IMPLEMENTATION OF INFORMATION TECHNOLOGY IN BUDGETING AND BUDGETARY CONTROL IN STATE CORPORATIONS IN THE MINISTRY OF ENERGY.

BY
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DS3/OL/1011/03

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN THE SCHOOL OF BUSINESS, KENYATTA UNIVERSITY.

MAY 2012
DECLARATION

I hereby declare that this research project is my original work and has not been presented for a degree in any other University.

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Mr. Fredrick Ndede
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DEDICATION

To my Father Reuben, my Mother Magdaline, who taught me the virtues of hard work, perseverance and encouraged me to always do my best. To my wife Margaret our sons Reuben, James and Duncan.

And

To the rest of my family

Your inspiration has been fruitful.
ACKNOWLEDGEMENT

To the Almighty God, I give my thanks. “Your steadfast love continued to be over me, your mercies were new every morning, great is your faithfulness”.

I express my gratitude to my Supervisor Mr. J. Muturi for his valuable support and encouragement. His considerable knowledge on research methods, his commitment to quality work and desire for details contributed to enhancing the quality, scope and content of this study and providing valuable advice and his pursuit for quality.

Special thanks and appreciation go to my family for their continued support. To Margaret, Reuben, James and Duncan, you were a real source of inspiration and moral support. Your prayers, patience demonstrated during the course of my studies was of great value and has been fruitful. I will be forever grateful to you.

To Lectures of the School of business who were involved in the task of imparting knowledge and to all my colleagues in the MBA class. I sincerely thank all of you for your valuable support. To all those who assisted me in deed or in prayer during the project, I highly appreciate your contribution.
ABSTRACT

Information Technology as applied to budgeting and budgetary control in State corporations in the Ministry of Energy was implemented during different periods to improve performance and offer quality financial management in the corporations. It is expected the implementation has or not contributed to realization of the set objectives as will be indicated in the findings of this research.

The objective of the research is to review the level implementation of IT in budgeting and budgetary control and identify factors that impact on the implementation and recommend appropriate action.

The researcher will design appropriate methods for data collection, analysis and presentation in order to meet the objectives of the research. Specific panel data will be compiled and analyzed using statistical tools, both descriptive and the student t test statistics, which attested to the effectiveness and efficiency in budgeting and budgetary control and overall financial control for most of the performance indicators under consideration. Many companies in the service industry and utilities, where shareholders wealth is given due consideration and efficient financial management is a key indicator, will find this research and others conducted by other researchers useful and will appreciate that IT enabled budgeting and budgetary control is the answer to their success and financial viability.
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<tr>
<td>BYES</td>
<td>Budget Management information system</td>
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<tr>
<td>BPR</td>
<td>Business Process Re-engineering</td>
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<td>DCS</td>
<td>Design and Construction system</td>
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<tr>
<td>GDBFC</td>
<td>General Directorate Of Budget and Fiscal Control</td>
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<tr>
<td>GOK</td>
<td>Government of Kenya</td>
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<td>GOT</td>
<td>Government of Turkey</td>
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<tr>
<td>KenGen</td>
<td>Kenya Electricity Generation Company</td>
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<td>KPLC</td>
<td>Kenya Power &amp; Lighting Company Ltd</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>ISP</td>
<td>Institutional Strengthening Project</td>
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<td>SOX</td>
<td>Sarbarnes Oxley</td>
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DEFINITION OF TERMS

**Information Technology:** The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numeric information by a micro-electronics based combination of computing and telecommunications "(Department of Trade And Industry, United kingdom).

**Cost Centres:** Areas or sections where budgets costs are planned and charged.
CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Budgets were first introduced in the 1920s as a tool to manage costs and cash flows in large industrial organizations. Johnson (1996) states that it was during the 1960s that companies began to use budgets to dictate what people needed to do. In the 1970s performance improvement was based on meeting financial targets rather than effectiveness. Companies then faced problems in the 1980s and 1990s when they were not willing to spend money on innovations and had to contend with the rigid budgets, they were no longer concerned about how customers were being treated, only meeting sales targets became essential. Budgeting in business organizations is formally associated with the advent of industrial capitalism for the industrial revolution of the eighteenth century, which presented a challenge for industrial management.

Omolehinwa (1989) defined a budget as a plan of dominant individuals in an organization expressed in monetary terms and subject to the constraints imposed by the participants and the environments, indicating how the available resources may be utilized, to achieve whatever the dominant individuals agreed to be the organization’s priorities. The impressive thing about this definition is that, it recognizes the constraint imposed on budget by other participants who are to ensure that the objectives and targets enunciated in the budget are achieved.

Pandey (2003) defines budget as a short term financial plan. It is an action plan to guide managers in achieving the objectives of the firm. Lucey (2003) in his formal definition defines budget as “a qualitative statement, for a defined period of time, which may include planned revenue, expenses, assets, liabilities and cash flows. A budget provides a
focus for the organization aids the co-ordination of activities and facilitates control whereas control is generally exercised through the comparison of actual costs with a flexible budget”.

Lucey (2003) in his recent definition of budget defines it as “a quantitative expression of a plan of action prepared for the business as a whole for departments, for functions such as sales and production or for financial resource items such as cash, capital expenditure, manpower purchase, etc. The process of preparing and agreeing budgets is a means of translating the overall objectives of the organization into detailed, feasible plans of action”. Welsh (2003) states that budgeting is the only comprehensive approach to managing so far developed that, if utilized with sophistication and good judgment fully recognizes the dominant role of the manager and provides a framework for implementing such fundamental aspects of scientific management as management by objectives, effective communication, participative management, dynamic control, continuous feedback, responsibility accounting management by exception and management flexibility.

Following the uncertainties prevailing in many business environments today, managers and stakeholders must be poised and prepared to compete favorably under these rapidly shifting conditions. In order to survive under these environmental complexities and vagueness managers and stakeholders of the manufacturing sector need sharp tools, proven management techniques to forecast the major changes which are likely to affect the business while they choose future direction and dimension of resources needed to attain selected goals.
Budgetary control as proven management tool (Chandler, 1990) helps organization management, and enhances improved performance of any economy in different ways. Its primary function is to serve as a guide in financial planning operators; it also establishes limits for departmental excesses. It helps administrative officials to make careful analysis of all existing operations, thereby justifying expanding, eliminating or restricting present practice (Musselman and Hughes 1981). Budgeting and control entails a distinct pattern of decisions in an organization which is capable of determining its objectives, purposes or goals, and how these goals are achieved by establishing principal policies and plans.

E-government is the use of information technology (IT) to promote more efficient and cost-effective government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens. No observation on e-government can apply to all countries in such a diverse region, ranging in terms of population size from the People’s Republic of China (PRC) to Nauru, and in terms of per capita GDP from Singapore to Nepal. Yet it seems evident that e-government is still only in its initial phase in the region.

Analysts point out a number of potential benefits and pitfalls of adopting e-government. Heeks gives many examples of managerial reforms supported by IT, including improving effectiveness and efficiency of personnel management, parts procurement, accounting, health care, and claiming unemployment benefits. There are examples of IT supporting more effective state and local government, (Jones, 2001). Salazar et al (2000) point out that expected benefits are often blocked by managerial and technical difficulties, and insufficient attention to the information needs of communities. (Salazar, 2000). Kaboolian and Silcock are among the many arguing that the opportunities presented by
IT for improved administration, among other factors, are leading to a global convergence toward a standard reform model; others such as Bellamy and Taylor argue that IT is more likely to reinforce than to change embedded information and communication capabilities in governance institutions (Kaboolian, 2001). Berman and Tettey argue that in African bureaucratic settings with limited technical capacity, authoritarian decision making, and strong patron-client relations, IT may fail to produce the hoped for results (Berman & Tettey 2001).

In Kenya, the Ministry of Energy is responsible for development and overseeing the implementation of the government policy on energy in the country. The Functions of the ministry are: Energy policy and development, Hydropower development, geothermal exploration and development, Thermal power development, Petroleum products, import/export/marketing policy, Renewable energy development, Energy regulation, Security and conservation, Fossil fuel exploration and development, Rural Electrification program implementation, Expanding and upgrading of energy infrastructure, Promoting energy efficiency and conservation and protecting the environment. In addition the Ministry has the following functions: Mobilizing requisite financial resources for operation and expansion of energy services consistent with rising demand, Ensuring security of supply through diversification of sources and mixes in a cost effective manner, Increasing accessibility to all segments of the population, Enhance legal, regulatory and institutional frameworks to create both consumer and investor confidence and Enhancing and achieving economic competitiveness and efficiency in energy production, supply and delivery. The energy industry is undergoing rapid and radical change, driven by legislative initiatives like the Energy Act 2006 and new technologies.
To offer efficient and effective services, the energy sector must react swiftly, focus on quality service delivery, and take advantage of enabling technologies. To thrive in a dynamic and intensely competitive environment, the energy sector must be agile and customer-oriented, and must harness the power of Information technology to assist in mastering the challenges (GoK, 2003).

A State Corporation is a body corporate established by an Act of parliament or any other law in which the government has whole or substantial control (State Corporations Act, 1987). Currently the Ministry of Energy has nine state corporations incorporated within the Energy Act to help the ministry achieve its objectives. This research paper will be biased toward state corporations in the Ministry of Energy that are operational for a period of more than two years and are dealing with generation, transmission and distribution of electrical energy.

According to Nyangoka (2006), energy is an important requirement for sustainable industrial development and increasing access to energy in urban and rural areas is critical in the fight against poverty and wealth creation. It is therefore essential to develop both rural and urban areas equally by providing the necessary information technology to enhance financial and operational efficiency in the state corporations within the energy sector. This would in turn facilitate industrial development leading to economic development and social development in all societies across the nation.

A budget is formal statement of the financial resources set aside for carrying out specific activities in a given period of time.
According to Ken (1998), there are a number of advantages to budgeting and budgetary control. Budgetary control compels management to think about the future, which is probably the most important feature of a budgetary planning and control system. It forces management to look ahead, to set out detailed plans for achieving the targets for each department, operation and (ideally) each manager, to anticipate and give the organization purpose and direction. It promotes coordination and communication and clearly defines areas of responsibility. Budgetary control requires managers of budget centres to be made responsible for the achievement of budget targets for the operations under their personal control. It provides a basis for performance appraisal (variance analysis).

Boquist (1998) observed that companies continue to blunder and fail because they have flawed budgetary planning and control systems, which they apparently fail to recognize. Some firms sense weakness of their budgetary analysis but viewed them as individual problems rather than systematic deficiencies. They misdirect efforts and produce greater frustration. As a result, corporate strategy and capital allocation become misaligned and remain so, despite disapproving financial performance. Boquist pointed out some of the drawbacks organizations encounter in the course of implementing budgetary planning and control systems. They include lack of a dynamic structure where present day economic environment demands that organizations adapt new and instructure practices. Given the new competitive realities, there is need for management to embrace flexible and adaptable budgetary planning and control system which has the ability to quickly respond to environmental changes and complexities. A good budgetary planning and control system must involve not only an analysis of capital allocation requests when the
project is executed, but also an analysis of all the capital needed to generate information such as market research, prior to investing in the project.

Absence of connection between compensation and financial measures where many companies adopt the net present value (NPV) criterion in selecting a project but compensate managers based on product earnings or rate of returns. This misaligns their interest with those of shareholders. The reason for misalignment between compensation and budgetary allocation system is that the NPV cannot be used to determine compensation because it is a stock/summary measure, based on projected cash flows and not on realized performance. Organizations are expected to adopt flow measures which are computed periodically, either quarterly or yearly as soon as they are realized.

Lack of Integration where most often, capital budgeting and expense budgeting are distinct processes for instance organizations that do practice capital budgeting make assumptions about future cash flows that are dependent on certain advertising and sales promotion outlays. However, these outlays are typically covered by the expense budget. Boquist noted that even in organizations in which the determination of the expense request is tied at the outset of capital request, the people approving the two requests do not necessarily try to ensure consistency between the two budgets.

Finance function is not usually a strategic partner where financial analysts doing budgetary planning are often seen as traffic cops than strategic partners. They often get into the budgetary process near the end, merely to rubber-stamp a conclusion that a marketing or manufacturing executive realized earlier. Budgetary planning then becomes a mere exercise, rather than values that produced the desired result, consequently, the quality of information for budgetary planning and control is seriously compromised.
There are also poorly trained financial professionals. In recent time, training outlays are typically treated as expenses rather than investments (Hope and Frazer, 2003). If the most sophisticated budgetary planning and control system is put in place, absence of the necessary investment in upgrading those involved in budgeting will only result in expecting to win a battle by sending in people with unfamiliar guns, which all together amount to total failure of such budgeting system (Adedeji, 2004).

