	

Source: *Research data*

4.4.6. Strategic IS Investment Decision Maker

61.4% of the respondents reported that the CEO and the head of IT in their organizations were the key decision makers when it comes to investing in strategic information systems. A further 21.3% indicated that in their organizations only the business unit leaders or their delegates make the decisions relating to investing in Strategic IS. However, a combined a total of 17.3% said that CIO's or IT executives exclusively make strategic IS investment decisions. The findings are evidence that in many SMEs, the CEOs and heads of IT have become collaborative business partners to ensure that all IT strategies are aligned to business goals. The findings also show that most SMEs no longer just regard IT as provider of technology operations and related services, but as a source of differentiation in the marketplace. The table below gives a summary of the findings.

Table 12: Strategic IS investment decision makers

	Frequency	Percent	Cumulative Percent
CEO and/or CFO With IT Head	45	61.443	61.4
CIO or group of dedicated IT/IS executives only	7	9.3	70.6
IT executives	6	8.0	78.7
Business Unit Leaders or Their delegates	16	21.3	100.0
Total	**75**	**100.0**	

Source: *Research data*

4.4.7. IT Head Involvement in Business Decisions

Concerning the matter of the head of IT participating in business decision making processes, majority of the respondents i.e. 44% reported that their heads of IT sometimes take part in business decisions while a significant 40% indicated that their IT heads frequently participate in business decisions. Only 8% and 2.7% said that the participation of their IT heads in business decision making is rare or never respectively. Looking at findings, it is evident that most heads of IT are beginning to have a keen interest in business matters in order to be able to understand business objectives and/or problems so that they can facilitate development of suitable ICT solutions for the business. The summary of the findings is as appears in table below.

Table 13: IT Head participation in business decisions

		Frequency	Percent	Cumulative Percent
Valid	Never	2	2.7	2.8
	Rarely	6	8.0	11.3
	Sometimes	33	44.0	57.7
	Frequently	30	40.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.8. Business Heads Involvement in IS Decisions

On the other hand, 54% of the respondents said that the CEO and/or business managers within their organizations frequently participate in discussions involving information systems matters. 33.3% indicated that the business managers sometimes participate in IS decision making process while a combine total of 8.3% were of the opinion that their business managers rarely or never participate in IS matters. These findings also demonstrate an overwhelming interest of CEOs in IS matters. This is most likely because the business managers of the SMEs desire to have a good understanding of information systems so that they can know what business value IS can add to the business. Here-under is the table with the summary of the findings.

Table 14: CEO participation in IS decisions

		Frequency	Percent	Cumulative Percent
Valid	Never	1	1.3	1.4
	Rarely	5	6.7	8.3
	Sometimes	25	33.3	43.0
	Frequently	44	54.7	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.9. Knowledge of IT Head/Personnel in Business

On the issue of how knowledgeable the heads of IT or IT personnel were in business matters, 36% of the respondents reported that the business knowledge of IT people in their organisations was satisfactory while 37.3% said the knowledge was good. 21% however indicated that the business knowledge of the IT manager and personnel within their organization was excellent. Only a combined total of 5.5% felt that the business knowledge of their IT people was either below average or poor. The findings illustrate that majority of the IT people have reasonable knowledge in business and this is good for the business since they will be able to develop ICT solutions to support business goals and strategies. It also shows that majority of IT people in SMEs are taking keen interest in the business management so that they can know what they can do for the business with their IT knowledge. The detailed findings are as captured in the table here-below.

Table 15: Knowledge of IT personnel in business

		Frequency	Percent	Cumulative Percent
Valid	Poor	1	1.3	1.4
	Below Average	3	4.0	5.5
	Satisfactory	27	36.0	42.5
	Good	28	37.3	80.8
	Excellent	16	21.4	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.10. Knowledge of Business Head/Personnel in IT

On the other hand, 52% of the respondents said that the IT knowledge of the business people in their organizations was good while 29.3% indicated that their knowledge was satisfactory. Only 16.1% of the respondents were of the opinion that the knowledge of their business managers in IT matters was excellent. A small number of 2.6% though felt that their business managers either had below average or poor knowledge in IT. These findings just like the findings on the knowledge of IT people in business show that a large majority of business people within SMEs have reasonable knowledge in IT meaning that they at least understand what IT is able to do for the business and this is very critical for

the integration of IT with business in the organization. The table below captures the findings in summary.

