

**IMPLEMENTATION OF ICT-BASED STRATEGY BY EAST
AFRICAN PORTLAND CEMENT COMPANY LIMITED**

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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This research project has been submitted for examination with my approval as the university supervisor

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I wish to express my heartfelt gratitude to the Lord almighty for guiding me through all my triumphs in my academic life.

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DEDICATION

I dedicate this work to my parents, Mr. And Mrs. Moturi.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENTS	iii
DEDICATION.....	iv
LIST OF TABLES	vii
LIST OF ABBREVIATIONS AND ACRONYMS	viii
ABSTRACT.....	ix
CHAPTER ONE: INTRODUCTION	1
1.1. Background of the Study	1
1.1.1. Concept of Strategy.....	2
1.1.2. Strategy Implementation	3
1.1.3. ICT-BASED Strategy	6
1.1.4. Cement Manufacturing Industry in Kenya.....	7
1.1.5. East African Portland Cement Company Limited	10
1.2. Research Problem	12
1.3. Research Objectives.....	13
1.4. Value of the Study	13
CHAPTER TWO: LITERATURE REVIEW	15
2.1. Introduction.....	15
2.2. Theoretical Foundation	15
2.3. Strategic Management Process	16
2.4. Strategy Implementation.....	18
2.5. ICT-Based Strategies	19
CHAPTER THREE: RESEARCH METHODOLOGY	23
3.1. Introduction.....	23
3.2. Research Design.....	23
3.3. Data Collection	23
3.4. Data Analysis	24
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION	25
4.1. Introduction.....	25
4.2. Response Rate.....	25

4.3.	General Organization Knowledge about EAPCC by the respondents	25
4.4.	The ICT based Strategy Implementation	28
4.5.	Challenges in implementing ICT based strategy	33
4.6.	Discussion	35
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS ...		37
5.1.	Introduction.....	37
5.2.	Summary of findings.....	37
5.3.	Conclusions.....	41
5.4.	Recommendations.....	43
5.5.	Limitations of the study	43
5.6.	Suggestions for further research	44
REFERENCES.....		45
APPENDICES		49
	APPENDIX A: QUESTIONNAIRE.....	49

LIST OF TABLES

Table 4. 1 – Number of Employees at EAPCC as known by the respondents	26
Table 4. 2 – EAPCC competitors as perceived by the respondents.....	27
Table 4. 3 - EAPCC Main Strategic Advantage over their competitors	28
Table 4. 4 - Brief description of the current ICT Based Strategy	29
Table 4. 5 - ICT Based Strategy/Changes implemented recently	30
Table 4. 6 - Is the ICT department doing enough to remain relevant and supportive	31
Table 4. 7 - ICT Based Strategy implementations	31
Table 4. 8 - Key ICT strategic areas to boost business	32
Table 4. 9 - Challenges/ Constraints in ICT Based strategy implementation	33
Table 4. 10 - How to improve strategy implementation	34

LIST OF ABBREVIATIONS AND ACRONYMS

ARM	Athi River Mining Limited
CBK	Central Bank of Kenya
EAPCC	East African Portland Cement Company Limited
ERP	Enterprise Resource Planning Software
GDP	Gross Domestic Product
ICT	Information Communication and Technology
KNBS	Kenya National Bureau of Statistics
WBCSD	World Business Council for Sustainable Development
WEO	World Economic Outlook

ABSTRACT

The purpose of this study was to investigate the manner in which East African Portland Cement Company Limited (EAPCC) has gone about implementing an ICT based strategy. Also included in the purpose of the project is the challenges and constraints experienced in carrying out this implementation. The study was guided by the various definitions of strategy by various scholars, strategy gurus and other researchers. Also how different an ICT based strategy would be defined and implemented. The study adopted the case study approach in the research design. The population of the study included at least six top managers or supervisors at EAPCC. This was as defined by the current organization chart. A questionnaire approach was used to collect the data through the drop and pick- layer method. Descriptive statistics were used to summarize the data. The study discovered that the method of implementing an ICT based strategy was broken down into phases with different sections assigned to different departments and sections with the ICT department being the main driver of the whole process. The main positive drivers for the successful implementation process were the support of the management for the ICT based strategy initiatives and the use of competent external consultants and skilled IT engineers who were recently recruited to boost the efforts towards the ICT based strategy. There were however some bottlenecks in the implementation process e.g. lack of adequate communication of the strategy throughout the business. As a result of this, there wasn't as much buy in from the lower level staff who the ICT strategy sought to improve. The study recommends that senior management reduce the level of bureaucracy in the organization to fasten and lubricate operations in the organization. There is a need for training senior and middle level management to cope with the complexities strategy implementation and how to better deal with the diverse cultures in the organization.

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

ICT (information and communications technology) refers to any communication device i.e. radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICT refers to the convergence of audio-visual and telephone networks to a computer network through a single channel. It is generally thought that the importance of ICT is in its ability to create greater access to information and enhance communication (Bitpipe, 2001).

Now with such importance placed on ICT, EAPCC has gone to great lengths to ensure that this strategic asset is managed to maximize its' importance and impact within the organization. Whether developing ICT to support decision making or facilitating better communication, it must emphasize the importance of good information management (Morton H., 2012).

ICT Projects fail for various reasons and there are various explanations on why this happens but most commonly is that ICT is treated as a separate entity from the business environment that it seeks to improve. The overall strategy of a business and its information infrastructure cannot and should not be separated in terms of ICT strategic thinking and planning. The ICT requirements must be understood within the vertical business process.

1.1.1. Concept of Strategy

According to Michael Porter (1996), "Almost no consensus exists about what corporate strategy is, much less about how a company should formulate it". This is due to a combination of factors that relate to strategy terms, concepts and principles and their practical application.

Fundamentally though, strategy is about out-performing the competition – but a strategy can be developed by a highly effective response by a key competitor. Strategy can be defined as how an organization creates and captures value in a specific product market (Michael E. R., 2007). This is both sufficiently precise to have substantive content yet inclusive enough to capture what most people feel should be part of so critical a concept.