According to Kaguri (2003), organizations encounter challenges when it comes to implementing and managing IT infrastructure. Singled out is high capital investment, threat to job security and drastic changes in technology. Information technology was identified as an important aspect in business with most organizations appreciating the need for installing IT infrastructure. It was also noted that employee empowerment can be measured in terms of access and use of IT infrastructure. The study by Kaguri identified the need to study implementation of IT in other sectors in the country to establish the challenges being faced.

Although Kaguri’s study focused on the challenges facing business organizations in Nairobi in managing Information technology, the findings may have some relevance in implementation of information technology in budgeting and budgetary control in state corporations in the Ministry of Energy. This is because the challenges faced like high cost of IT infrastructure, threat of job security and drastic changes in technology may also apply. As in many other government institutions, the Ministry of Energy has implemented IT in its operations. Other Studies on implementation of Information Technology in budgeting and budgetary control done by Kiringai and West (2002), Paul Kriestral (2005), Shah (2002) and Metzgar and Miranda (2001) respectively have
captured issues that affect implementation as: Failure to develop management information systems, requirement for heavy investment in technology, need for enhanced skills in IT by accountants involved in budgeting and budgetary control, lack of systems in the market that has all the features of an effective and efficient budgeting and budgetary control.

According to Kinyeki et al (1996) the implementation of information technology in budgeting and budgetary control has the following benefits: promotes effectiveness in reforms by changing procedures, rather than efficiency reforms by accelerating the throughput of data with existing procedures, improving data processing and providing basic analysis of data. Alister, C. (2008) states that implementation of information technology in budgeting and budgeting control has the benefit of faster data gathering making the process of creating budgets and forecasts simpler and faster, sophisticated analysis thus enabling managers to locate variance between budget and actual on a single line and more flexible reporting, making the finance team be able to access and generate reports from any location.

The Ethiopian Government was successful in the implementation of an integrated Financial Information management system. Despite the initial challenges of resource, capacity, infrastructure, changes in government and dependency on foreign aid policies. The application of an incremental and phased approach in implementation made the project a success, resulted to delivery of the automated system at relatively low cost, and a gradual update to a technically robust and sophisticated system complying with international standards (Chene, 2009).
Diamond and Khemani (2005), observed, that developing countries budget execution and accounting processes are either manual or supported by very old inadequately maintained software applications. This has had detrimental effect on the functioning of their public expenditure management. The consequent lack of reliable and timely revenue and expenditure data for budget planning, monitoring expenditure control, and reporting has negatively impacted on budget management. This has resulted to poor controlled commitment of government resources, leading to large build up of arrears; excessive borrowing, pushing up interest rates and crowding out private-sector investment; and misallocation of resources, undermining the effectiveness of service delivery. In addition, governments have found it difficult to provide an accurate, complete, and transparent account of their financial position to parliament or to other interested parties, including donors and the general public. This has hindered transparency and the enforcement of accountability in government, and has contributed to the perceived governance problems in many of these countries.

In Kenya several studies have been conducted in the area of implementation of information technology in government and private sector. Wafula and Wanjohi (2005) observed that most Government ministries including the Ministry of energy did not have elaborate information technology projects. Kiringai and West (2002), studied how implementation of Information technology has impacted budget reforms and medium term expenditure framework and factors that have impacted on successful implementation. Oyugi (2005), studied budget process and economic governance. Ngugi et al (2005), studied the budget reform process in Kenya.
Kaguri (2003), studied challenges facing business organizations in managing information technology. All the above researchers concentrated on budgeting and budgetary control and implementation of Information Technology in the budgeting and budgetary control process in government and private business organizations.

The studies conducted in government ministries and business organizations may not be applied to the State Corporations in the Ministry of Energy. In addition, since the public corporations begun undergoing changes aimed at improving service quality, no data has been identified on studies carried out to determine factors that affect implementation of information technology in budgeting and budgetary control.

1.2 Statement of the Problem

The construction of the budgeting process is complex. The use of appropriate information technology systems minimizes mistakes and enhances the capability of a system to provide broad spectrum of information relevant for planning, controlling and decision making all in the aim of creating or enhancing value. Adopting an appropriate budgeting application allows managers to look toward the future rather than solely on data from the past when making decisions. These systems and applications enable comparisons among an organization’s departments, divisions, or projects, enabling internal benchmarking and variance analysis (Abdullah, 2008). The successful implementation of information technology and its accompanying systems, in budgeting and budgetary control process has brought about benefits of accurate and up-to-date data, systematic use of information to support decision making, efficient utilization of resources and payment orders followed online and approvals effected and monitored on-line (Government of Turkey,
Diamond and Khemani (2005), observed, automation of business processes, procedures and internal controls is an essential feature of a successful implementation of a financial management information system which incorporates budgeting and budgetary control system, this strengthens financial controls and promotes accountability.

While state corporations in the ministry of energy have not adequately implemented information technology in budgeting and budgetary control, no current data has been identified on implementation of IT in budgeting and budgetary control in state corporations in the Ministry of Energy.

1.3 Objectives of the Study

1.3.1 General Objectives of the Study

The general objective of the research was to study the implementation of IT in budgeting and budgetary control in state corporations in the Ministry of Energy.

1.3.2 The Specific objectives

1. Determine whether availability of Software and hardware affects the implementation of IT in Budgeting and Budgetary control process in energy state corporations.

2. Establish whether training in IT impacts on implementation of IT in budgeting and budgetary control process in energy state corporations.

3. Determine whether attitude towards IT affects implementation of IT in budgeting and budgetary control process in energy state corporations.

4. Determine whether funding affects the implementation of IT in Budgeting and Budgetary control process in energy state corporations.
1.4 Significance of the Study

The study was significant in a number of ways.

First, to make the Energy Sector Managers understand how they can leverage their IT investment to improve operational and financial performance.

This study also aimed at assisting Management to understand the pitfalls of the current budgeting process and enhance the process to achieve better utilization of funds through efficient monitoring and record keeping.

The findings of the study were intended to lead to better utilization of IT resources and improving the budget management process. IT Managers will also be able to assess how the existing resources are utilized and take corrective action.

The findings of the study were also supposed to facilitate timely disbursement of funds to projects by streamlining the budget management process. Funds for IT projects would be disbursed on prompt basis as requests and approvals can be made online.

The research was intended to identify gaps in the implementation of the IT systems relating to budgetary control and advice management on action needed. The cost of the use of IT systems was to be identified to enable management manage costs or introduce more cost effective systems.

The findings of the study would also be a base for students or researchers who wish to explore further on the subject of Information Technology and its impact on budgetary control. Since most of the budget control in the public sector is done manually, the findings and recommendations of the research would form a basis for improving the
budget management process in the public sector and promote use of IT systems in budgeting and budget management.

The study would form a basis for developing a framework for improved budget management as well as a basis for improving budget management through use of IT thereby improving accuracy, speed and control.

Finally the government would also benefit in its effort to improve budgeting and budgetary control in state corporations.

1.5 Scope of the study

The study concentrated on the implementation of IT in budgeting and budgetary control and systems at the state corporations in the Ministry of Energy only.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Modern Information Technology plays an important part in the budgeting and budgetary control process. Information technology influences budgeting and budgetary control and introduces innovation and enables simplification of the processes and tasks. As a result of Information technology use, the distance and time are all reduced to insignificant levels due to application of appropriate technology and efficient communication systems. Budget information stored in a common database can be maintained over a considerable period of time, accessed by all parts of the organization and availed to many authorized users to facilitate decision making. Information Technology when applied in budgeting and budgetary control impacts on the efficiency and effectiveness of decision making process within an organization.

Grafton and Permaloff (1999) states that budget decision-makers are attempting to rationalize the budgeting process by using workload budgeting, program budgeting, benefit-cost analysis, policy analysis and sophisticated forecasting techniques. Analytical budget formulation and forecasting technique like these require computer assistance. They build upon the use of spreadsheets, statistical packages, neutral network forecasting software and other programs designed specifically for data warehousing.

Contemporary budgetary practices can be traced to the development of the English constitution. The glorious revolution of 1689 established the supremacy of Parliament over the King. Thereafter, the King and later the Prime Minister could request certain taxes or various expenditures but only Parliament could authorize them. Change took place quite slowly, with marked disparities between principal and practice. Parliamentary
authority extended to what it felt essential to, and what it was able to control. Budgetary control was first extended to the armed forces, this was meant to prevent the King from assembling a force large enough to unseat parliament.

Horngren and Foster (1988) observed that well managed organizations usually have a budgetary cycle within planning the performance of the organization as a whole as well as its parts. The entire management team agrees to what is expected. Well managed organizations also provide a framework of reference, a set of specific expectations against which actual results can be compared against plans, variances from plans; investigated, corrective action follows investigations and plans are prepared again, considering feedback and changed conditions.

Horngren and Foster (1988) further state that budgets are a major feature of most control systems, when administered intelligently, budgets can, compel planning, provide performance criteria, and promote communication and coordination. Budgeting and control and Information technology share common features in that their success in organizations is complimentary and depend mostly on identification and design of efficient and effective business systems, which are customer driven and focused.

For implementation of Information Technology in budgeting and budgetary control to be successful, an appropriate accounting and information system which will include: the records of expenditure and performance related to responsibility, a prompt and accurate reporting system showing actual against budget, the ability to provide more detailed information or advise on request should be in place. In short the accounting system should be seen as supportive and not threatening (Lucey, 1988).
A major factor going along with the development and adoption of budgeting and budgetary control is the application of information technology. Lucey, (1988) states that computers can be a valuable tools for management accounting as they assist in ensuring speed, accuracy, filling and retrieval abilities and calculating and decision making capabilities. Spread-sheets play a great role in budgeting and budgetary control by assisting in exploring the effect on a budget of different values and assumptions so that a manager can make effective decisions.

2.2 Budgeting and Budgetary Control

Prior (1985) defines a budget as “a financial plan of operations for a forthcoming accounting period”. According to Horngren (1988) the purpose of the budget is to compel planning, communicate ideas and plans to everyone affected by them, coordinate the activities of different departments or sub-units of the organization, to establish a system of control by having a plan against which actual results can be progressively compared and to motivate employees to improve their performance.

Thornton (1978) states that “the level of attainment usually incorporated in the budget is a realistic figure for the budget period: one that is reasonably attainable in the conditions that are expected to exist in the budget period, although there should be an element of incentive to be a challenge to management”. Thornton further suggests that two levels of attainment could be achieved; a minimum expectation budget and a ‘desired standards’ budget. Prior (1985) defines budgetary control as “the establishment of budgets relating the responsibilities of executives to the requirements of a policy. And the continuous comparison of actual with budgeted results either to secure by individual action the
objective of that policy or to provide a basis for its revision”. Prior lists the main uses of budgetary control as follows:

1) To define the objectives of the organization as a whole, and with its overall framework, to define the results which each department (and its Personnel) should achieve.

2) To reveal the extent to which actual results have exceeded or fallen short of the budget.

3) To indicate, as variances, the reasons why actual results differ from those budgeted, and to quantify these variances in money terms to establish their magnitude.

4) As a result of quantifying variances, a basis is provided for guiding executive’s action to correct adverse trends and to take full advantage of any beneficial trends which are revealed by the results.

5) To provide a basis for revision of the current budget, or for preparation of future budgets.

6) To provide a system whereby the resources of the organization are used in the most efficient way possible.

7) To indicate the efficiency with which the various activities of the organization have been coordinated.

8) To provide some centralizing control where activities and responsibilities of an organization are decentralized.

Where the activities of an organization are subject to seasonal or cyclical variations, budgetary control provides a means of stabilizing the organization’s activities. According
to Lucey (1988) computers are valuable tools for management accounting purposes for reasons as they are for all other applications, namely speed, accuracy, filing and retrieval abilities, calculating and decision making capabilities, input and output facilities. These are expanded as follows:

2.2.1 Speed

Relative to manual methods, all aspects of computer operations take place at very high speed. Whether the computer is calculating an overhead variance, making an entry on a job cost file, printing an actual/budget statement or carrying out some other task, the computer does it in a minute fraction of the time it would take manually.

2.2.2 Accuracy

All computers incorporate built checking features which ensure for all practical purposes 100% accuracy is achieved in following a program. If a program has been thoroughly tested and produces the required output or performs the correct calculations, then this is followed faithfully time after time.

