

**INFORMATION AND COMMUNICATION TECHNOLOGY AND  
ORGANIZATIONAL RESOURCE MANAGEMENT IN KENYA'S REAL  
ESTATE SECTOR**

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**OCTOBER, 2013.**

DECLARATION

This project is my original work and has not been submitted for a degree course or any other award in any other university

Student

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## **DEDICATION**

First of all I dedicate this project to my dear mother Mrs. Grace Kigen who has struggled both physically and financially to support my learning with lots of care, love and gratitude your genuine donation and constant assistance from the entire family and friends. May God bless this work and all those who were involved in making it successful.

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## **ABSTRACT**

The main purpose of this study is to investigate information and communication technology and organizational resource management in Kenya's real estate sector. Specific objective of the study includes, to establish the extent to which ICTs are used for resource management in real estate, to determine the challenges encountered by utilizing ICTs in resource management in real estate to establish the benefits of usage of ICT for resource management in real estate and to establish the relationship between usage of ICT and organization resource management in real estate sector. The study will employ a descriptive survey research design. The total population for the study was 60employees. A questionnaire is used to collect data which will later be analyzed by the use of descriptive statistics and presented in frequency distribution tables and percentages. The findings established that factors that lead to use of ICT Firms include Management decisions, the need to increase efficiency, the urge to counter competitors and the need to reduce organizational costs. Ways of managing ICT in Firms is through employing competent personnel, sourcing for the right machines/equipments, regular check and maintenance of ICT devices and adequate funding and investing on ICT so as to curb the emergencies. ICT and organizational resources management should be enhanced in firms in order to reduced wastages in the organization, reduce organizational costs, enhance future use of resources, and enhance quick and easy tracking of required information. Challenges Firms are facing in the management and use of ICT include high costs of purchase and maintenance, regular machine failure or breakdown, ICT devices require high level of employee knowledge who works with ICT devices which may call for outsourcing and employee resistance due to loss of jobs. Based on the findings the study recommends that the management should carry out employee training to equip them with required skills to handle and use ICT effectively. The researcher suggested that further research should be carried out to determine the effects of ICT on organizational productivity.



# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

In the current Information age, knowledge is the new material because not only is it power, but also the source of wealth. It has become a veritable factor of production, a necessary resource for any society that wishes to progress. Information and Communications Technology (ICT) is often used as an extended synonym for information technology but a more specific term that stresses the role of unified communications and the integration of telecommunications, computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. The evolution of Information and Communication Technologies during the last decade has significantly altered the business landscape on a worldwide scale. Integration of organizations, especially with suppliers and other entities outside organizational borders is known as a supply chain (SC) concept, which emphasized that several different organizations are involved in getting the product to the end user (Rushton et al, 2001; Cooper et al, 1997). The integration of ICTs in the business processes resulted in numerous examples of enhanced organizational performance both in developed and developing countries

There are not only economic benefits which organizations can achieve from adopting and exploiting ICTs, but also the managerial knowledge, skills and experience of owners of real estate firms which have the potential to make a significant difference in exploiting new opportunities offered by ICTs (Matlay, 2000). Chapman et al (2000) claim that most managers who lack in- depth understanding of ICTs and their potential benefits would benefit considerably from assistance on how to link technology to specific operational aspects of their business.

In the 21<sup>st</sup> century the world has been qualified by the phenomenon of globalization, gaining and maintaining a competitive edge in the real estate business, market has become a top priority among numerous challenges facing property management business today. Information and Communication technology has reemerged as the new development that has taken place in the last decade with policies aimed at making ICT an enabled economy being implemented (Kagwe, 2006). However, real estate business should acknowledge and exploit the opportunities provided

by the exciting development in ICT to serve as a gateway to effective management of organization resources in a more advanced and comfortable way (Habel, 2006).

There is a significant amount of research demonstrating a positive impact of ICT in the supply chain. As companies seek to improve the efficiency in the supply chain through increased integration, ICT can be considered as a key enabler for supply chain management through its ability to support information sharing and shortening information processing time. Supply chain integration can however be expressed in a wide range of dimensions such as integration of processes, information, organizations and systems (Bowersox et al., 1999; Mouritsen et al., 2003).

### **1.1.2 ICTs in Organization Resource Management**

Resource management refers to the process of using a company's resources in the most efficient way possible. These resources can include tangible resources such as goods and equipment, financial resources, and labor resources such as employees. Resource management can include ideas such as making sure one has enough physical resources for one's business, but not an overabundance so that products won't get used, or making sure that people are assigned to tasks that will keep them busy and not have too much downtime (Habel, 2006).

The organization is where resources come together. Organizations use different resources to accomplish goals. The major resources used by organizations are often human resources, financial resources, physical resources, and information resources. Resources are what make a business run, and allocating organizational resources for business should be done carefully in a competitive environment. All of these organizational resources are crucial to the success and growth of a business. Technology is a valuable organizational resource that can come in the form of equipment, programs, and devices. Technology is a resource that will help increase value and productivity of a business if acquired appropriately. People are always a valuable organizational resource, and hard working and knowledgeable employees are a resource that should never be overlooked. Finance is another organizational resource that can come from investors, stakeholders, and the business itself. Finance is hard to allocate during a rough economical time, and companies must promise to be able to promise value in order to acquire financial resources in

business. This organizational resource is something that will be a long term investment and proper researching beforehand will save a lot of time and money in the future.

ICT in resource management has two main roles. On one hand, business expects ICT management to develop distinctive solutions, which improve competitiveness and support company goals in the best possible way. On the other hand, business expects ICT management to purchase standardized services in the most cost-effective manner. This will therefore facilitate consistent flow of supply chain function in organization resource management in real estate.

ICT management must actively help and challenge the business to identify its needs and to find the best possible solutions. In essence, this is about finding a balance between the demands of the resource management business and the supply of ICT. ICT management must also inform the business of the new opportunities arising from the new possibilities in information technologies and information systems. In order to enhance organization resource management, real estate companies should invest in IT services to ensure it is at its right cost and right time while minimizing the overall operational cost by implementing efficient resources pooling and dynamic resources allocation approach to support more efficient and effective business and administration process to achieve the organization objectives.

Certainly, Information and Communication Technology has favoured a multiplicity of changes in several industries. Thus, a major challenge for real estate firms has been the exploding advancement and the ever-growing ICT developed within the past few decades (Cela, 2005). The transformation stage is related to greater use of ICT, creating a more competitive and more dynamic economic environment which is conducive to sustained growth and supply chain management in organizations. Network and spill-over effects of ICT increase the information available to market participants and lower transaction costs. At this stage, the contribution of ICT to economic growth will be broad-based and sustainable beyond the initial investment push only if ICT raises the productivity of ICT-using sectors and makes the whole economic system more efficient (Pilat, 2004).

### **1.1.3 Kenya Real Estate Sector**

Real Estate in Kenya is currently undergoing a real estate boom and investors in this sector have been enjoying very high returns. Kenya real estate industry has been on a roller coaster ride since 2005. The sector not only witnessed the entry of many new domestic realty players but also the arrival of many foreign real estate investment companies including private equity funds, pension funds and development companies entered the sector lured by the high returns on investments. Consequent to the government's policy to allow Foreign Direct Investment (FDI) in this sector, there was a boom in investment and developmental activities.

Kenya's economic revival has seen the construction and real estate sector grow very rapidly and the sector is projected to grow annually by 16.7 percent on average, its GDP rising from 2.3 percent in 2002 to 4.2 percent in 2007 according to the Economic Recovery Strategy for Employment and Wealth Creation government report (2012). This has been brought about by growth of ICT in organization resource management which has triggered growth in a number of foreign investors into the country.

With real estate in Kenya fast emerging as a big opportunity, Reliance Industries of India, in a joint venture with Delta Corp, has purchased land worth Sh2.87 billion in Kenya for development of housing and office properties and already is making good profits. According to the global realty consultancy Knight Frank (The Wealth Report, 2013), the average property prices in Nairobi's high-end estates rose by 10 per cent in 2012. Besides, Nairobi's prime property market rose the highest among Africa cities, and was only followed by Cape Town in South Africa.

Konza Technology City dubbed Africa's Silicon Valley will be the single largest property development ever done in Kenya. It is going to host the technology city as part of many programmes that aim to steer Kenya into middle income status. It will cost a whopping US\$ 14.5 billion after commencing in January 2013 and is to be completed by 2030. Driven by commercial technology services the site will also be home to Kenya's Financial City initiative, provide University and Science Parks, potentially house government ministry relocations from nearby Nairobi and establish a modern living community which attracts high calibre professionals to a modern life style. Konza Technology City is based on successful new town projects around the

world and draws on international best practice to ensure global competitiveness. Others real estate based ICT firms include Tatu City a property development by Moscow based Renaissance Partners and English Point Marina which will be East and Central Africa's first floating pontoon marina (World Bank, 2012).