Table 16: Knowledge of business people in IT

		Frequency	Percent	Cumulative Percent
Valid	Poor	1	1.3	1.3
	Below Average	1	1.3	2.6
	Satisfactory	22	29.3	31.9
	Good	39	52.0	83.9
	Excellent	12	16.1	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.11. Alignment of IS and Business Strategy

Regarding the issue of aligning IT to business planning, 38.7% felt it was satisfactorily done in their organizations while 36% were of the opinion that the alignment was good. Only 14.3% indicated it was excellently done in the organizations while a combined 8.3% reported that the alignment was either below average or poorly done in the businesses. With satisfactory and good ratings receiving majority support from the respondents, it gives proves that most SMEs have their IT strategies aligned with business goals and this could be as a result of collaborative business partnership that was evident between the CEO/business managers and the CIO/head of IT within the businesses. Also the great interest shown by the business people in IT and IT people in business could also be a major contributor to the integration of IT/IS with business. The table below shows these particular findings.

Table 17: Alignment of IS and Business strategy

		Frequency	Percent	Cumulative Percent
Valid	Poor	1	1.3	1.4
	Below Average	5	6.7	8.3
	Satisfactory	29	38.7	48.6
	Good	27	36.0	86.1
	Excellent	13	14.3	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.12. Involvement of IT people in Business Matters

On the issue of IT people taking part in business activities, 36% reported that it was good in their organizations while 34.7% said it was satisfactory in theirs. Only 21% agreed the situation was excellent in their organizations while a total of 8.2% were of the view that it was either below average or poor. This level of participation of IT people in business is very good for SMEs because it ensures that IT people acquire good understanding of the business to help them develop appropriate IT solutions for the business. It also ensures that the solutions they come up with meet the specific needs of the business. The findings are as summarized in the table here-under.

Table 18: IT people involvement in business

		Frequency	Percent	Cumulative Percent
Valid	Poor	1	1.3	1.4
	Below Average	5	6.7	8.2
	Satisfactory	26	34.7	43.8
	Good	27	36.0	80.8
	Excellent	16	21.4	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.13. Involvement of Business people in IT

On the other hand, 36% of the respondents reckoned that the participation level of the business people in IT matters was good in their organizations. A further 26.7 % agreed it was satisfactory and 23.9% reported that the participation level was excellent in their places of work. 6.7% and 1.3% however felt the situation was below average and poor respectively within their organizations. This level of participation of business people in IT is equally very good for SMEs because it ensures that business people acquire good understanding of IT in order to know what IT solutions are suitable for the business. It also ensures that the IT solutions developed by the IT people are in line with the overall business goals. The table below gives the summary.

Table 19: Business people involvement in IT

		Frequency	Percent	Cumulative Percent
Valid	Poor	5	6.7	6.7
	Below Average	5	6.7	13.4
	Satisfactory	20	26.7	40.1
	Good	27	36.0	76.1
	Excellent	18	23.9	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.14. Strategic IS Investment Decision Criteria

From the findings, majority of SMEs use; competitive advantage, alignment with business goals, management information for strategic planning, accuracy and reliability of information, good return on investment, employee productivity, business efficiency, improving customer relations and easier access to information as the various criteria used when making IS investment decisions. These findings imply that SMEs do not necessarily use one criterion to decide on what IS to adopt but they consider a combination of factors in order to reap maximum business value from the investment. The exact approval ratings for the various factors are as captured in the tables overleaf.

Table 20: IS investment decision criteria

Increased Competitive Advantage

		Frequency	Percent	Cumulative Percent
Valid	1	10	13.3	13.3
	2	3	4.0	17.3
	3	6	8.0	25.3
	4	6	8.0	33.3
	5	50	67.7	100.0
Total		**75**	**100.0**	

Source: *Research data*

Aligned well with Business Goals

		Frequency	Percent	Cumulative Percent
Valid	1	9	12.0	12.0
	2	2	2.7	14.7
	3	9	12.0	26.7
	4	13	17.3	44.0
	5	42	56.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

Improved management information for strategic planning

		Frequency	Percent	Cumulative Percent
Valid	1	4	5.3	5.3
	2	6	8.0	13.3
	3	4	5.3	18.6
	4	18	24.0	42.6
	5	43	57.4	100.0
Total		**75**	**100.0**	

Source: *Research data*

Accuracy and Reliability of Information

		Frequency	Percent	Cumulative Percent
Valid	1	7	9.3	9.3
	2	2	2.7	12.0
	3	6	8.0	20.0
	4	44	58.7	78.7
	5	46	21.3	100.0
Total		**75**	**100.0**	

Source: *Research data*

Good Return on Investment

		Frequency	Percent	Cumulative Percent
Valid	1	9	12.0	12.0
	2	4	5.3	17.3
	3	9	12.0	29.3
	4	3	4.0	33.3
	5	50	66.7	100.0
Total		**75**	**100.0**	

Source: *Research data*

Improved Customer Relations

		Frequency	Percent	Cumulative Percent
Valid	1	10	13.3	13.3
	2	6	8.0	21.1
	3	4	5.3	26.6
	4	10	13.3	39.0
	5	45	60.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