Although formulating a consistent strategy is a difficult task for any management team, making that strategy work by implementing it throughout the organization is even more difficult (Hrebiniak, 2006). A myriad of factors can potentially affect the process by which strategic plans are turned into organizational action (Cyrus S. A., 2013). Unlike strategy formulation, strategy implementation is often seen as something of a craft, rather than a science, and its research history has previously been described as fragmented and eclectic (Noble, 1999b). It is thus not surprising that, after a comprehensive strategy or single strategic decision has been formulated, significant difficulties usually arise during the subsequent implementation process. The best-formulated strategies may fail to produce

superior performance for the organization if they are not successfully implemented, as Noble (1999b) notes.

According to the White Paper of Strategy Implementation of Chinese Corporations in 2006, strategy implementation has become “the most significant management challenge which all kinds of corporations face at the moment”. The survey reported that 83 percent of the surveyed companies failed to implement their strategy smoothly, and only 17 percent felt that they had a consistent strategy implementation process (Yang L., 2008).

It is thus obvious that strategy implementation is a key challenge for today's. There are many factors that influence the success of strategy implementation, ranging from the people who communicate or implement the strategy to the systems or mechanisms in place for co-ordination and control.

1.1.2. Strategy Implementation

You have heard this advice a hundred times, “effective implementation of an average strategy, beats mediocre implementation of a great strategy every time”. Yet companies nonetheless often fail to operationalize their strategies in ways that improve the likelihood that they will be implemented effectively. Nearly 70 percent of strategic plans and strategies are never successfully implemented (Corboy & O’Corrbui, 1999).

Arguably, many of the most commonly cited causes for implementation failure are either myths or excuses that have gained popularity from being repeated often. The real reasons

that strategies fail are varied. Fortunately, the causes can often be anticipated and the pitfalls can be avoided. Strategies often fail because the market conditions they were intended to exploit change before the strategy takes hold. Product life cycles are shorter, disruptive technologies emerge with greater frequency, and financial markets can be fickle. And, many markets are experiencing rapid, discontinuous change. Larry Downes (2001) makes this point persuasively based on his research into strategy execution mistakes. Specifically, Downes finds that “technology challenges the old rules and assumptions” and creates daunting “external obstacles to execution”.

Though successful strategy implementation begins from its formulation. A critical step, often overlooked is ensuring that organizational capabilities align with the strategy. A basic assessment of organizational capabilities and the capability gaps created by altering strategy is a very direct means of improving alignment. Eric Beaudan, Director of Organization Effectiveness at the Bank of Montreal, makes the point well, “have the presence of mind to note which core competencies exist or are lacking in the organization . . . unrecognized incompetence can lay waste to the best of plans” (“Failure of Strategy”, Ivey Business Journal, 2001).

Your strategy development project should also directly consider potential competitor reactions to a strategy and how your company will respond in turn. Your company should maintain a basic competitive intelligence capability as a matter of day-to-day strategic management.

Involving people directly in the strategy development project has paid off for a number of the CEO's. Getting people involved in the creation of the plan is the best thing we have done, they buy-in and feel responsible for it (Keith S., 2010). Not everything you decide to do is popular, but by involving (a large group) people have a chance to air their differences about strategy and the whole team can discover what has merit and what does not.

Because so many strategies fail for a lack of buy-in, understanding, or poor communication, ensure that resources are dedicated to continuing, persistent communication. Talk about how recent events relate to the strategy. Relate business results (good and bad) back to the strategy. Be candid about what is working and what is not and tell people what you are doing to fix it.

Effective implementation requires continual monitoring of progress in implementing the plan, of the competitive environment, of customers' satisfaction, and of the financial returns generated by the strategy. And, monitoring is meaningless if it is not accompanied by accountability and change when change is warranted. It helps to keep the implementation on track and enables to adjust quickly to challenges and obstacles. Jim Ethier of Bush Brothers (2009) added, "If enough people engage in implementation and you are monitoring and discussing it all the time, people are embarrassed not to be engaged in implementation".

1.1.3. ICT-BASED Strategy

An Information and Communications Technology (ICT) based strategy defines the way an organization proposes to manage and enhance its information assets to support its current and future business needs. The ICT Strategic Plan becomes a tool that uses to communicate its ICT Strategy both internally and externally. An ICT Strategy ensures that ICT activities and investments are aligned with corporate strategic objectives, and to define the ICT standards and policies that have in place. ICT strategic plans are used as tools for decision-making about future acquisitions. Any new proposal to change or enhance business processes should be tested to ensure that it conforms to the approved ICT Strategic Plan (Livesley M., 2011).

An ICT Strategic Plan, like Corporate and Business Plans, is an output from an ICT strategic planning process. The ICT strategic planning process involves planning for business systems, information management, asset management, and information and communications technology that supports the strategic and corporate objectives of the organization. The planning process should also take into account wider government policy priorities and relevant legal factors to ensure the needs of key stakeholders are met. ICT strategic planning also includes establishment of appropriate governance and effectively drive the ICT strategies being pursued.

Therefore, the purpose of undertaking an ICT strategic planning process is to look ahead and determine whether the existing ICT environment in an organization will effectively support future business needs, and if not, what changes can and will be made. It follows

that ICT Strategic Plans are an integral part of strategic and corporate plans. An ICT strategy is a support strategy that exists to underpin the organization's core business strategies and defines the business benefits and outcomes to be achieved by the agency through the pursuit of its ICT strategy, the key projects by which the organization's ICT strategy will be implemented and the way in which achievement of benefits will be managed, and the timing of their realization.

1.1.4. Cement Manufacturing Industry in Kenya

Cement is a fine, grey powder which sets and then hardens into a solid, strong material. It is mainly used to make concrete and mortar for construction. Cement is made by heating limestone with other materials (such as clay) to get clinker which is further processed to make Cement. Cement is a vital product and the key constituent of concrete (Njeru W., 2007). Cement, as a product is one of the indicators of the general developments in the construction industry, since it mirrors the level of activity in the sector. The industry is important as it plays a forward and backward linkage with other economic sectors hence playing a critical role as an indicator to the general economic conditions. It's a key contributor of revenue to the government and supports other key sectors like energy (CBK, 2007). It also supports the community in term of income, community programs and skills (Njeru W., 2007).