## **1.2 Statement of the Problem**

There has been a great appreciation of property prices and volatility across the different property markets in Kenya since the year 2006. According to Hass property consultants, in their first property index in Kenya, the prices for high end residential properties has doubled between the years 2005 and 2009 (Hass property index, 2009). The current rental yields that is the return on capital tied up in property is lower than mortgage interest. The Hass Consult property index data for the first quarter in 2011 indicates that rental yields are down to 5.62 per cent per year from a high of 7.3 percent per year in 2007. The Hass survey further reveals that property prices have risen 55 per cent since the year 2007 while rental yields have appreciated with only 18 per cent. Interestingly this has not barred investors from rushing to buy real estate property.

While the benefits of these technologies have been acknowledged there have been some constraints of adoption especially in developing countries. The constraints are many and include, access to computers (email and internet), affordability of computers and connectivity, telephone and electricity infrastructure, computer literacy, expertise, etc. (Davis & Danning, 2001; Oliver et al, 2001; Knowlton & Knowlton, 2001; Sibiya, 2003; Gumbo, 2003). While such problems have been acknowledged, the main reasons behind the slow pace of adoption have been identified as lack of effective policies on ICTs (Kaino, 2004). Many countries have outlined the significance of these technologies and much of these policies have remained on paper without committing enough resources to policies.

At the organizational level, it is widely accepted that the integration of ICT in organizational functions is necessary for increased efficiency, cost-effectiveness, and competitiveness in real estate. The tendency unfortunately has been, more often than not, to approach such integration from the technology level, leading to escalating costs without corresponding efficiency gains. This leads to disillusionment, skepticism, and reduced organizational commitment and resources to support ICT services and systems (Kaino,2004).

In Kenya, studies on ICT on resource management have not been extensively done as many studies have been based on utilization of ICT in resource management and effects on infrastructural development as a key economic enabler. Awinda (2012) researched on relationship between real estate's returns and equity markets returns in Kenya and (Virtual Capital Limited, 2008) undertook a study on the Viability of Real Estate Investment Trusts in Kenya to seek opinions of the investing public as well as research undertaken to understand how a Real Estate Investment Trusts market operates in other more developed capital markets. This research is different from the above local studies as it looks at how ICT and organization resource management in real estate sector enables organization to compete efficiently and gain market penetration in the growing real estate industry.

### **1.3 Objective of the Study**

The general objective of the study is to evaluate the usage of ICT for organizational resource management in Kenya real estate. The specific objectives are:

1. To Establish the extent to which ICTs are used for resource management in real estate.
2. To Determine the challenges encountered by utilizing ICTs in resource management in real estate.
3. To Establish the benefits of usage of ICT and organization resource management in real estate.
4. To Establish the relationship between usage of ICT and organization resource management in real estate sector in Kenya.

### **1.4 Value of the Study**

The findings of the study and recommendations will provide good practical and theoretical background to retailing firms. The study is also timely because ICT effectiveness among real estate management firms is on the increase and act as an opportunity because to property business to maximize their operation and give a greater return on investment as they provide high quality services to ensure customer satisfaction and to compete with their competitors.



The findings will also act as a base for real estate firms to adopt and use a strategic advantage against their competitors. Institutions for information communication technology will also be direct beneficiaries in that they will strategize to sell their software. It will be of great benefits to other organizations as they will utilize ICT so as to realize improved profitability through adequate resource management.

The study also contributes to the wider body of knowledge both in academics and research in the area of resource management and particularly academicians who may need to find the link between ICT and organizational management in real estate sectors in Kenya.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The review of literature provide a critique of the studies done by other people, it aims at identifying and evaluating opinion, knowledge , attitudes and findings of various studies that have been carried out in the areas of Information and Communication Technology and organizational resource management in Kenya real estate sector. It includes economic benefit of ICT, Application of ICTs in real estate, benefits and organization resource management, challenges of ICTs in real estate, conceptual framework and summary.

### **2.2 Economic Benefits of Information and Communication Technology**

Over the years, studies have ascertained the enormous potential that Information and Communication Technologies have to bring widespread social, political and economic benefits to developing countries. They can create a new human society, facilitate the rise of human capabilities to new heights, generate economic growth, and reduce poverty (Torero & Braun, 2006). Information and Communications Technologies (ICTs), broadly defined, facilitate by electronic means the creation, storage, management and dissemination of information. ICT is both a vehicle for communication and a means of processing information. ICTs are part of the economic infrastructure that supports global production, trade, investment and capital flows. ICTs are means by which individuals, institutions and organizations network, undertake activities, and participate in the development process at local, national and global levels.

With the proposed development of an ICT and a financial services centre on a 2,000 hectare development in Konza (60 kilometers from Nairobi), the Government of Kenya has created a vision to develop Konza into one of the most successful cities in Africa, competing economically and culturally with the best cities in the world. This development offers significant opportunities to global players in the ICT, Business Process Outsourcing (BPO), financial services and providers of support services to these sectors. ICT has introduced what is known as the Networked economy where successful businesses are linked with their suppliers, internal manufacturing processes, shippers and customers in real-time. Businesses are now able to move

data and communicate with each other in real time. This has transformed the way businesses are being done. ICT has the capacity to cut costs of coordination, communication and information processing and many businesses have taken advantage of this (Brynjolfsson & Hitt 2000).

Specifically the ICT industry is the main driver of the economies of countries like India and China (EU Annual report, 2007). The ICT sector provided a more than six-times-greater contribution to Kenyan GDP in 2009 compared to 1999. Directly, the ICT sector contributed to 14% of the country's GDP growth between 2000 and 2009 prices, it grew from KSh13.7bn in 2000 to KSh71.8bn in 2009; GDP overall grew from KSh976bn to KSh1.382tn). So the World Bank's calculation that ICTs contributed a quarter of GDP growth during the decade also include a specific, quantified assumption about ICTs triggering growth in other sectors, in particular the financial sector.

Information and communications technology (ICT) by promoting efficiency and productivity is the major driver of economic growth and development in the world today, including in Kenya. Even simple mobile phones promote economic growth. ICT via an affordable network and applications is the foundation of a knowledge economy, which promotes innovation, job creation, and exports. A competitive ICT industry is therefore essential for Kenya. Lowering costs and increasing people's access to ICT will reduce transaction costs and increase business efficiency, even for small service firms in rural areas. It will improve access to information, helping raise educational standards and raising interest in science and public affairs making public officials more accountable while equalizing opportunities both spatially and inter-generationally and helping reduce income inequalities through better job training.

Sadagopan (2005) states that Management Information Systems (MIS) would be a computer based system that provide flexible and speedy access to accurate data as this would suit any personal professional, organizational, national or global system. Obviously, the organization's information system as pertaining to the planning, operation and control of the enterprise is the most important among these. MIS refers primarily to such organization's information system which are generally large, sophisticated, structured, dynamically evolving and of immense commercial value.

Information technology can add a lot of value to Real Estate businesses by helping them with Customer Relationship management, online advertisement and brand positioning. Such realtors can manage their business efficiently, market properties using digital channels, increase sales, and provide a noticeably higher level of service to both buyers and sellers. The property market has grown considerably in the last decade. Property consultants Knight Frank's (Africa Property Report, 2011), reported robust activity in all market segments, with many projects already completed. Others such as Renaissance Capital's proposed Tatu City and Centum Investments' "diplomatic hub" are in the pipeline. To capitalize on the boon, various companies quickly created real estate departments while some Nairobi Stock Exchange (NSE) listed agricultural companies began to diversify into property development, saying their land would be worth 10 times the current share price if it were converted to real estate.

The increase in use of ICT also increased support needed for maintenance, data entry and record keeping. Many agents look to the local real estate franchise or broker/owner who holds their real estate license for such support. This has the potential to change the dynamic between the agency and the individual agent, moving the local real estate agency into a larger role of providing critical (and expensive) ICT infrastructure for agents. And, increasingly, these local real estate agencies are franchises of national-level organizations such as Prudential, Better Homes and Gardens and RE/Max. Benjamin and Wigand (1995), Sarkar, Butler & Steinfield (1995), Bakos (1998), Wigand (1997) & Gellman (1996) have all hypothesized that the advent of networked ICT such as the Internet might enable electronic markets, perhaps resulting in decreased coordination costs and changes in the value chain. One potential advantage of electronic markets is possibility of designing value chains that require less physical intermediation between producers and consumers (Choudhury et al., 1998).