Improved Employee Productivity or Business Efficiency

		Frequency	Percent	Cumulative Percent
Valid	1	8	10.7	10.7
	2	5	6.7	17.4
	3	7	9.3	26.7
	4	13	17.3	44.0
	5	42	56.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

Easier Access to Information

		Frequency	Percent	Cumulative Percent
Valid	1	10	13.3	13.3
	2	2	2.7	16.0
	4	13	17.3	33.3
	5	50	67.7	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.15. Past Strategic Benefits of IS Investment

65.4% of the businesses visited indicated they had enjoyed higher past benefits by investing in information systems while 22.7% said they had realized average benefits from their past IS investments. Only 5.3% had enjoyed much higher benefits and a combined 6.6% reported that they had either realized lower or much lower benefits from their past IT/IS investments. These findings confirm that majority of SMEs are actually deriving business value from using strategic information systems in the business.

Table 21: Benefits of past IS investments

		Frequency	Percent	Cumulative Percent
Valid	Much Lower	1	1.3	1.3
	lower	4	5.3	6.6
	Average	17	22.7	29.3
	Higher	49	65.4	94.7
	Much Higher	4	5.3	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.16. Challenges of Strategic IS Implementation

Many of the respondents talked to reckoned that; inadequate senior management support, inadequate communication and inadequate user involvement were the leading reasons why most organizations fail in their quest to implement strategic information systems. Surprisingly enough, lack of funds did not feature as a major challenge to the implementation of strategic information systems. This could be because majority of the businesses do not consider money a hindrance to implementing IS provided the business value of the intended information systems can be accurately determined and the costs and benefits clearly explained. The table overleaf gives a summary of the findings on the same.

Table 22: Challenges in implementing strategic IS

	Frequency	Percent	Cumulative Percent
No Response	9	12.0	12.0
Inadequate/Lack of senior mgt support	13	18.7	30.7
Inadequate/Lack of communication	15	20.0	50.7
Inadequate/Lack of involvement in end users	25	33.3	84.0
Inadequate/Lack of involvement of ICT	3	4.0	88.0
Inadequate/Lack of funds	6	8.0	96.0
Other	3	4.0	100.0
Total	**75**	**100.0**	

Source: *Research data*

4.4.17. Corrective Actions when facing problems during Strategic IS Implementation

Regarding the corrective measures usually taken in their organizations in case of problems during the implementation of strategic information systems, the responses were as varied as indicated in the tables below. What came out strongly from the respondents was that they either rarely or sometimes consider undertaking any of the corrective measures that are usually available to them.

Table 23: Corrective actions in the face of challenges

Postpone the Investment

		Frequency	Percent	Cumulative Percent
Valid	Never	5	6.7	6.7
	Rarely	40	53.3	60.0
	Sometimes	21	28.0	88.0
	Always	9	12.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

Add more Resources

		Frequency	Percent	Cumulative Percent
Valid	Never	6	8.0	8.0
	Rarely	41	54.7	62.7
	Sometimes	18	24.0	86.7
	Always	10	13.3	100.0
Total		**75**	**100.0**	

Source: *Research data*

Bring in External Consultants

		Frequency	Percent	Cumulative Percent
Valid	Never	5	6.7	6.7
	Rarely	38	50.6	57.3
	Sometimes	17	22.7	80.0
	Always	15	20.0	100.0
Total		**75**	**100.0**	

Source: *Research data*

Use Different Techniques

		Frequency	Percent	Cumulative Percent
Valid	Never	8	10.7	10.7
	Rarely	15	20.0	30.7
	Sometimes	42	56.0	86.7
	Always	10	13.3	100.0
Total		**75**	**100.0**	

Source: *Research data*

Extend the Completion Date

		Frequency	Percent	Cumulative Percent
Valid	Never	5	6.7	6.7
	Rarely	11	14.7	21.4
	Sometimes	77	65.3	86.7
	Always	10	13.3	100.0
Total		**75**	**100.0**	

Source: *Research data*

4.4.18. Expectations from Strategic IS Investments

Majority of the respondents for not very clear reasons chose not to say what their future expectations are with regard to investments in strategic IS. This could have probably been because of the dynamic nature of the business environment, more so with regard to IT technology. Thus making it quite difficult for them to predict what benefits they may actually reap when they invest in IS. However, a significant number hoped that investment in IS will bring about efficiency of business operations and growth of the business. The table below gives a full breakdown of the expectations as reported by respondents'.

