

**CHALLENGES OF IMPLEMENTING THE INFORMATION AND  
COMMUNICATION TECHNOLOGY STRATEGY AT THE KENYA  
REVENUE AUTHORITY**

**BY  
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## DECLARATION

This research project is my original work and has never been presented for the award of a degree in any other university or institution of learning.

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

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## **DEDICATION**

This work is dedicated to all my loved ones, who give me the daily secret to pursue goals relentlessly and my mother Phaustine Nafuna, who showed me how to read and write.

## **ACKNOWLEDGEMENT**

I first and foremost thank God for giving me the strength and commitment to complete this project. I also wish to thank my supervisor Dr. Vincent Machuki for his invaluable guidance and advice on all academic and project related issues.

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## ACRONYMS AND ABBREVIATIONS

<b>BAP</b>	Business Automation Project
<b>BSC</b>	Balanced Score Card
<b>BMP</b>	Business Management Process
<b>CAMIS</b>	Cargo Management Information System
<b>CAPEX</b>	Capital Expenses
<b>CG</b>	Consultative Group
<b>COSIS</b>	Customs Oil Stocks Information System
<b>CRMP</b>	Customs Reform and Modernization Programme
<b>DLMS</b>	Driving License Management System
<b>DTRMP</b>	Domestic Tax Reform and Modernization Programme
<b>ECTS</b>	Electronic Cargo Tracking System
<b>ERP</b>	Enterprise Resource Planning
<b>ERS</b>	Economic Recovery Strategy
<b>FOSS</b>	Free Open Source Software
<b>ITIL</b>	Information Technology Infrastructure Library
<b>ITMS</b>	Integrated Tax Management System
<b>ITSM</b>	Information Technology Service Management
<b>GRA</b>	Ghana Revenue Authority
<b>GSM</b>	Global System for Mobile communications
<b>HELB</b>	Higher Education Loans Board
<b>IBM</b>	International Business Machines
<b>ICT</b>	Information and communications Technology



<b>JKUAT</b>	Jommo Kenyatta University of Agriculture and Technology
<b>KDN</b>	Kenya Data Networks
<b>KENET</b>	Kenya Education Network
<b>KIM</b>	Kenya Institute of Management
<b>KIXP</b>	Kenya Internet Exchange Point
<b>KPA</b>	Kenya Ports Authority
<b>KRA</b>	Kenya Revenue Authority
<b>KTA</b>	Kenya Transport Association
<b>LAN</b>	Local Area Network
<b>MDG</b>	Millennium Development Goals
<b>MMS</b>	Manifest Management System
<b>OPEX</b>	Operational Expenses
<b>PMBO</b>	Programme Management and Business Analysis Office
<b>RARMP</b>	Revenue Administration Reform and Modernization Programme
<b>RBM</b>	Results Based Management
<b>ROI</b>	Return on Investment
<b>SAGA</b>	Semi Autonomous Government Agency
<b>STI</b>	Science Technology and Innovation
<b>STRATEX</b>	Strategy Expenses
<b>UPS</b>	Uninterruptible Power Supply
<b>VAT</b>	Value Added Tax
<b>VMS</b>	Vehicle Management System
<b>WAN</b>	Wide Area Network

## **ABSTRACT**

Public organizations are increasingly becoming reliant on the adoption of Information and Communication Technology as a strategic management tool in order to enable them to achieve intended objectives. One such organization that relies on the ICT strategy is the Kenya Revenue Authority. The implementation of the ICT strategy in any organization faces challenges just like implementation of any other strategy. The objective of this study is to establish the challenges of implementing the ICT strategy at the KRA and determining the measures necessary to overcome the challenges established in that organization. The study has both the conceptual and contextual argument where strategy implementation and its inherent challenges are discussed with specific reference to ICT. KRA as organization is discussed to bring out its mandate and its operating environment. A case study methodology was used with selected respondents subjected to interviews through a prepared interview guide. Textual data was then collected in the form of field notes, transcripts and complementary secondary data were explored and analyzed through content analysis. It was found from the study that KRA faces challenges in implementing the ICT strategy both from internal and external factors. Internal factors relate to resources, organization structure, skills and knowledge and operationalization and institutionalization of the strategy. External factors relate to power of suppliers, resistance from stakeholders and the legal and regulatory framework in which the organization operates. Overall it was concluded that KRA has been able to mitigate some of the challenges through deliberate initiatives in the respective corporate plans. The study recommends that further research is undertaken on the subject of ICT strategy implementation in other similar organizations. It is also suggested that future research can achieve better results through use of alternative methods of data collection like use of secondary data sources as opposed to use of the interview guide like in these case study.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Organizations all over the world have realized the need to embrace strategic management to attain a competitive advantage in pursuit of set objectives. With globalization of more industries, strategic management is becoming an increasingly important way to track international developments and position of a company for long term advantage (Wheelan and Hunger, 2005, as cited in Huiru, 2011). Strategic management involves strategic planning, implementation and control. Although formulating a consistent strategy is a difficult task for any management team, making the strategy work, implementing it throughout the organization is even more difficult (Hrebiniak, 2006, as cited by Li, Guohoi and Eppler, 2011). Firms at all times have to make strategic choices to suit their objectives. After generating alternative courses of action, it is necessary to examine the strategic strengths and weaknesses of each alternative (Asworth, 1985). ICT has inherent challenges where the intended and emergent outcomes do differ. According to Gallier and Leidner (2009), strategic management of data, information and knowledge and associated ICT represents a major strategic challenge and opportunities for organizations in the twentieth century.

The theories that help relate organizations to the challenges of strategy are assessed here. Strategic management theory is built on the management practice where managers perform activities to help an organization gain a competitive advantage. Open systems theory views an organization as an open system comprising of input, system, output and feedback with a two way interaction with the environment. The contingency theory first recognizes that systems are open and any course of action undertaken in an organization is contingent upon internal and external

constraints of the environment. The choice of ICT strategy is now a reality in all firms and it has to be complimented with robust and effective implementation. Advances in information technology and the internet mean that organizations have to embrace successful e-commerce and e-business strategies (Mullins, 1985). The importance of ICT for firms as argued by Castells (1999) as cited by Mullins (1985) emerged in the last quarter of the century and is now defined by three key and intertwined features being informational, global and networked. A lot of corporations and private entities have over the past two decades embraced ICT strategy to enhance operational efficiency and automate business processes. As much as these organizations have embraced these strategies in plans, the implementation of the strategies remains a challenge.

Public organizations in Kenya have over the last three decades embraced strategic management practices through initiatives such as Structural Adjustment Programmes (SAP), Millenium Development Goals (MDGs) and Vision 2030 that have put the ICT strategy as enabler of competitive advantage. Kenya Revenue Authority as an organization has since placed the ICT strategy at the heart of its strategic formulation and implementation in its corporate plans.

### **1.1.1 The Concept of Strategy Implementation**

Strategy implementation is the translation of chosen strategy into organizational action so as to achieve strategic goals and objectives. It is the nature in which an organization should develop, utilize and amalgamate organizational structure, control system, and culture to follow strategies that lead to competitive advantage and better performance. Strategy implementation involves disbursement of resources to strategy essential activities, creation of strategy encouraging policies, employing best policies and programs for constant improvement. As stated by Ward &

Peppard (2002), it requires that adequate resources are obtained and allocated effectively; that the appropriate organization and responsibilities are in place and that people are motivated to contribute to the achievement of the strategies. It is noted in Scholes and Johnson (2002) as cited by Ward and Peppard (2002) that intended strategy evolves into emergent strategy once taken through the planning phase. During the implementation phase the strategy is subjected to unexpected constraints and options, which leads to either realized strategy if properly implemented or failed strategy if not properly implemented.

Excellent formulated strategies will fail if not properly implemented. It is also not possible to achieve effective implementation if there is no stability between strategy and each organizational dimension such as structure, reward policy and resource allocation. During implementation, changes are inevitable in many cases due to the actions of others within the organization or from the external stakeholders. Also new opportunities emerge that were earlier never predicted and in many instances the realized strategy is not the one originally intended. According to Hill and Jones (2010), we live in a world of uncertainty, complexity and ambiguity dominate and in which small chance events can have a large and unpredictable impact on outcomes.

An agile organization needs to be alive to these changes and adjust accordingly to realize what is practical. As further noted by Ward and Peppard (2002) it is necessary to involve people during strategy development as opposed to only having them implement what was only developed by a few top managers. This makes realizing intended strategy more feasible. Aligning strategy to objectives is therefore not an end in itself. Between the ideal of strategic alignment and the reality of implementation lie many difficulties (Michael and Eisenstat, 2000).

### **1.1.2 Information and Communication Technology Strategy**

Technology is one of the principle drivers of competition. It plays a key role in the industrial structural change as well as creating new opportunities and strategies. According to Porter (2004) the necessary steps in formulating and choosing strategy involves identification of the technologies and sub-technologies in the value chain, determination of the likely path of change of the technologies, determination of the technologies that are most significant for competitive advantage, assessment of the organization's relative capabilities in the technologies and making a choice of strategy that encompasses all the technologies that reinforce the organizations intended goals.

The ICT strategy is a plan which includes objectives, principles and tactics, relating to the use of the information and communication technologies within the organization. ICT strategy is a subset of information strategies which also includes the information service strategy and the change management strategy. It is usually derived from the primary business or support strategies of an organization (Gallier and Leidner, 2009). Information systems implementation processes involves a long range of planning for funds, human resources, services, and technical expertise, hardware and software capabilities needed to exploit information services opportunities which arise from time to time (Baker, 1995).

Galliers and Leidner (2009) defined the informational strategy as made up of informational service strategy, informational technology strategy and change and implementation strategy. It was notes that it is important to design informational strategy with other functional strategies such as corporate, production, finance, marketing and human resource (Biddy, Boostra & Kennedy, 2005 as cited by Galliers and Leidner, 2009). Among the key objectives of

implementing ICT strategies is in data processing to improve operational efficiency by automating information based processes, using management information systems to increase management effectiveness by satisfying their information requirements for decision making and improve competitiveness by changing the nature or conduct of business.

The factors that influence the choice and implementation of the ICT strategy are both internal and external. Internal factors include an organization's capabilities such as financial strength, the prevailing business strategies, size, structure and previous legacy technology systems. External factors include changes in technology and trends, competition forces, strength of technology providers, compliance with requirements from other organizations and compliance with the legal framework within which the organization is domiciled. Research has shown that the implementation of information systems in organizations requires a focus on contextual variables such as organization power relations and organizations culture (Markus and Pfeffer, 1983).