### **2.3 Application of ICT in organization Resource and Real Estate Sector.**

Application of ICT can be applied in different areas in organization that enable the organization to manage its resources. Certainly, real estate is an information-intensive business. The industry highlights the role of information and underlying computing and communications technologies (Baen & Guttery, 1997; Tucillo, 1997). Agents connect buyers to sellers and do so through control and dissemination of information provided through the Multiple Listing Service (MLS). The increased use of ICT in residential real estate encompasses both information and

communication technologies. The primary increase in information technology seems to be the use of the web to display house listings. A second increase is the use of advanced search features and interfaces to access the online MLS. The research to date suggests that the ways in which real estate agents access the MLS and use the advanced searching, querying and reporting features that the current forms of MLS access software allows is worth additional attention.

Firstly, ICT can be considered as a tool where people can use ICT to support them in their work such as for calculations, word processing producing spreadsheets, diagrams ,tables and even for computer aided design and manufacturing (CAD/CAM systems)thus as a tool ,ICT can enhance task performance. Secondly, it be employed to do things faster and more fundamentally, to automate (i.e. substitute technology for labour) many routine, clerical and information intensive organizational tasks and process for example, they can be programmed to automate organizational tasks such as accounting, payroll and involve production of personalized letter and control of machines. Thirdly, ICT for embedding where “embedding” refers to the programming of organizational procedures, rules and control into the material ICT (i.e. the existing hardware and software) and this design the existing technologies with embedded business process to achieve more effective control of the organization activities (Jessup, 2003).

Fourthly ICT for information business data as it have a distinctive potential property of information. This can be defined as the process that translates descriptions and measurement of activities, events and objects into usable information, while performing information processing tasks. ICT routinely capture and store data and information. This diverse data can be further manipulated and analyzed in an integrated way to give organization better understanding and hence control over their material and human resource as well as enhancing the effectiveness of management and the in interactions with customers and suppliers and finally used for communicating where accurately and timely communication is of fundamental importance in all forms of MIS and the general principles of communication because of the speed and all-pervasive nature of ICT , modern communication is almost entirely electronically based whether within the same organization or more widely to support customers , government interventions or to the general public( Jessup, 2003).

The internet has opened up numerous possibilities for doing business at a local and global level. It enables a business organization to interact with other business organizations (Business to Business or B2B) and with customers (Business to Customer or B2C) more directly. Information on order, involves, approval of credit, shipping notices and confirmation sent between businesses parties can be exchanged directly through the internet because of continue development and its diffusion into society at large. The internet is no longer just viewed as another technology amongst many. It has become an invaluable and integral part of business and personal life in the modern world. (Lawrence, 2001)

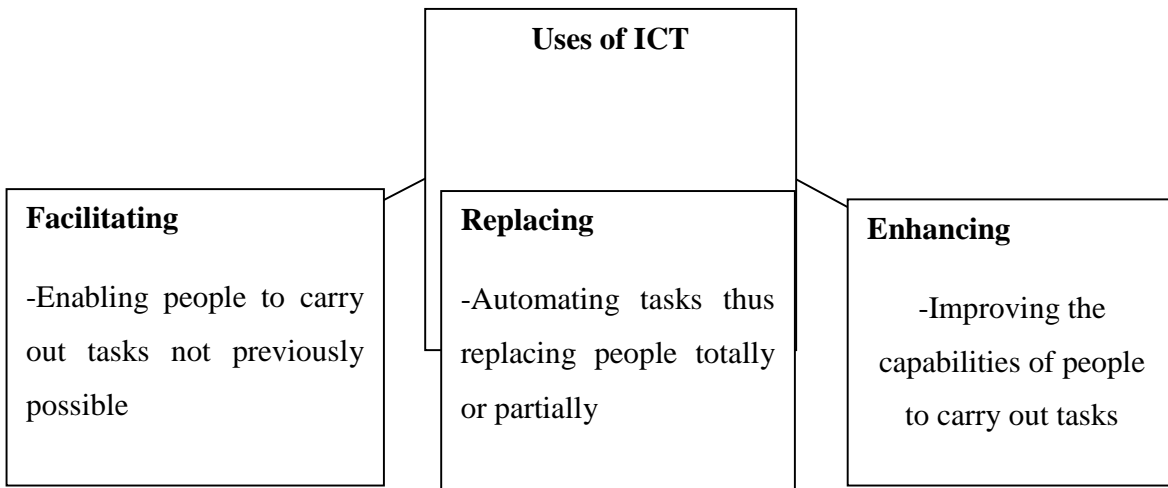
Bailey et al, (2005) explains that bar-coding enables a situation where every stock line can be uniquely identified. Bar-codes the familiar parcels contain numbers printed as series of narrow and wide limbs and space are used to identify merchandise. Sensors can read those codes quickly and accurate at the checkout or till and numbers matched with a computer file, enabling the description, current price (not encoded but locked up by computer) and other details of the product specification to be accessed compared with checking by hand, scanning is three or four times faster. It can update information on as changes occur in terms of date and time, amount bought, price paid and so on. This system greatly facilitates data collection compared with traditional methods. Real time information is available or patterns of share traffic sales and profitability on every line carried. This information can be passed on to the suppliers of the merchandise concerned, Electronic Point of Sales (EPOS) and example of Electronic Data Interchange (EDI). That is the transfer of structural data by agreed message standards from computer to computer by electronic means (Bailey et al, 2005).

#### **2.4 Benefits of ICT to organizations**

Information and communication technologies are versatile and powerful technologies. They assist individual groups and organization in many different ways. In order to make effective use of them, business organization need to understand their capabilities for example, ICT can assist an organization with its data storage and processing, with the flows of information in and around the organization in the control of the organization and in establishing internal links between different parts of the organization and external links with business partners, customers and suppliers. Broadly ICT can supplement, replace or extend the human function (Jessup, 1999).

Jessup (2003) consider that ICT can be viewed as facilitating, replacing and enhancing technology as outlined below;

Figure 2.1 Benefits of ICT to organization



As facilitating technologies the untuned and the World Wide Web (www) facilitates people in accessing remote information from worldwide sources and hence remove the constraints of time and distance. ICT also facilitates humans in the analysis of complex information. ICT as replacement technologies: includes robots in car assembly line tasks and computer automation (where computers replace people in certain business process) ICT can be programmed to automate certain routine mechanical and business operations and thus replace humans, totally or partially (Jessup, 2003). ICT based system enhance the effectiveness of manager through enabling effective information management business co-ordination control decision making and strategic planning. ICT also enhances organizational communication through E-mail video conferencing and chat room facilities on the internet. In addition, they enhance the ability of humans to aces and analyze data more effectively (Jessup 2003).

Information Technology (IT) is the automation of processes, controls, and information production using computers, telecommunications, software and ancillary equipment such as automated teller machine and debit cards (Khalifa 2000). It is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels. Communication Technology deals with the Physical devices and software that link various

computer hardware components and transfer data from one physical location to another (Laudon & Laudon, 2001). Companies using advanced ICT are more capable of responding to a dynamic environment, and can reduce operation costs more easily. ICT technologies also constitute an essential aspect of the relationship with external partners in that they change the nature of the relations between companies by allowing for real-time exchange of information and documentation in electronic form.

According to Irechukwu (2000) a number of organization used technology to gain a competitive advantage and design creative application that allow them to compete more effectively for example of the introduction of information technology whereby it uses the barcode scanner will help pick up a product code directly from a barcode on the shelf level eliminating the use of the keying operation, the system knows what products are stored and what is not shelf location so that items for the same section of the stored items can be packed in the same container. Some firms use technology to generate revenue, for example by making information products available through computer systems as there is an abundance of financial database and services to which one can subscribe . It is possible to obtain hundreds of types of data about companies and their financial considerations. Reducing costs is another way organization is saving costs. Companies and banks generate products that rely on information such as bills, notices, renewals and so on represent output of product that must be printed and distributed to customers.

Finally ICT has been used to create new opportunities. They may be no other way to do some tasks than to use technology, how else could an airline associate a passengers name with all the legs of a trip and have information accessible any place in the world in a few seconds. The size of the database, or the necessity to communicate across a wide geographical area, computer is the only way to solve a problem (Chaffey, 2004).

## **2.5 Challenges of ICTs in Organization Resource Management**

According to Solanke (2010)'s Mathematical Model for Professional Survival has become an issue of great concern. The model predicts the period within which professions of architecture, estate management, and building construction would lose their relevance in Nigeria. It predicts if the present situation does not change, architecture has 37 years; Estate Management, 21 years;



while Building Construction has less than 15 years before losing relevance in the scheme of things based on the rapidly developing modern ways of carrying out the professional practices.

Digital divides is another challenge, which in the opinion of Obayan (2010), is lack of critical drive and strategies to harness the full potential of ICT for the socio-economic development of the country; and that high subscription and infrastructure costs in addition to poor quality of service and epileptic network connections by service providers; have become major hindrances to the use of ICT in education, research and development as well as its application to real estate surveying and valuation practice in Nigeria.