Table 24: Expectations from strategic IS investments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No Response	44	58.7	58.7	58.7
	Awareness	3	4.0	4.0	62.7
	Better Services	1	1.3	1.3	64.0
	Cheaper Resources	1	1.3	1.3	65.3
	Create ERP System	2	2.7	2.7	68.0
	Create IT Department	1	1.3	1.3	69.3
	Efficiency	5	6.7	6.7	76.0
	Growth	6	8.0	8.0	84.0
	Investment	1	1.3	1.3	85.3
	New processes	2	2.7	2.7	88.0
	New Systems	2	2.7	2.7	90.7
	Qualified Personnel	1	1.3	1.3	92.0
	Quality Products	1	1.3	1.3	93.3
	Smooth Running	1	1.3	1.3	94.7
	Strategizing	1	1.3	1.3	96.0
	Training	3	4.0	4.0	100.0
	Total	**75**	**100.0**	**100.0**	

Source: *Research data*

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The aim of this chapter is to provide a summary, conclusions and recommendations based on set objectives, findings and opinions from the respondents along with recommendations for further research. The study used questionnaires as the main source of the findings. The aim of the study was to investigate the business value of strategic information systems in SMEs within Westlands Division.

5.2. Summary of Findings

The summary of findings for this study are divided into demographics details of the respondents, general information on the SMEs visited and use of strategic information systems in the businesses sampled.

5.2.1. Information on respondents and the SMEs

Majority of the respondents in the SMEs visited were aged between 18-40 years with a greater number having completed secondary and undergraduate education. Many of the businesses (78.4%) were either sole proprietorships or partnerships engaging in either trade or service businesses. Most of the IT personnel interviewed were from the operational level whereas majority of the respondents from the business side belonged to the strategic level. A significant majority (62.7%) of the people interviewed had worked in their present positions for between 1 and 5 years. The educational level and the positions occupied by the respondents in the organization ensured greater insights into the subject of the study hence the high success rate of the process. Close to half of the SMEs had less than 10 employees and a monthly turnover of between Kshs. 100,000 and 500,000. The level of IT expenditure in the SMEs largely depended on the size of the organisation, Joint stock companies spent most on IT while sole proprietorships spent the least on IT. Partnerships and family businesses had average spending on their IT projects. The main benefits of IT/IS as reported by the respondents included improved communication and flow of information within the business and improved accuracy, reliability and easier access to information for decision making and problem solving. Nevertheless, a significant number of respondents variously indicated that they also enjoy

other benefits such as; Competitive Advantage, Employee productivity and business efficiency and Improved customer satisfaction and loyalty as a result of using IT/IS.

5.2.2. Business Objectives and Strategies

From the findings, the most common strategic objectives of the SMEs were maximising profit, ensuring customer satisfaction and customer loyalty. Other business objectives such as; barring new entrants, new product development, new business process development, growth & expansion and diversification may not have ranked very highly among the SMEs probably because they are more expensive to implement therefore out of reach for most of them. SMEs do not enjoy large capital bases hence they can only focus on their primary objectives, which is to satisfy their customers and make profit. On the other hand, there was no one particular strategy that was overwhelmingly preferred by the SMEs in their effort to achieve the main objectives stated above. However, majority of the businesses indicated that they mostly focus on cost, business process value addition and enhancing their core competencies as the main strategies of achieving their objectives. Other strategies such as;

5.2.3. Types of Information Systems

The business value of strategic information systems in SMEs within Westlands Division formed the theme of this study; among the SIS the study focused on were the Business level IS, Firm-Level Strategic IS, Industry-Level Strategic IS and Strategic Transitions IS. The business level strategic information systems ranked as the most widely used by the SMEs, with most of the business using them to enhance their business processes and activities. These systems were mainly used to process payroll, manage stock, manage finances, and produce management information. A significant majority of the respondents also indicated that they use firm level strategic information systems which are mainly geared towards integrating the operations of different business units and enhancing core competencies. To this end, most of the businesses indicated that they use enterprise resource planning systems (ERPs). The internet was also used mainly to communicate with the various business stakeholders and also acquire business information on issues such as; markets, customer needs, record keeping and business training opportunities. A large majority of the respondents were in agreement that strategic information systems they had in place are either important or very important to the business. This was an

indication that they are deriving value from them hence the high regard. The findings also show that most SMEs are generally taking ICT seriously in their endeavor to thrive in the competitive business environment.

5.2.4. Strategic Information Systems Investment

The researcher found out that in most SMEs, the decision to invest in information systems is either made continually throughout the year or during the annual budget discussions. Only a few businesses indicated that their IS investment decisions are either based on a business opportunity or reaction to external environmental forces. In the same organizations, the CEO and ICT Head are jointly involved in making IS investment decisions. This was further reinforced by most of the respondents indicating that within their businesses majority of the CEOs have taken a keen interest in IT decisions while the ICT heads have also developed a lot of interest in business discussions and decision making processes. The researcher also found out that the knowledge of the CEO in ICT matters and the knowledge of the ICT head in business matters was either good or satisfactory. This was very consistent with the findings on the participation levels of the CEO in ICT and ICT head in business matters. All these findings point to the fact that the CEO as the head of the business together with the ICT head as the leader of ICT within the business have recognized the importance of using ICT to provide business value to the organization. This therefore means that they have to work concertedly to ensure that the business realizes full value from any ICT/IS investment that the organization undertakes.