Kenya's building and construction sector is amongst the most rapidly growing, experiencing an average growth rate of 14.2% for the period 2006 – 2011. Difficult global macro conditions (high oil prices) and Kenya's 2008 post-election violence in the midst of

a high inflation environment (inflation averaged 9.0%) resulted in the country's subdued economic performance during the period (World Economic Outlook (WEO) Database (October 2012)). While cement consumption in particular is highly correlated to a country's economic performance, cement consumption experienced superior growth that was more than twice the rate of GDP growth during the period. Growing in tandem with the construction sector, cement consumption increased at an average rate of 14.1% for the period 2006 – 2011, with consumption reaching 3.43 million tonnes (Mt) in 2011, up from 1.57MT in 2006 (KNBS Economic Survey (2009 and 2012)). In Kenya, cement history started in the early 1930s when in 1933, East Africa Portland Cement (EAPCC) began as a trading company importing cement. Blue Circle Industries of United Kingdom formed the company. The plant's initial capacity was 60,000 tons a year, but presently it stands at 700,000 tons a year. EAPCC targets 1.3 million tons towards the end of year 2007 (East African Portland, n.d.). In 1951, Bamburi Cement Ltd was founded and Lafarge, a company from France is the principal shareholder of Bamburi Cement Ltd. At inception the annual capacity was 140,000 tons of cement but at present it stands at 2.1 million tons a year and a market capitalization of 70 billion shilling (www.bamburicement.com, n.d.). ARM (Kenya) was established in 1974 and its principal shareholder is the Paunrama family. Initially it was a mineral extraction and processing company and later in 1996, the cement division began operation.

The company targets a capacity production of 200,000 tons a year by the end of 2007 and has a market capitalization is 8.7 billion (www.armkenya.com, n.d.). The cement industry is capital intensive and the manufacturing is energy intensive. The industry plays a

significant role in the climate change debate and energy accounts for up to 45 per cent of cement production costs. Cement firms operate in markets closely linked to the economic cycle with a back-forward linkage with many other sectors like energy and transport (WBCSD, 2002).

Challenges facing this industry include; climate protection, responsible use of all fuel and raw materials, enhancing employee health and safety, carbon emissions, local impacts and un-harmonized trade tariffs in the region, rising costs of inputs like energy and challenges in internal business processes like to integrate sustainable development as a set of principles into management systems, relationships with business partners and civil society (WBCSD, 2002). The industry plans to increase capacity due to high demand of cement. Firms are also seeking cost reduction options for power, raw material, and logistics. Efforts are in place towards product diversification and target value added and application specific products. Firms in the industry are more conscious of quality as seen in their effort to acquire certification of manufacturing activities. Generally, there is concern over security of raw materials and other resources (WBCSD, 2002). The industry faces challenges in regard to business integration of sustainable development cooperation with cement companies and external organization to enhance sustainable development practices (Njeru W., 2007).

The key drivers of this growth in consumption included a rising demand for housing (which triggered an upsurge in private sector funded housing developments), the commercial construction boom fuelled by increased foreign investment, and extensive government and

donor-funded spending on the country's mega infrastructure projects. As a result, per capita consumption (PCC) of cement increased at an average rate of 10.7% for the period to 83.9 kilograms (Kg) in 2011 from 50.0Kg in 2006 despite relative stagnation in annual population growth (KNBS Economic Survey (2009 and 2012)). The industry is important as it plays a forward and backward linkage with other economic sectors hence playing a critical role as an indicator to the general economic conditions. It's a key contributor of revenue to the government and supports other key sectors like energy (CBK, 2007). It also supports the community in term of income, community programs and skills.

1.1.5. East African Portland Cement Company Limited

EAPCC is the oldest cement manufacturer in Kenya having been incorporated in 1933. EAPCC started as a trading company, importing cement for early construction work in East Africa and in 1956 constructed its first factory in Athi River. Blue Circle Industries of United Kingdom formed the company. The name Portland was given due to the resemblance in color of set cement to the Portland stone that was mined on the Isle of Portland in Dorset, England. EAPCC's shareholding structure is largely institutionalized, with the company's top ten shareholders owning a combined 96.1% stake in the company. NSSF and the Treasury are the company's top shareholders holding 27.0% and 25.3% respectively. EAPCC also produces custom-made cement products for the construction industry (www.eastafricanportland.com, n.d.).

The Company initially had one cement mill (Mill No. 2) and used to import clinker from India. The production capacity was about 60,000 tonnes of cement. In December 1956,

construction of the Athi River facility started. The factory was commissioned in 1958 and consisted of a Rotary Kiln (Wet), a big cement mill (Cement Mill 1 & 3) which significantly increased production capacity to 120,000 tonnes per annum (www.eastafricanportland.com, n.d.).

In the last few years, EAPCC has greatly expanded its production capacity. With the introduction of Mill No. 5 and the embrace of Coal energy, the Company can presently produce over 1.3 million tonnes of cement per annum at reduced cost. Furthermore, the Company's recently implemented ERP system was recognized as the best for 2011 (www.eastafricanportland.com, n.d.).

The Company now has fully automated business processes which means complex paperwork is now largely a thing of the past; from the offices of top Management to the Factory floor. Blue Triangle Cement, is EAPCC's flagship brand. The nation's historical structural icons, such as KICC, have been built using Blue Triangle Cement. Others include the Thika Superhighway and Chemususu Dam. EAPCC is ISO 9001: 2008 certified company, a mark of our professionalism and high standards in operations. EAPCC is also OHSAS certified (Occupational Health and Safety), a mark of our world class standards of safety at the workplace. In 2011, EAPCC received recognition from the Computer Society of Kenya for Best ERP Implementation, reflecting the successful automation of all our business processes from factory floor to Management. Growth, expansion and sustained profitability are the guiding principles of our business model. Our permanent base in

Uganda gives us a foothold in the region and we continue to expand our regional operations even as we grow our market share in Kenya.

1.2. Research Problem

Implementing strategy is harder than developing it. This has been the belief and view of many business experts and strategy scholars. Although this might be true, none is more important than the other and therefore all should be treated as equally important in order to ensure strategy success. Strategy success is a combination of both these components and more. Though implementation is where most seem to get stuck or fail at. Depending on a number of factors, this has been the outcome of most organisations and institutions that have attempted strategic responses in order to turn around their businesses and institutions.

The business environment in the cement producing organizations has had several changes that have had an impact on the companies in the past and are expected to influence company actions in the medium and long-term. The political pressures, new entrants, cultural factors, technology changes, legislative changes, Government policies are but some of the challenges that have greatly affected strategic actions in this industry. These challenges cannot be ignored because as the cement industry plays a significant role in our economy.