Moreover, several studies have investigated business innovation processes and suggest that a low level of customer and value network integration into the innovation process represents a challenge to business innovation, especially service-oriented radical innovations. Holmström (1989) argues that large size of the organization per se is a great challenge to business innovations as it often leads to bureaucratic internal organization of the firm and myopic management behavior due to concerns for reputation in the capital market. Therefore, small companies innovate disproportionately compare to large companies, and contrary incumbents often fail to innovate due to their bureaucratic organizations that compromise innovation incentives. Moreover, Chesbrough and Crowther (2006) have identified not invented-here (NIH) syndrome and lack of internal commitment as main hampering factors of business innovations. Koudal et al. (2010) found that innovative companies do not invest adequate resources on business innovation even though investing in innovation has proven to be profitable.

It is also perceived that ICT in the real estate industry is often classified as a cost intensive investment with very indefinite returns due to the risks associated with research and development and great variations in both demand and profits (Manley, 2008). In addition, ICT in real estate is constrained by complex value chains and project based operations.

Real estate organizations need to change current work practices; become more client orientated; become more competitive; and become more productive (Love 1996). These challenges are attributable to factors that affect the working environment, including globalization of the economy; greater performance expectations from the clients; increased competition between

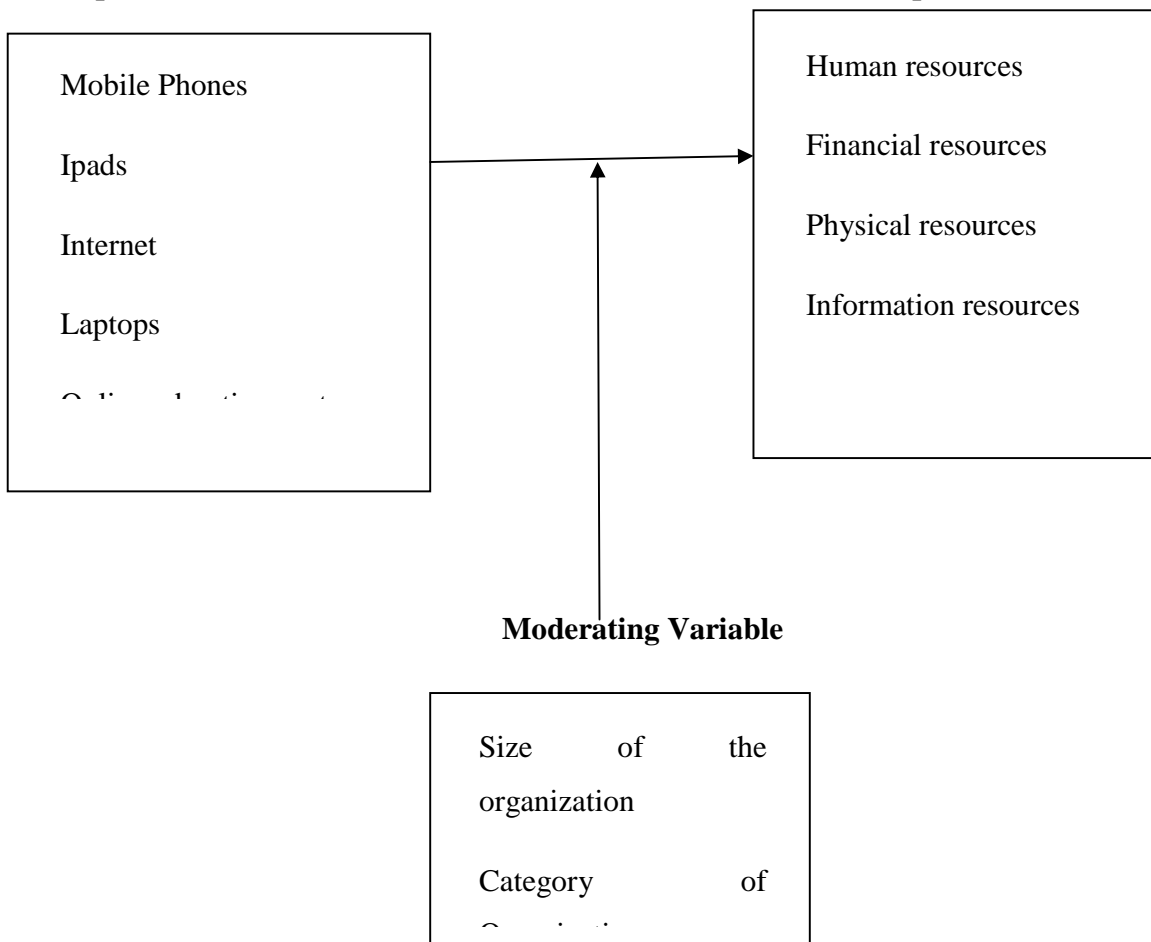
local contractors; continued restructuring of work practices and industrial relations. The industry has to realize that investing in ICT is no longer primarily buying a piece of hardware or software. It is now more of a potential long term investment in the process of change itself (Cleveland 1999; Buch & Wetzel 2001). Unfortunately, the nature of the industry's constructed products, its organizations and processes, limit technological change within the real estate industry (Gann 1997).

## 2.6 Conceptual Framework

With the discussion capture in the literature review, the proposal will look at how ICT and organization resources management contributes to the growth of real estate in Kenya.

### Independent Variable

### Dependent Variable



It can be argued that the conceptual framework offers a number of advantages over those based either purely on a deterministic view of technology or on a purely supply and demand led model. In particular, the framework is able to link the economy, firm and ICT more closely to the real estate level and sets technology in context. Institutional barriers and market barriers can still be

examined but must be seen in the context of broader social and economic factors governing the transformation of technology.

## **2.7 Summary**

On the basis of what has been reviewed above, there is adequate knowledge about the effects of ICT in organization; managers must recognize that ICT output is as good as the quality of data and direction of analyzing the data that human beings have put into it. It is necessary to examine the gains made by real estate firms through uses of ICT for managers to put much weight in it, both large and small firms can use the information systems and networks to conduct business electronically to make them more convenient , efficient and competitive in today's dynamic global business environment information system . The internet and other global networks are creating new opportunities for organizations, co-ordination and innovation. Information system can help organization extend their far way location, offers new products and services reshape job work, flows and perhaps profoundly change the way they conduct and control their business operation.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The chapter gives the method and procedures adopted for research methodology. It comprises of several subsections, which include research design, target population, sampling, data collection and data analysis.

### **3.2 Research Design**

The research will use a descriptive survey research design, which according to (Singh, 2010), research design is a set of advanced decisions that make up the master plan specifying the methods and procedures for collecting and analyzing the needed information in order to establish how ICT and organization resource management are used in Kenya real estate sector. The design has a number of benefits as large amounts of data can be collected with relative ease from a variety of people and also the design can be used to investigate problems in realistic setting.

### **3.3 Target Population**

Population is defined as all the members of a real or hypothetical set of people, events or objects to which a researcher wishes to generalize the results of the research study (Bord & Gall, 1989). This will consist of five real estate firms in Nairobi, this will include, Crown Homes Management Limited, Sweetland Consultants Limited, Metrocosmo Limited, Redfearn International Limited and Cb Richard Ellis Limited.

### **3.4 Sampling**

The study will have a sample size of 60 employees across the selected real estate's firms in Nairobi. The sample will comprised of 5 managers, 30 field employees, 20 employees in administration and head office and 5 accountants. Table 3.1 show the categories of the respondents. Stratified sampling technique will be used

Table 3.1 Category of respondents

<b>Companies</b>	<b>Managers</b>	<b>Field officers</b>	<b>Admin. And front office</b>	<b>Accountants</b>
Crown Homes Management Limited	1	6	4	1
Sweetland Consultants Limited	1	6	4	1
Metrocosmo Limited	1	6	4	1
Redfearn International Limited	1	6	4	1
Cb Richard Ellis Limited	1	6	4	1
<b>Total</b>	<b>5</b>	<b>30</b>	<b>20</b>	<b>5</b>

According to Lucey (1996), a sample where  $n > 30$  or  $n < 5\%$  of the population leads to a very small standard error and hence greater precision. This will be achieved because the response rate is expected to be more than 60%.

### 3.5 Data Collection

A semi-structured questionnaire consisting of both closed and open-ended questions will be used. The questionnaire will be personally administered to organizational managers or relevant acting officers to collect primary data from the selected real estate firms. They will be distributed through drop and pick method and a few others through email. The questionnaire will be divided into four sections. Section A will deal with Demographic profile, Section B will cover extent to which ICT are used, Section C benefits of ICT in resource management while Section D will cover Challenges of ICTs in resource management and relationship between usage of ICT and Organizational resource management in real estate firms. Each geared to capture raw data that will be used at the analysis stage.