2.2.3 Filing and Retrieval Abilities

Computer files are currently invariably maintained on some kind of disk storage, and the associated software files handling systems, allow the rapid updating, amendment, cross-referencing and retrieval of large volumes of data that would be virtually impossible using any manual system. Computer backing storage systems are becoming smaller, cheaper and permit faster access. These developments mean that the accountants and managers can have more and more information readily available for instantaneous display on their terminals.
2.2.4 Calculating and decision making capability

Computer calculating speeds are measured in millionths of a second and are the heart of their power. In computer terms, the calculation required for management accounting purposes are very modest yet these same calculations done manually are tedious and time-consuming. Take for example the calculations required for apportioning various items of overhead expenditure over cost centres, which is a routine but necessary task. Each calculation is simple but the overall task, including cross down totaling, can be lengthy when done manually, and yet is ideally suited to the computer where it would be done virtually instantaneously.

Allied to the calculating power of the computer is its ability to test different values or conditions and depending on the results, take different actions. It is this ability which enables the computer to make decisions and makes it qualitatively different from other machines. The speed, calculating power and decision-making ability of the computer enables the accountant to extend the scope of his analysis beyond that which would be feasible manually, except for a special once-off exercise.

2.2.5 Input and output facilities

Computers can read and search files, print results or display information on visual display units at very high speeds. With modern software, report lay outs can be altered at will, results can be displayed using a range of diagrammatic and graphical displays, often in full colour, and displays can be interrogated and manipulated by the user without leaving his desk. Taken together the various facilities provide a far more flexible and speedy service than would be impossible using manual means.
2.2.6 Spreadsheet packages

Modeling can help the manager or accountant in planning and decision making. One useful practical way of modeling is to use a spreadsheet package to show results of different actions. The basis of a spread sheet package is electronic work sheets whereby data can be stored and manipulated at will the spread sheet matrix of locations which can contain values, formulae and relationships. The key feature is that elements are changed automatically when one or more of the key assumptions are changed. One of the important tasks of tactical level management is concerned with budgeting. Spreadsheets can be of great assistance in exploring the effect on a budget of different values and assumptions so that the manager can make more effective decisions.

One example is an accountant dealing with cash budgeting. Cash budgets are examples of routine but highly essential reports which need frequent updating to reflect current and forecast conditions, changes in credit behavior, anticipated gains or expenditures and so on. Each period (weekly, monthly, quarterly) changes and up-to-date information are input and, in combination with the brought forward file data, the cash budget will be automatically projected forward by the spread sheet program with highlighted surpluses and/deficiencies, balances carried forward from one period to another and all the usual contents of cash budget. The budget could be shown in both an abbreviated and detailed format and could also be displayed in a graphical form.

Foulks and Lynch (2001), state that a database consists of files, each containing information on a similar topic. Each file comprises a number of records which individually contains fields which hold data relating to a specific item within file.
Database systems are presently being developed which take the place of spreadsheets in some tasks. Budgeting is one of these. Until recently, many large organizations conducted budgeting using complex spreadsheet based systems. Each budget centre would have its own budget spreadsheet linked into other spreadsheets. An update in one spreadsheet would automatically update the others.

One of the fastest growing areas in accounting software supply in recent years has been in budgeting systems. Databases systems such as Hyperion Pillar and Comshare Budget Commander have been designed to provide a comprehensive answer to the budgeting problems of the large organization. The records used to input data are coded in a manner that allows both master budget and profit centre budgets to be extracted. The coding also identifies the source of the entry the centralized nature of the database allows top to bottom up adjustments to be made with ease. The Central database holding the budget can be accessed from remote locations but appropriate security coding can be arranged for some categories of item for example management of salaries’.

2.3 The Role of IT in Budgeting and Budgetary Control

Ombui (2003) states that Information Technology has important general-purpose power and ability to manipulate processes and tasks and is therefore considered an “Information Engine”. Information Technology can do what the steam engine did during the Industrial revolution (Jones, 1997). The management of budgets requires an organization’s ample time and resources, especially with large service organizations and geographically distributed utility companies. Investments in sound Information Technology systems are of paramount importance and effectively reduce the effects of both distance and time to nothing.
Information technology provides new opportunities for tackling new ways of budgeting and budgetary control. Information technology is an enabler for better budgeting and budgetary control. Metzgar and Miranda (2001) suggest five functions of information technology in budgeting as follows:

(a) **Automated Financial Control.** Budgeting technology is expected to serve as the main vehicle for spending control. Budgetary control at transaction level typically lies in the General Ledger (GL) module. But a broader concept of budgetary control would include the ability to analyze costs and monitor budget execution, which would necessitate some degree of interaction of the budget system with the GL.

(b) **Ease Budget Development.** Budget development refers to 'painful' side of budgeting, developing budget forms, managing budget version, amalgamating agency requests, validation of calculations, and accessing historical data. Information technology should ease the staff burden and costs of budget development. In particular, budgeting technology should allow the automated “self Assembly” of information given by stakeholders across the enterprise; this makes the development of the budget easy.

(c) **Planning and forecasting.** Planning and forecasting are basic components of administration. It is desirable to anticipate change in the organizational, economic, or political environment and assess its impact on the level and allocation of resources.

(d) **Facilitate analysis and reporting.** An organization’s transactional history is an important resource for planning and budgeting. Budgeting technology should facilitate and simplify data analysis, information access, and deliver high quality reporting closely tailored to the needs of diverse user groups.
Once a data warehouse of budgetary information is developed, advanced capabilities are easier to utilize and implement.

Promote Collaboration and Harmonization. Budgeting technology should accommodate top-down goal setting, bottom-up feedback, and collaboration on an enterprise-wide basis. Such technology promotes harmonization of stake holder and management interests. Metzgar and Miranda (2001) further suggests ten features and functions to consider when embracing budgeting technology as follows:

1) Enterprise Platform and Common Database. Modern budget systems should support open and collaborative budgeting processes that allow input from all areas of the organization while relying on a common database standard to reduce fragmentation.

2) Internet /web-enabled. Internet access gives remote users the ability to participate in the budgeting process. Web-enablement allows simple, intuitive web-based interactions that do not require intense end-user training.

3) Document Management Features. Leading budget systems should contain document management capabilities that provide end users with a structure to help develop the budget document without imposing rigidity.

4) Flexibility. Budget systems must have flexibility to support a number of different ways of correcting and processing information.

5) Modularity. Modern budgeting systems should coexist with many major Enterprise Resource Planning (ERP) applications, more traditional accounting systems or be developed on standalone basis.
6) Workflow. Leading budget systems should allow electronic routing and approval of documents. Such features minimize the paper intensive nature of budgeting. Such “workflow” features allow “email triggers” that advice end users if a value in the dataset is a cause for concern. For example a Department spending 90% of its appropriations for a line item in the first six months.

7) Analytical Engine. Data within the budget system should be interrelated and linked to allow automated processing of changes to the budget. The analytical engine of the budget system should allow scenario building, modeling, and “what if” capabilities that are applied for planning and routine decision making. End users should be able to store justifications at the “cell” level on why the made changes to data or to assumptions during modeling exercises. Easy-to-use menus or templates should drive the analytical capabilities.

8) Multi dimensionality. Modern budget systems must allow the “slicing and dicing” of data. New technology permits multi-dimensionality with a simple click-and-point, drop-and-drag functionality. In addition, such features allow end users to “drill down” or “drill through” different fields to get at the detail behind summary data.

9) Trend Analysis and Forecasting. Prominent budget systems should have the ability to store multiple years of budget history and use such history for revenue and expenditure forecasting. The forecasting capabilities should permit simple trend analysis as well as multiple-regression and econometric methods.
10) **On-line Processing.** Access to "real-time" information is another distinguishing feature of budgeting systems. Although some of the other improvements to budget systems would still provide value under "batch processing" the ideal state for budgeting technology is to use real-time data from the financial and human resource systems.

2.4 **Information Technology**

Shah (1994) states that information technology encompasses not only hardware and software products but also all the management techniques and skills required to apply them to the task of information management. He further analyses technology developments of interest to accountants as improvements in price or performance in communications and computers and the shift from mainframe computers to work stations. Accessing corporate data stores, providing greater processing power to the users, as extended access to information drawn electronically from outside the organization either via a network or disk, as rapid growth in technology leading to more "mobile computing", graphic/ image, audio and video information increasingly incorporated with text and numeric data in information applications. New technologies may provide alternatives to keying data into the computer while developments in software engineering offer greater modularity of systems facilitating the re-engineering of business systems.

According to Shah (1994), Information technology will impact an accountant in the following ways: Technology will have a much greater impact on the structure of organizations and the way they do business. The accountant must become a skilled manager of the change process, and be able to determine the need for and form a strategic investment in IT.
Accountants will utilize more time at higher levels of the task hierarchy. Alternatively they may become more involved in IT systems which undertake some of their current tasks. The role of the accountant will change to that of an information manager and that greater specialization which will need to be managed properly by the Institute of Accountants.

Shah concludes that what is needed is an information technology revolution to overcome the threats imposed by advances in IT and convert them into opportunities. Paul Kriestral (2005) states that in the past three years the role of IT in compliance has increased, in particular in the areas of privacy and security-mostly in the protection of computer based information and networks, document retention-dealing with a vast number of documents created and stored digitally and in financial regulation— involving many IT laden processes, as The Sarbanes-Oxley (SOX) section 404 compliance efforts have made plain.

Results of the research carried out indicate that 45% respondents say that its role has “increased greatly” in privacy and security this being the highest response. It was also revealed that document retention had 34% and financial regulation had 33%. These were areas that require the heaviest investment in technology. Companies face a wide variety of rules which have grown in number and complexity over the years. The massive frauds in major Companies such as Parmalat and Enron has resulted to increase in regulations in many countries with the aim of improving financial reporting requirements and executive accountability.
IT has played a crucial role in supporting companies’ compliance efforts. The scale and scope of regulations has prompted companies to invest heavily in labour saving technology in order to keep up with the amount of official paper work. Post-Enron regulation has placed even a higher premium on IT to find ways to help corporate executives exercise control over their companies and to comply with the new rules.

The Economic Intelligence unit, in cooperation with VERITAS Software Corp., surveyed 133 executives around the world and conducted ten in-department interviews with senior business people to find out how the role of IT is changing. The responses show that its role has certainly grown as the executive suite places more demands on it. With the increase in its importance, it has become more integrated into the compliance process, diffusing responsibility for technology decisions in this area.

Examples of recent Developments:

The Sarbanes–Oxley Act (SOX) in the US and similar laws elsewhere have led many companies to scramble to overhaul their financial reporting, internal controls and data storage in order to meet unprecedented requirements for speed, consistency and accuracy.

For banks, the Revised International Capital Framework will radically change how financial services organizations calculate risk. A host of data-privacy legislation worldwide has led to a demand for heightened levels of accuracy and network protection.

The survey revealed that the use of IT in compliance is growing rapidly in monitoring business activity that is heavily reliant on technology, such as privacy and security. Expenditure on compliance–related IT appears to be rising rapidly, although many respondents in the survey admit that they do not have a clear picture of how much is being spent.
Of those respondents that say they have an accurate idea of their compliance spending, 53% say that annual expenditure in this area is expanding by over 10%. Even though this form of spending is growing fast, 46% say it has not had an effect on expenditure on other forms of IT procurement, and 27% believe that it has actually increased this type of spending only 9% say it has decreased.

The role of IT departments in compliance efforts varies widely. A full 62% of respondents say that IT department focuses on the system requirements of compliance programmes, a traditional role. But 36% say IT is involved at a strategic level with company's response and almost 25% say IT is permanently represented on the core compliance team.

2.5 Budget Management

According to the Turkish Government (2001), Budget Management Information System (BYES) is an integrated software program capable of using data from other systems as inputs and transmitting data to other systems, which aim at; enabling the preparation and implementation of the budget in electronic medium, the execution of all transactions of every central unit of the General Directorate of budget and Fiscal control and of all budget departments in the electronic medium, and ensuring on-line contact between the General Directorate of Budget and Fiscal control and the Budget Departments and the other stakeholders such as the Turkish Court of Accounts and the State Planning Organization.