Thiga (2002) in his study in response to Kenya Airways in the face of changing environment established that, airlines have been undergoing a period of considerable environmental turbulence like high operating costs. His study revealed that airlines responded by abandoning unprofitable routes, network expansion and collaboration.

Chepkwony (2001) on strategic responses of petroleum organizations to challenges of increased competition revealed that organizations responded by making changes in their mission, technology and embraced diversification in response to changes in the environment.

While these studies have addressed various aspects of responses to environmental challenges, none focused on the ICT strategies in cement industries in Kenya, hence this study addressed the issue of the strategic responses by EAPCC to challenges posed by the changing environment in the industry specifically in ICT as this is a key component in today's business strategies. The study therefore aimed to answer the research question, how has East African Portland Cement Company Ltd. approached implementation of an ICT-based strategy?

1.3. Research Objectives

The objectives of this study were:

- i. To determine the implementation process of an ICT-Based strategy by East African Portland Cement Company Ltd.
- ii. To establish the challenges faced by East African Portland Cement Company Ltd in implementing ICT-based strategy.

1.4. Value of the Study

The research is expected to benefit the following EAPCC parties and other affected or interested parties. For the EAPCC Top Management, this study is expected to help them

identify factors of the environment that affect their organization and hence be able to better develop and implement an ICT strategic plan. Potential investors, they would equally be better informed about the challenges faced by EAPCC specifically in relation to ICT and other areas already operating and hence make more informed decisions.

The Government can through these research findings better understand relevant issues regarding the industry and EAPCC specifically which could help the government in policy formulation and regulation. And last but not least, researchers will find this research to be a useful source of reference for other researchers who might be interested in carrying out further research based on the findings of the current study. It will also help fill the knowledge gap regarding the area of study.

CHAPTER TWO: LITERATURE REVIEW

2.1.Introduction

This chapter highlights the strategic management process at EAPCC, strategy implementation in a cement manufacturing industry. The various concepts of an ICT-based strategy and its various facets are detailed in this section.

2.2.Theoretical Foundation

Implementing adequate ICT (Information and Communication Technology) strategies is essential for increasing activity and management efficiency within an organization. The implementation of information systems to the organization's characteristics and goals is indispensable for increasing its efficiency in specific activities and management. It is important that management strategies take into account the dedicated software's potential in significantly increasing organization efficiency, provided that it is properly designed and implemented. The main goal of implementing information systems within an organization is to induce overall activity efficiency by ICT which involves automation of information processing, providing adequate and accurate information and proper and reliable document management. The ICT system's implementation also improve management strategies since electronic relay of most relevant information from organization's departments / system's modules will turn into reliable information sufficient to guide management decisions.

ICT strategies should find their appropriate place within designing organization's management strategies since, based on their business impact, both in required resources,

business impact and gained sustainable competitiveness, if properly implemented, ICT management becomes a key component in organization management and strategies especially in this modern information age. Within this theoretical foundation, the present research paper focuses on the most important principles in implementing an ICT strategy adapted to the company's targets and resources and in efficiently implementing ICT strategies for managing organization activity and processes.

2.3.Strategic Management Process

In business, strategy relates to the manner that is used to achieve all the goals and targets that have been set for the organization. Strategy helps to not only achieve long term goals but also tends to give organizations the tools to achieve and maintain a competitive edge over their counterparts in the industry (Cambio, 2012). In order for an organization to achieve its long term objectives and goals the organization needs a strategic plan. The objectives and goals of the strategic plan are to become successful in business. The organization needs to evaluate the expectations and demands of the stakeholders when constructing a strategic plan. A strategic plan can look perfect and show high returns on paper, but if stakeholders are not properly educated on what is expected of each one of them and quite honestly if they are not each capable of accomplishing their job duties the strategic plan is going to fail (Rambo, 2013).

Managerial decisions and activities that determine the long term performance of an organization are called strategic management (Hunger & Wheelen, 2010). In order for an

organization to develop an effective strategic management process the organization must first identify the organization's mission, objectives, strategies, and policies. The mission of an organization is its reason for existence. The objectives are the planned results of the organization and when those results will be achieved. The strategies of the organization are the steps needed to accomplish the mission and objectives. The policies are the fundamental and ethical guidelines for making a decision on behalf of the organization (Clarkson, 2011).

Strategic management has been embraced by successful firms and has been accredited for the success of many firms. Scholars insist that strategic management has overwhelming support. A future manager should understand the reasons for strategic management instead of blindly following the current trends. Strategic management allows an organization the ability to establish a clear goal and the way forward. The organization develops goals which are a key component of strategic management. The goals provide the organization with direction and help the organization to become progressive. Strategic management can improve performance to include: financial and non-financial performance. Strategic management is useful in measuring progress within the organization. This is accomplished through a gap analysis. The gap analysis provides the organization with the difference between the organizations goals and actual accomplishments. The organization can use the information to make sure that company goals have been reached and what is needed to accomplish a goal that hasn't been reached. Strategic management can structure the decision making process across multiple departments. It is important for an organization to

make consistent decisions that are in the best interest of the organization and strategic management provides that consistency.

2.4.Strategy Implementation

The strategy implementation involves the process of seeing what it will take to make the strategy work and to reach the targeted performance on schedule. The job of implementing strategy is primarily an action-driven task that cuts across the whole organization. The principal aspects associated with putting the strategy into place include: building an organization capable of carrying out the strategy successfully, developing budgets that steer resources into those internal activities critical to strategic success, motivating workers in ways that induce them to pursue the target objectives energetically so as to execute the strategy successfully, creating a work environment conducive to successful strategy implementation, installing strategy-supportive policies and procedures, developing an information and reporting system to track progress and monitor performance, exerting the internal leadership needed to drive implementation forward and to keep improving on how the strategy is being executed. The main aim is to create the linking between the way things are done and what it takes for effective strategy execution. The stronger the linking, the better the execution of strategy. Fitting the way the organization does things internally to what it takes for effective strategy execution is what enables the organization to the delivery of strategy successfully.