### 3.6 Data Analysis

Data analysis is the process of bringing order, structure and meaning to the mass of information collected. In this study, the data obtained from the questionnaires will be analyzed using descriptive statistics. According to Breakwell (2006), descriptive research design is commonly represented by use of frequency charts, graphs and pie charts to tabulate mean frequencies,

standard deviation and percentage indices to summarize the respondent answers. By help of regression and correlation, the data generated in Section B to Section D of the questionnaire will also be used to deduce the level of relationship in which usage of ICT and organization resources have in real estate sector. These methods of analysis are most desirable as it enable researcher to have an insight of information and communication technology and organization resource management in Kenya's real estate sector.

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

### **4.1 Introduction**

This chapter presents analysis and interpretation of data obtained by means of questionnaires where a total of 60 responses were received. The purpose of the study was to evaluate the usage of ICT and organization resource management in Kenya real estate sector. The economic benefit of telecommunications is enormous, both as a growing industry in its own right and in terms of its influence on economic development. ICT is making the world a smaller place and creating new information highways of high speed electronic data exchange. The economic implication of ICT are far-reaching; mobile telephones, satellite television and automatic teller machines are just a few examples of the way in which ICT is changing how people communicate, become informed or do business Eytayo, (1980) .

### **4.2 Respondents Characteristics**

The first part of the questionnaire is aimed at assessing the demographic information of the respondents and their associated activities in relation to the use of ICT in their organization followed by usage of ICT, benefits and challenges of ICT and organization resource management in real estate sectors.

#### **4.2.1 Age of Respondents**

In the table below it shows that majority of respondents were age around 26-40 years as this include the active employees in the organization depending on the frequency of use of ICT, Employees younger or equal to 25 years were also higher compared with 41 years and above.

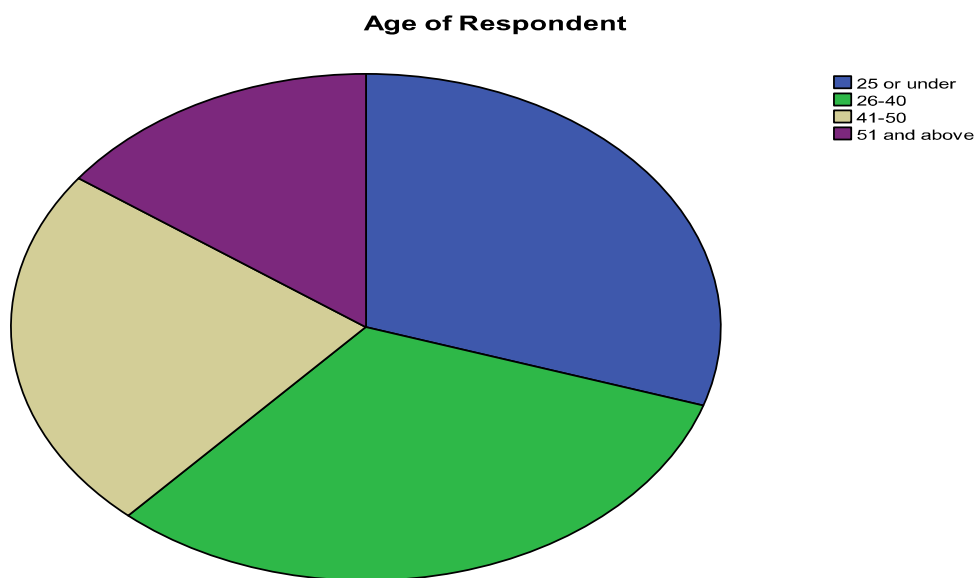
Table 4.1 Age of Respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 25 or under	18	30.0	30.0	30.0
26-40	19	31.7	31.7	61.7
41-50	14	23.3	23.3	85.0
51 and above	9	15.0	15.0	100.0
Total	60	100.0	100.0	

Source: Research data

This can also be shown through the use of pie chart as shown below/

Figure 4.1: Age of respondents



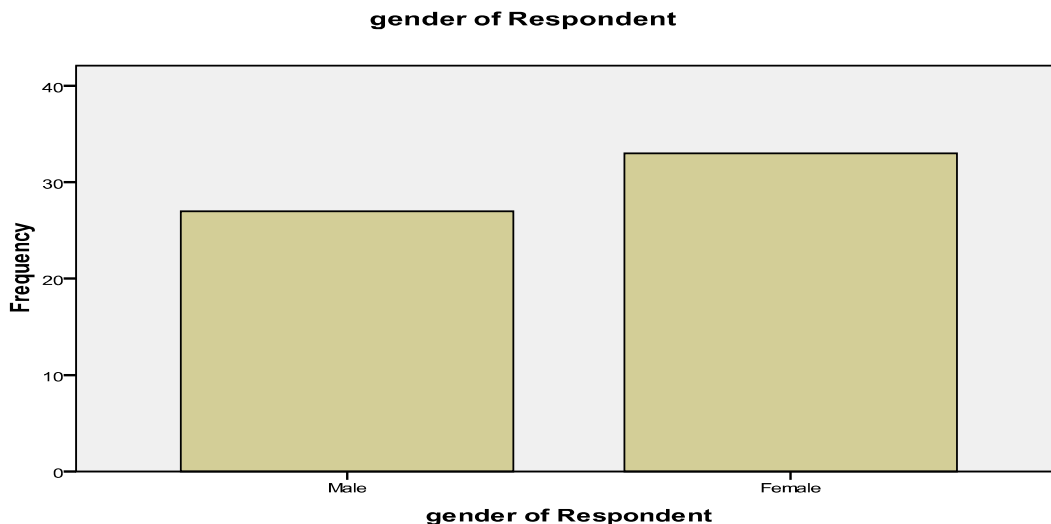
Source: Research data



### 4.2.2 Gender of respondents

Given the information of the age of the respondents, most of them were female at 55% compared to males at 45% with most of them preferring to use ICT in most of the organization resources as female respondents were mainly in the middle and junior level management of the organization as a result of their flexibility to handles different organization activities at ease such as financial resources, human resources, information resources and physical resources. Furthermore there were not more intense activities that would favor males or females in respect to the kind of work they were doing.

Figure 4.2 Gender of respondents



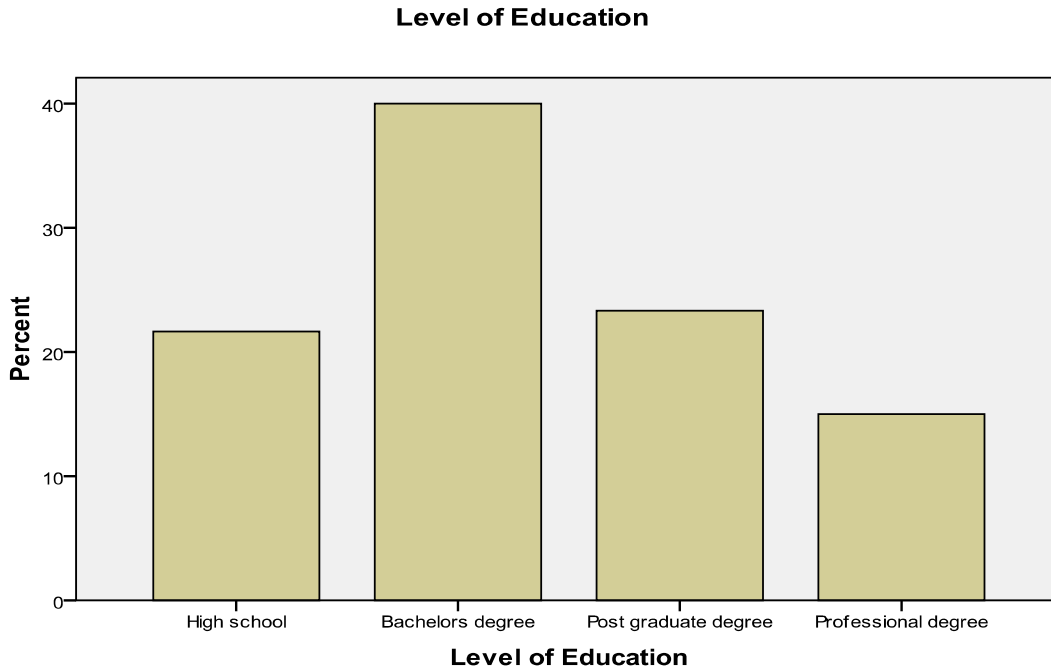
Source

: Research data.

### 4.2.3 Level of education

The question regarding employees level of education showed to a greater extent that most of employees were graduates and thus proved that education development was necessary to the field of real estate as the job market requirement favored respondents with higher education level while most field officers were high school level with a percentage of 21% compared to 40% for respondents with bachelors degree.