By use of the above system, the General Directorate of Budget and Fiscal Control (GDBFC) ensures that accurate and up-to-date data are received from resources, consolidated, and made available for instant access.
It also ensures that information is systematically used to support decision making, that resources are planned in due manner, utilized in an efficient way, and that realizations are timely and effectively monitored, that up-to-date and sound reports are submitted to the top management. The payment orders drawn up by the Budget Offices are followed up on-line by the Government Court of Accounts; and that approvals by the Court of Accounts regarding appropriations are issued in one hour instead of one week when the use of electronic signatures is affected. Transitions relating to appropriation transfers during the implementation of the budget are monitored on-line by the Budget Departments, and are instantly accessible to the institutions in charge of budget preparation. The time taken for data entry has decreased and there is more time available for analysis and evaluation of budgets, therefore, facilitating preparation of more sound budgets in case of delegation of power. The government budget proposal drawn up, which is consolidated by the Ministry of Finance, can be presented online. The on-line contact with the General Directorate of Public Accounts enables the follow-up of the latest circumstances concerning spending in the stages of budget preparation and implementation, therefore ensuring facility in decision-making regarding the appropriation movements during the stages of both budget preparation and implementation; at the same time, the directorate is able to follow-up the appropriation movements and payment orders on an up-to-date basis, thus, there is no need for excessive paper transmission.
Kiringai and West (2002) identified a number of weaknesses in planning and budget process that have contributed to poor performance as, poor forecasting ability, lack of medium term perspective, failure to cost future resource requirements, too many budgets, excessive political interference, in the budgeting, separation of planning and budgeting process, failure of sectoral planning groups to integrate strategic planning concerns into the budget cycle; failure of expenditure controls by line item; incremental recurrent budgeting especially ongoing programmes resulting in redundant and rising programme implementation cost; delays in issuing resources due to unforeseen changes in revenue, emergency expenditures and unplanned activities through the development budget to attract donor finding at the expense of accountability and transparency; discrepancies between development estimates and public investment programmes, poor quality of development projects due to poor targeting; high per unit costs and low completion rates; weak accounting systems; inadequate and at times lack of monitoring and evaluating systems and failure to develop management information systems.

The International Monetary Fund (IMF) and other international bodies have developed a number of codes and standards that are set out in “good practices”. These are in the areas of policy transparency, data dissemination and financial regulation and supervision. In relation to public reporting, the IMF has identified the following codes and standards which includes the public availability of information public should be provided with full information on the past, current and projected fiscal activity of government, open budget preparation, execution and reporting budget documentation should specify fiscal policy objectives, the macroeconomics framework, the policy basis for the budget, and identifiable major fiscal risks, budget data should be classified and presented in a way
that facilitates policy analysis and promises accountability, procedures for execution and monitoring of approved expenditures should be clearly specified and fiscal reporting should be timely, comprehensive and reliable and should identify deviations from the budget.

The enhanced use of IT government has undertaken to adopt strategies such as facilitating universal access to ICT infrastructure, that is, power, equipment and improved connectivity in all institutions of learning, developing a project under rural electrification programme that will help access power to educational institutions to facilitate wider use of IT, develop sufficient capacity for development and utilization of both computer hardware and software, review that telecommunication policy to support education for example, preference trial treatment of education and training institutions, providing teachers and education sector managers with access to information and tools to enable them deliver better educational services, developing capacity for computer assembly development of software and hardware institutional materials to support e-learning, developing special computer for learners with special needs, developing modalities for cost reduction for ICT equipment and services and creating partnerships that will facilitate greater dissemination of IT services to rural areas (Ashford, 1989).

In order to achieve accelerated growth in the sector, the government has undertaken to establish an inter-ministerial committee working closely with the mainstream IT into government operations so as to improve efficiency and productivity, invest in adequate IT education and training. The education curriculum will be streamlined to incorporate IT studies to develop appropriate skill requirements, implement a well targeted tax reduction and/or tax incentives on both computer software and hardware to make them affordable
to micro enterprises and low income earners, review the legal framework to remove impediment that have discouraged adoption and use of e-commerce and lastly to develop a master plan for e-government by the end of June 2004 (Grant, 1980).

According to Chene (2009) Emerging Information and Communication Technology (ICT) can play an important role in fighting corruption in public finance systems by promoting greater comprehensiveness and transparency of information across government institutions. As a result, the introduction of Integrated Financial management Systems (IFMIS) has been promoted as a core component-and in many cases a driver-of public financial reforms in many developing countries. Yet experience shows that in spite of the considerable resources allocated to such schemes, IFMIS projects tend to stall in developing countries, as they face major challenges of institutional, political, technical and operational nature. Case studies of more successful countries such as Kosovo, the Slovak Republic, Tanzania and Ethiopia indicate that factors supporting successful implementation of IFMIS include a clear commitment of the relevant authorities to financial reforms objectives, ICT-readiness, a sound project design, a phased approach to implementation, a project management capability, as well as adequate resources and human resource capacity allocated to the project.

According to United Nations Scientific and Cultural Organization (2001) implementation of Information technology in Finance and Budgeting system for financial and budgetary operations has various challenges namely: Change in working methods such as changes in programming, budgeting and managing practices, new technology and new working principles and methods. These require additional training for staff to cope with the change in working methods brought about by new technology.
Organizational Impact: The new financial and administrative procedures have an impact on the current way the organization operates, notably in its internal division of work and information flows. Although not all staff members may be impacted to the same degree or in the same manner, certain key organizational adjustments will be required to create the working environment that will allow the organization to benefit from the implementation of Financial and Budgetary System (FABS). These adjustments include modifications in the distribution of roles and responsibilities within and between sectors and the adjustment of certain job profiles.

Decentralization: As a first step, existing administrative procedures applicable to field offices and institutes will need to be revised not only to take into account their specific requirements, but also to simplify them. Reporting structures and delegation of authority will need to be re-examined in light of decentralization policy and translated into revised field process the Financial and Budgetary System can only be fully implemented in field offices once the review and simplification of processes has been completed.

Resolving the above challenges will require allocation of adequate resources and will therefore be costly and time consuming.

In the Kenya Economic Recovery Strategy for Wealth and Employment Creation 2003-2007, the Government recognizes the economic value and benefits of ICT services both in rural and urban areas. Information Communication Technology is essential to the realization of the required enhancement in productivity and empowerment of the citizens. The sector has however, not been able to achieve its objectives due to low penetration of ICT usage in Kenya especially in the rural and marginal areas due to high cost of equipment, poor telephone communications service and lack of power supply. In general,
ICT development has been negatively hampered by lack of awareness, priority, focus, coordination, resources and capacity (GoK, 2003)

The Ministry of Education in Kenya session Paper, No 4, 2005 has also identified a number of challenges facing access and use of information communication technology in Kenya. These include high levels of poverty that hinder access to ICT facilities and limited rural electrification and frequent power disruption. Where there is electricity, high costs of internet provision, costs associated with Information Communication Technology equipment, inadequate infrastructure and support hinder the use of Information Communication Technology.

According to Wafula and Wanjohi (2005), the Government of Kenya initiated the ICT bill in 2002 which later progressed to become the ICT Act 2008, this provides a regulatory framework that recognizes the importance of ICT in economic and social development, it is intended to facilitate the use of electronic transactions in the country, promote business and confidence in the use of ICT and enable businesses and individuals to use electronic communication in their dealings with government. One of the key ICT initiatives such as the Kenya E-Government initiative was introduced in year 2000, this initiative has faced challenges such as lack of an evaluation/audit mechanism, lack of main champion, lack of adequate publicity, non-involvement of stakeholders in development. Most Local authorities were observed to be relying on outsourced services.

However, an ICT initiative in the Local Government ministry has been put in place under the local Government Reform Programme and aims to improve the local authorities’ financial management and revenue mobilization particularly by developing an integrated
financial management System (IFMS). ICT is expected to provide local authorities with
the opportunity to acquaint themselves with new strategies for effective lobbying,
advocacy, design, implementation, and delivery of services to citizens using management
information systems that meet local, national, regional and international trends. The study
conducted in 2005 government ministries under the auspices of Ministry of Planning and
National Development identified ICT projects within the other government ministries
such as Cooperative, Agriculture Education, Health, Cooperatives, Transport, Tourism
and Wildlife, Foreign Affairs, Trade/Industry, Finance. Office of the President, Roads
and Public Works, Gender, Livestock/Fisheries and Planning. A few ministries such as
Environment, Justice and Constitutional Affairs, Energy, Local Government and Labor
did not seem to have any elaborate ICT projects.

Information and Communications Technology (ICT) is pivotal to modern government
and fundamental to the strategies for public service reform. The creation of new
information and communication systems are seen as an essential component in the
creation of accountability. When a decision is taken, information about that decision and
its outcomes, must be communicated to those above the decision makers. Without such
information flow, and the information system to carry that flow, there can be no
accountability because there can be no knowledge of the decision. (Heeks, 1998).

While pursuing democratic/political processes, in managing resources, executing
functions, measuring performance and in service delivery, information is the basic
ingredient. Therefore, there is great potential for these trends of information age reform
to bring significant benefits to Africa because government has been and still remains the
single largest collector, user, holder and produce of information. Information is a central resource for all staff levels for all activities.

The work of government is thus very information-intensive and four main types of formal information are identified (Heeks, 2002). These include information to support internal management which includes information about staff for personnel management, and information about budgets and accounts for financial management. Like the other types of information, it can be used for everything from day-to-day operational implementation to long term policy analysis and planning.

It is also used in information to support public administration and regulation. This includes information that records the details of the main “entities”; people, business enterprises, buildings, land plots, imports/exports, etc. It is used for a variety of purposes such as legal, judicial and fiscal.

Changes in information systems must be an essential part of all reform initiatives in Africa and changes in information technology will have a great potential in efficiency and effectiveness gain in the public sector. In theory, everything that IT can do could be done by some other means. However, in practice, its ability to increase the speed and/or reduce the cost of information tasks means it can do things that would not otherwise be contemplated.

While there have been major steps to improve implementation of IT in Government business processes the objective has not been achieved due to low penetration of IT usage in Kenya especially in the rural and marginal areas due to high cost of equipment, poor telephone communications service and lack of power supply. In general, IT development
has been negatively hampered by lack of awareness, priority, focus, coordination, resources and capacity (GoK, 2003).

Some state corporations in the Ministry of Energy are currently implementing IT in their business processes in order to improve their effectiveness of their business operations and improve quality of services to customers. Kenya Power and Lighting Company is in the process of implementing the System Data Acquisition /Energy Management system project which will provide a telecommunication backbone for a reliable, efficient and fast data communication system, while at the same time providing a better media for tele-protection, and interconnection of radio and ripple systems. The fibre optic cable which is incorporated in the project has a capacity of forty eight fibres. The company will utilize ten fibres for its operations, data and speech communications and lease the surplus capacity to generate revenue (KPLC Annual report, 2009). The Company implemented IT in budgeting and budgetary control in 1997, however not all functionalities that facilitate online budgeting and budgetary control have been implemented. (KPLC, 2007 ). KenGen has made some progress in the implementation of Information Communications Technology (ICT) strategy. However only about 75% of her key business processes have been automated (KenGen Annual Financial Report, 2007).

2.6 Conceptual Framework

The concept behind IT Budgetary control is about exploring where an organisation stands in terms of achieving its corporate objectives, where it wants to be and how to get there. It is important to establish if IT enabled budgetary control will do away with manual,
tedious budgetary control processes that are both unreliable and inefficient due to problems inherent in information accuracy, retrieval and sharing.

**Figure 1: Implementation of IT in Budgeting and Budgetary Control Process**

- IT software and hardware
- Training in IT
- Attitude towards implementation of IT
- Funding of IT

*Independent Variable*  
Source: Researcher

*Dependent Variable*
3.1 Research Design

The researcher used descriptive research design for the study. Descriptive research design is a process of collecting data in order to answer the questions concerning the current status of the subject in the study. The purpose of descriptive research is to determine and report the way things are. According to Kothari (1999) descriptive research attempts to describe such things as behaviour, attitudes, value and characteristics. Descriptive research gives an account of a particular phenomenon, situation, community or person. Descriptive research was used in the study because this design is adopted in a situation where an accurate account of a particular phenomenon or situation is required.

3.2 Target Population

The Ministry of Energy has nine (9) state corporations. Two state Corporations namely the Geothermal Development Company and Kenya Power Transmission Company are in the formation stages and will not therefore, form part of the population. Since the financial managers are the implementers of IT in budget and budget control, the total population for the study was seven (7) financial managers in the corporations within the Ministry of Energy however the study did not cover two corporations which are in the early stages of operation after formation, that is the Kenya Power Transmission Company and the Geo-Thermal Development Company.
3.3 Sampling Method

Since the population is manageable the researcher used the census method of investigation.