Implementation of ICT strategies just like with other strategies has challenges. According to Doherty and Horne (2002), improving information services implementation continues to rank highly among the major issues facing management of user oriented IT services in public organizations. This are as a result of issues like budget constraints, resistance to change among internal and external stakeholders, poor planning, lack of skills, knowledge and technology penetration within an organization. Other factors include lack of communication and involvement by staff, lack of requisite infrastructure like power, networks and content, duplication of technology platform and over capacity in organization data centers. Access to mobile networks in telecommunication and use of broadband internet are central to the long-term economic development strategies in firms.

Despite the challenges, ICT is at the centre of initiatives for business process reengineering and automation of manual processes as well as integrating business systems. It is also useful in enhancing performance and availability of business systems as well reducing costs through automation and improvements in work environments. According to Liebonitz (1999) as cited by Borura (2010), 55 percent of projects fail during problem scoping and inception; 20 percent during requirement analysis; 15 percent during testing, 5 percent during design; 5 percent during implementation and none during coding. This recognizes the challenge of ICT strategy implementation. There are many opportunities for things to go wrong during information services implementation and parastatals take a number of risks when embarking on this course of action (Maguire, 2002).

### **1.1.3 Kenya's Public Sector**

Kenya's public sector has evolved over the last three decades starting from Structural Adjustment Programmes (SAPs) and privatization pushed through by Bretton Woods institutions to the Millennium Development Goals (MDGs) at the turn of the century and now through the adoption of the vision 2030 with its social, political and economic strategic pillars. According to Rono (2002), strategic implementation in Kenya's public sector was pushed earlier on through Public Sector Reforms and Institutional Capacity Building initiatives driven by the Bretton Woods institutions. In the Consultative Group (CG) of 2003, the Kenyan government underscored its strategic perspective that efficient and effective public service management was key to achieving rapid and sustained economic growth and poverty reduction which had been set as a goal in the Economic Recovery Strategy (ERS) of 2003-2007. The year 2004 saw the establishment of the Public Sector Reform and Development Secretariat in the office of the



president with operationalization of the Results Based Management Approach (RBM) in the public service.

The year 2005 led to the development of the performance management system and institutionalizing of the strategic planning process and embracing transformative leadership capacity building programme. These initiatives culminated in the formulation of MDGs in 2000 which eventually led Kenya to pen the Vision 2030 whose aim is transform Kenya into a newly industrializing, middle income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment. According to Kenya Vision 2030 (2008), the vision is anchored on three pillars, political, social and economic with a strategic focus on reform in eight key sectors, among them science, technology and innovation (STI) in which ICT is a main component. Government agencies have now gone ahead adopting e-Government initiatives to enhance efficiency and effectiveness in government and promote information sharing and collaboration. The areas that have profited immensely from ICT are e-business and e-commerce. According to Mullins (1985) technology developments particularly those based on advancing information are essential for organizational effectiveness and are powerful drivers of organizational change. This makes it necessary to plan and implement successfully.

Some of the key initiatives being undertaken by the Kenyan government are the development of e-government initiatives and adoption of the government ICT strategy. According to a bulletin from the website of the Kenya ICT board, E-government applications apply the judicious use of ICT to enable governments to improve their internal systems, deliver services more efficiently and effectively and make information more accessible to the citizens. According to the Kenya's National ICT policy (2006), the government endeavors to reduce waste and project failure and

stimulate growth. It also aspires to create a common ICT infrastructure for government agencies, use ICT to deliver change and strengthen ICT governance. The ICT policy has since been strengthened by the launch of the National ICT Master plan 2017(2012) which whose pillars include use of ICT to enhance public value and quality of life, put focus on the development of ICT businesses, strengthening ICT as a driver of industry and creating an integrated ICT infrastructure and info-structure.

#### **1.1.4 The Kenya Revenue Authority**

Kenya Revenue Authority (KRA) is a public sector organization that relies heavily on ICT strategy in order to deliver on its core responsibility of collecting revenue on behalf of the Government of Kenya. According to the Kenya Revenue Authority website (2013), KRA is a Semi Autonomous Government Agency (SAGA) whose purpose is assessment, collection, administration and enforcement of laws relating to revenue and tax administration. It was established in 1<sup>st</sup> July 1995 by an Act of Parliament, Cap 469. There has been a deliberate policy to embrace ICT strategic initiatives as periodically set out in the KRA corporate plans.

The KRA Second Corporate plan (2003/4 – 2005/6) set the stage for the Revenue Administration Reform and Modernization Programme (RARMP) to consolidate gains achieved in tax administration. The Third Cooperate Plan 2006/7/ 9 (2008), ensured that KRA transformed itself into a modern, fully integrated and client focused organization.

In the KRA fourth corporate plan 2009/10/11/12 (2009), KRA entrenched reforms at the operational level to achieve operational efficiencies and enhance service delivery. The planning and formulation phase of ICT strategy was done in the Second KRA Corporate plan 2003/4 5/6 (2003). In the fourth corporate plan 2009/10/11/12 (2009), the prominence of implementation of

ICT strategy came to the fore. The KRA fifth corporate plan (2012) is currently running from 2012/13 to 2015/16. KRA has a centralized Information Communication Technology (ICT) department that provides support services to the entire organization.

KRA has had mixed success in its pursuit to automate business processes and perform support functions to achieve its goals for achieving increased revenue and facilitating voluntary compliance by taxpayers. The success is demonstrated by the rise in the total taxes collected from just under two hundred billion Kenya shillings in 2001/02 to over eight hundred billion in the year 2012/13. According to the KRA portal (2013), the organization also has a lot more ICT penetration among staff than previous years. Not all ICT projects have been smooth as evidenced by incessant complaints about the delays occasioned by malfunctioning of the customs revenue collection system and failure to properly roll out key projects like the electronic cargo tracking system (ECTS) and enterprise resource planning system (ERP) among a host of others. This warrants the necessity to evaluate the implementation of ICT strategy projects since ICT is at the heart of the RARMP initiative that is the cornerstone of the business reengineering programme and as such ICT forms one of the key strategic pillars in each of the corporate plans developed over the last ten years.

## **1.2 The Research Problem**

Given the dynamics where organizations operate, they have found it necessary to formulate strategies that assist them achieve intended goals and objectives. Once these strategies are formulated, choices are made from available alternatives. ICT has emerged as one of the key strategies embraced by organizations. According to Porter (2004), a move towards the proactive use of ICT for competitive advantage emerged during the 1980s and 1990s. While the choice of

ICT strategy has been at the heart of organization's policy plans its implementation remains a challenge. A significant percentage of intended strategies are never realized because of challenges in the implementation process. According to Galliers and Leidner (2009), the implementation process is very complex especially having the technology penetrate an organization's structure and culture. The implementation of ICT strategy in public corporations just like any other organization remains challenging.

Kenya Revenue Authority is one such organization that relies heavily on ICT strategy in order to deliver on its core responsibility of collecting revenue on behalf of the Government of Kenya. The need to identify the challenges facing public organizations like KRA in the implementation of the ICT strategy and measures of mitigating them, warrant the need to carry out this study. A review of previous studies like those of Awino (2000) for financing of higher education by HELB, Muthuiya (2004) in non-profit making organizations in Kenya, Ochanda (2005) at Kenya Industrial estates, Wambugu (2006) at KIM, Wanjohi (2007) at Mathare 4A slum upgrading in Nairobi and Ngari (2011) at Heritage Bank Ltd among others show that they concentrate mainly on case studies relating to challenges in implementation of strategy in organizations. A few other studies such as those done by Nyambene (1996) on factors limiting IT usage in publicly quoted companies in Kenya, Abwao (2002) on IT applications in business in business management within Kenyan companies, Kariuki (2004) on IT strategy and organization structure relationship in companies listed on the NSE and Wanjiku (2008) on the extent and challenges of application of ICT in marketing in commercial banks in Kenya do relate the subject of strategic management and ICT on various other aspects but not directly linked to challenges in implementation of the ICT strategy. A number of studies that relate KRA to strategic management include that of responses to KRA on the challenges in the implementation of customs reform and modernization

by Aliet (2008), challenges of strategy implementation at the KRA by Kimeli (2008), a model of costing in public organizations: a case study of KRA by Wafula (2012), and challenges of implementing strategic change at KRA by Njoki (2011). These studies however don't research on the challenges faced by KRA in the implementation of its ICT strategy.

This exposes the gap of not enough case studies being undertaken on the subject of ICT as a strategy. Studies have not been conducted to identify the challenges of implementation of this core strategy not only in KRA but other public organizations. This is despite the fact that ICT now forms the backbone of main reform and reengineering processes in these organizations. Considering the studies undertaken it is necessary that a lot more needs to be done to relate ICT and strategy choice and implementation in public organizations. It is necessary to note that no specific study has been undertaken to relate strategy implementation and ICT strategy at KRA and these points to the need for carrying out the study. What are the challenges encountered in implementing ICT strategies at the Kenya Revenue Authority and how can they be overcome?

### **1.3 Research Objectives**

The objectives of the study were to:

- (i) Establish challenges of implementing ICT strategy in Kenya Revenue Authority.
- (ii) Determine measures to overcome the identified challenges of implementing the ICT strategy in the organization.

### **1.4 The value of the Study**

This case study research has emphasized detailed contextual analysis of a limited number of events or conditions and their relationships. This is the case because this kind of study is defined as a scholarly inquiry that investigates contemporary phenomenon within its real-life context

when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. Continuous comparison of data and theory for multiple case scenarios will lead to theory refinement since new theory will not emerge quickly on this subject and context but developed over time as research is extended from these case to the next as more data are collected and analyzed.

The study is set to assist policy makers and other stakeholders identify with policies and strategies that are most effective and how they are implemented in the context of public organizations, which can assist in policy formulation. It will be important in policy development in organizations such as KRA and other public organizations as long stakeholders use the findings to understand specific needs, improve communication, dissemination and through proper and timely implementation of research findings. The research is going to be a pool of knowledge that is applicable outside the research setting with implications for policy and management of ICT related tasks and projects. The Kenya Revenue Authority as well as other public corporations with similar work environment and settings is primed to benefit from the findings of this study.

A lot of management practices that have been identified as having a consequence to successful strategy implementation will be used to assist managers in other organizations to strive for best practices in their own firms. Such practices that have been identified include project management utilizing tools such as Prince 2 and Cobit, change management, best practices for procedures and processes such as ISO certifications and stakeholder involvement practices. Others include information technology infrastructure library platform practices, portfolio, programme and project management model and managing of successful programmes practice.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The literature review seeks to anchor the theoretical underpinnings of the study to the study content, explore strategy implementation and drill down to the specific ideas on implementation of the ICT strategy. Finally the section discusses the challenges of implementing ICT strategies as derived from secondary data sources and the means by which these challenges can be overcome.