Strategy implementation is the most complicated and time-consuming part of strategic management. It cuts across virtually all facets of managing and must be initiated from many points inside the organization as it has to think through the answer to the question, “What has to be done in order for the overall corporate strategy to be implemented successfully and the details of implementation will apply enough force on the organization to convert objectives into actual results?” (Gono, 2012). Depending on the amount of internal change involved, full implementation can take several months to several years.

2.5. ICT-Based Strategies

An ICT strategy by definition could be a combination of the two words to simply refer to a long term organizational plan that guides the organization on the way forward in terms of ICT and that defines how the ICT function will support the overall business strategy and boost productivity and profitability of the organization. It will define the phased adoption approach to various emerging technologies and how they will interface with the existing business functions and help them achieve more.

Therefore, the fundamental roles that an ICT strategy will perform are; provide access to information and knowledge, with focus on speed to access, process, adapt and organize information (Hanna, 2003). This, in turn, has accelerated learning, innovation, and knowledge creation and dissemination of the same. In this sense, ICT has the profound impact of the invention of printing, speeding up and reducing the costs of production and transactions throughout the organization. ICT will also increasingly embedded in all types

of production, processes and transactions, giving rise to intelligent products, real time control processes, facilitating trade, outsourcing business-support and back-office services, and enabling complementary organizational innovations and last but not least connecting people, departments, branches and other interfacing businesses. This gives rise to empowerment, participation, coordination, decentralization, social learning, connecting communities of practice, mobilizing social capital, and globalizing civil society concerns (Hanna, 2003). ICT's have been increasingly described as "technologies of freedom" (Ithiel de Sola Pool, 1983). Therefore with these main roles of ICT, the following are possible ICT strategies, creating a workforce with current and competitive intelligence. To have a vibrant, innovative and globally competitive ICT function in the organization that plans strategically for the future, based on accurate information and forecasting, which will further the goals of productivity in all other sectors of the organization and contribute to the economic development goals of the organization (Manitoba, 2012). Marketing and branding the corporate ICT strategy for support throughout the organization. To have a strong ICT brand that presents a corporate strategy and is well known for innovation and quality in key international markets. The brand should encompass all digital ICT activity in the organization and should be driven by a close relationship between the industry and the various federal and government ministries and programs involved in innovation, commercialization and trade. Encourage and rewarding innovation in ICT (Manitoba, 2012).

Have an ICT department that is a magnet for great ideas and support R&D and implementation of technology through development of multidisciplinary commercial R&D and product realization. Embracing the use of ICT to reduce paperwork and mundane tasks. Here will involve the development of a paperless environment where only mandatory paperwork will be done. This will involve implementing an enterprise resource planning system that will stretch throughout the whole supply chain involved. Also will be a document management system implemented to take care of the paper trail that currently exists. Promote ICT literacy and training needs in the organization. This will involve training staff in the relevant technologies that are and will be in use as defined in the ICT strategy. This will span from technologies like oracle database management, website development and maintenance, network monitoring and security, information security, general user ICT awareness training to boost employee workforce knowledge. Adopt and implement ICT industry standards and conduct. This will be to build a strong base for innovation in the ICT industry by fostering the development and application of open technical and professional standards. It will also encourage professionalism and the ethical and principled conduct of ICT practitioners.

Outsourcing of Non-core ICT functions like printing, PC maintenance, procurement procedures and other functions. This should help the ICT department in the organization to focus on more productive and strategic focuses functions. Hiring competent staff and consultants who are well versed in current ICT technologies as mentioned above. This will be in line with the training and development of the staff involved. For the consultants,

whether locally sourced or off shore sourced, they should have the necessary prerequisites and relevant certifications.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1.Introduction

The chapter outlines the overall methodology that has been used in the study. This includes the research design, data collection methods, research procedures and data analysis and presentation.

3.2.Research Design

A case study design approach was used to assist to get the general and specific objectives of the study. This was meant to establish the strategy implementation approach by East African Portland Cement Company Ltd. in their environment and the challenges and constraints experienced through the implementation process. According to Bromley (1990), it is a “systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest” (p. 302).

3.3.Data Collection

The study relied on primary data from the main research respondents. The source of primary data was from questionnaires containing both structured and unstructured questions. These were filled out by top managers and supervisors at EAPCC. This approach has been successively used by Gekonge (1999) and Chepkwony (2000). These included senior managers, heads of departments and supervisors. Responses were sought out from senior managers who have been in the industry for a relevant period of time. The

questionnaires were divided into three parts. Part one captured information about general characteristics of the organization. Part two focused on the strategic responses that have taken place at EAPCC while part three covered the challenges of implementing these strategic responses in the organization.

3.4.Data Analysis

Descriptive statistics analysis was employed. Before processing the responses, the completed questionnaire data were edited for completeness and consistency. The descriptive statistics analysis was used to analyze the respondents' views on the way the ICT strategy was and is being implemented and the challenges and constraints during implementation at EAPCC. The data was coded to enable the responses to be grouped into various categories. This included percentages and frequencies. Tables and other graphical presentations as appropriate were used to present the data collected for ease of understanding and analysis.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1.Introduction

This chapter presents the analysis of the study findings according to the data collected from the field. It provides information on the implementation process and procedures of an ICT based strategy by EAPCC in Kenya. It begins with instrument return rate, demographic data of the respondents, while the other sections are based on the research questions of the study.

4.2.Response Rate

Questionnaires were used to collect data from senior managers at EAPCC. A total of 5 questionnaires were distributed and all of them were returned giving a response rate of 100% which was deemed to be very good and sufficient for data analysis. The respondents were quite cooperative and the data collected was taken to be a true representation of the respondents' views due to the independence of the questionnaire method of data collection.

4.3.General Organization Knowledge about EAPCC by the respondents

The study sought to find out the general knowledge of EAPCC of the managers in respect of their position at EAPCC, EAPCC's main competitors; size of EAPCC in terms on number of employees, and their main strategic advantages in the cement manufacturing industry in Kenya. The purpose of this information was to find out if the respondents

generally knew their organization and who their competitors are and why they are their competitors. On number of employees at EAPCC, the results were as shown in table 4.1.