3.4 Data collection Techniques

Questionnaires and document analysis was used to gather data for the study. As Kiess and Bloomquist (1985) observed that, a questionnaire offers considerable advantages in its administration: It can be used for large numbers of population simultaneously and also provide the investigation with an easy accumulation of data. Gay (1976) maintains that questionnaires give respondents freedom to express their views or opinion and also to make suggestions. It is also anonymous. Anonymity helps to produce more candid answers than is possible in an interview. All the questionnaires are expected to elicit information on factors affecting implementation of information technology in budgeting and budgetary control process. The questionnaire has six sections. Section A is on demographic information and section B seeks information on training and skills in the use of IT, section B and C will has items relating to use of IT in budget and budgeting control, section D focuses on availability of software and hardware, section E deals with attitudes towards implementation of IT while section F focuses on funding on the use of IT in budgeting and budget control.
3.5 Data Analysis and Presentation

After collecting data the questionnaires was checked for completeness, accuracy and uniformity of information obtained. With the help of SPSS, data was analyzed using descriptive statistics such as percentages, mean and frequencies. Frequency distribution tables are used to present the background information and to analyze data in order to show the findings. Tables, pie charts and bar graphs are used to present the data while frequencies and percentages are used to discuss the findings.
CHAPTER FOUR
DATA ANALYSIS AND ESTIMATION OF RESULTS

4.1 Introduction

The purpose of this chapter was to analyze the variables involved in the research. In the first two sections, data description and analysis is presented.

4.2 Data Description

This section presents sources and the definitions for the dependent and the independent variables of the research. The data used in the study was collected from Finance Managers of seven State Corporations in the Ministry of Energy. Tables and charts have been presented to show the distribution patterns of the variables under study.

4.3 Instrument return rate

The researcher issued out 7 questionnaires to the respondents from all the Finance managers in the seven State Corporations in the Ministry of Energy. Seven (7) questionnaires were returned representing a response rate of 100%.

4.3 Descriptive Statistics

4.3.1 Gender of Respondents

Respondents had been requested to indicate their gender. The results are presented in the table below:

Table 4.1: Gender of the respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
From the responses, majority were male representing 86% while 14% of the respondents were female. The findings imply that majority of Finance Managers in State Corporations in the Ministry of energy are men.

4.4.2 Age distribution of the respondents.

Respondents had been requested to indicate their age. Categories were given and the respondents were to indicate categories applicable to them. The table below gives a summary of their responses.

Table 4.2: Age of the respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 20 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21 – 25 years</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

44
Results indicated that 29% of the respondents were in the 31-35 years age bracket, 14% were in the 36-40 years age bracket and 57% of the respondents were 41 and above years.
4.4.3 Level of Academic Qualifications

Respondents were asked to state their level of academic qualifications. The table below gives a summary of the level of the respondent’s academic qualifications.

Table 4.3: Respondents education qualifications.

<table>
<thead>
<tr>
<th>Education Qualifications</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diploma</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Degree</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>Masters</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Other (as specified)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

The results revealed that a majority (57%) of the respondents had first degree, while 43% have master’s degree.
4.4.5 No of years Served in corporation

Respondents had been requested to indicate how long they had served the corporation.

The table below gives a summary of their responses.

Table 4.4: No of years served in corporation

<table>
<thead>
<tr>
<th>No of years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5 years</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>5-10 years</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>11-15 years</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>16-20 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.4: No of years served in Corporation
Figure 4.4 indicates that 43% of the respondents had experience in the corporation of below 5 years, 14% of the respondents had experience of 5-10 years, and 14% had experience of 11-15 years while 29% had experience of over 20 years.

4.4.6 Designation of the respondent

Respondents were asked to state their designations. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th>Designation of Respondents</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance Manager</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>Accountant</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Financial Analyst</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings indicated that a majority 57% of the respondents had Finance Manager designation, while 29% had Accountant designation and 14% had Financial Analyst designation.

4.4.7 Name of the Department of the Respondent

The respondents were requested to indicate the name of the department they worked in. The table below gives a summary of the distribution of the respondents as per their departments.

<table>
<thead>
<tr>
<th>Name of the Department</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>Economic Regulation</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>
86 % of the respondents were from Finance Department, while 14% were from Economic Regulation department.

4.4.8 Location of Department of the Respondent

The respondents were requested to indicate the physical location of the department they worked in. The table below gives a summary of the distribution of the respondents as per the location of their department.

Table 4.7: Respondents Department

<table>
<thead>
<tr>
<th>Location of the Department</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>Mombasa</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
The results showed 86 % of the respondents were from department located in Nairobi, while 14% were from department located in Mombasa.

4.4.9 No of years of experience in the Department

The respondents were requested to indicate the no of years of experience in the department. The table below gives a summary of the no of years of experience in the department.

Table 4.8: No of years of experience in the Department.

<table>
<thead>
<tr>
<th>No of years worked in the Department</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5 years</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>5-10 years</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>11-15 years</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>16-20 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
Figure 4.8 shows that majority (43%) of the respondents worked in the department for below 5 years, 14% worked in the department for 5-10 years, and 14% worked in the department for 11-15 years, while 29% worked in the department for over 20 years.

4.4.10. Availability of necessary software for budgeting and budgetary control.

The question sought to find out from respondents whether the corporation has the necessary software for budgeting and budgetary control. The table below gives a summary of their responses.

Table 4.9: Availability of necessary software.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings revealed that 86% respondents indicated the corporation has necessary software for budgeting and budgetary control, while 14% indicated absence of necessary software for budgeting and budgetary control.

4.4.11. Accessibility to software for budgeting and budgetary control.

The question sought to find out from respondents whether they were able to obtain the software for budgeting and budgetary control when needed. The table below gives a summary of their responses.

Table 4.10: Accessibility to software.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
Figure 4.10 shows that majority (86%) of respondents indicated they had access to the software for budgeting and budgetary control, while 14% indicated they have no access to the software for budgeting and budgetary control.

4.4.12 User friendly Software.

The question sought to find out from respondents whether the available software is user friendly. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings revealed that the majority 86% of respondents indicated the available software is user friendly, while 14% indicated that the available software is not user friendly.

4.4.13 Training On Software received.

The question sought to find out whether the respondents get training on software received. The table below gives a summary of their responses.

Table 4.12: Training On Software

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>YES</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
Figure 4.12 indicated that majority 86% of respondents did not receive training on software received, while 14% indicated that they did receive training.

4.4.14 Failure to accomplish a job because of lack of software.

The question sought to find out from respondents whether there are times when they fail to accomplish a job because of lack of software. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th>Table 4.13: Failure to accomplish a job because of lack of software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>YES</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>
As illustrated in figure 4.13 a majority 57% of respondents indicated that there are no times they fail to accomplish a job due to lack of software, while 43% of the respondents indicated there are times they fail to accomplish a job due to lack of software.

4.4.15 Software performance.

The question sought to find out from respondents whether the software performs as expected. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.14: Software performance.
The findings show 86% respondents indicated that the software performs as expected, but 14% indicated that the software does not perform as expected.

4.4.16. Capability of existing hardware.

The question sought to find out from respondents the rating of the existing hardware in handling an efficient and effective budgeting and budgetary control system in the organization. The table below gives a summary of their responses.

Table 4.15: Capability of existing hardware in handling an efficient and effective budgeting and budgetary control system.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>High</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>Medium</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Very low</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
The results reveal that majority 86% of respondents indicated that the capability of existing hardware in handling an efficient and effective budgeting and budgetary control system is High, while 14% rated the capability of existing hardware in handling an efficient and effective budgeting and budgetary control system as Very High.

4.4.17 Components of IT applied budgeting and budgetary control system.

The question sought to find out from respondents the components of information technology in budgetary control applied in budgeting and budgetary control system in their organization. The table below gives a summary of their responses.
The findings show that 86% of respondents indicated that flexibility component applies, while 14% of respondents indicated that flexibility component did not apply. It is
also indicated that 86% agreed with the statement that workflow component applies, however 14% respondents thought otherwise. The findings also revealed 57% of respondents agreed that analytical engine component applies and 23% indicated otherwise. The findings also show that 86% of respondents agreed to the statement that trend analysis and forecasting component applies, while 14% of respondents didn’t agree with the statement.

4.4.18. Impact of availability of appropriate software on the implementation.

The question sought to identify the impact of availability of appropriate software on the implementation of IT in Budgeting and Budgetary control in the organization. The table below gives a summary of the responses.

Table 4.17: Impact of availability of appropriate software on the implementation

<table>
<thead>
<tr>
<th>Impact</th>
<th>Yes</th>
<th>% Yes</th>
<th>No</th>
<th>% No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speeds up budgeting</td>
<td>2</td>
<td>29%</td>
<td>5</td>
<td>71%</td>
</tr>
<tr>
<td>Improves Effectiveness</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>No elaborate software using Excel</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Enhanced Monitoring and approvals</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Availability of Information and monitoring</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Improves Decision Making</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Checking performance and remedial action</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Very high impact</td>
<td>1</td>
<td>14%</td>
<td>6</td>
<td>86%</td>
</tr>
</tbody>
</table>
Figure 4.17: Impact of availability of appropriate software on the implementation

Figure 4.17 shows that 23% of respondents said implementation of IT in budgeting and budgetary control speeds up budgeting, while 11% respondents said it improves effectiveness. It also revealed that 11% respondents said it has no impact as they use Excel, 11% of the respondents said it enhances monitoring and approvals, while a further 11% of the respondents said IT avails information and enhances monitoring, The findings also indicate that 11% of the respondents said it improves decision making, and 11% of respondents said it impacts on checking performance and remedial action, while 11% further said impact is very high.

4.4.19. Problems faced in terms of software availability and their capability.

The question sought to identify the problems faced in terms of software availability and their capability. The table below gives a summary of their responses.
Table 4.18: Problems faced in terms of software availability and their capability.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inaccurate Results</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Low level of customization and lack of configuration to meet new requirements.</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Network non-availability</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>No problem</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Inability to undertake Scenario analysis for budget preparation.</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Complex software calculations</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>

Figure 4.18: Problems faced in terms of software availability and their capability

Figure 4.18 reveals that 16% respondents gave inaccurate results as the problem faced in terms of software availability and their capability, while 16% respondents gave low level of customization and lack of configuration to meet new requirements as the problem faced in terms of software availability and their capability. It further shows that 17% respondents gave network non-availability as the problem faced in terms of software availability and their capability. The findings also indicate that 17% respondents said no
problem is faced in terms of software availability and their capability, while 17% respondents gave inability to undertake scenario analysis for budget preparation as the problem faced and 17% gave complexity of software calculations as the problem faced.

4.4.20. IT training

The question sought to find out whether respondents had received IT training. The table below gives a summary of their responses.

Table 4.19: IT training

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.19: IT training

As illustrated in figure 4.19 majority 71% respondents indicated they received IT training, while 29% indicated that they had not received any IT training.
4.4.21 Level of IT training

The question sought to find out what level of IT training respondents had received. The table below gives a summary of their responses.

**Table 4.20: Level of IT training**

<table>
<thead>
<tr>
<th>Level of IT training</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short term</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>Certificate</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Diploma</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Degree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Masters</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

The results revealed that a majority 57% of respondents received short term course, while 14% indicated they received certificate course and 29% of respondents indicated they underwent a Masters course.
4.4.22 Refresher on implementation of IT in budgeting and budgetary control.

The question sought to find out whether the respondents were taken for refresher courses on implementation of IT in budgeting and budgetary control. The table below gives a summary of their responses.

Table 4.21: Refresher Course on implementation of IT in budgeting and budgetary control

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>NO</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.21: Refresher Course on implementation of IT in budgeting and budgetary control.

The results show that 29% of respondents indicated they were taken for refresher courses on implementation of IT in budgeting and budgetary control. While 71% indicated they
were not taken for refresher courses on implementation of IT in budgeting and budgetary control.

4.4.23 In service training on introduction of new software

The question sought to find out whether the respondents were taken in service training on introduction of new Software. The table below gives a summary of their responses.

Table 4.22: In service training on introduction of new software

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

The findings indicated 86% respondents were taken for in service training on introduction of new software, while 14% indicated they were not taken for in service training on introduction of new software.
4.4.24 Preparation for the implementation of IT in budget and budgetary control.

The question sought to find out whether the Department was prepared for the implementation of IT in budget and budgetary control. The table below gives a summary of their responses.

Table 4. 23: Preparation for the implementation of IT in budget and budgetary control.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4. 23: Preparation for the implementation of IT in budget and budgetary control.

The results in figure 4.23 shows that 86 % of respondents indicated the department was prepared for the implementation of IT in budget and budgetary control, while 14%
respondents indicated the department was not prepared for the implementation of IT in budget and budgetary control.