From the research findings, there was no one outstanding criterion that SMEs use to decide on the strategic information systems to adopt. Nevertheless, more than half of the SMEs visited pointed out that; competitive advantages, good return on investment and easier access to information were the main factors to consider to discussing the kind of strategic information system to implement in the business. The findings also largely indicated that SMEs would in most cases use a variety of criteria depending on certain prevailing factors within the business environment. A large majority (71%) of the respondents reported that they had realized higher or much higher benefits from their past investment in strategic information systems. This implied that among the benefits they have enjoyed include competitive advantages, good return on investment and easier

access to information among others. The researcher also learnt that the adoption of strategic information systems in many of the SMEs has been without challenges. The most common challenges that the SMEs face during the implementation of SISs are; inadequate senior management support, inadequate communication and inadequate user involvement. On the question of what the they do in case they faces challenges during the implementation process, there was no common response though majority indicated that they would sometimes use different techniques or extend the completion time. Others reported that they would in rare circumstances postpone the investment, add more resources or bring in external consultants.

5.2.5. IS and Business Alignment

In 74.7% of the SME visited, the respondents pointed out that the relationship between the business and ICT side was either good or satisfactory. They concurred that their main motivation to investing in information systems is to enable them achieve their core business objectives. This confirms the fact that majority of the businesses are depending on IS to implement their business objectives. The researcher further found out that in many of the SMEs, majority of the business employees had above satisfactory level of knowledge in ICT hence making it possible for them to effectively participate in ICT decision making processes. Likewise, ICT personnel had above average knowledge in business enabling them to actively get involved in business discussions. These findings proved that it is very important for the ICT people to get interested in what is happening in business and business people also to get interested in what ICT is all about in order for the alignment to be realized. The researcher found out that the businesses that had a better alignment of ICT with business enjoyed more benefits particularly with regard to their business objectives and strategies.

5.3. Conclusion

The SME sector has become an important part of the Kenyan economy and cannot be ignored. The government together with other stakeholders must do everything in their capacity to ensure that this sector is not only viewed as informal, but is given the capacity like the formal business community to develop. The SME sector has come up as a major employer in the country due to the inability of the formal industry to absorb all professionals. The study of the SMEs revealed and confirmed some of the issues with regard to the use of strategic information systems as a business value addition and competitive tool. All the businesses visited have some basic ICT tools and the respondents interviewed agreed that technology plays an important part in their businesses. They also acknowledge that knowledge about ICT/IS affects the ICT/IS decision-making within the business. This study has also revealed the weakness within some SMEs of a lack of strategic direction with regard to IS. For them IS is often implemented for survival or compliance purposes and not strategically, which could result in a competitive advantage for the business. The study found out that in order for SMEs to enjoy full business value from IS; the gap between business and ICT people has to be narrowed. The business people must understand and get involved in ICT so that they can know what ICT can do for the business. On the other hand ICT people also must understand and get involved in business in order to know what they can do for the business with their ICT knowledge and Skills. The researcher therefore believes that knowledgeable and skilled ICT employees are very important in the knowledge economy for successful adoption and implementation of IS, since they will be able to develop relevant ICT applications, support and maintain systems that are essential to the business.

When implemented haphazardly IS might not add any business value and probably will not lead to any competitive advantage for the business, but when it is implemented as part of the business strategy to support the business processes it will probably lead to a competitive advantage. Thus the manner in which SMEs adopt and implement IS is important as this will determine whether they will gain competitive advantage or not.

SMEs play an important role in the global economy: they contribute to the GDP and reduction of unemployment, especially in developing countries. Many governments around the world are pushing for SMEs to adopt IS in order for them to survive in the knowledge economy. The Kenyan Government is no exception. The need for SMEs to adopt IS is driven by governments, globalisation, innovation, flexibility and competitive advantage.

The adoption of IS should take into consideration that SMEs are different and thus have different needs for IS. It is important for an SME to adopt IS solutions that are specific to its needs. A number of challenges make it difficult for SMEs to adopt IS, such as a lack of knowledge about the strategic use of IS, inadequate senior management support, inadequate communication and inadequate user involvement.

Most of the respondents agreed that IS is important and that it has an impact on their business in one way or the other. The biggest barrier to competitive implementation of IS in their businesses is a lack of adequate integration of ICT and business. This leads to poor decision-making regarding IS, a lack of trust in the value and security of IS, failure to take advantage of the benefits that even the simple technologies could give the business, and failure to utilise no-cost/low-cost software options. This research has shown that the key reason for SMEs' failure to implement IS to their competitive advantage is the lack of ICT knowledge by the business people, which leads to the failure to include IS as a strategic and operational tool for business.