### **2.2 Theoretical Underpinnings of the Study**

This study is anchored on various theories that are hereby discussed. The strategic management theory is built on a practice where managers pursue a set of activities to achieve superior performance and provide their organizations with a competitive advantage (Hill and Jones, 2010). This is achieved through pursuit of strategic leadership, strategic formulation and strategic implementation. Strategic leadership is about how to effectively manage a company's strategy making process to create competitive advantage. Strategic implementation is the task of putting strategies into action with activities such as designing, delivery and supporting products; improving the efficiency and effectiveness of operations; and designing a company's organization's structure, control systems and culture. This study revolves around strategic implementation of the chosen strategies.

Whenever organizations conduct their businesses, they influence and change their external environments, while at the same time being influenced by changes in the local and global environments. The two-way influential change is an active adaptive change. Organizations are

therefore open systems, changing and influencing each other over time (Gould, 2001). Open systems are those that exchange material, energy, people, capital and information with its environment. An open system consists of input, system, output and feedback. Inputs relate to raw material, human capital, financial capital and technology. The system carries out the transformation of inputs in finished products through activities such as management and technological processes. It is here that information and communication technology plays a prominent role. The output from the system process transformation is in the form of information, financial or human results and gains. The system also has a feedback to itself for continuous improvement. According to Bastedo (2004), open systems theory refers to the concept that organizations are strongly influenced by their environment.

The contingency theory starts with the acknowledgement that all organizations are open systems and that there exists no best way of organizing and running them. The theory argues that the optimal course of action is contingent upon the internal and external constraints dictated to by the environment in which the organization operates (Itzkoritz, 1996). The contingency theory is build on the premise that an organization is organic and open and there exists a relationship of interdependence between the organization and its environment, as well as within and between its various subsystems. Here management is situational, where management policies and plans must respond to changes in the environment. The evolvement of technology represents such change in the environment. Bastedo (2004) views the contingency theory as a flavor of the open systems theory, which indicates that organizations are run in ways that best fit the environment they operate in. Fielder (1964) in advancing his first theory on the contingency approach, indicated that leadership effectiveness depends on the integration of the leader's task or relations, motivations and aspects of the situations.



Grant (1991) indicates that the strategy is the match an organization makes between its external and internal resources and skills and the opportunities and risks created by its external environment. This explains the link between strategy and the external environment affecting an organization. Grant further indicates that at the business level strategy, explorations of the relationships between resources, competition and profitability include the analysis of competitive innovation, the appropriability of returns of innovations, the role of imperfect information and the means by which the process of resource accumulation can sustain competitive advantage. These resource based approach to strategy analysis starts by identifying and classifying a firm's resources, identifying the firm's capabilities, appraising the rent generating potential of resources, selecting the strategy that best exploits the firm's resources and finally identifying the resource gaps which used to be filled.

Finally the last relevant theory to the study is the institutional theory which focuses on the resilient aspects of the social structure, where it considers the processes by which structures such as rules, norms and ventures become established as authoritative guidelines for social behavior in an organization. According to Scott (2004) as cited by smith and Hitt (2004) organizations are recognized to be rationalized systems – sets of roles and associated activities laid out to reflect means-ends relationships oriented to the pursuit of specified goals. It also recognizes that models of rationality are themselves cultural systems, constructed to represent appropriate methods for pursuing goals and objectives.

### **2.3 Strategy Implementation**

Organization strategies are as a result of an organized and rigorous planning process. In order to realize strategy it is necessary that adequate resources are obtained and allocated effectively; that

the appropriate organization and responsibilities are in place and that people are motivated to achieve the strategies (Ward and Peppard, 2002). At all times it is necessary to monitor performance and to control activities to ensure actions taken are producing intended results which aim to fulfill set out objectives. Performance measurement eventually forms the feedback to refine the objectives for continuous improvement whether the strategies are realized or not. However things turn out differently at times despite the best efforts to implement the intended strategy. This is as a result of unexpected constraints, new options, changes occasioned by others and new opportunities; all of which are never predictable. This necessitates that parts of the intended strategy are not realized. This leads to different types of strategy definition like emergent strategy which is a result of these changes occasioned by such factors. Realized and unrealized strategies depend on successful or failed implementation.

The success of implementing strategies involves the operationalization and institutionalization of the planned activities. This relates to an organization's structure and culture. An organization's culture needs to be consistent with its strategy. Organizations need to have adaptable cultures by paying attention to key stakeholders such as employees, customers and stockholders to ensure that culture evolves with strategy. This is necessary since strategies set the general goals and course of action of an organization while operational plans provide details needed to incorporate strategic plans into day to day operations. Mintzberg (1992) suggest that organizations can be differentiated along three basic dimensions; the key part of the organization that plays the major role in determining its success or failure; the prime coordinating mechanism, that is the main method the organization uses to coordinate its activities and the type of decentralization used, that is, the extent to which the organization involves subordinates in the decision making process. Institutionalizing strategy is a process which translates an organization's code of

conduct, mission, policies, vision and strategic plans into action guidelines applicable to the daily activities of its workforce. It is aimed at integrating fundamental values and structure. To institutionalize strategy, business leaders must develop a system of values, norms, roles and groups that will support the accomplishment of the strategic goals. Operationalizing strategy involves having a plan of action implemented by an organization such that it describes how it will employ resources in the delivery of products or services. This makes strategy clearly distinguishable and measurable and involves translating long-term objectives and strategic plans into organizational activities. Institutionalizing strategy is a process that then translates an organization's code of conduct into action guidelines and integrates strategy into an organization's fundamental values. Given that an institution is a collection of values, norms, roles and groups that develop to accomplish a certain goal, strategy in an institution is institutionalized if its connected to the culture, the quality system and other driving forces in the organization.

Kaplan and Norton (2001) shifted focus from the emphasis on strategy planning to effective implementation through stakeholder value creation. They linked strategy to value creation through an integrated set of specific objectives with clearly defined measures. This approach links the financial perspective with customer, internal, learning and growing perspective in their strategy map through the balanced score card. This is to ensure that strategic goals can be translated into achievable and measurable objectives throughout an organization. Whenever business fails to deliver the strategy they developed, it's usually the fundamental management process that is at fault. According to Kaplan and Norton (1996) as cited in Kaplan and Norton (2001), successful implementation should be characterized by translating the vision, communicating and linking, feedback and learning and thorough business planning. Also a

proper implementation process requires an enabling business process. Meekings, Drasfield and Goddard (1994) documented the Business Management Process (BMP) framework that translated customers and shareholder needs into strategic business objectives. This were then structured into key performance indicators, performance targets, gap analysis, improvement initiatives and provided linkages back to objectives through structured reviews.

## **2.4 Implementation of the ICT Strategy**

Like any technologies various stages exist in ICT strategy adoption and introduction. It starts with initiating the idea, carrying out a feasibility assessment, making the investment decision, designing, installation, operationalization and post-operationalization evaluation (Mullins, 1985). According to Galliers and Leidner (2007) among the earliest initiatives to use information technology was a strategy developed by the IBM's business systems planning (BSP) methodology developed in 1982 for use by its customers. This was used to identify not only how the organization harness information technology to meet business needs but also demonstrate the need to more computing. Initiatives to utilize IT as strategy in business started way back in the 1980s. Galliers and Leidner (2009) noted that a major research conducted in the late 1980s by the Massachusetts Institute of Technology (MIT) sought to uncover the means by which IT could be harnessed to provide truly significant advances in business performance.

The ICT strategic framework provides a high level framework for the effective management of information and technology, to ensure ICT systems are controlled and maintained in line with corporate objectives and emerging trends. The ICT strategic management framework guides agencies in service delivery planning, the allocation of appropriate resources and reporting on performance. In reviewing ICT strategic directions, agencies are required to ensure that their use

and application of ICT is considered with wider organization's policies and priorities. An ICT strategic framework has elements relating to governance, emerging trends and technology, business systems and applications, infrastructure and technology, IT business continuity, project management and information management.

The ICT strategy involves the utilization of ICT to strengthen governance, enable and deliver change, create a common infrastructure and reduction of waste and prevent projects from failure. This is geared towards delivery of public services at affordable cost. Effective strategy management requires people to employ the right technology in the right way for the right purpose meaning a seamless mix of people, processes and technology. According to the Department of Science, Information, Innovation and the Arts of the Queensland republic (2012), the ICT strategy is meant to enable the government to revitalize front living services for households, deliver better infrastructure and restore accountability in governance.

The use of ICT strategy as a tool for any organizations embracing change and transformation has become prominent. According to Umit (2013), ICT has now become a strategic asset for any organization and the importance of IT-based innovations is recognized in bringing productivity improvements and competitive edge in industry. In a study to establish how the ICT strategy contributes towards achieving business objectives in construction companies in the UK and Turkey, Umit concluded that the importance of aligning ICT and business objectives was roundly acknowledged.

Implementation of ICT strategies has been identified as a contributor in increasing workforce productivity, enhancing of competitive advantage, expansion of market reach and as a means of facilitating education, collaboration and partnership. Wanjohi (2009), in his study on the role of

ICT strategic plan and SLAs in Cooperatives, observes that the ICT strategy framework as comprising set objectives to achieve set ICT activities such as measuring performance, enabling profit maximization, reduction of costs and increasing efficiency. Wanjohi further noted that the ICT strategy was adopted as part of the cooperative society development strategy, which in turn was part of the wider government policy as adopted in the Vision 2030. This meant that the ICT strategy is ideally a component of the corporate policy and the overall government policy.

## **2.5 Challenges of Implementing the ICT Strategy**

Like all other strategies ICT faces numerous challenges during implementation. ICT failures can be attributed to technical, project, organizational, environmental, use and developmental factors. The key challenges stem from factors such as budget constraints, resistance to change, lack of skills and knowledge among the organization's workers and low ICT penetration within organizations (Gichoya, 2005). Many countries in Sub-Saharan Africa also suffer from poor infrastructure such as poor fibre and GSM networks, unreliable electricity and lack of ICT institutions and schools to impart relevant knowledge. Schools are ill equipped to train IT due to lack of content as well.

Poor organization structures too contribute, as is the nature of leadership styles, culture, bureaucracy and attitudes of an organization's workforce. These attributes also lead to agency conflicts among top decision makers with some viewing ICT as integral to organization's strategic plans while others rating it as a cost centre. ICT in many countries also suffers from a poor regulatory framework. This is coupled with a slow uptake of the national ICT policies and laws governing issues such as ICT ethics and patent laws can have an adverse effect on how projects are implemented and how ICT is driven to penetrate organizations or even society.

Challenges with economies around the world have led to the decline in ICT investments in many organizations. According to Galliers and Leidner (2009) a lot of high flying IT and telecommunication companies begun to decline and some sought to reduce costs through consolidation. The budgets inclined up at a declining rate with a growth of IT budgets standing at 8 percent but reducing drastically to 0.1 percent in 2002 in the United States. Related to budget is the challenge of the high cost of IT equipment and solutions due to few and powerful suppliers. Wilcocks (1999) as cited by Galliers and Leidner (2009) observe that it is estimated that companies in the developing world spent in the region of 2 percent of their annual turnover on hardware and software alone.