Figure 4.3 Level of education



Source: Research data

#### 4.2.4 Respondents role in organization

A look at the response on where the different firms have placed themselves in terms of role played by each employee, it shows that most respondents did not clearly know their role in the organization most notable between junior and middle management level as the table below shows a higher middle management employees than junior level which was not the case in the place of work. This can further be looked at the upper management who were basically the accountants and managers in the organizations that constitute a higher number than the junior level management.

Table 4.2 Level of employees

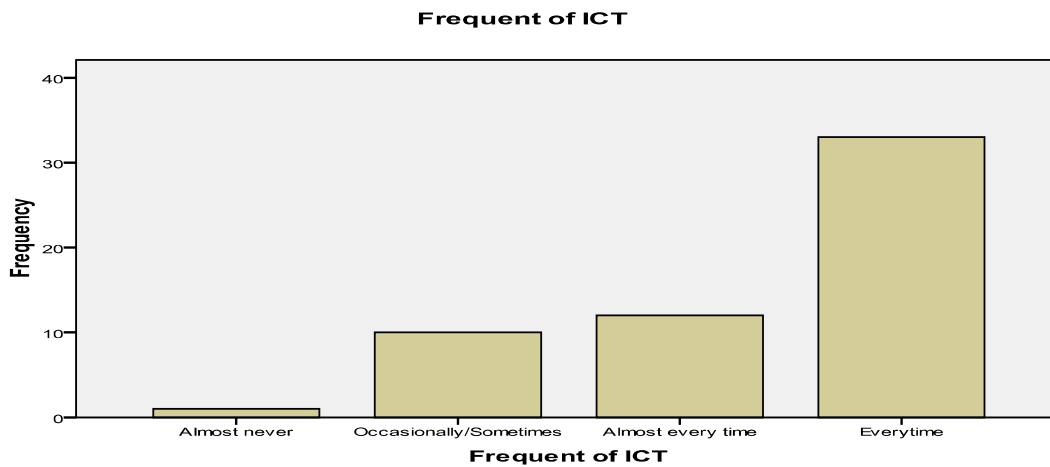
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upper management	18	30.0	30.0	30.0
	Middle management	27	45.0	45.0	75.0
	Junior Management	15	25.0	25.0	100.0
	Total	60	100.0	100.0	

Source: Research Data

#### 4.2.5 Frequency of ICT Use

This shows that 55% of the respondent from different organizations did use ICT in their daily routine work in their organization. This is important in real estate sector as the organization depends largely on the information brought forward by clients in their supply chain networks and negotiations with prospective clients. This will enhance communication and financial gains for organizations willing to expand their growth to unprecedented heights do to the positive interactions with ICT in ensuring the organization meets its objectives and maximizes resources available to them.

Figure 4.4 Frequent of ICT



Source: Research data

According to the data collected from the respondent, majority of employees from the selected real estate firms were using mobile phones, IPADs, Internet and Laptops in their occupations to interact and make work manageable hence showing the usage in ICT in enhancing growth and development in organization that uses them to maximize profits and increased their revenues.

Another area that showed how ICT is used in the organization resource management was given to respondents to respond to areas where ICT is applied such as online marketing, supply chain management, learning and data processing and their views are shown in the table below.

The Figure shows that majority of employees in different organizations were actively using ICT in different areas of organization by all areas showing a mean score of above 4 while none of the respondent failed to answer in the questions regarding its use in different areas. ICT and organization resource management seems inevitable to any organization that wants to grow and compete competitively with their competitors' in real estate sectors in Kenya.

#### 4.2.6 ICT Application Areas

The table shows the mean generated from the data to show the use of ICT and organization resource management by looking at organization resources that are used. Respondents were asked to either agree or disagree by means of Yes or No if they use the resources in their organization efficiently in executing their daily duties. The table shows a mean score of 1 of respondents' answers showing that all of them agree that the use of organization resource management were part of their daily duties.

Table 4.3 ICT areas

		Online marketing	Supply chain management	Learning process	Data processing
N	Valid	60	60	60	60
	Missing	0	0	0	0
Mean		4.0833	4.2333	4.2500	4.3667
Mode		4.00 <sup>a</sup>	4.00 <sup>a</sup>	5.00	5.00
Std. Deviation		1.01333	.87074	.85618	.93820

Source: Resource data

#### 4.3.1 Frequency of ICT and Level of Education

To establish the relationship based on frequency of ICT use and level of education for the study, respondents were put to task to indicate their frequency in terms of use of ICT hence pegged to their level of education. The figure below shows that high school level scored low on frequency of ICT used with a total of 11 while Bachelors graduate had a score of 23 indicating that level of education was important when analyzing the use of ICT in organization resource management in most organization

Table 4.4 Frequent of ICT \* Level of Education Crosstabulation

		Level of Education				Total
		High school	Bachelors degree	Post graduate degree	Professional degree	
Frequent of ICT	Almost never	0	1	0	0	1
	Occasionally/Sometimes	6	2	1	1	10
	Almost every time	1	6	4	1	12
	Everytime	4	14	8	7	33
Total		11	23	13	9	56

#### 4.3 Organization Resource Management

When respondents were asked to state if they use organization resources in their workplace, the question was well answered with most the respondents agreeing that they interact with the resources in part of their duties at work.

Table 4.5 Resource management areas

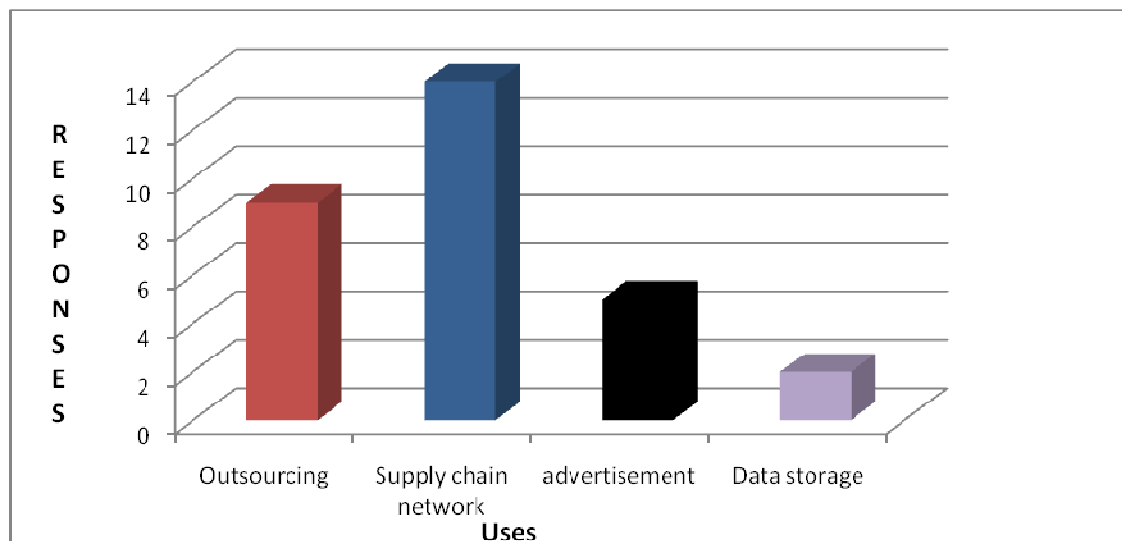
	N	Mean	Std. Deviation
Human resources	60	1.2667	.89947
Financial resources	60	1.1000	.30253
Physical resources	60	1.1167	.32373
Information resources	60	1.2667	1.31312
Valid N (listwise)	60		

Source: Research data

#### 4.4 Usage of ICT

Questions from this area involved assessing the usage of ICT and organization resource management in real estate sectors where data collected showed immense usage of different applications of ICT by organizations that store data, information, use software applications for monitoring, advertising and reporting to investors as well as supply chain networks by ensuring that organizations resources are well utilized.