5.4. Recommendations to facilitate business value addition through adoption of strategic information systems by SMEs

The main area of this study was strategic information systems and SMEs in Westlands; from the findings, it is clear that there are areas that should be focused on to facilitate the use of SIS among SMEs. The researcher therefore suggests the following ways in which SMEs can use IS to become competitive:

i. **Set up an IS Strategy for the Business**. This means a strategy of how technology will be used to help the business achieve its objectives and optimise its business processes. This would include choosing the type of technology,

infrastructure and architecture that will best achieve business goals and maximise benefits.

ii. **Align the Business Strategy with the IS Strategy**. This means that the IS strategy should support the business strategy. IS should not run the business.

iii. **Identify IS roles needed to make the adoption process successful**.
These roles are, for example, the driver of IS, the maintainer, or the administrator. SMEs should hire knowledgeable staff or consult with ICT professionals. The research has therefore indicated the need for SMEs to implement SIS in order to be competitive. SIS adds business value and will be a competitive tool when it forms part of the business strategy and when the necessary ICT skills and knowledge are within the SME. All SMEs in Kenya need to seriously consider implementing more SIS, in order to remain competitive in today's fast moving global knowledge economy.

SMEs should start considering the adoption of various new technologies, making sure that such technologies are aligned with their business objectives. SMEs need to explore emerging technologies such as ERPs, E-commerce and E-business. All this needs to be done at a strategic level, meaning that SMEs should employ the right people to assist in these studies and the implementation thereof. The business managers/owners need to become aware of and understand the benefits and the role of IS within the SME. IS then needs to be prioritised as a functional area. Once this is done the SME should build an IS culture within the business, by making the business process more reliant on technology and less on manual processes, and by continually exploring all the various and newest technological options with their possible benefits to the SME.

Constant communication with staff about what is happening is important to make all employees comfortable with it. The SME should also invest in training its staff about technology and encourage employees to use technology. The SME should thus develop different IS roles and name them in such a way that everyone can relate to them with ease. The aim is to make technology easy and understandable so that everyone feels comfortable with it and applies it effectively. Knowledge is the answer to decision

making, therefore the CEO/business managers need to be equipped with IS knowledge or surrounded by knowledgeable ICT people. The SME needs to establish IS as a function, with ICT represented at the strategic level with input into decisions affecting the future direction of the business. The SME should have a dedicated person or group with the main aim of driving and looking after the technology needs of the SME, with the relevant powers to be able to execute such decisions.

5.5 Recommendations for Further Research

The researcher recommends a closer look at specific strategic information systems and the kind of business value they would add to SMEs. The researcher also believes that it will be very important to study specific focus areas of business and ICT alignment that will bring more business value to SMEs.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

TO: WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: RESEARCH INFORMATION FOR MY MBA PROJECT

I am a postgraduate student undertaking a Master of Business Administration in Strategic Management degree at the School of Business, University of Nairobi. As a partial fulfillment of the requirements for the award of the MBA degree, I am conducting a survey on **"Business value of Strategic Information Systems of SMEs within Nairobi".** You are one of the carefully selected respondents and I would like to kindly request for information regarding the Strategic Information Systems (IS) used in your organisation.

The information you provide in this study will not be used for any other purpose apart from its intended academic use. I hereby undertake not to make any reference to your name in any presentation or report resulting from this study.

I am aware that filling the questionnaire is time consuming, but I will greatly appreciate your valuable time and support in this important matter. Any additional information in form of suggestions and comments that you may feel may add value to my research findings particularly regarding this area of study will be highly appreciated.

Thank you in advance.

Yours Faithfully,

Kevin Ogutu

APPENDIX II: QUESTIONNAIRE

SURVEY ON THE STRATEGIC VALUE OF INFORMATION SYSTEMS AMONG SMEs IN KENYA

General Instructions

Strategic information systems can be at any level. They are systems that fundamentally change the organisation itself. So viewed from this perspective, each of the six types of systems; Transaction Processing Systems (TPS), Knowledge Work Systems (KWS), Office Automation Systems (OAS), Management Information Systems (MIS), Decision Support Systems (DSS) and Executive Support Systems (ESS) can potentially be regarded as strategic information systems if their impact transforms the goals, business processes, products and external relations of the company to produce competitive advantage. In fact strategic information systems can change the very nature of the business.

Please answer all questions to the best of your ability. There is no right or wrong answers. **What matters is your personal opinion.** The survey should take approximately 15 minutes. Thank you for taking the time to complete this questionnaire. **Your response will be completely anonymous**.