4.4.25 Refresher courses before the implementation of IT.

The question sought to find out whether the respondents were taken for refresher courses before implementation of IT in their department. The table below gives a summary of their responses.

Table 4.24: Refresher Course before implementation of IT

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.24: Refresher Courses before implementation of IT.

As illustrated in figure 4.24 the majority 71% respondents indicated they were taken for refresher courses before implementation of IT, but 29% respondents indicated they were not taken for refresher courses before implementation of IT.
4.4.26 Personnel well versed with aspects of IT in budget and budgetary control.

The question sought to find out whether the respondents were well versed with aspects of IT in budget and budgetary control. The table below gives a summary of their responses.

Table 4. 25 : Personnel well versed with aspects of IT in budget and budgetary control

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

The findings indicate a majority 71 % respondents said the personnel was well versed with aspects of IT in budget and budgetary control, while 29% indicated that personnel was not well versed with aspects of IT in budget and budgetary control.
4.4.27 IT Efficiency in budgeting and budgetary control

The question sought to find out from respondents whether IT has introduced efficiency in budgeting and budgetary control. The table below gives a summary of their responses.

Table 4.26: IT efficiency in budget and budgetary control

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.26: IT efficiency in budget and budgetary control

Figure 4.26 indicates that 86% respondents showed IT has introduced efficiency in budgeting and budgetary control. While 14% of respondents indicated that IT has not introduced efficiency in budget and budgetary control.
4.4.28 Necessary IT training and skills for personnel in budget and budgetary control.

The question sought to find out from respondents whether personnel in budget and budgetary control have necessary IT training and skills. The table below gives a summary of their responses.

Table 4.27: IT training and skills for personnel in budget and budgetary control

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

As illustrated in figure 4.27, 71% respondents indicated personnel in budgeting and budgetary control have necessary IT training and skills, while 29% of respondents indicated that personnel in budget and budgetary control do not have necessary IT training and skills.
4.4.29 Knowledge and skills in utilization of IT in budgeting and budgetary control.

The question sought to have the respondents rate the knowledge and skills in utilization of IT in budgeting and budgetary control. The table below gives a summary of their responses.

Table 4. 28: Knowledge and skills in utilization of IT in budgeting and budgetary control.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High</td>
<td>4</td>
<td>58</td>
</tr>
<tr>
<td>Medium</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Low</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Very Low</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N/A- Did not rate.</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4. 28: Knowledge and skills in utilization of IT in budgeting and budgetary control.
The findings indicate 58% respondents rated knowledge and skills in utilization of IT in budgeting and budgetary control as High; while 14% respondents as Medium, 14% as Low, and 14% did not rate.

4.4.30 The level of Information technology training in relationship to usage of information technology in budgeting and budgetary control.

The question sought to have the respondents rate the level of Information technology training in relationship to usage of information technology in budgeting and budgetary control. The table below gives a summary of their responses.

Table 4.29: The level of Information technology training in relationship to usage of information technology in budgeting and budgetary control.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>3</td>
<td>44</td>
</tr>
<tr>
<td>High</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medium</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Low</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Very Low</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Did Not rate</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.29: The level of Information technology training in relationship to usage of information technology in budgeting and budgetary control.
The results revealed that majority 43% respondents rated the level of Information technology training in relationship to usage of information technology in budgeting and budgetary control as Very High, while 29% respondents rated as Medium, 14% as Low, and 14% did not rate.

4.4.31 Comments on the level of training and skills in IT and implementation of IT in budget and budgetary control.

The question sought to obtain comments from respondents on the level of training and skills in IT and implementation of IT in budget and budgetary control. The table below gives a summary of their responses.

Table 4.30: Comments on the level of training and skills in IT and implementation of IT in budget and budgetary control.

<table>
<thead>
<tr>
<th>Level of training and skills in IT and implementation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Not adequate</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings indicate that 71% respondents indicated level of training and skills in IT and implementation of IT in budget and budgetary control is adequate. While 29% indicated the level of training and skills in IT and implementation of IT in budget and budgetary control is not adequate.

4.4.32 Attitude of the financial managers and budget handlers.

The question sought to find out from respondents the attitude of the financial managers and budget handlers on the implementation of IT in budget and budgetary control.

The table below gives a summary of their responses.
Table 4.31: Attitude of the financial managers and budget handlers.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>Neutral</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Negative</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Did not Answer</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.31 shows that 57% of respondents indicated that the attitude of financial managers and budget handlers is positive, while 29% indicated that attitude is neutral, and 14% of respondents did not answer.

4.4.33 Eagerness to use IT.

The question sought to find out from respondents whether personnel eager to use IT in budget and budgetary control. The table below gives a summary of their responses.
Table 4.32: Eagerness to use IT

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Did Not Answer</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

As illustrated in figure 4.32 a majority (57%) of respondents indicated that the personnel were eager to use IT in budget and budgetary control, and 29% of respondents indicated that personnel were not eager to use IT in budget and budgetary control, while 14% did not respond to the question.

4.4.34 Attitude of people in the department on the implementation IT in budget and budgetary control

The question sought to find out how whether the attitude of people in the department affects the implementation IT in budget and budgetary control. The table below gives a summary of the responses.
Table 4.33: Attitude of people in the department on the implementation IT.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>72</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Did Not Answer</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.33: Attitude of people in the department on the implementation IT

Figure 4.33 reveals that 72% respondents indicated that the attitude of people in the department affects the implementation of IT in budget and budgetary control, while 14% respondents indicated that the attitude of people in the department does not affect the implementation IT in budget and budgetary control and 14% respondents did not answer.
4.4.35. Explanations as to why attitude of people in the department affects the implementation IT in budget and budgetary control.

The question is a follow up of 4.4.34 and sought to obtain explanations as to why the attitude of people in the department affects the implementation IT in budget and budgetary control. The table below gives a summary of the responses.

Table 4.34: Explanations as to why attitude of people in the department affects the implementation IT.

The respondents who responded yes in the above question gave the following explanations:

Note: Each respondent gave only one explanation.

<table>
<thead>
<tr>
<th>Explanation</th>
<th>NO</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>If staff confirm system is working they accept it.</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Staff are expected to use IT and train others</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Positive attitude leads to high usage</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Staffs believe with the system everything is possible and work will be faster.</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Staff fear use of IT will lead to control of expenditure and staffs are not comfortable with system approvals.</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>
The following explanations were given as to why attitude of people in the department affects the implementation IT. The findings show that 20% respondents indicated that if staff confirm system is working they accept it, 20% respondents further indicated that staff are expected to use IT and train others while 20% respondents indicated that positive attitude leads to high usage of IT and 20% respondents indicated that staff believe with the system everything is possible and work will be faster. The results also reveals 20% respondents indicated staff fear, use of IT will lead to control of expenditure and staffs are not comfortable with system approvals.

4.4.36 Attitude of people towards use of computers.

The question sought to measure the attitude s towards use of computers in IT in budgeting and budgetary control. The table below gives a summary of the responses.
Table 4.35: Attitude of people towards use of computers

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT help me in my budgetary control</td>
<td>6</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Computers are difficult to understand</td>
<td></td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Knowing how to use computers will help me do well in my budgeting control</td>
<td>6</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Working with computer means working on your own, without contact with others</td>
<td></td>
<td>1</td>
<td>4</td>
<td>2</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Computers are not very necessary in budgetary control</td>
<td></td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Use of IT in budgeting as well as using other means</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>I prefer use of other methods than us of IT</td>
<td></td>
<td>1</td>
<td>1</td>
<td>5</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Using a computer would encourage me to be creative in budgetary control</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Having a computer available to me would improve my general satisfaction</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Computers have made budgeting easy</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

As illustrated in figure 4.35 respondents indicated that the attitude towards use of computers in budgeting and budgetary control in the following ways:
4.4.37: Level of implementation of IT in budgeting and budgetary control in the organization.

The question sought to obtain rating from respondents on the level of training and skills in IT and implementation of IT in budget and budgetary control in the organization. The table below gives a summary of their responses.

Table 4. 36: Level of implementation of IT in budgeting and budgetary control in the organization.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>2</td>
<td>28.5</td>
</tr>
<tr>
<td>High</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Medium</td>
<td>2</td>
<td>28.5</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4. 36: Level of implementation of IT in budgeting and budgetary control in the organization.
The findings reveal 28% respondents indicated level of implementation of IT in budget and budgetary control in the organization is Very High, while 43% respondents indicated level of implementation of IT in budget and budgetary control in the organization as high and 29% respondents indicated level of implementation of IT in budget and budgetary control in the organization is medium.

4.4.38 Aspects of IT used in budget and budgetary control

The question sought to have the respondents identify which aspects of IT are used in budget and budgetary control. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online data collection</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Internet web</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Fund management, controlling budget preparation</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Budget preparation, Consolidation of budget financial</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>approvals, monitoring and control, modifications and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reallocations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reports on actual vs. budget, per cost centers, variances,</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>future planning, control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>
Figure 4.37: Aspects of IT used in budget and budgetary control.

Figure 4.37 reveals 15% respondents identified online data collection aspects used in budget and budgetary control, 14% respondents identified internet web aspects used in budget and budgetary control and 14% respondents identified fund management, investment management, controlling aspects used in budget and budgetary control. It is also indicated 14% respondents identified Budget preparation, Consolidation of budget financial approvals, monitoring and control, modifications and reallocations aspects used in budget and budgetary control, while 14% respondents identified Reports on actual vs. budget, per cost centre, variances, future planning, control aspects used in budget and budgetary control. And finally, 29% respondents did not respond to the question.

4.4.39 Adequacy of use of IT in budget and budgetary control.

The question sought to find out from respondents whether IT is adequately used in budget and budgetary control. The table below gives a summary of their responses.
Table 4.38: Adequacy of use of IT in budget and budgetary control.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>NO</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority 57% respondents indicated that IT is adequately used in budgeting and budgetary control. While 43% indicated that IT is not adequately used by the personnel in budgeting and budgetary control.

4.4.40. Use of the old method of budget and budgetary control other than IT.

The question sought to find out from respondents whether people use of the old method of budget and budgetary control other than IT. The table below gives a summary of their responses.
The findings reveal 29% respondents indicated people use old method of budget and budgetary control other than IT, while 71% indicated people do not use the old method of budget and budgetary control other than IT.

4.4.41. Reason for use of Old method of budget and budgetary control other than IT

The question is a follow up of 4.4.40 and sought to identify the reasons why people Use of the old method of budget and budgetary control other than IT. The table below gives a summary of their responses.
The study sought to find out why people use old method of budget and budgetary control. Figure 4.40 reveals 14% respondents indicated that Lack of knowledge and Shyness from IT training, also 14% of respondents indicated that old professionals believe in old
methods as the reasons why people use old method of budget and budgetary control other than IT. 72% respondents did not answer.

4.4.42. Existence of an enterprise platform and common database.

The question sought to find out from respondents whether there is an enterprise platform and common database that supports open and collaborative budgeting process allowing input from all areas of the organization while relying on a common database. The table below gives a summary of their responses.

Table 4.41: Existence of an enterprise platform and common database.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.41: Existence of an enterprise platform and common database
The study sought to find out from respondents whether there is an enterprise platform and common database that supports open and collaborative budgeting process allowing input from all areas of the organization while relying on a common database. The results reveal a majority 71% respondents indicated there is an existence of an enterprise platform and common database, while 29% indicated that there is no enterprise platform and common database.

4.4.43 Internet web enabled budgetary control system.

The question sought to find out from respondents whether there is an Internet web enabled budgetary control system that gives remote users the ability participate in the budgeting process. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.42: Internet web enabled budgetary control system
The case study sought to find out from respondents whether there is an Internet web enabled budgetary control system that gives remote users the ability to participate in the budgeting process. In the above figure, 71% respondents indicated existence of an Internet web enabled budgetary control system, while 29% indicated that there is no Internet web enabled budgetary control system.

4.4.4. Existence of document management features.

The question sought to find out from respondents existence of document management features in the budgetary control system that provide users with a structure to help develop the budget document without rigidity in your organization. The table below gives a summary of their responses.

Table 4.43: Existence of document management features

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>4</td>
</tr>
<tr>
<td>NO</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
</tr>
</tbody>
</table>

Figure 4.43: Existence of document management features

![Pie chart showing 57% YES and 43% NO]
The findings illustrate the majority 57% respondents indicated existence of document management features. While 43% indicated that there is no document management features.