Figure 4.5 Uses of ICT

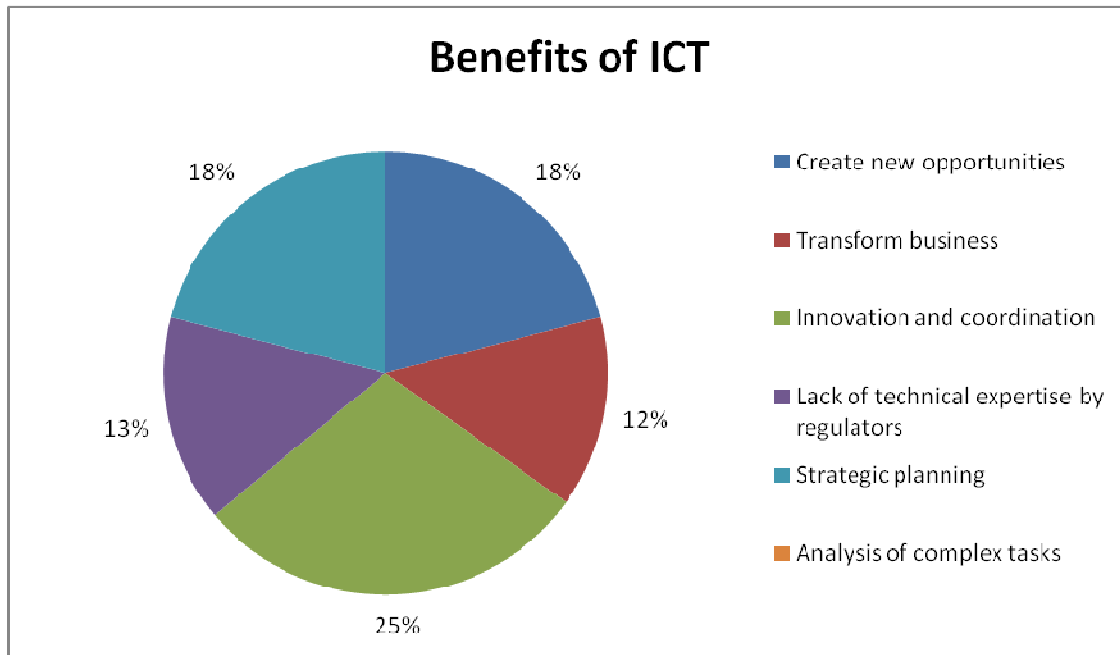


Source: Research data

#### 4.5 Benefits of ICT

An evaluation of how beneficial ICT and resource management would be, reviewed the importance attached to each benefit as shown in the figure below.

Figure 4.6 Benefits of ICT



Source: Research data

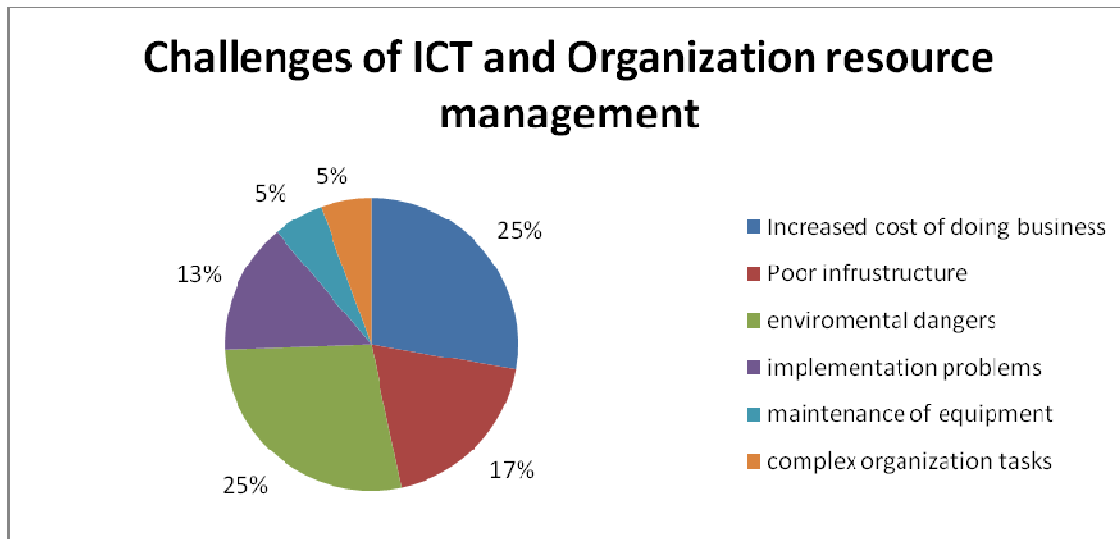
The enhancement of strategic planning, analysis of complex tasks, create new opportunities and promote innovation and transform how business in real estate is being done were the most beneficial. The results tally within the objectives of the study.

#### 4.5 Challenges of ICT and Organization Resource Management

To identify the challenges associated with the implementation of ICT and organization resource management practices the respondents were asked to rate the six identified factors which hinder implementation. The results reviewed that lack of government support, lack of understanding of the concept and its benefits and investment costs have played a crucial role in the slow adoption of ICT as demonstrated by the table below were views collected by ranking responses at a scale of five starting with Very large extent to no extent.

Figure 4.7 Challenges of ICT and Organization Resource Management





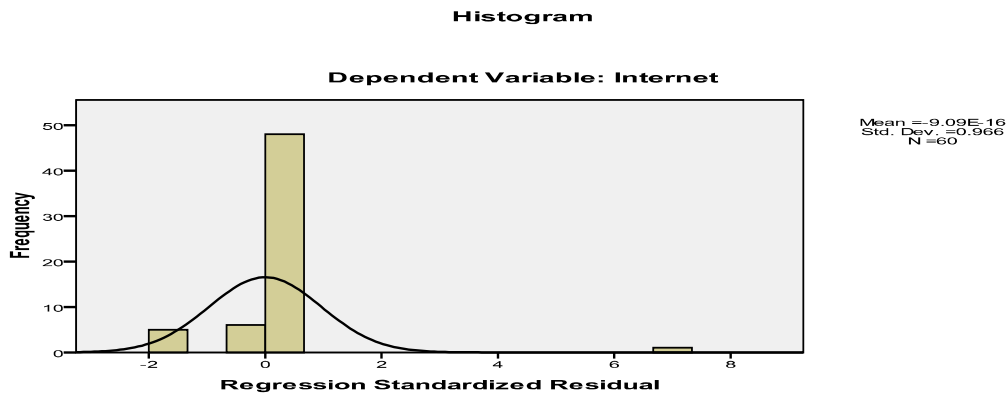
Source: Research data

The challenges questions was well handled and answered by respondents very well as most of them site that they were indeed faced with multiple implementation of various ICT and organization resources issues.

#### 4.3 Relationship between usage of ICT and Organization resource management

A relationship between usage of ICT and organization resource management was formulated by use of linear regression to specify the nature of the relation between two variables. A histogram showing the relationship between the use of internet with organization resource management showed a standard deviation of 0.966 and a mean score of  $-9.09E-16$  with a population of 60 respondents as shown below.

Figure 4.8 Relationship between ICT and Organization Resource Management



Source

**: Research data**

Thereafter a bivariate correlation can be used to determine if two variables are linearly related to each other. The tables below show the correlation between frequency of ICT use and level of education.

Table 4.6 Descriptive Statistics

	Mean	Std. Deviation	N
Frequent of ICT	3.3750	.84342	56
Level of Education	2.3167	.98276	60

Table 4.7 Correlations

		Frequent of ICT	Level of Education
Frequent of ICT	Pearson Correlation	1	.297*
	Sig. (2-tailed)		.026
	N	56	56
Level of Education	Pearson Correlation	.297*	1
	Sig. (2-tailed)	.026	

N	56	60
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\*. Correlation is significant at the 0.05 level (2-tailed).

The Descriptive Statistics section gives the mean, standard deviation, and number of observations (N) for each of the variables that you specified. For example, the mean of the level of education is 2.3167, the standard deviation of the frequent of ICT variable is 0.84342, and there were 56 observations (N) for frequent of ICT and 60 for level of education.

On linear regression the dependent variable was level of education while independent variable frequent of ICT. A summary of the relationship was table as shown below.

Table 4.8 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.297 <sup>a</sup>	.088	.071	.94476

a. Predictors: (Constant), Frequent of ICT

Given the formula of  $y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_kx_k + \varepsilon$  the R value of 0.297<sup>3</sup> showed a measure of the quality of the prediction of the dependent variable being a good level of prediction. R square value of 0.088 shows a variability of our dependent variable of 8.8%.

The statistical significance can be illustrated by analysis of variance where F-ratio tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable,  $F(1,54) = 5.219, p < .0005$  the regression model is a good fit of the data.

Table 4.9 ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
-------	----------------	----	-------------	---	------

1	Regression	4.658	1	4.658	5.219	.026 <sup>a</sup>
	Residual	48.199	54	.893		
	Total	52.857	55			

a. Predictors: (Constant), Frequent of ICT

b. Dependent Variable: Level of Education

Therefore all the variables added statistically significantly to the prediction,  $p < .05$ . making the relationship more descriptive as information and communication technology and organization resource management in Kenya's real estate is an interesting finding.

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

The empirical investigation which was obtained through structured questionnaires so as to bring out the use of ICT and organization resource management to real estate sector, usage, benefits and challenges form the basis of this summary discussion.

### **5.1 Summary**

The firms which participated were both large and small, who belonged to different category as international and local companies in real estate sector. The most notable thing is that the ICTs are associated with organization resources vary from sector to sector and size of the organization. It is also quite evident that Nairobi, from where the sample was drawn, faced serious implementation problems from the local companies and some international firms in implementing ICT and organization resource management in the organization. Most of the companies have been using ICT in communicating through emails but very few have been using softwares such as real estate management softwares, enterprise resource planning, point of sale softwares and bar coding to quickly and accurate checkout matched items that are being sold. Most of the organizations are merely using technology in office duties such as printing and general office supplies and very few on advertisements.