The degree of process change refers to the extent to which the firm's processes and people need to evolve to adapt to the new technology solutions at the core of the IT dependent strategic initiative to allow it permeate across the organization (O'Hara et al.1999 as cited by Galliers and Leidner, 2009). Galliers and Leidner observe that evidence exists that users of technology are rarely involved in the process of technology development only for them to be expected to have input during operationalization stage in aspects such as working conditions, practices, tasks, decisions about methods, tools and techniques. According to the Modernization plan 212/14 for Ghana Revenue Authority (GRA) (2012), there is also a challenge of skills and knowledge required to roll out advanced ICT projects and conduct ICT business analysis. This is a result of low IT penetration among staff of many organizations. GRA also noted that implementation of ICT projects is also faced with limited coverage of IT infrastructure and services such fibre networks and power challenges in remote locations.

Organizations have a challenge related to funding sources especially development partners and donor agencies. The duration of loans is determined without adequate consultation or carrying out of a needs analysis of recipient organization. Funding for capital and human resource requirements usually ends with the project phase. Once the capital expenses are met the government agency is left with the responsibility of meeting operation and resources costs. Many organizations also suffer from duplication and over capacity in data centers and lack of knowledge of the TCO and even measurement of the cost of ICT. The strength of suppliers and the limited number of solution providers has seen the ICT industry controlled by few powerful companies such as Oracle, Microsoft and IBM. This has made ICT solutions expensive to roll out and rigid to change platforms. Apart from all these challenges since implementation has a strategic plan as input, then any poorly formulated plans lead to poor implementation.

It is instructive to note that for planned strategy to fully evolve into intended outcomes, it is necessary that its institutionalized and operationalized in an organization. Operationalizing the strategy leads to a plan of action on how to utilize resources in the achievement of set goals and objectives. Institutionalizing the strategy ensures that it is connected to the organization culture. The challenges as a result of operationalization include availability and use of an organization's capital resources, human resource capacity in terms of numbers, knowledge and skills and the organization's enterprise architecture capacity. Challenges related to institutionalization span from culture challenges, politics and resistance to change.

Gichoya (2002) in his study on the factors affecting the successful implementation of ICT projects in government , identified the barriers to be infrastructure, financing, poor data systems and lack of compatibility, lack of skilled personnel, poor leadership styles, culture and



bureaucracy and poor work attitude. This shows that the challenges are either as a result of internal or external factors, with internal factors centered around institutionalization and operationalization of strategy. Burke et al (2001) are of the opinion that human resource related issues have a big impact on processes because whenever implementation is successful, it is because a focused attention was paid to the human issues. Additionally Maguire (2000) argues that there are too many examples of IS projects that fail due increasing problems of rising costs and misuse rather than acceptance and use of systems but significant effort needs to be put to ensure successful implementation to counter resistance from potential users and other stakeholders. Burke further argues that organizations do not always have enough staff available for the successful implementation of ICT projects. Other researchers also have similar views as evidenced by Muathe et al (2013) in an empirical study on the relationship adoption of ICT among health related SMEs in Nairobi. They concluded that four variables namely; quality of ICT systems, information intensity, ICT specialization and organization readiness have statistically significant influence on adoption of ICT projects.

## **2.6 Measures to Mitigate Challenges of Implementing ICT strategy**

A lot of measures have to be effected to realize a successful implementation of ICT strategies. This ranges from aligning vision to strategy during the planning phase, having unqualified government support and an enabling legal and regulatory framework. This can also be done through identification of priority themes, embracing technological changes and embracing modernization and globalization practices. Exercising due diligence and benchmarking with the best practices can be integral to successful choice of technology and this can go a long way in ensuring successful roll out of projects as well employing strong programme and project management practices. The other factors that can ensure a fair chance of success in

implementing ICT relate to use of ICT in integrated platforms among related entities such as government departments, organizations or regional blocks and ensuring the stakeholders such as consumers and stockholders are sensitized to expect certain levels of services and products.

To mitigate challenges occasioned by the reduction in budgets due to economic decline Galliers and Leidner (2009) proposed extending the lifecycle approach to lengthen the time frame of implementing ICT projects, bullet proofing the infrastructure through rethinking and reprioritizing, seeking short term quick wins or maintaining the legacy by surviving the downturn and reverting back to the initiatives once the decline is over. Challenges relating to overcapacity and duplication can be addressed through introducing central controls to promote consistency and integration, consolidating services, removing excess capacity in data centers and duplicated applications and adopt the use of open source software and streamlining procedures. It is also important to create of a common ICT infrastructure for government agencies and use ICT to enable and deliver change and strengthen ICT governance. The adoption of open standards that promote interoperability of systems and security also goes a long way in addressing duplicity of platforms. Galliers and Leidner (2009) addresses the concern of duplication and overcapacity by arguing that organizations should learn from one another and become more adept at sharing IT assets and resources. This can resonate well with adopting e-governance by building common infrastructure for most government agencies as opposed to having disparate system across government departments.

The lack of awareness and fear for change can be mitigated through improved communication among all the stakeholders, involving them at the very planning phase and having a deliberate change and management strategy working in tandem with the ICT strategy. The adoption of

change management strategy addresses issues of stakeholder involvement and reduces occurrences of resistance to change. It is also necessary to involve staff during strategy development as opposed to only involving them in implementation of decisions made by a few individuals (Ward and Peppard, 2002).

There is also need to reengineer business process for staff to efficiently use new equipment and facilities and making adjustments to the new operational setup to facilitate uptake through a change management program. The best practices in ICT strategy implementation should always involve proper appreciation of the ICT environment an organization is operating in, careful selection of projects, capacity building among staff through re-skilling, identification of the right technologies, proper management practices and ensuring the organization processes fit the technology (Gichoya, 2002).

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This section contains the approach that was used to carry out the study. This includes the research design, data collection methods, the target respondents and data analysis tools and practices. Being a case study, the research was largely exploratory utilizing qualitative research methods.

### **3.2 Research Design**

A case study methodology was used. A case study research is a method used by which accumulated case histories are analyzed with a view of formulating general principles. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships and have the intention of drilling down the broad subject into a specific case. The design sought to extent experience to what was already known through previous studies or reports on the subject of study.

The design approach was through reviewing existing literature and information and through conducting interviews from select respondents. Case studies approach was found to be relevant since it is possible to efficiently and orderly classify the units selected for research based on data and information collected. The key feature in a case study is that multiple methods are usually combined to illuminate a case at different angles through use of a combination of many research methods.

### **3.3 Data Collection**

Data collection was done through collection of primary and secondary data. Primary data was derived through questions prepared in an interview guide to twenty (20) managers who are heads

of sections in business, policy, planning and ICT sections as target respondents and a few heads of departments and commissioners. The formal approach involved unstructured interviews with open ended questions.

Secondary data involved study of existing documents to understand substantive content as identified in primary data. The documents included media reports, evaluation reports, project files, compliance and audit reports, appraisal documents, corporate plans and process documents such as minutes of meetings. These were used to compliment the information derived from primary sources.

### **3.4 Data Analysis**

Textual data collected in the form of field notes and transcripts studied and analyzed through content analysis. Content analysis is a technique for making inferences by systematically and objectively identifying special characteristics of messages (Holsti, 1968). Since most of the data was qualitative, it was indexed to develop categories and theoretical explanations in line with the interview guide. The analysis process involved thorough reviewing and having knowledge of the data collected, focusing the analysis by identifying key questions, organizing the data by question, topic, time, event, case, individual or group and then categorizing the information through coding or indexing (Powell and Renner, 2003). The choice of content analysis was because it was virtually unobtrusive and is suited for analyzing in-depth interview data. Content analysis is also cost effective since it involves limited resource requirements and provides a means to study trends and processes that may have occurred over a long period of time. In the case of this study data analyzed considered a period of over ten years in the organization.

## **CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents the analysis and findings of the study. It provides information the management respondents in establishing the challenges of implementing the ICT strategy in the Kenya Revenue Authority and finding out the messages that are in place to deal with these challenges. A total of 20 managers from business, policy, planning and ICT functions were interviewed using an interview guide. The chapter discusses the formality of the strategic management practice at KRA, reviews the ICT strategy at KRA and the challenges and mitigation measures of ICT strategy implementation. Finally the chapter ends with a discussion of findings to relate the findings to the empirical studies.

### **4.2 Strategic Management at KRA**

The study sought to determine the level of formality of the strategic management practice and how it has been operationalized and institutionalized in the organization. The responses were varied depending on the nature of the job description of the manager and the functional characteristics of the division. This was necessary to evaluate because a lot of the challenges faced in strategy implementation stem from the formality of the practice and how ready the strategies are in operation and institutionalized. From empirical studies is strategies are poorly planned it's clear that challenges will inevitably arise. This relates to issues of strategic planning and adoption, change management practices and overall management practices and leadership attributes.

#### **4.2.1 Strategic Planning, Objectives and Goals**

The interview revealed that strategic management practice is institutionalized in the organization and deliberate initiatives have been put in place to operationalize it. The most significant beginning was with the second corporate plan of 2003/04 – 2005/06 which set the stage for the Revenue Administration Reform and Modernization Programme (RARMP). The third corporate plan of 2006/07 – 2008/09 led to the RARMP achieving significant strides in ensuring KRA transformed itself into a modern, fully integrated and client focused organization. The 4<sup>th</sup> corporate plan of 2009/10 – 2011/12 was aimed at entrenching the reforms at the operational level to achieve operational efficiency and enhance service delivery. At the time of the study the organization had set into action the 5<sup>th</sup> corporate plan of 2012/13 – 2014/15 which focuses on achieving excellence in revenue administration through organizational renewal, innovation and staff capacity enhancement for better customer focus.

Managers from the corporate affairs section were most knowledgeable, conversant and articulate in explaining the various corporate plans and their associated initiatives. Business managers of the Customs, Domestic Taxes and Road Transport departments had the necessary information about initiatives in the corporate plans but mainly relevant to their departments. Support department managers had the least overall picture of the corporate plans because they put a lot of focus on specifics relating to their relevant support functions such as ICT, procurement, finance, human resource and audit and compliance.

Relevant findings were also gathered from the secondary data sources in the form of documentation from the library and the KRA portal. These were complimented with review and appraisal documents from RARMP meetings, steering committee minutes from projects such as

ECTS, Customs management system and the I-Tax project. From these sources detailed findings on the corporate plans from the 2<sup>nd</sup> through to the 5<sup>th</sup> were collected and analyzed. They gave the relevant objectives and plans and evaluations of success and failures.

#### **4.2.2 Formality of Strategic Management**

Strategic management has been undertaken through the thoroughly prepared corporate plans with so far five (5) plans having been adopted and four so far appraised. The corporate plans are built around the four perspectives of internal processes, people, customer and revenue from the Balanced Score Card (BSC). KRA embraces the practice of performance contracting and appraisal for the contracted period.