4.4.45. A budgetary system with ability to coexist with the enterprise Resource planning applications.

The question sought establish from respondents whether there is a budgetary system with ability to coexist with the enterprise Resource planning applications i.e. SAP in your organization. The table below gives a summary of their responses.

Table 4.44: A budgetary system with ability to coexist with the enterprise Resource planning applications.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.44: A budgetary system with ability to coexist with the enterprise resource planning applications.
The study sought to establish from respondents whether there is a budgetary system with ability to coexist with the enterprise Resource planning applications i.e. SAP in your organization. Figure 4.44 reveals majority 86% respondents indicated there is existence of a budgetary system with ability to coexist with the enterprise resource planning application, while 14% indicated that there is no budgetary system with ability to coexist with the enterprise resource planning applications.

4.4.46. Budgeting system with online processing features.

The question sought to find out from respondents whether there is budgeting system with online processing features. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>NO</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.45: Budgeting system with online processing features
The results indicate the majority 71% respondents indicated there is existence of a budgeting system with online processing features, however 29% indicated that there is no budgeting system with online processing features.

4.4.47. Impact of funding on the implementation of information technology in budgeting and budgetary control.

The question sought to find out the impact of funding on the implementation of information technology in budgeting and budgetary control their organization. The table below gives a summary of their responses.

Table 4.46: Impact of funding on the implementation of information technology.

<table>
<thead>
<tr>
<th>Impact</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>High</td>
<td>5</td>
<td>72</td>
</tr>
<tr>
<td>N/A</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.46: Impact of funding on the implementation of information technology
Figure 4.46 shows 14% respondents indicated that the impact of funding on the implementation of information technology in budgeting and budgetary control system in their organization is Very High, while 72% respondents indicated it is high and 14% indicated not applicable.

4.4.48 funding for implementation of IT.

The question sought to find out from respondents whether the corporation gives funds for implementation of IT. The table below gives a summary of their responses.

Table 4.47: Funding for implementation of IT

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.47: Funding for implementation of IT.
The findings indicate that the majority 86% respondents indicated that their corporation gives funds for implementation of IT, while 14% indicated that their corporation does not give funds for implementation of IT.

4.4.49. Utilization of funds for implementation IT

The question sought to find out from respondents whether the funds given are well utilized for the implementation of IT. The table below gives a summary of their responses.

<table>
<thead>
<tr>
<th>Table 4.48: Utilization of funds for implementation IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>YES</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Figure 4.48: Utilization of funds for implementation IT
The majority 86% respondents indicated that the funds given are well utilized for the implementation of IT and 14% indicated that the funds given are not well utilized for the implementation of IT.

4.4.50 Lack funds for implementation of IT.

The question sought to find out from respondents whether there are times when they lack funds for implementation of IT in their organization. The table below gives a summary of their responses.

Table 4.49: Lack funds for implementation of IT.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>NO</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 4.49: Lack funds for implementation of IT.
As illustrated in figure 4.49, a majority 57% respondent indicated there are times they lack funds for implementation of IT in their organization, while 43% indicated that they do not lack funds for implementation of IT in their organization.

4.4.51 Components to be improved to enhance implementation of IT in budgeting and budgetary control.

The question sought to find out from respondents the components of information technology in budgetary control should be improved to enhance implementation of IT in budgeting and budgetary control.

The table below gives a summary of their responses.

Table 4.50: Components to be improved to enhance implementation of IT

<table>
<thead>
<tr>
<th>Component</th>
<th>YES/TICKED</th>
<th>NO/NOT TICKED</th>
<th>YES (Percent)</th>
<th>NO (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise Platform and Common Database Component</td>
<td>2</td>
<td>5</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>Internet Web Enabled Component</td>
<td>2</td>
<td>5</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>Document Management Features Component</td>
<td>2</td>
<td>5</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>Modularity</td>
<td>2</td>
<td>5</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>Online Processing Features Component</td>
<td>3</td>
<td>4</td>
<td>43%</td>
<td>57%</td>
</tr>
<tr>
<td>All of the above</td>
<td>2</td>
<td>5</td>
<td>29%</td>
<td>71%</td>
</tr>
</tbody>
</table>
The study sought to find out from respondents the components of information technology in budgetary control should be improved to enhance implementation of IT in budgeting and budgetary control. The findings revealed 29% respondents indicated that Enterprise Platform and Common Database Component needs to be improved, while 71% did not choose Enterprise Platform and Common Database Component. It further revealed 29% respondents indicated that Internet Web Enabled Component needs to be improved while 71% did not choose Internet Web Enabled Component. It also revealed 29% respondents indicated that Document Management Features Component needs to be improved while 71% did not choose Document Management Features Component. Finally the results also showed 29% respondents indicated that the Modularity component needs to be improved while 71% did not choose Modularity component. 43% respondents indicated that the Online Processing Features Component needs to be
improved while 57% did not choose the Online Processing Features Component. The findings also revealed 29% respondents indicated that all of the above components need to be improved while 71% did not choose All the Components together.

4.4.51. Suggestions for effective implementation of IT in the budget and budgetary control.

The question sought to obtain suggestions for effective implementation of IT in the budget and budgetary control from respondents in their organizations. The table below gives a summary of their responses.

Table 4. 51: Suggestions for effective implementation of IT.

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Yes</th>
<th>No</th>
<th>Percent</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training all relevant staff</td>
<td>5</td>
<td>2</td>
<td>71%</td>
<td>29%</td>
</tr>
<tr>
<td>Enabling other database components and document management features.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Provision of computers.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Adequate processors speed.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Inputs are controlled.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Have in house programs and system analysts.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Further dev. &amp; enhancements of systems.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Need for Management Support.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Change management is introduced.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>User requirements be identified and met.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Adopting user friendly systems.</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>Adopting flexible budgets based on</td>
<td>1</td>
<td>6</td>
<td>14%</td>
<td>86%</td>
</tr>
</tbody>
</table>
The study sought to obtain suggestions for effective implementation of IT in the budget and budgetary control from respondents in their organizations. The findings reveal 71% respondents indicated training as the most relevant issue for effective implementation of IT while 29% of the respondents did not indicate training as the most relevant issue for effective implementation of IT. The findings also revealed that 14% respondents indicated Enabling other database components and document management feature as the most relevant issue for effective implementation of IT, while 86% did not indicate Enabling other database components and document management feature as the most
relevant issue for effective implementation of IT. It is also illustrated that 14% respondents indicated provision of computers as the most relevant issue for effective implementation of IT and 86% did not indicate provision of computers as the most relevant issue for effective implementation of IT. Moreover, 14% respondents indicated adequate processors speed as the most relevant issue for effective implementation of IT but 86% did not list adequate processors speed as the most relevant issue for effective implementation of IT. The findings further indicate that 14% respondents indicated need to control inputs as the most relevant issue for effective implementation of IT whereas, 86% did not list need to control inputs as the most relevant issue for effective implementation of IT.

Figure 4.50 also shows that 14% respondents indicated the need to have in house programs and system analysts as the most relevant issue for effective implementation of IT and 14% respondents indicated need for further development and enhancements of systems as the most relevant issue for effective implementation of IT, while 86% did not list need for further development and enhancements of systems as the most relevant issue for effective implementation of IT.

The findings also shows that 14% respondents indicated need for Management Support as the most relevant issue for effective implementation of IT and 14% respondents indicated the need to have change management be introduced as the most relevant issue for effective implementation of IT as well as 14% respondents indicated the need to have user requirements be identified and met as the most relevant issue for effective implementation of IT, while 86% did not list the need to have user requirements be identified and met as the most relevant issue for effective implementation of IT.
It is also revealed that 14% respondents indicated the need for adopting user friendly systems as the most relevant issue for effective implementation of IT, 86% did not list need for adopting user friendly systems as the most relevant issue for effective implementation of IT.

However, 14% respondents indicated the need for adopting flexible budgets based on economic conditions as the most relevant issue for effective implementation of IT, 14% respondents indicated the need for availability of reports for decision making as the most relevant issue for effective implementation of IT and 14% respondents indicated the need for approval rights to monitor and control expenditure as the most relevant issue for effective implementation of IT, while 86% did not list the need for approval rights to monitor and control expenditure as the most relevant issue for effective implementation of IT.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction.
The chapter summarized the finding of the study. This was done in line with the objectives of the study. The study also came up with various conclusions and recommendations. The researcher then harmonized the recommendations by suggesting further recommendations in line with practice and policy.

5.1 Summary of Findings.

5.1.1 Effects of IT software and hardware availability in implementation of IT.
The study investigated whether availability of software and hardware affects the implementation of IT in budgeting and budgetary control process in energy state corporations and concluded that indeed availability of software and hardware affects the implementation of IT. Specifically, the study found out that 86% respondents indicated the corporation has necessary software for budgeting and budgetary control. Moreover, it showed that the same percentage indicated that the software’s and hardware’s were accessible and user friendly.

5.1.2 Training in IT
One of the objectives of the study was to establish whether training in IT impacts on implementation of IT in budgeting and budgetary control process in energy State Corporation, the study concluded that majority 71% respondents indicated they received IT training, while 29% indicated that they did not received any IT training. The study also indicates that 71% respondents indicated level of training and skills in IT and
implementation of IT in budget and budgetary control adequate, while 29% indicated the
level of training and skills in IT and implementation of IT in budget and budgetary
control is not adequate. The findings reveal 71% respondents indicated training as the
most relevant issue for effective implementation of IT while 29% of the respondents did
not indicate training as the most relevant issue for effective implementation of IT.

5.1.3 Effects of attitude towards implementation of IT

In order to determine whether attitude towards IT affects implementation of IT in
budgeting and budgetary control process in energy state corporations, the findings
revealed that 20% respondents indicated that If staff confirm system is working they
accept it, 20% respondents further indicated that Staff are expected to use IT and train
others while 20% respondents indicated that positive attitude leads to high usage of IT
and 20% respondents indicated that staff believe with the system everything is possible
and work will be faster. The results also reveals 20% respondents indicated staff fear, use
of IT will lead to control of expenditure and staffs are not comfortable with system
approvals.

5.1.4 Impacts of IT funding in implementation of IT

In order to determine whether funding affects the implementation of IT in budgeting and
budgetary control process in energy state corporations, the findings indicate that the
majority 86% respondents indicated that their corporation gives funds for implementation
of IT, while 14% indicated that their corporation does not give funds for implementation
of IT. The findings further show that 14% respondents indicated that the impact of
funding on the implementation of information technology in budgeting and budgetary
control system in their organization is Very High, while 72% respondents indicated it is
high. Furthermore the study revealed 86% respondents indicated that the funds given are well utilized for the implementation of IT and 14% indicated that the funds given are not well utilized for the implementation of IT.

5.2 Conclusions and Recommendations

5.2.1 Effects of IT software and hardware availability in implementation of IT.

The study concluded that the availability of software and hardware affects the implementation of IT in budgeting and budgetary control process in energy State Corporation. The study also implied that information technology encompasses not only hardware and software products but also all the management techniques and skills required to apply them to the task of information management. Further analyses show technology developments of interest to accountants as improvements in price or performance in communications and computers and the shift from mainframe computers to work stations.

5.2.2 Training in IT

The study clearly concluded that training of staff in IT affects the implementation of IT in budgeting and budgetary control process in energy State Corporation. This is because Modern Information Technology plays an important part in the budgeting and budgetary control process. Information technology influences budgeting and budgetary control and introduces innovation and enables simplification of the processes and tasks. As a result of Information technology use, the distance and time are all reduced to insignificant levels due to application of appropriate technology and efficient communication systems. Budget information stored in a common database can be maintained over a considerable period of time, accessed by all parts of the organization and availed to many authorized
users to facilitate decision making. Information Technology when applied in budgeting and budgetary control impacts on the efficiency and effectiveness of decision making process within an organization

5.2.3. Effects of attitude towards IT in implementation of IT

The study concluded that the attitude of staff towards IT affects the implementation of IT. As the results clearly indicated if staff confirm system is working they accept it, Staff are expected to use IT and train others. The study further indicated that positive attitude leads to high usage of IT and that staff also believe with the system everything is possible and work will be faster. However, the results also reveals that staff’s fear, use of IT will lead to control of expenditure and staff are not comfortable with system approvals.

5.2.4 Impacts of IT funding in implementation of IT

The study concludes that funding affects the implementation of IT in budgeting and budgetary control process in energy State Corporation, the study reveals that most corporations give funds for IT implementation

5.3 Recommendations

The study recommendations are in line with the objectives, findings and conclusions of the study. The recommendations from the finance managers were taken in to account in formulation the specific recommendations that would inform decision making.