SECTION A: PERSONAL INFORMATION

1. **Age of respondent**

   i.18-30 Years ☐

   ii.31-40Years ☐

   iii.41-50 Years ☐

   iv.51-60 Years ☐

   v.Above 60 Years ☐

2. **Highest level of formal education attained**

   i. Primary Education ☐

   ii. Secondary School Education ☐

   iii. Diploma ☐

   iv. Higher/Advanced Diploma ☐

   v. Undergraduate ☐

   vi. Postgraduate ☐

   vii. Vocational Training ☐

   viii. Adult education ☐

3. **What hierarchical level do you currently occupy within the Organisation?**

   a. Operational ☐ b. Knowledge ☐ c. Tactical ☐

   d. Strategic ☐

4. **For how long have you been in your current position in the organisation?**

   a) Less than 1 Year ☐ b) 1-5 Years ☐

   c) 6-10 Years ☐ d) More than10 Years ☐

SECTION B: ORGANISATION PROFILE

5. How many employees do you have in the organisation?

a. Less than10 ☐ b. 10-50 ☐ c.50 -100 ☐

d. More than100 ☐

6. In what category of business ownership does your organisation belong to?

a. Sole Proprietorship ☐ b. Partnership ☐

c. Joint Stock Company ☐ d. Family owned ☐

7. For how long has your organisation been in operation?

a. Less than 1 year ☐ **b.** 1-2 years ☐ **c.** 3-5 years ☐

d. 6-10 years ☐ **e.** More than 10 years ☐

8. What is the approximate monthly turnover for your organisaton?

a) Below Kshs. 50,000 ☐

b) Kshs. 50,000-100,000 ☐

c) Kshs. 100,001-500,000 ☐

d) Above Kshs. 5,000,000 ☐

9. What products/services do you offer?

- **a)** Insurance ☐
- **b)** Banking ☐
- **c)** Education ☐
- **d)** Airline ☐
- **e)** Health ☐
- **f)** Telecommunications ☐
- **g)** Agricultural ☐
- **h)** Transport ☐
- **i)** Retail ☐
- **j)** Legal ☐
- **k)** Manufacturing ☐
- **l)** Automobile ☐
- **m)** Auditing/Accountancy ☐
- **n)** ICT ☐
- **o)** Pharmaceuticals ☐
- **p)** Hotels and Restaurants ☐
- **q)** Tourism ☐
- **r)** Real Estate ☐
- **s)** Other (please specify)……

10. Approximately how much has the organisation spent on IT/IS infrastructure over the last 5 years?

a. Less than 100,000/= ☐ b. 100,000 – 500,000/= ☐

c.500, 000 -1,000,000 /= ☐ d. More than 1,000,000/= ☐

11. What benefits have you enjoyed from the IT/IS expenditure above?

- **a)** Increased competitive advantage ☐
- **b)** Improved communication and information flow within the business. ☐
- **c)** Improved accuracy, reliability and easier access to information for decision making and problem solving. ☐
- **d)** Improved employee productivity and business efficiency ☐
- **e)** Improved customer satisfaction and loyalty ☐
- **f)** Others (Specify)…….. ☐

SECTION C: STRATEGIC INFORMATION SYSTEMS AND THE BUSINESS

12. What are your key strategic objectives as a business? (You can tick more than one).

a) Maximizing profits ☐

b) Maximizing shareholder wealth ☐

c) Barring new entrants ☐

d) Achieving competitive advantage ☐

e) Developing new superior products/innovation ☐

f) Developing new business processes ☐

g) Customer satisfaction and loyalty ☐

h) Growth and expansion ☐

i) Increasing market share ☐

j) Diversification ☐

k) Other (Specify)…….

13. What strategies have you adopted to achieve the above objectives? (You can tick more than one).

a. Cost leadership ☐

b. Differentiation ☐

c. Focused differentiation ☐

d. Cost focus ☐

e. supply chain management ☐

f. Business processes value addition ☐

g. Enhancing core competencies ☐

h. Information partnerships ☐

i. Restructuring/BPR ☐

j. Other (Specify)…….

14. What kinds of Information Systems do you have in place to support the above strategies? (*State the Type/name for each, if any)*

a) Business level IS (e.g. *Business processes value addition, creating new products, product differentiation*) ☐

Name/Type:……

b) Firm-Level Strategic IS (*e.g. integrating the operations of different business units, enhancing core competencies)* ☐

Name/Type:……

c) Industry-Level Strategic IS (*e.g. partnerships with other businesses in the same industry)* ☐

Name/Type:……

d) Strategic Transitions IS (e.g. *Business process re-engineering, Organisational redesign* ☐

Name/Type:……

15. On a scale of 1-5 *where 1 is not important and 5 very important*; tick the level of importance of the above listed Strategic Information Systems to your business.

	Very Important	Important	Less Important	Not important
	4	3	2	1

16. **When does your organisation consider investing in Strategic IS? (*Please provide one answer only*)**

    a) Continually throughout the year ☐

    b) After an annual IT budget is prepared ☐

    c) When there is a business opportunity ☐

    d) Reaction to environmental forces e.g. Competition ☐

    e) Other (Please specify)…….