The fifth corporate plan whose theme is achieving excellence in revenue administration through organizational renewal, innovation and staff capacity enhancement for better customer focus runs from 2012/13 to 2014/15. The fourth corporate plan had a theme of attaining internal best practice in revenue administration by investing in a professional team, deepening reforms and quality service delivery to enhance compliance. This plan ran from 2009/10 to 2011/12. The third corporate plan of 2006/7 to 2008/9 was aimed at KRA transforming itself into a modern, fully integrated and client focused organization. The second corporate plan of 2003/4 to 2005/6 dealt primarily with enhancing revenue collection, through enhanced quality service to stakeholders, modernization of internal processes and revitalization of the workforce and the first corporate plan of 2000/01 to 2002/3 symbolized the formal adoption of modern strategic planning and performance management techniques. Four of these plans have been thoroughly appraised and evaluated for results and subsequent lessons learned.



### **4.2.3 Change Management Practices**

Managers interviewed recognized the importance of change management as part of the many initiatives that come with business process reengineering. Managers however noted that despite change management being part of project implementation exercises it has taken long for it to be properly institutionalized. In the 5<sup>th</sup> corporate plan however the KRA top management has moved to institutionalize change management under the people's perspective of the Balanced Score Card (BSC). The process will involve implementing a structure for change management and training change management champions and agents while incorporating mandatory change management practice in all reform programmes.

### **4.2.4 Project Management Practices**

KRA has an Office of programme management formerly referred to Programme Management and Business Analysis Office (PMBO) complete with its vision, mission and objectives. The office is charged with the responsibility of program administration and support, funding and resourcing, mobilizing and evaluation and business analysis of projects. This shows how KRA takes into consideration the practice of project management at corporate level.

## **4.3 ICT Strategy at the Kenya Revenue Authority**

This section analyzed the relevance of ICT as a strategy in the pursuit of the organization's set objectives and goals. This involved assessment of ICT penetration in the organization and identification of the various initiatives that utilize ICT strategies.

#### **4.3.1 ICT Relevance and Penetration in the Organization**

Managers interviewed recognized the importance of ICT in the pursuit of their business objectives and goals. Managers of Customs and Domestic Tax departments indicated that ICT is at the core of virtually all their business operations. Managers from the Customs department gave insights on the evolution of the Customs processes through the introduction of the Simba 2005 system which has revolutionized the way customs processes are conducted. This marked a departure from the manual operations from the year 2005. The Simba 2005 system has since evolved from initiation, growth, maturity and is currently at the decline stage and is set for replacement in the current corporate plan of 2012-2015. Managers in the customs department also gave information on the implementation of several other ICT systems such as the Manifest Management System (MMS), Electronic Cargo tracking system (ECTS), COSIS and CAMIS which have played a key role in revolutionizing their operations.

The managers from the domestic Tax department indicated that ICT has become an important tool in their operations as evidenced by the rollout of the ICT based Integrated Tax Management System (ITMS) system now reengineered as Integrated Tax system (I-Tax) which is an online tax payer registration and declaration system. Managers in the Road Transport system also did indicate the relative importance of ICT in the operation of functions though it was noted that the systems here are less integrated than in the previous two departments discussed. Some of the main ICT systems in the Road Transport department include KoVIS for scanning and archiving motor vehicle log books, Vehicle Management System (VMS) for motor vehicle registration, Driving License Management system (DLMS) for driving license registration and the legacy Movers for registration. The managers in RTD attributed to lack of integration and modern ICT

systems covering the entire portfolio of functions to agency conflicts between stakeholders and the parent corporations of KRA and Ministry of Transport.

Manager in charge of human resource in the support services department recognized the importance of ICT in their functions and these was manifested in the implementation of the Open Source ERP system for use by the human resource, procurement and finance departments. The human resource department also has a medical administration software based system for managing HR functions and has plans to implement a medical administration system that uses biometric and smart card technology to supplement its functionality. Head of the corporate affairs section in Support Services department also confided of plans to procure an enterprise ERP to enjoy the full functions of an ERP. The office of corporate affairs has the Office of Project management which employees the use ICT project management tools such as Prince 2 and is being modeled to attain status of a centre of excellence. The ICT department apart from being the chief facilitator has grown into a fully fledged section with nearly 150 strong personnel in different disciplines of technology and infrastructure, project management, security, service support and business analysis and design. The ICT department is structured along the Information Technology Infrastructure Library (ITIL) framework that has eliminated the silo business department approach and adopted a functional based support structure across all business departments.

The head service support section of the ICT department indicated that a large portion of KRA employees are now competent ICT users with a quite a significant number of them even going a step further of using portable devices such as laptops, tablets, ipads and smart phones in

execution of their tasks and for collaboration. This is an indication that KRA as an organization has since adopted an ICT inclined culture.

#### **4.3.2 Reform Initiatives that Utilize the ICT Strategy**

Information from managers and secondary information from corporate plans, project files and meeting minutes detailed various initiatives that have utilized ICT during implementation. The Customs Reform and Modernization Project (CRMP) has since implemented the Simba2005 customs administration system, Cargo Management Information System (CAMIS), Customs Oil Stocks Information System (COSIS), Automated Air Passenger Service Charge System (APSC), Electronic Cargo Tracking System (ECTS) and X-ray scanners among others. The Domestic Taxes Reform and Modernization Project (DTRMP) has utilized ICT to implement two tax administration systems, the Integrated Tax Management System (ITMS) and the I-Tax for online taxpayer PIN registration and online filing of tax returns.

The Road Transport Reforms and Modernization Project (RTRMP):has had the following programs implemented, namely the Vehicle Management System (VMS) for motor vehicle registration, Driving License Management System (DLMS) for driving license registration and KoVIS for archiving of motor vehicle registration records. Other systems which have utilized ICT include the Business Automation Project (BAP) has seen the adoption of the ITIL best practice framework for ICT, the rollout of the KRA online portal, improvement of LANs, WANs, Commercial Backup Power and Data Centre improvement and the Infrastructure Development Project (IDP) where a Free Open Source Software (FOSS) and KRA call centre have been implemented.

#### **4.4 Challenges of Implementing ICT Strategy at KRA**

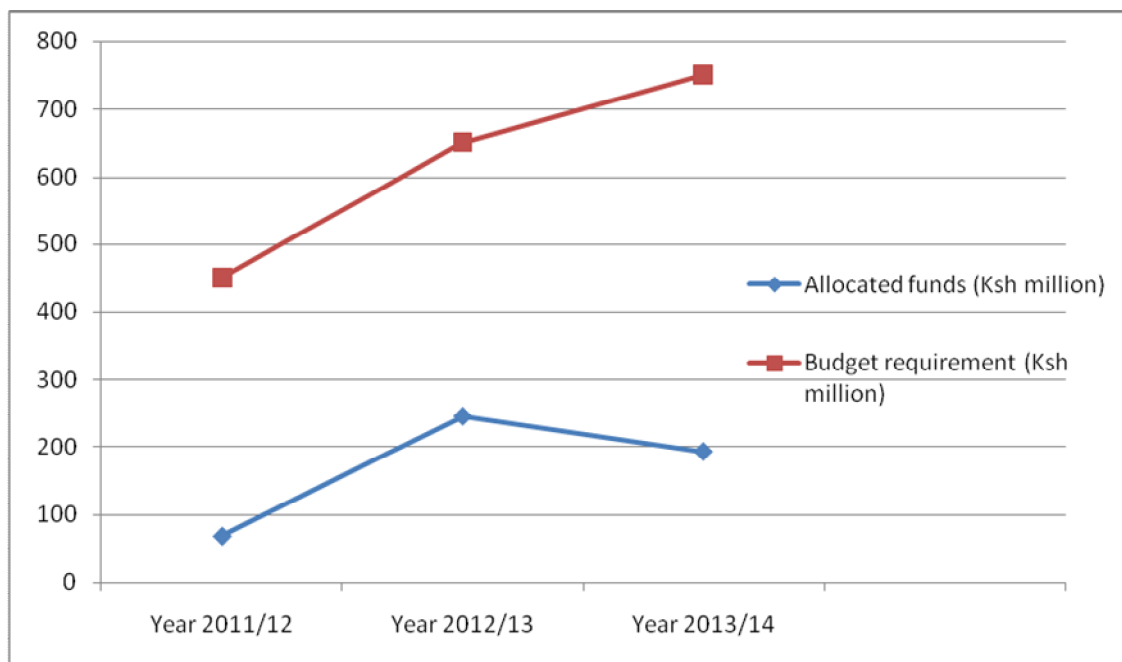
Since a lot of challenges in implementation of ICT strategy stem from lack of institutional preparedness for ICT of an organization and the level of formality of strategic management, these can then be assessed from the previous sectional findings. This section then delves into the core findings that concern the study; the challenges faced in the implementation of ICT strategies that go beyond preparedness and formality of the above practice. These findings were primarily derived from responses by the managers to the questions from the prepared interview guide. A lot of the information from the interviews was complimented with secondary data sources ranging from corporate plans, project appraisal documents and organization RARMP and project steering committee minutes.

The key challenges alluded to from interviews and secondary data available from KRA included budget constraints, financing challenges and sources, resistance to change from internal and external stakeholders, procurement bureaucracy, lack of knowledge and skills, and poor infrastructure. Others were identified as lack of enabling organization culture, poor legal and regulatory framework, management agency conflicts, lack of capacity planning for infrastructure, strength of suppliers and the high cost of ICT.

The manager in charge of ICT procurement indicated that ICT has had a very severe deficit in its budget allocations. In 2011/12 it was allocated only Ksh 68 million, 2012/13 allocated Ksh 246 million and 2013/14 another Ksh 193 million against projected budgets in the range of Ksh 700 million to Ksh 1 billion over the years. The allocated budgets also experienced a variance of Ksh 53 million yearly alluding to the failure to match expenditure to procurement plans. This was noted in the appraisal document available in the KRA corporate plans at the KRA portal. The

recommendations in the corporate plan recognized the challenge with budget constraints and aspired for an ICT budget plan of 8 to 10 percent of the entire organizational budget in line with best practices around the world for organizations that rely on ICT to deliver the levels of service envisioned.