Table 4. 1 – Number of Employees at EAPCC as known by the respondents

Number of Employees	Frequency	Percent
0 - 500	0	0
501 - 1000	1	17
1001 - 1500	4	66
1501 and above	1	17
Total	6	100

The study found out that at least 66% the respondents had a good idea of how many employees were employed at EAPCC and the rest were not that far off. This was a positive attribute of the respondents to this study because the more one was accustomed to how large the company is, the more they appreciated the need for an efficient strategy, more specifically an ICT strategy. The study further sought to know whether the respondents knew they had competitors in the cement manufacturing industry in Kenya and whether they knew who they were. The results were as shown in table 4.2

Table 4. 2 – EAPCC competitors as perceived by the respondents

Competitor	Frequency	Percent
Bamburi Cement	6	40
Rhino Cement Foundation	2	13
Athi River Mining Limited	4	27
Savanna Cement	2	13
National Cement	1	7
Total	15	100

The study found out from the total 15 responses distributed among the 6 respondents that Bamburi Cement was their strongest competitor and their weakest competitor was National Cement at only 7% percent. This was quite reflective of the cement manufacturing industry in Kenya as Bamburi cement was the market leader with about 40% market share, followed by EAPCC as 24% (EAPCC, 2012). It was also highlighted from the responses that the second most competitive cement manufacturer in the region was Athi River Mining with 27% of the responses of respondents mentioning them. They also on the ground follow very closely in market share after EAPCC with 16% (EAPCC, 2012). Their responses to the study questions would therefore be credible enough to draw conclusions from. The study further inquired about what was the main strategic advantage they had over their rivals in the market. The respondents were required to highlight what they thought was the main strategic advantage over their competitors and the results were as shown in Table 4.3.

Table 4. 3 - EAPCC Main Strategic Advantage over their competitors

Strategic Advantage	Frequency	Percent
Quality of their Brand	4	67
Produce their own clinker	2	33
Total	6	100

As shown in table 4.3, 67% of the respondents viewed their brand i.e. Blue triangle to be their main strategic advantage over their rivals in the industry. This is more specifically the quality of the cement they have produced over the 80 years of operation. This to EAPCC as highlighted by the results above show that the blue triangle brand is most trusted in the market. However, 33% percent of the respondents view the ability to produce their own clinker as being their main competitive advantage clinker being a very key component in cement manufacturing and most expensive. It was noted that most of their rivals either import clinker from external entities as far as India while some even buy clinker from EAPCC. This implied that market brand is very important in the industry and the quality of the cement is also a key strategic advantage if well trusted in the market.

4.4.The ICT based Strategy Implementation

The study inquired from the respondents whether they knew of the current ICT based strategy at EAPCC and how they viewed its implementation. First was their brief overview of the current ICT strategy. This is captured in table 4.4

Table 4. 4 - Brief description of the current ICT Based Strategy

Brief description of the ICT Based Strategy	Frequency	Percent
Well Defined	1	17
Poorly Defined	2	33
Didn't know anything about it	3	50
Total	6	100

As shown in table 4.4, majority of the respondents were not well informed of the ICT based strategy i.e. 50%. They were either not involved or didn't know that there was an ICT based strategy being implemented. Also, there were 33% of the respondents that attempted to define the ICT based strategy but gave a very poor definition. There was only one of the respondents i.e. 17% of the respondents who knew and defined the ICT based strategy well. This was as a result of him being involved in the implementation process and as a result was well versed in it. These results indicated that the implementation process of the ICT based strategy was not well communicated. Next the study looked at if any part of the ICT based strategy was implemented and if so, if it was felt in the business. The study therefore interrogated this by asking for any ICT based strategy they have observed recently. The results were as shown in Table 4.5.

Table 4. 5 - ICT Based Strategy/Changes implemented recently

ICT Based Strategy	Frequency	Percent
New Email System	2	33
New ERP System	3	50
None	1	17
Total	6	100

As shown in table 4.5, majority of the respondents viewed a new ERP system as being the most significant ICT based initiative recently implemented i.e. 50% of the respondents. 33% of the respondents saw a new email system as being also a recent effective ICT based strategic initiative. However 17% of the respondents didn't know of any recent ICT based initiative. The study then moved to finding out the effectiveness of ICT in relation to the industry. This was through seeking the respondent's view of whether the ICT department is doing enough to remain relevant in the current ICT industry as shown in Table 4.6.

Table 4. 6 - Is the ICT department doing enough to remain relevant and supportive

Is ICT department relevant	Frequency	Percent
Yes	6	100
No	0	0
Total	6	100

As shown above in Table 4.6, all the respondents viewed the ICT department as being relevant in their efforts. This means that they felt the support of ICT in the business and knew that it was an important role in the business. Next the study sort out on how best an ICT based strategy should be implemented. This was done by seeking the respondents view on how effective some implementation strategies would be as shown in Table 4.7.

Table 4. 7 - ICT Based Strategy implementations

Implementation Strategy	N	Min	Max	Mean	Std. Dev
Adopt and implement ICT industry standards	6	2	5	3.00	1.265
Supporting Research & Development in ICT	6	2	4	3.00	1.095
Promote ICT literacy and training needs	6	2	4	2.67	0.816
Well communication of the ICT Based strategy	6	2	4	2.33	0.816
Outsourcing most of the ICT Based initiatives	6	2	5	3.17	0.983
Hiring competent staff and consultants	6	1	5	3.00	1.414
Involving key users of systems in strategy planning	6	3	5	4.17	0.753

The respondents were required to indicate to what extent various listed ICT strategies and initiatives would be successful and impactful, These were coded as (1) - no impact, (2) - little impact, (3) - moderate extent, (4) - great extent and (5) - very great extent. Using descriptive statistics, strategy implementation methods were rated as those that had the greatest impact since they had a mean of 3 and above as shown in table 4.7. In response to these strategy implementation techniques, the study found out that the respondents were positive about the changes brought about by key users of systems in the strategic planning of the ICT based strategy implementation, well communicating the ICT based strategy in the organization and the need to train and improve ICT literacy in the organization both in the ICT department and the organization as a whole. Those 3 implementation strategies stood out the most. The study then sort to find out what were the most critical areas that the ICT strategy needed to touch on in the organization. This was open ended and asked the respondents to highlight the areas they deemed critical in order to boost business in the market as shown in Table 4.8.