17. **Who is the primary Strategic IS investment decision maker within your Organisation? (*Please tick one box only*)**

    a) CEO and/or CFO with IT Head ☐
    b) CIO or group of dedicated IT/IS executives only ☐
    c) IT executives ☐
    d) Business unit leaders or their delegates ☐
    e) Other (please specify)……

18. **How often does the IT head participate in business planning within your organisation?**

Frequently	*Sometimes*	*Rarely*	*Never*
4	3	2	1
☐	☐	☐	☐

19. **How often does the CEO/Business Managers participate in IS/IT decision making processes?**

Frequently	*Sometimes*	*Rarely*	*Never*
4	3	2	1
☐	☐	☐	☐

20. **What is the level of business knowledge of IT Manager/personnel within your organisation?**

Excellent	*Good*	*Satisfactory*	*Below Average*	*Poor*
5	4	3	2	1
☐	☐	☐	☐	☐

21. What is the level of IT knowledge of business managers/people within your organisation?

Excellent	*Good*	*Satisfactory*	*Below Average*	*Poor*
5	4	3	2	1
☐	☐	☐	☐	☐

22. In your opinion, how would you rate the alignment of the IS strategy to Business strategy in your Organisation?

Excellent	*Good*	*Satisfactory*	*Below Average*	*Poor*
5	4	3	2	1
☐	☐	☐	☐	☐

23. In your opinion, how would you rate the involvement of IT people in business decisions within you organisation?

Excellent	*Good*	*Satisfactory*	*Below Average*	*Poor*
5	4	3	2	1
☐	☐	☐	☐	☐

24. In your opinion, how would you rate the involvement of business people in IT decisions within you organisation?

Excellent	*Good*	*Satisfactory*	*Below Average*	*Poor*
5	4	3	2	1
☐	☐	☐	☐	☐

25. What would be your rating on a five point scale *where 1 is not important and 5 very important* to each of the following decision criteria for investing in strategic IS in terms of its overall importance to your organisation?

a) Increased competitive advantage ☐

b) Aligned well with business goals ☐

c) Improved management information for strategic planning ☐

d) Improved accuracy and reliability of information ☐

e) Good return on investment ☐

f) Improved employee productivity or business efficiency ☐

g) Improved customer relations ☐

h) Easier access to information ☐

i) Other specify……..

26. Have past Strategic IS investments in your organisation returned higher or lower strategic benefits (business value) than other non-IT investments? (*Please tick one box only*)

Much higher	*Higher*	*Average*	*Lower*	*Much lower*
5	4	3	2	1
☐	☐	☐	☐	☐

27. In your opinion, what are challenges that may hinder effective implementation of Strategic IS in your Organisation?

a) Inadequate/Lack of senior management support ☐

b) Inadequate/Lack of communication among the various stakeholders ☐

c) Inadequate/Lack of involvement of end users in the development or acquisition of the systems ☐

d) Inadequate/Lack of involvement of ICT personel in business matters ☐

e) Inadequate/Lack of funds ☐

f) Other (specify)……

28. What corrective action does your organisation perform when identifying major problems during Strategic IS investment decision making?

	Always 4	*Sometimes* 3	*Rarely* 2	*Never* 1
Postpone the investment and re-evaluate its feasibility	☐	☐	☐	☐
Add more resources	☐	☐	☐	☐
Bring in external consultants	☐	☐	☐	☐
Use different technique for decision making	☐	☐	☐	☐
Extend the completion date	☐	☐	☐	☐

29. Identify the factors you believe are the most likely to inhibit implementation of Strategic Information Systems in your organisation by pointing on a 5-point scale *(Please tick the most appropriate box for each of the boxes: 5 is the very likely inhibiting factor while 1 is the least inhibiting factor)*

	5	4	3	2	1
Difficulty in identifying relevant benefits and costs with current evaluation methods	☐	☐	☐	☐	☐
Difficulty in quantifying relevant benefits and costs with current evaluation methods	☐	☐	☐	☐	☐
Unfamiliarity with strategic IS investment techniques	☐	☐	☐	☐	☐
A general lack of suitable strategic IS decision making technique or methodology	☐	☐	☐	☐	☐
A general difficulty in selecting the appropriate Strategic IS decision making technique	☐	☐	☐	☐	☐
Lack of time	☐	☐	☐	☐	☐
Lack of qualified or professional personnel to conduct strategic IS decision making	☐	☐	☐	☐	☐
Lack of funds to finance the strategic decision making process	☐	☐	☐	☐	☐

30. What are your *Current and future expectations from* Strategic *IS investments in your organisation*?

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Thank you again for your support and participation