Figure 1: Allocated funds as compared to budgeted funds for ICT



Source: ICT procurement plan minutes in RARMP KRA meeting

Top managers from the ICT department recognized that a very significant portion of the ICT budget was financed through bilateral funding arrangements from partners such as World Bank, African Development Bank, USAID, and JICA. These arrangements are such that a very significant number of them factor in their budgets capital expenses (CAPEX) and no operational expenses (OPEX) to cater for operational and recurrent costs. The OPEX for the ensuing years eventually outstrip the initial CAPEX and impacts negatively on other projects financing going forward. They also recognized that the lack of strategy expenses (STRATEX) for this funded

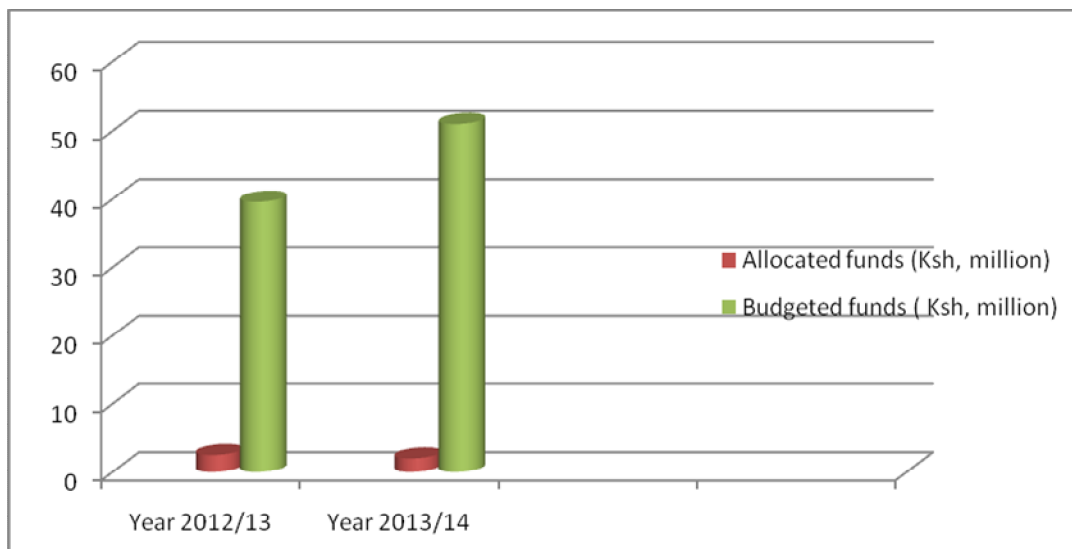
projects made organizations embark on projects without plans and proper justification and only implemented them because some resources have been availed typically in a procurement lifecycle and not that the projects were a priority.

Resistance to change was recognized by all managers interviewed as a serious cause to some programmes not achieving intended objectives. The resistance was recognized to come from stakeholders such as employees, taxpayers, other government agencies, other states especially from the East Africa Cooperation (EAC) region and technology partners. Some of the projects enumerated to have endured this obstacle during implementation included the Electronic Cargo tracking system (ECTS) which has since been resisted for nearly 3 years to the date of the study by the Kenya Transport Association (KTA) in a continuing court case. The manager in charge of reform in the CSD department indicated that the rollout of the Simba 2005 system also witnessed sustained resistance from clearing agents and even staff. The introduction of electronic cash registers for declaration of VAT was too resisted by taxpayers through a court case before KRA prevailed in the court case. This was according to the manager in charge of legal affairs. All the managers attributed a lot of this resistance to lack of involvement and communication among the key stakeholders whenever a project is initiated. It was however expressed by the manager in charge of office of project management that these resistance has been less felt in a lot other projects due to lessons learned in previous initiatives and adoption of change management and other best practices in the rollout of programmes.

In the interviews and other project review and evaluation documentation, one thing that came out strongly as a challenge was the problems associated with procurement of ICT solutions. This was alluded to by managers in charge of ICT procurement and the managers in the procurement and

supplies services section. The problems highlighted ranged from failure of the relevant tender and procurement committees convening in time, high instances of non-responsive bids on tenders and quotations, procurement bureaucracies from bilateral donors, lack of expertise and capacity on procurement procedures and difficulties in dealing with non-resident suppliers. Managers from the procurement and ICT and procurement departments indicated that there is a massive deficiency of training budgets for ICT staff. An illustration of the budget deficiencies for the years 2012/13 and 2013/14 is illustrated below.

**Figure 2: Budgets for ICT training**



Source: ICT procurement plan minutes in RARMP KRA meeting

The ability to transfer and share skills has also been noted as a challenge due unavailability of a knowledge management framework. It was also noted that it is difficult to rotate and transfer skills due to the diverse backgrounds and knowledge requirements of the various ICT personnel. This was indicated by managers from ICT and HR. The managers also noted the alarming turnover of staff in the ICT department and at the time of the study, a task force had been set up to assess challenges to staff retention in the department. They also noted a deficiency in the



actual numbers of ICT staff especially in crucial technical departments such as infrastructure engineers, business analysts, strategy and planning and programmers. It represents a higher proportion of staff in the management cadre with no enough corresponding support staff.

The availability of requisite infrastructure to support ICT such as data dedicated leased lines, fibre and microwave technologies and availability of power did come up as a major stumbling block for implementation of ICT projects in KRA. The ICT managers observed that Kenya has a small footprint in fibre connectivity and GSM coverage which means solutions cannot be rolled out to all regions easily. This is normally attributed to lack of investment in the sector by solution providers and apathy from government to spur growth in infrastructure. They also pointed out that Kenya experiences a deficit in this kind of basic and core infrastructure in many towns and the concentration is only in major towns. This is then compounded by the server and frequent power disruptions, which lead to service outages and damage to equipment.

Managers in corporate affairs and HR highlighted a problem relating to organization culture especially during the inception years of automation and business process reengineering especially in the third and fourth corporate plan. In this period the organization had not matured well enough in the use of ICT and programmes suffered due to the slow uptake by the organization's staff. During this period a lot of staff did not possess ICT skills having been used to running their business processes manually. This lack of ICT maturity coupled by the lack of a proper change management strategy influenced the organization structure and staff culture adversely.

All Managers interviewed recognized the challenge of management agency conflict as a source of friction in the planning, prioritization, choice and implementation of ICT strategies. This came

in the form of organization politics, departmental self importance and sometimes vested interests in key bodies mandated to come up with implementation plans. It was noted that this agency conflicts permeated teams like the RARMP which oversee project implementation across the organization and also in steering committees and project implementation teams (PIT). Failure to harmonize these conflicting or competing interests leads to wrong priorities, poor choices and poor implementation.

From the interviews with corporate affairs, ICT and legal section managers it was noted that ICT implementation has also experienced challenges due to lack of an enabling policy and regulatory framework both internally and from the government. This has been attributed to slow uptake of the National ICT Policy and strategy and this has had an impact on KRA being a public corporation. They also recognized the need for KRA to internally be up to date with the necessary framework in the form of an up to date ICT policy and ICT strategy which has yet to be revised since 2005.

Another key challenge highlighted by the ICT managers was the relative poor health of the data center and the proliferation of many servers. This was identified as having a direct effect on performance and availability of systems. The KRA data center has over 100 servers with nearly 80% constituting low capacity standalone servers that have low processing power with some underutilized while others over utilized. This was attributed to failure to adopt good equipment acquisition strategies and a lack of an ICT infrastructure procurement plan that factors in modularity and resourcing capacity on demand.

Managers in the corporate affairs, ICT, finance and procurement indicated that the relative high cost of ICT solutions and infrastructure and the relative power of suppliers was a challenge as

well to the uptake of the ICT strategy. Typical ICT budgets that finance projects run into tens of dollars annually. This has been occasioned on one part to the relative high cost of the ICT systems and solutions. Some of the core ICT business systems such as Simba 2005 system and I Tax systems have cost the authority tens of million dollars. This largely due to the sheer amount of time it takes to rollout, configure and customize the systems. The infrastructure components such as data centre equipment also command high premium prices. Some of the high value infrastructure equipment and solutions procured over the last three years include the I Tax system, ITMS system, HAHSS oracle engineered server, EMC Centera SAN, IBM power 7 series server. The other notable observation by these managers is the absolute strength and power of suppliers such as IBM, Oracle, EMC and Cisco for infrastructure hardware; Jamii Telecom, Safaricom and Kenya Data Networks (KDN) for network links and internet services; Oracle and SAP for ERP solutions and Oracle and Microsoft for database solutions. The very limited or lack of competition for these organizations and their limited distribution channels makes the organizations to command premium prices for their solutions. They also pointed out that other related costs for IT are equally high. One of the key components of the ICT budget constitutes servicing the recurrent expenses for payment of use of ICT services provided by third party solution providers. Some of the current recurrent budgets for ICT include those for data links and internet services, maintenance contract for Simba, oracle licenses, maintenance for ITSM, support for PostGres , licenses and support for I Tax modules, license for Antivirus kaspersky tools, cost of SSL certificates and staff secondment from JKUAT among others. This clearly constitutes a very significant OPEX outlay. ICT also spends occasionally on consultancy and plans to constitute a sizeable STRATEX outlay.

Figure 3: Recurrent costs budgets for ICT 2013/2014

Item No	Service	Recurrent cost (Ksh, million)
1	Data links and internet services	74
2	Simba system maintenance	25
3	ITSM solution maintenance	14
4	Oracle licenses	25
5	PostGres database support	14
6	Support for I Tax modules	80
7	Kaspersky licenses	3.5
8	SSL certificates licenses	1.5
9	JKUAT staff secondment	19

Source: ICT procurement plan minutes in RARMP KRA meeting

During the interview with managers and review of secondary data sources a few other peripheral factors came up that affected the successful implementation of ICT strategies. Like many organizations, KRA faces a challenge with its staff lacking experience in running large scale integrated solutions and often rely on contractors or third party partners to manage for them. This is because ICT is not the core function of KRA and it is a challenge to have very skilled and experienced personnel like running complex projects. Employees were also reported to suffer from benign neglect, a case where staff ignore situations and refuse to stay committed to fulfilling programme obligations especially when they are not consulted and involved at the inception stages of the ICT projects. Managers also recognized the challenge of scope creep where requirements emerge where users demand implementing of project features outside the original scope in a futile pursuit to cater for every stakeholder's needs. It was found that some users kept raising new demands and expectations as they get acquainted to new solutions. These eventually nullified the original scope and terms of reference and the project ends up having time overruns and delaying the realization of main milestones. Another factor that was identified as having manifested in a number of ICT project implementation was the underestimation of the

effort to build interfaces, change reports, customize software and convert data. This led to the scope not being thoroughly planned that result in time overruns. In some of the projects, processes were not clearly defined at an early stage meaning they have to be modified further down the line leading to changes in scope and terms of reference. Finally it was noted that a number of ICT projects fail to achieve the expected milestones due to integration challenges with existing or complementary systems. The systems are expected to work together and depending on the nature of the systems and required integration points, it may be easy to realize the strategy or fail in its implementation. Some of the projects that were mentioned that experienced these challenge included integrating the ITMS tax solution with system for registration of companies and persons, Customs samba 2005 system integration with banks and the continued failure built a multi vendor platform for the ECTS system among multiple suppliers of the solution.