5.3.1 Effects of IT software and hardware availability in implementation of IT.

Finance managers recommended that various measures need to be put in place in order to improve the implementation of IT. Some of the recommendations included;

i. Provision of computers.
ii. Adopting user friendly systems

iii. Enabling other data base components and document management features

iv. Have in house programs and system analysts.

5.3.2 Training in IT

Finance managers further recommended various measures needed to be put in considerations in training in order to improve in implementation of IT. They include:

i. Training of all relevant staff

ii. Need for management support

iii. Have in house programs and systems analysts

iv. User requirements be identified and met

5.3.3 Effects of attitude towards IT in implementation of IT

Suggested recommendations for effects of attitude towards IT implementation included:

i. Adequate processors speed

ii. Adopting flexible budgets based on economic conditions

iii. Availability of reports for decision making

5.3.4 Impacts of IT funding in implementation of IT

Suggested recommendations for IT funding include:

i. Approval rights to monitor and control expenditure.

ii. Inputs be controlled.

iii. Need for Management Support.

iv. Change management be introduced

v. Adopting flexible budgets based on economic conditions
5.4 Suggested areas for further study

This suggests that a comparative study in other sectors such as water sector, Agricultural sector, and industrial sector to validate these results. In addition further studies should be done in private sector as this study was done in public sector. This study also recommends that future studies should take into consideration the diffusion of innovation theory, the technology acceptance model, and all other models that explore the factors that affect the level of use and acceptance of technology.

5.5 Limitations of the study

One of the limitations of this study relates to the truthfulness and honesty of the respondents. The level of honesty for respondents may limit the accuracy of the findings. However there was no way in which the researcher could assess the level of honesty.

The applicability of findings is also limited to the ministry of energy sector in particular and public entities in general. Therefore the findings have limited application to private enterprises. This is because the political, environmental technological and legal factors differ between public and private enterprises.
REFERENCES


TO WHOM IT MAY CONCERN:

RE: CHARLES M. CIUGU – D53/OL/1011/03

This is to confirm that the above named is a master of Business Administration MBA (Finance) Student in the School of Business, Kenyatta University.

He is through with course work and has successfully defended his Masters Degree proposal (Implementation of Information Technology in Budgeting and Budgetary Control in State Corporations in the Ministry of Energy) and has done all the corrections that were pointed out by the examiners during the defense. He is now embarking on data collection.

Any assistance accorded to him will be much appreciated by this office.

Thank you.

MUATHE SMA (PhD)
DOCTORAL AND MBA PROGRAMME COORDINATOR

SMA/nt
APPENDIX 1

QUESTIONNAIRE FOR RESPONDENTS

This questionnaire is aimed at collecting information on the evaluation of the Implementation of Information Technology in budgeting and budgetary control in State Corporations in the Ministry of Energy in Kenya. You are therefore asked to participate in the study by filling in this questionnaire. The information you give will be of benefit to the researcher in accomplishing his academic goal. Please respond to the items honestly. The information you give will be held in total confidence and used only for the purpose of the study. Respond to each item by putting a tick (√) on the appropriate response.

Section A Demographic information of the respondents

1. Indicate your gender
   Male [ ]
   Female [ ]

2. Indicate your age
   15 – 20 years [ ]
   21 – 25 years [ ]
   26 – 30 years [ ]
   31 – 35 years [ ]
   36 – 40 years [ ]
   41 years and above [ ]

3. What is your academic qualification?
   Certificate [ ]
   Diploma [ ]
Degree [ ]
Masters [ ]
Others (specify) 

4. How long have you served at this state corporation?
   Below 5 years [ ]
   5 - 10 years [ ]
   11 - 15 years [ ]
   16 - 20 years [ ]
   Over 20 years [ ]

5. What is your designation .................................................................

6. Name of the department .................................................................

7. Location of the department ..............................................................

8. State your years of experience in this department
   9. Below 5 years [ ]
   10. 5 - 10 years [ ]
   11. 11 - 15 years [ ]
   12. 16 - 20 years [ ]
   13. Over 20 years [ ]

Section B: Availability of software and hardware for budgeting and budgetary control

1. Does your corporation have the necessary software for budgeting and budgetary control?
   Yes [ ]  No [ ]

2. Are you able to obtain the software when needed?
   Yes [ ]  No [ ]
3. Is the available software user friendly?
   Yes [ ]   No [ ]

4. Do you get training on the software that you receive?
   Yes [ ]   No [ ]

5. Do you at times fail to accomplish a job because of lack of software?
   Yes [ ]   No [ ]

6. Does the software perform as expected?
   Yes [ ]   No [ ]

7. How do you rate capability of the existing hardware in handling an efficient and effective budgeting and budgetary control system in your organization.
   Very high [ ]   High [ ]
   Medium [ ]   Low [ ]
   Very low [ ]

8. Listed below are components of information technology in budgetary control. Please identify the ones that are applied in budgeting and budgetary control system in your organisation:

Please, tick (√) appropriate box

<table>
<thead>
<tr>
<th>Component</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Flexibility Budget system is flexible to support a number of different ways of collecting and processing information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Workflow: Budget system allows electronic routing and approval of documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Analytical Engine: Data within the budget system is interrelated and</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
linked to allow automated processing of changes to the budget

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Trend analysis and Forecasting: Ability to store multiple years of budget history and use such history for revenue and expenditure forecasting</td>
</tr>
</tbody>
</table>

9. What is the impact of availability of appropriate software on the implementation of IT in Budgeting and Budgetary control in your organization?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

10. What problems do you face in terms of software availability and their capability?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Section C: Training and skills in the use of IT in budgetary control

11. Have you received training in IT?

   Yes [ ]   No [ ]

12. If yes what level of training have you received/

   Short term course [ ]
   Certificate [ ]
   Diploma [ ]
13. Have you received any refresher course on IT budgetary control?
   Yes [   ]     No [   ]

14. Do receive any in-service training once new software has been introduced?
   Yes [   ]     No [   ]

15. Do you think the department was prepared for the implementation of IT in budget and budgetary control?
   Yes [   ]     No [   ]

16. Were you taken for refresher courses before the implementation of IT in your department?
   Yes [   ]     No [   ]

17. Do you think the personnel in your department are well versed with aspects of IT in budget and budgetary control?
   Yes [   ]     No [   ]

18. Do you think the IT has been efficient in budget and budgetary control?
   Yes [   ]     No [   ]

19. Do you think the personnel in the budget and budgetary control have the necessary IT training and skills
   Yes [   ]     No [   ]

20. How do you rate your knowledge and skills in utilization of IT in budgeting and budgetary control.
    Very high [   ]    High [   ]
    Medium [   ]    Low [   ]
    Very low [   ]
22. How do you rate the level of Information technology training in relationship to usage of IT in budgeting and budgetary control in your organization.

Very high [ ]            High [ ]
Medium [ ]              Low [ ]
Very low [ ]

23. What would you comment on the level of training and skills in IT and implementation of IT in budget and budgetary control in your department?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Section D: Attitude towards implementation of IT in budgeting and budgetary control

24. What is the attitude of the financial managers and budget handlers on the implementation of IT in budget and budgetary control?

Positive [ ]
Neutral [ ]
Negative [ ]

25. Are the personnel eager to use IT in budget and budgetary control?

Yes [ ]           No [ ]

26. Does the attitude of the people in the department affect the implementation of IT in budget and budgetary control?

Yes [ ]           No [ ]

27. If yes above please explain your answer
28. The table below is designed to measure attitudes towards the use of computers in budgeting control. Please indicate your level of agreement or disagreement by ticking (V) the appropriate response using the following key.

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT helps me in my budgetary control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computers are difficult to understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowing how to use computers will help me do well in my budgeting control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working with computer means working on your own, without contact with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computers are not very necessary in budgetary control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I use of IT in budgeting as well as using other means</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I prefer use of other methods than use of IT</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Using a computer would encourage me to be creative in budgetary control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a computer available to me would improve my general satisfaction in the budgeting control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computers have made budgeting easy</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Section E: Implementation of information technology in budgeting and budgetary control

29. How do you rate the level of implementation of IT in budgeting and budgetary control in your organization.

Very high [ ] High [ ]
Medium [ ] Low [ ]
Very low [ ]

30. What aspects of IT are used in budget and budgetary control?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

31. Do you think IT is adequately used in budget and budgetary control?

Yes [ ] No [ ]

32. Do you have people using the old method of budget and budgetary control other than IT?

Yes [ ] No [ ]

33. If yes above, what do you think are the reasons?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

121
34. Do you have an enterprise platform and common database that supports open and collaborative budgeting process allowing input from all areas of the organisation while relying on a common database?

Yes [ ]  No [ ]

35. Do you have Internet web enabled budgetary control system that gives remote users the ability to participate in the budgeting process?

Yes [ ]  No [ ]

36. Do you have existence of document Management Features in the budgetary control system that provides users with a structure to help develop the budget document without rigidity in your organization?

Yes [ ]  No [ ]

37. Do you have A budgetary system with ability to coexist with the enterprise Resource planning applications i.e. SAP in your organization?

Yes [ ]  No [ ]

38. Do you have a budgeting system with online processing features in your organization?

Yes [ ]  No [ ]

Section F: Impact of funding on the implementation of information technology in budgeting and budgetary control

39. What is the effect of funding on the implementation of information technology in budgeting and budgetary control in your organization

Very high [ ]  High [ ]

Medium [ ]  Low [ ]

Very low [ ]
40. Does your corporation give funds for implementation of IT?
   Yes [ ] No [ ]

41. Are the funds well utilized for the implementation of IT?
   Yes [ ] No [ ]

42. Do you at times lack funds for implementation of IT in your organization?
   Yes [ ] No [ ]

43. Which of the information technology components should be improved to enhance implementation of IT in budgeting and budgetary control in your organization?
   Please, tick (✓) appropriate box
   Enterprise Platform and Common Database Component [ ]
   Internet Web Enabled Component [ ]
   Document Management Features Component [ ]
   Modularity [ ]
   Online Processing Features Component [ ]
   All of the above [ ]

44. Give your suggestions for effective implementation of IT in the budget and budgetary control in your organization

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
APPENDIX II

LIST OF PARASTATALS IN THE MINISTRY OF ENERGY

Electricity Regulatory Commission
Kenya Electricity Generating Company
National Oil Corporation
Kenya Pipeline Company
Kenya Petroleum Refineries Ltd
Kenya Power and Lighting Company
Kenya Electricity Transmission Company
Rural Electrification Authority
Geothermal Development Company Ltd
## APPENDIX III: BUDGET

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Cost (Kshs.)</th>
<th>Total(Kshs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Personnel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Assistant</td>
<td>1</td>
<td>@ 18,000.00</td>
<td>18,000.00</td>
</tr>
<tr>
<td><strong>2. Materials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photocopying paper</td>
<td>4</td>
<td>@600.00</td>
<td>2,400.00</td>
</tr>
<tr>
<td>Foolscap</td>
<td>1 ream</td>
<td>@ 500.00</td>
<td>500.00</td>
</tr>
<tr>
<td>Scratch Cards</td>
<td></td>
<td></td>
<td>3,000.00</td>
</tr>
<tr>
<td>Internet</td>
<td></td>
<td></td>
<td>2,000.00</td>
</tr>
<tr>
<td><strong>3. Travel Expenses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Researcher</td>
<td></td>
<td></td>
<td>8,000.00</td>
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<tr>
<td>Research Assistant</td>
<td></td>
<td></td>
<td>10,000.00</td>
</tr>
<tr>
<td><strong>4. Data Analysis</strong></td>
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<tr>
<td>Statistical Analysis</td>
<td></td>
<td></td>
<td>5,000.00</td>
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<tr>
<td><strong>5. Report preparation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typing</td>
<td></td>
<td></td>
<td>3000.00</td>
</tr>
<tr>
<td>Printing</td>
<td></td>
<td></td>
<td>12,000.00</td>
</tr>
<tr>
<td>Binding</td>
<td></td>
<td></td>
<td>14,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>77,900.00</td>
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</tbody>
</table>
## APPENDIX IV: TIME SCHEDULE

<table>
<thead>
<tr>
<th>Activity</th>
<th>May - June 2011</th>
<th>July - Sep</th>
<th>December</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature research and research review</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Proposal writing</td>
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<tr>
<td>Design of instrument</td>
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<tr>
<td>Pilot study and field work</td>
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<tr>
<td>Data analysis</td>
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<tr>
<td>Report writing</td>
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<tr>
<td>Submit of project</td>
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</tbody>
</table>