Table 4. 8 - Key ICT strategic areas to boost business

ICT strategic areas	Frequency	Percent
Network Efficiency and availability	2	33
Online presence i.e. E-Commerce	1	17
Portability and ease of access for customers and sales agents	1	17
Business Continuity plans	2	33
Total	6	100

As shown above in Table 4.8, the respondents highlighted 2 key ICT strategic areas i.e. business continuity plans in case of any incident and networking efficiency and availability to facilitate smooth running of business operations i.e. systems and other services. Both these key ICT areas stood at 33 %. At 17% each were portability and ease of access for customers and sales agents and online presence i.e. e-commerce. These two too were noted as critical by the respondents and would boost business efficiency and performance.

4.5.Challenges in implementing ICT based strategy

The study also sought to find out the major challenges and constraints in the implementation process of the ICT based strategy. The study inquired from the respondents what the most dominant challenges were or constraint in their view relating to ICT based strategy implementation process. This was captured in table 4.9.

Table 4. 9 - Challenges/ Constraints in ICT Based strategy implementation

Challenges/ Constraints	Frequency	Percent
Lack of ICT skills and expertise	1	17
Bureaucracy in the organization	3	50
Poor Change Management	1	17
Budget Constraints	1	17
Total	6	100

From Table 4.8, the main challenge to ICT strategy implementation was bureaucracy at 50%. This was seen as the most straining challenge where respondents highlighted that a very tall structure hampered ICT base strategy implementation efforts. The rest was also mentioned by the rest of the respondents but were not as dominant. The study also sought to know what can the organization do to improve on the challenges experienced during the implementation process and to make the whole ICT based strategy successful. The results are captured below in Table 4.10.

Table 4. 10 - How to improve strategy implementation

Challenges/ Constraints	Frequency	Percent
Improve Communication of the strategy	2	33
Make the organization less bureaucratic	3	50
Improve on change management	1	17
Total	6	100

Table 4.10 highlights that 50% of the respondents think that reducing the bureaucratic nature of the organization would greatly improve on the ICT based strategy implementation. 33% also viewed that improving the communication of the strategy throughout the organization would also go a long way in boosting strategy success in the organization while 17% saw that improving on change management would improve on strategy implementation.

4.6. Discussion

From the above findings and data analysis, there is a general positive backing from the top management that ICT is important to the business and is paramount in order to stay relevant in the market. One of the major efforts towards the ICT strategy implementation is the support for training in relation to the strategy. Staff are well trained and supported to learn the best practices in the industry. Although this was noted to be only in the parties that were directly involved in the implementation procedure. Other parties outside the direct implementation process were trained on a need to know basis. Also noted was the use of experts and consultants that are well versed in the fields relevant to ICT based strategies i.e. information security, network and infrastructure and many other areas. However there were some negative efforts in the implementation process. Some of these were little or poor communication of the ICT strategy in the business thus poor buy in from staff lower in the hierarchy of the organization and also lack of involvement of key staff in the formulation and implementation of the ICT based strategy. A great challenge is being experienced by the parties involved in the implementation i.e. a feel that the level of bureaucracy in the business is the greatest hurdle in the implementation process. Removing this would go a long way in boosting the ICT based strategy implementation efforts.

Therefore linking the results of the study to the theoretical framework that guided the study, we see a strong dependence on ICT even in a manufacturing industry. We see this with the implementation of an enterprise resource planning system. This shows that the ICT strategy is aligned to the organization wide strategy to link the whole supply chain to improve the organizations processes and procedures from the beginning at the quarries to the end

customer. Also we can see the effect of a poorly managed or implemented ICT strategy in the way the ERP system was implemented and its effect on EAPCC's performance in the market. This highlights on the how important a well implemented strategy is important to an organizations success. But generally ICT is now a key component in EAPCC's strategy and it is now a concern for all departments in the organization hence backing the view that if an ICT strategy is well implemented, it becomes a key component in the organizations management. ICT has generally improved overall efficiency and effectiveness of the organizations processes and activities.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1.Introduction

This chapter deals with the summary, conclusions and recommendations of the study. The general objective of the study was to investigate the manner in which ICT based strategy has been implemented in EAPCC and the challenges and constraints experienced in this implementation.

5.2.Summary of findings

The researcher developed two research objectives from which research questions were drawn to be answered by the study. Related literature on implementation of ICT based strategy at EAPCC and the challenges experienced during this implementation was reviewed. The study targeted all senior managers, supervisors and other relevant parties to the ICT based strategy project at EAPCC. The study employed a case study approach and used questionnaires to collect the required information. The number of questionnaires returned was 6 and the return rate was 100%. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 17.0 to process the frequencies, percentages and descriptive statistics which were used to discuss the findings. The following were the findings of the study.

The study established that there was an ICT based strategy that was still being implemented at EAPCC. Although there were various phases and sections of the ICT based strategy being implemented, it was noted that there were various methods being used and some were effective and others not so effective nor popular. The first notable observation from the responses received was that the managers and supervisors who were the main respondents of the study were well knowledgeable of their organization i.e. EAPCC. They well knew the size of the organization in terms of employees. This was a key element in this study as the level of knowledge of the managers and supervisors who are key in the ICT based strategy implementation reflected in their commitment to making the strategy work. The study also noted that the managers who were key decision makers in the organization were well aware of their main competitors in the industry. This was clearly Bamburi Cement followed by Athi river mining limited. This shows that EAPCC was well aware of their competition and they were not complacent in their position in the market. The study results well showed the exact position of the various competitors. Finally in determining the level of knowledge of the managers and supervisors about EAPCC was what they viewed as EAPCC's main strategic advantage in the market. This was seen as their brand which guaranteed quality and was consistent. Also highlighted was the ability of EAPCC to produce its own clinker which is a key component in producing cement.