#### **4.5 Measures to Mitigate Challenges of Implementing ICT Strategy at KRA**

In this section the respondents advanced a number of suggestions and recommendations to address the challenges identified with implementing ICT strategies in the organization. This include embracing an enabling legal and regulatory framework, aligning vision to strategy, embracing modern best practices, mitigating budget constraints, addressing resistance to change, dealing the supplier power, addressing duplication and overcapacity in the data centers, having and enabling organization culture and structure and addressing the knowledge gap among other measures.

Managers from the corporate affairs and legal sections suggested that KRA being a leading corporate ICT player should be at the forefront of assisting the government to adopt and operationalize the National ICT policy and strategy. They suggested that this is possible because

KRA is heavily involved in a lot of joint government initiatives with other corporations such as E-government, ICT board, KENTRADE, Kenya Ports Authority, Kenya Education Network (KENET) network for universities and colleges and the Kenya Internet Exchange Point (KIXP) among others. This should be done by prioritizing the initiative on collaboration and offering of assistance to other MDA's on Vision 2030 flagship projects and related initiatives. It was noted that this is provided under the current ICT performance contract in the customer perspective of the Balanced Score Card in the fifth corporate plan. KRA also had to ensure that the internal ICT policy is revised and approved timely to match the emergent technologies and best practices and to timely revise it.

One of the sure ways of addressing the challenges to ICT strategy implementation was having deliberate and formal ICT strategy plans as part of the corporate plans. This was noted by managers in the corporate affairs section as the prevailing practice in the last three corporate plans where ICT strategy has formed one of the pillars of the overall objectives in the corporate plans. It was noted by the managers that the formality of this process from its execution, control, audit and evaluation serves to prepare the organization to anticipate challenges and opportunities from both the internal and external environments while at the same time leveraging on the strengths and mitigating inherent weaknesses that the organization may possess.

Managers from finance, ICT, procurement and office of project management recognized the need to raise ICT budgets to within the 8 to 10 percent of entire organization budget as is the practice worldwide for organization that rely on ICT to deliver the level of services envisaged as in an organization like KRA. There were recommendations implement service level agreements and operational level agreements in order to cost business departments to establish the cost of ICT.

These costs will put into perspective how the business relies on ICT and enable managers to establish the cost of ICT and justify ICT budgets to top management and the board. They also recommended that KRA harmonizes all financing options from internal sources to bilateral financing agencies gauge the available financing sources and options and then match them to requirements. This is to enable the organization to budget and finance purposefully. Managers also recognized the need to avoid duplication and overcapacity to reduce the cost of ICT and attain the desired return on investment (ROI) on ICT projects. Interviews also revealed the need to embrace strategic management best practices in project budgeting by thoroughly establishing the financing required to fully implement a project by factoring in STRATEX, CAPEX and OPEX in the budgets. Managers from the policy and corporate affairs section suggested practices such as stretching and extending of project timelines and reprioritizing to mitigate budgets to allow projects to span over a relatively longer period.

In order to address duplication and overcapacity in the data centre, managers from the ICT department recommended that KRA embraces ICT best practices that come with modern technology platforms such as cloud computing for aggregating computing, networking and storage resources; consolidation for reducing server footprint and virtualization to provisioning capacity on demand. Other modern practices recommended include use of managed services by third party contractors to provide networking and communication services on demand or use of co-location facilities to have the data centre resources hosted by third party service provider.

The managers also thought it necessary to have the organization provide infrastructure resources according to a centralized common plan that caters for all functional and business units. A proper plan suggested factors in scalability or requirements and growth of data. Another approach to

deal with this challenge was to involve the organization collaborating with other partners like KPA and KENTRADE and other organizations from other revenue authorities to share services and infrastructure to avoid duplication.

Managers from the office of project management interviewed suggested that in order to reduce resistance to change it is necessary to institutionalize the change management practice in the organization. They indicated that this has since been adopted as an objective in the fifth corporate plan after previous experiences pointed to its importance. The organization is also expected to have proper communication channels to sensitize stakeholders. It was suggested that communication should be made part and parcel of the project implementation structure right from the onset and stakeholders should be involved right from project initiation to have their input right from the beginning. Another suggestion was to have KRA phase projects to allow for gradual adoption of changes to processes as opposed to some cases where change has been to abrupt and not properly communicated.

Some of the suggestions advanced by managers from ICT, finance and procurement sections that can be used to address the challenges of the high cost of ICT solutions, high recurrent expenses and relative strength of suppliers included suggestions that KRA ICT procurements should be subjected at all times to open, transparent and fair competitive bids to encourage competition and lower bid prices. They suggested that unless in exceptional circumstances selective or direct procurement should be avoided at all costs. Also managers from policy and corporate affairs divisions indicated the need to properly scope projects to avoid irrelevant modules of implementation and scope creep that leads to delay in project completion which comes at a cost. The choice of only intended modules and solutions ensures that cases of duplication are reduced



or entirely eliminated. They too suggested that KRA should leverage and share infrastructure and solution platforms with partner organization like KPA, KENTRADE, and neighbor revenue authorities like TRA, URA and RRA as is the case in other trading blocks around the world. This will serve to share cost and gain advantages of collaboration and integration of platforms. Managers felt that its necessary for KRA to petition major manufacturer's for direct engagement to eliminate agency costs associated with distribution channels and resellers. One of the most significant suggestions by ICT managers in addressing the escalating software license costs is adopting the use of free open source software (FOSS). Some of the open source platforms suggested include use of FOSS databases such as PostGres, development tools such as TomCat and JBoss and use Linux operating systems as opposed to use of proprietary UNIX flavors.

Manager across all sections also were of the opinion that it is necessary for project team players to carry out due diligence to establish ICT solution and equipment costs before embarking on any procurement. They can then use this information to establish unwanted cases of low returns on investment and at the same time use the information to aggressively lobby suppliers for better prices.

Interviews with managers from ICT and HR sections revealed several suggestions that can be adopted to mitigate the challenge of the knowledge gap in ICT skills. They recognized that the trends in technology stipulate that aggressive training and knowledge transfer strategies are put in place to enable staff to adequately and competently support the solutions. They insisted on the need for institutional advocacy at the top management and board level to prioritize ICT training as a key component of ICT budgets. It was also suggested that it is now necessary to have training expenses as part of the capital expenses (CAPEX) budget when planning for procurement of any project components. This is to ensure that purchase of any solution is

complimented with proper transfer of skills and shadowing to enable ICT officers to effectively learn new skills to support the solutions. The managers also recognized the need to implement a knowledge management solution to ensure the development of institutional knowledge to make it easy to transfer and make it easy to transfer and retain knowledge. It was also suggested that in order for KRA to retain key staff and get the best out of them it's necessary to consider special remuneration and compensation for special skills as is the practice in successful corporation that rely on ICT worldwide.

All managers indicated that a lot has since been achieved to help alter the organization structure and staff culture to be more receptive and prepared for ICT and automation. It was noted that the computer staff ratio has risen to just over 1:2 in the last five years. The organization has had a lot of structural changes with departments structured along functional units and processes such as audit, compliance, corporate affairs and technical services being reconfigured or even created all together. KRA has since embraced the ISO 9001 for processes and documentation and this has a positive influence on the working culture. Specifically the ICT department has transformed itself from the silo, decentralized and business department based to centralized and functional based with services running across all departments. This has been done through the adoption of ITIL framework which has greatly influenced the working culture not just in ICT but how the department serves the business departments. Further culture changes are recommended to be realized through the eventual institutionalization of the change strategy as proposed in the fifth corporate plan.

Some of the suggestions by managers from the ICT and corporate affairs sections were to have the KRA top management properly constitute the project teams such as RARMP, steering

committees and project implementation teams to ensure that only the most qualified and relevant members are included. This ensures that the most knowledgeable persons on the project or programme are picked to increase the chances of implementation. It was also suggested that it is always recommended to involve all the relevant external and internal stakeholders in the planning phase and to have proper communication channels and methods. Also managers from the corporate affairs department and ICT suggested that stronger enforcement and compliance should be inculcated into project implementation to address vested and competing interests.

The best way of utilizing bilateral funding in KRA ICT projects is by having them as part of the overall budgeting and procurement plans to eliminate the risk associated with budget imbalance between CAPEX, STRATEX and OPEX. It is also necessary to have project plans fully thought out and prioritized in line with the vision, mission and objectives of the organization as opposed to adhering to the needs of the funding agency. These recommendations were given by managers from ICT, finance and the procurement sections. They also suggested that the organization also needs to properly constitute competent Project Implementation Team (PIT) members who work as liaison to the funding teams. The members should have the relevant terms of reference to deal with project matters covering all aspects from planning, choices, budgets and implementation and post implementation audit and control.

#### **4.6 Discussion**

The study noted instances of concurrence between the empirical studies in the literature review and the study findings. Both acknowledged the central role of ICT strategy as an enabler in service delivery. Both the literature review and the study recognize the importance of the formality of the strategic management function in organizations, meaning that the success or

failure of implementation of any strategy relies on its operationalization and institutionalization. The challenges identified and the recommended measures for mitigation were similar in a lot of cases between the literature review and the study findings. However the relative strength of each of the themes was different due to the very nature of KRA as a key organization to government functions. This was also due to the fact that the organization has made a lot of strides in having a deliberate institutionalizing strategy and has a relative high ICT internal penetration unlike other similar organizations.

It was also noted that a lot of the respondents were well versed with the strategic management practice and the relative importance of ICT in organization's pursuit of goals and objectives. The managers most knowledgeable in the subject of study were mainly from the ICT and corporate affairs sections of the organization. Other respondents were primarily more comfortable in relevant areas of specialization.

The key findings from this study include the near universal agreement on the importance of strategic management in the implementation of ICT projects and initiatives. Past studies even on different aspects of ICT also recognize these. The study also agrees with past studies on the difficulties encountered during the implementation of strategy due to both internal and external factors, with internal factors mainly as a result of operationalization and institutionalization of strategy in an organization. The very nature of the challenges faced by the organization in implementing ICT strategy as found out by the study and previous research vary from one organization to another due to its resources and structure. External challenges tend to be consistent from one organization to another only with varying degrees of effect due to organization preparedness to mitigate them.

The findings of the study relate a large extent to the previous studies on the nature of challenges that exist in implementing the ICT strategy and the means to address them. As noted in literature review, Jones (2010) recognized that organizations operate in an environment of complexity and ambiguity and this does complicate outcomes. The recognition of failure of projects as a result of poor implementation is consistent with Liebonitz (1999) conclusion as cited by Borura (2010) that 5 percent of projects fail during implementation. Gichoya (2002) recognized the challenges of ICT implementation as stemming from factors such as budget constraints, resistance to change, lack of knowledge and skills among staff and low ICT penetration. All this factors were identified as key in the study.

The need to involve staff in plans before involving them in implementation was identified as a means to reduce resistance and increase chances of successful implementation. This was echoed in observation by Ward and Peppard (2002) suggested that it is necessary to involve staff during strategy development as opposed to only getting them involved during implementation. Borura (2010) in his study on the information systems implementation in state corporations identified the factors affecting successful implementation of IT systems. He identified the factors as budget constraints, lack of skills and knowledge, high cost of IT, resistance to change and lack of appropriate involvement by stakeholders. These factors were generally consistent with the study findings.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter summarizes and makes conclusions on the study in relation to the earlier stated objectives. The chapter also discusses recommendations for policy and practice, limitations of the study and states suggestions for further research.

### **5.2 Summary of Findings**

The study set out to address two objectives, one was to identify the challenges encountered by KRA in implementing ICT strategies and the second one was to establish measures of addressing these challenges. From the findings it was noted that KRA faces challenges similar to other similar organizations as previously identified in the literature review section.

The key challenges identified included those occasioned by internal and external factors. Those due to internal factors were identified as budget constraints in financing ICT infrastructure and solutions and training, resistance to change, hardships in the procurement process and practice, lack of knowledge and skills by staff to effectively implement ICT projects, unfavorable organization culture and structure and duplication and overcapacity in the data centre. Those due to external factors include risks posed by financing sources such as bilateral donors, poor ICT infrastructure, lack of an enabling regulatory and legal framework, strength of suppliers and the high cost of ICT infrastructure and solutions.

From the findings it can be deduced that KRA has been able to cope with some of the challenges but had limited success in dealing with others. KRA has had some measure of success as a result

of being able to institutionalize the strategic management practice through the adoption of formality in planning through corporate plans and performance contracting using the balanced score card. The organization has also made commendable strides in aligning vision to strategy, institutionalizing change management and stakeholder involvement in project plans and enhancing the organization culture through transformational organizational structural changes. The challenges that KRA seem to be struggling to overcome include having an enabling legal and regulatory framework, budget deficits for ICT, financing recurrent expenses and duplication and overcapacity in the data centers and coping with high cost of ICT. It is however important to note that managers are alive to these challenges and poses enough skills and knowhow on how to overcome them given the resources and the enabling environment.

### **5.3 Conclusion**

All respondents were in agreement on the importance of ICT as an enabler of strategic advantage to help the organization to achieve the organization's goals and objectives. They do recognize the fact that not all intended ICT strategies are normally realized because of inherent challenges and opportunities presented by the internal and external environment. The internal environmental factors important in determining success of ICT strategy implementation relate to the organization culture, structure, change preparedness and penetration of ICT through ICT usage in the organization and skills among staff to effectively implement and support ICT solutions. The external environment has posed challenges to implementation of ICT strategies in KRA and a lot of effort has to be summoned to effectively mitigate them. This study recognized the need to improve planning and coordination of ICT programmes, promotion of skills and knowledge transfer, streamlining of procurement processes and involvement of all stakeholders in system analysis and requirement definition. The organization is meanwhile expected to embrace best

practices, ICT project monitoring and evaluation, adopt new tools and technologies for quality assurance and improvement of product quality.

The findings established that the implementation of the ICT strategy at the KRA faces challenges. It was noted that the organization had necessary means to deal with most challenges associated with operationalization and institutionalization of the ICT strategy but has limited means in dealing with challenges resulting from external factors. The research further determined that top managers in KRA had enough knowledge in determination of mitigation measures to these challenges. Challenges to implementation of the ICT strategy in KRA were found to be as a result of internal and external factors. The internal factors identified were as a result of ICT budget constraints, resistance to change, procurement challenges, lack of requisite knowledge and skills for staff and an unfavorable organization culture and structure. External factors that were identified include poor infrastructure in the region, strength of suppliers, high relative cost of IT and the legal and regulatory framework by the government. To address the challenges the study identified the means as including stakeholders in decision making, building capacity to enhance skills and knowledge and operationalizing and institutionalizing strategy in the organization. From the findings it can be concluded that organizations such as KRA are not entirely prepared to deal with a fair fraction of challenges resulting from ICT strategy implementation and have obvious gaps that they require to address in order to achieve desired results.

#### **5.4 Recommendations for Policy and Practice**

From the findings, it is recommended that the study contributes to policy in KRA and the other government organizations working in similar settings and environment. The main



recommendations will relate to the institutionalization and operationalization of strategic management for ICT. This coupled with having a deliberate and formal approach to strategic formulation and implementation will provide valuable lessons for organizations.

It was noted that organizations are equipped with strategic management practices and benchmark with known international best practices. The study is also important in that it gives further recommendation for the management practice in organizations. This relates to the adoption of project management practices such as ICT infrastructure library and the adoption of change management and stakeholder involvement in project implementation. This are the kind of practices that are key in determining success or failure of managers in successfully achieving intended and planned ICT strategies.

### **5.5 Limitations of the Study**

There were a number of limitations that may have affected the quality of data collected. All target respondents were KRA employees and only those working in the Nairobi. This was due to lack of resources and time to incorporate consultants and contractors who have worked with KRA and other managers from other offices around the country. The study therefore may not have reflected the characteristics and opinions of the other potential respondents not interviewed. The very nature of the subject hinted of a certain degree of evaluation and appraisal of the managers' ability to successfully implement ICT projects. It is then entirely possible that not all managers especially in ICT and project management office gave full disclosure on management reasons why projects implementation faced challenges. Also the challenge of management agency conflict gave rise to typically varying positions on similar issues such as organization

structure, culture, priorities, plans and ICT preparedness and importance. This made it difficult to moderate and harmonize positions on issues.

## **5.6 Suggestions for Further Research**

Despite the in-depth study of this case study, there still exists a gap that future researchers should explore. Corporations in Kenya do exhibit different characteristics depending on the arm of government they reside and on their relative importance to the central government. KRA is among the select corporation which is given preferential status due to its importance as the government revenue collection agent. It may be necessary to carry out studies in corporations in different fields of governance as well.

The selection of respondents can be further enhanced to study the same subject by including consultants, contractors and other stakeholders conversant with ICT programmes in KRA. This may include solution providers, other related government agencies like ICT board, directorate of E-government, Kenya Ports Authority and KENTRADE among others. Other respondents can be picked from organizations from partner states that collaborate with KRA in rolling out ICT projects such as managers from revenue authorities in the EAC states of Uganda, Tanzania, Rwanda and Burundi.

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## **APPENDICES**

### **Appendix I: Letter of Introduction**

I am a graduate student undertaking a Master in Business Administration degree at the University of Nairobi. I am currently carrying out a case study of Challenges affecting the Implementation of the ICT Strategy at the Kenya Revenue Authority. I kindly request identified managers to provide information that will enable me conclude the study through interviews conducted with questions from a prepared interview guide.

The information required is purely for academic purposes and will be treated in the strict confidence. A copy of the research project will be made available to you upon request. I will appreciate your cooperation in this academic exercise.

Thanks

**Collins Mukhongo - Reg No: D61/71444/2008**

## **Appendix II: University Letter of Introduction**

### **Appendix III: Interview Guide**

#### **A. Operationalization and institutionalization of strategic management practice**

These are questions that seek to identify the formality of the strategic management process and the operationalization and institutionalization of the strategic management practice in KRA – *target respondents are top managers in business departments.*

1. How formal is the process of strategy planning and implementation at Kenya Revenue Authority?
2. How is the strategic planning process conducted in KRA?
3. What are the key objectives of the KRA corporate plans?
4. What is the relevance of ICT in KRA in achieving organization objectives?
5. How is performance contracting conducted and appraised in relation to strategic management in KRA?
6. Does your section participate in formal change management activities? If so what is the level of involvement of staff in the change management programmes?
7. How does your section participate in change management activities in the organization?
8. Do we have formal audit and continuous improvement functions in KRA?
9. How does your section conform to audit and continuous improvement activities?
10. What are the project management practices in KRA?

#### **B. ICT penetration in the organization**

These are questions that seek to get information on the level of penetration of ICT in the organization and among staff - *target respondents are top managers in the business departments*



1. What is the level of knowledge and skills of staff in the section on ICT initiatives?
2. How far has ICT permeated in the sectional activities and practices?
3. What are the current ICT initiatives in the section?
4. How relevant is ICT in the execution of sectional functions?
5. What challenges are encountered in the adoption of ICT in your section?

**C. Implementation of ICT strategy and challenges**

These are questions targeting ICT and business automation managers to assess the planning, development and implementation of ICT strategic activities in KRA - *target respondents are top managers in the ICT and corporate project departments*

1. What is the importance of ICT in the pursuit of organization goals and objectives?
2. What are the main ICT initiatives in the past and present corporate plans and performance contracts?
3. How are members of staff involved in the planning process for the development and choice of ICT strategies?
4. How much money is spent on ICT projects and initiatives relating to your section in KRA?
5. How successful to you rate the implementation of ICT initiatives over the years?
6. How good is the KRA data centre?
7. What challenges are associated with the roll out of ICT projects?
8. How do you address these challenges related to ICT programme implementation?

#### **D. Role of ICT in the overall corporate plans**

These are question targeting top level managers on gauging the importance of ICT in the organization- *target respondents are top managers in the ICT and corporate project departments*

1. What are the key reform initiatives achieved by KRA that utilize the use of ICT over the last 10 years?
2. What are the sourcing methods for ICT projects and initiatives in KRA? How effective and efficient are they?
3. Explain the level of success of the ICT initiatives in the reform agenda.
4. Explain the challenges that have been experienced in the implementation of ICT initiatives in KRA over the last 10 years.
5. How has KRA coped with these challenges associated with implementation of the strategies?
6. How are ICT projects appraised and controlled?

#### **E. Support functions to ICT initiatives**

These are questions targeting managers of departments that provide support functions to ICT initiatives.

Procurement- *target respondents are top managers in the procurement and supplies section*

1. Describe ICT procurement planning process and budgets
2. Describe the ICT procurement lifecycle
3. What are the challenges associated with ICT procurement?
4. What are the mitigations for the challenges?

Human resource - *target respondents are top managers in the human resource section*

1. What is the population of ICT staff in the organization?
2. Describe the level of qualifications and knowledge of ICT staff in KRA.
3. What is the level of turnover of ICT staff in KRA?
4. What are the human resource challenges associated with implementation of ICT strategies in KRA?

Finance- *target respondents are top managers in the finance section*

1. Describe the financing process of ICT initiatives.
2. Describe the challenges associated with financing of ICT initiatives in KRA and the mitigating factors.

Project office- *target respondents are top managers in the project management office section*

1. Describe the present and past corporate ICT initiatives in the organization.
2. Describe the formality of ICT strategy development and implementation in KRA.
3. Describe ICT sourcing and financing in KRA.
4. Describe the project management procedures in place for implementing ICT projects.
5. Describe compliance and audit activities for ICT programmes in KRA.