The study also noted that not many of the managers and supervisors were familiar with the ICT based strategy. This was a gap as for any successful strategy implementation, effective communication of the strategy is important in order to make it successful. There was also

a general concern from the managers on the strategies that were being employed and whether the ICT department was doing enough to remain relevant and up to date with current technological changes and trends in order to best support both the corporate strategy and business needs. The study established that the managers and supervisors who are key entities in the implementation of the ICT based strategy acknowledged ICT as a key element in the corporate strategy and that it was important in order to keep them strategically advantaged in the market. Although the main strategic advantage that was highlighted by the managers and supervisors in the market was the EAPCC brand and its perceived quality in the market, they also highlighted the need for ICT related strategic advantages. These included improved business continuity plans be put in place and network and infrastructure efficiency related to ICT be invested upon. These would boost business reliability both to customers and sales agents who represent EAPCC out there in the market. Also from the study it was discovered that involving users in the planning and implementation phases and procedure of the ICT based strategy would be the biggest win in making it a successful strategy implementation. This is because the key users of the systems and business processes are the ones who will mainly be affected by the strategic changes that the organization take and it's therefore important that they be involved. Also noted was that improving ICT literacy both technically and within the organization would boost ICT based strategic implementation. This outcome highlights that for any strategy including an ICT based one, it is important to have the necessary skill and know how in order to make its implementation and operationalization a success. Other key factors include good communication the ICT strategy throughout the organization. This should

help get organizational support and buy in especially from the people it seeks to improve. Another would be to supporting research & development in ICT, adopt and implement ICT industry standards, outsourcing most of the ICT based initiatives and hiring competent staff and consultants.

The major challenges of implementing ICT based implementation at EAPCC was bureaucracy in the organization. This was viewed as the biggest hindrance to implementing ICT based strategy. This slowed down the procurement process for new technologies and equipment required for the implementation. Others included lack of ICT skills and expertise, budget constraints and poor change management procedures. These were what were perceived as the most effective setbacks in implementing the ICT based strategy.

The study also found out that the most effective change in the implementation procedure was to reduce bureaucracy in the organization. This was highlighted as the most effective EAPCC constraint. The others were to improve on change management and improve communication of the strategy throughout the organization. This would boost cooperation of managers and employees in implementing the strategy. The strategy should have promotion efforts from the bottom up and not the other way which normally creates a lot of resistance due to the view that from the top down is an imposition and not well received at the bottom of the structure or the organization.

5.3. Conclusions

The manner in which an ICT based strategy is being implemented at EAPCC is mixed with both positive and negative efforts. The major efforts being the support for training in relation to the strategy. Staff are well trained and supported to learn the best practices in the industry. Although this was noted to be only in the parties that were directly involved in the implementation procedure. Another positive effort is the use of experts and consultants that are well versed in the fields relevant to ICT based strategies i.e. information security, network and infrastructure and many other areas. There is also a positive feel from the business that ICT is important to the business and is required in order to stay relevant in the market. On the other hand there were some negative efforts or practices that were hampering the implementation process. These include little or poor communication of the ICT strategy in the business thus poor buy in from staff lower in the hierarchy of the organization and also lack of involvement of key staff in the formulation and implementation of the ICT based strategy. Despite these setbacks however, there was still a positive attitude of the staff to support the ICT strategy.

There is also a great challenge being experienced by the people involved in the ICT based strategy implementation team. They feel that the level of bureaucracy in the business is the greatest hurdle in implementing the ICT based strategy. They also felt that if this single blockade is removed by reducing the number of approvals and offices required to go through procurement requests and other implementation committees, that the

implementation procedure would be much smoother. This would go a long way in boosting the ICT based strategy implementation efforts.

The study also highlights the ignorance of the managers and supervisory staff concerning high level plans and efforts to improve the organization. These include being in the know of critical organization changes happening and how they can plug in and make the whole effort be successful. Even though they acknowledged various ICT initiatives to improve the business and make them competitive, they still required more knowledge on the same to improve the support and channeled efforts towards them.

5.4.Recommendations

Based on the findings of this study, it is recommended that the senior management i.e. the managing director and other relevant parties ease the level of bureaucracy in the organization to fastest and lubricate operations in the organization. There is need for training senior and middle level management to cope with the complexities strategy implementation and how to better deal with the diverse cultures in the organization.

5.5.Limitations of the study

One of the limitations of this current study is access to adequate information from the actual workers on the ground who would better describe the impact felt from the ICT strategies employed and too some extent senior management staff who some were too busy or unavailable due to one reason or another. Access to staff was a tad too difficult as the factory and its operations ran 24 hours a day. Also access to financial data and documents was limited due to their sensitivity. This limited the research in that it was hard to analyze the financial impact the implementation process had against the gains realized by the company on ICT strategies employed.

Also the time allocated to carrying out the research was not adequate and as a result not enough time was dedicated carrying out a deeper research on the factors that affected the implementation process. The time limitation limited the data gathering process and also the data collection method where getting scheduled time with the senior managers was hard and questionnaires had to be used instead of interviews. Also the amount of data that could

be collected was also limited by the time available and therefore getting more information on the implementation process.

The data collection method used too was not the best and would have required a more open ended approach e.g. through questionnaires and other means that would encourage more interaction with the respondent in question. Areas such as the procurement procedures used in the implementation process, the effect of outsourcing techniques used i.e. offshore versus onshore outsourcing effects etc. would have been key areas in this study that would have come out during an interview for example as compare to a questionnaire which limited the scope of the research in more significant issues.

5.6.Suggestions for further research

The study recommends that similar studies be conducted in the other industries with a view of establishing whether the same dynamics in ICT based strategy implementations hold similar effects in those industries.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

TO BE COMPLETED BY A SENIOR MANAGER

Please answer the following questions.

1. What position do you hold in the organization?
2. How Many Employees do you have in the firm - approximately?
3. Who are the company's major competitors (Please list them).
4. What do you think is your main strategic advantage over your current competitors?

SECTION B: ICT STRATEGIES

5. What you brief view of the current ICT strategy?
6. Please state any ICT related changes/strategies that have be implemented recently?
7. Do you think ICT department is doing enough to remain relevant in the industry?
8. To what extent do view the below ICT Based strategies as effective in your organization? Use a scale of 1 to 5 where 1 is to a no extent and 5 is to a very great extent.

ICT Strategy	1	2	3	4	5
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Adopt and implement ICT industry standards					
Supporting Research & Development in ICT					
Promote ICT literacy and training needs					
Well communication of the ICT Based strategy					
Outsourcing most of the ICT Based initiatives					
Hiring competent staff and consultants					
Involving key users of systems in strategy planning					

9. How supportive of the corporate strategy is the ICT department?

10. Which critical areas in ICT still need to be addressed? Please specify.

SECTION C: CHALLENGES EXPERIENCED

11. How would you briefly describe the ICT strategy implementation process?

12. Which are the most dominant constraints or challenges experienced in implementing ICT strategy?

13. What suggestions do you propose to improve ICT strategy implementation?