That is still largely true of computers and to some extent the Internet, but much less true overall as mobiles have become the dominant form of ICTs in development. In particular key studies such as those by Waverman et al (2005), Lee et al (2009), and Qiang (2009) have demonstrated a clear connection between mobiles and economic growth and or between telecoms more generally and economic growth. They all address the “endogeneity” problem: that a correlation between telecoms (indeed, all ICTs) and economic growth is readily demonstrable; but that you then have to tease out the direction of causality: economic growth of course causes increased levels of ICTs in an organization most being enabling human resources in organization to enhance the use of ICT to make it part of their everyday practice.

From the analysis of this study, a sound conclusion can be drawn with emphasis that ICT policies in its economic and social development role, are just catalyst meant to aid national development. The benefits of ICT and organization resource management to a national economy should be measured as an input to other economic activities. And more importantly should also be considered as complementary to other sectors. ICT development is linked with and complements the development of industry, trade, farming, education, housing, health and financial institutions. It is this complementary role of ICT that makes it appropriate to link ICT planning to a national economic and social planning.

The first objective was further compounded by the fact that organizations interviewed viewed technology as an integral part of their growth as most of the organization keep their client contact information in their database as well as with partners and other outside investors who may need information to enable them invest with them in different real estate investment projects.

The second objective was clearly indicated by their response to different response that were brought forward by respondent that showed most organization were faced by the impending challenges brought about during transition of the organization resources by applying ICT in most part of the organization departments. Most notable challenges according to how the respondents answered the questionnaire was the inadequate expertise to handle complex organization tasks by use of ICT, Maintenance of ICT equipments and implementations problems were seen as to a large extent affecting most of the organizations in real estate sector.

The third objective of the study is backed by findings which reviewed that where there is ICT use in organization, employees and management would carry out most of the tasks that used to be done over long periods of time within a short time as ICT software's have simplified tasks hence benefiting the organization to a large extent. It has also helped the organization in strategic planning and analysis of complex information which has enable them to edge above their competitors with skills from all human resources, financial resources, physical and information resources playing a major role in overall growth of the organization. The economic benefit of telecommunications is enormous, both as a growing industry in its own right and in terms of its influence on economic development. Telecommunications is making the world a smaller place and creating new information highways of high speed electronic data exchange. The economic

implication of ICT are far-reaching; mobile telephones, satellite television and automatic teller machines are just a few examples of the way in which ICT is changing how people communicate, become informed or do business.

The final objective showed a clear relationship between ICT usage and organization resource management as most organization were able to implement ICT in most of organization resources in order to match the growing needs in the real estate sector where all resources in organization had to be conversant with the use of ICT in order to grow and level their efforts with other organizations that are already benefitting from the use of ICT in most of the operations in the organization.

## **5.2 Conclusion**

According to Beamon (1999) the supply chain concept may grow out of recognition that the process of transforming raw materials into final products and delivering those products to customers is becoming increasingly complex. This study has shown that business owners in Kenya though faced with certain ICT and organization resource management challenges do not have serious distribution and development problems.

The management of most of the firms is supportive of ICT change because of its benefits. However, the field does not seem to be ready for a ICT change because of government laxity in implementation of ICT policies that support its growth. Such policies that will improve the cost of doing business, registration of companies by use of ICT with limited manual work associated with implementation. If all organization would implement the use of ICT in all its operations then the country and most importantly the real estate sector would be the best investment option that everyone would be opting to engage in.

This study has helped to review the level and characteristic of the ICT and organization resource management with the conclusion that the usage of ICT is beneficial to the country economic growth as well as industry development as its usage in resource management of most organization is lacking. Attempts to overcome ICT and organization resource management challenges through practicing some aspects of ICT management in organization resources were evident but not indicative of full adoption of the strategy. For example, most of the multinationals were found to be high in ICT awareness even though their operations had very minimal usage in ICT in all departments in the organization. The most departments that have implemented use of ICT in resource management were the accounting, procurement and front

office department. Information and communication technology and organization resource management practices has a place in Kenya if the awareness is created. This calls for the need to address all the factors hindering the implementation of its use in most of organization.

### **5.3 Recommendations**

The study recommends the creation of awareness of the role of ICT and organization resource management practices for the benefit of all the stakeholders and for sustainable development and economic growth. The research strongly supported the view that Kenya is steadily on its path to becoming an icon in the African ICT market. The market is fertile for the absorption of foreign investment that is highly likely to reap favorable returns. The infusion of capital, foreign and otherwise, into the technology sector is undoubtedly a necessary catalyst to the actualisation of Kenya's potential as Africa's next ICT hub.

The government should speed up the process of drawing up the process whose input should include those of the manufacturers, professionals from the fields of operations management, purchasing, marketing and academic institutions to mention but a few.

### **5.4 Limitations of the study**

A major challenge was in regards to data collection cost, and the resistance of respondents to participate. The topic too posed a challenge because a majority of the small firms did not understand it and therefore creating the need for more time and also calling for clarification for different resources that organization use.

### **5.5 Suggestions for Further Research**

The study shows that more can be learnt about ICT and organization resource management by accommodating more views from the players in the real estate sector. This study gives room for a descriptive study as some insight has already been obtained. Thus there is a need for a similar study targeting ICT policies in real estate sector and organization as an integral part of its development and growth

The findings of the study also raise a number of additional research questions which may include similar research on the service sector and the role of the government in the implementation of ICT in Kenya's real estate.



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## APPENDIX I

26<sup>th</sup> September, 2013

KIMAIYO KEBENEI EDWIN  
P.O. BOX 14159-20100,  
NAKURU.

Tel: 0723314045

Dear Sir/Madam,

RE: LETTER OF INTRODUCTION

I am a final year student pursuing a post Graduate degree leading to conferment of Master in Business Administration (Procurement and Supply Chain Management). As a requirement of my field of study, it is paramount that student conduct/ undertake a study project in their field of interest.

I am undertaking a research to establish the extent to which information and communication technology and organization resource management are used in Kenya's Real Estate sector. I will be grateful if you volunteer to assist in this project by consenting to complete a questionnaire which covers certain aspects of the topic.

Be assured that any information provided will be treated in the strict confidence and none of the participant will be individually identified in the resulting report. Thanks for supporting my effort in achieving the course expectations.

Sincerely,

.....  
Kimaiyo Kebenei Edwin

.....  
Dept. of Management Science

## APPENDIX II

### UNIVERSITY OF NAIROBI SCHOOL OF BUSINESS



#### QUESTIONNAIRE:

The questionnaire below is intended to determine the extent of Information and communication technology and organization resource management in Kenya's Real Estate Sector. Please give answers in the space provided and tick (✓) in the box that matches your response to the questions where applicable. All information will be treated with utmost confidentiality.

#### SECTION A: Demographic Profile

1. What is your age?  
 25 or under  
 26-40  
 41-50  
 51 and above
2. What is your Gender?  
 Male  
 Female
3. What is your highest level of education completed?  
 High school  
 Bachelors degree  
 Post graduate degree  
 Professional degree
4. Which of the following best describes your role in the industry?  
 Upper management  
 Middle management  
 Junior management

5. How frequent is ICT is used in your organization?

- Almost never
- Occasionally/Sometimes
- Almost every time
- Every time

6. How many branches does your organization have?

.....

7. How many employees do you currently have in your organization?

.....

8. Which of the following category does your organization fall into?

- Local company
- International company

9. How is ICT used on the following areas?

	Never	Rarely	Sometimes	Often	Always
Online marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supply chain management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Learning process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Do you manage your resources with the use of ICT?

	YES	NO
Human resources	<input type="checkbox"/>	<input type="checkbox"/>
Financial resources	<input type="checkbox"/>	<input type="checkbox"/>
Physical resources	<input type="checkbox"/>	<input type="checkbox"/>
Information resources	<input type="checkbox"/>	<input type="checkbox"/>

11. What ICTs do you use in your organization?

	YES	NO
Mobile phones	<input type="checkbox"/>	<input type="checkbox"/>
PDA's	<input type="checkbox"/>	<input type="checkbox"/>
IPADs	<input type="checkbox"/>	<input type="checkbox"/>
Internet	<input type="checkbox"/>	<input type="checkbox"/>
Laptops	<input type="checkbox"/>	<input type="checkbox"/>

## Section B: Usage of ICT

12. To what extent does your organization use ICTs for the following applications:? Use 1- No extent at all, 2- Little extent, 3-Moderate extent, 4-Large and 5- Very large extent.

	1	2	3	4	5
Use remote access services to enable staff to access up-to-date information when visiting clients					
Keep client contact information in a database on your network to support shared work inside the organization as well as with partners, investors and other outside bodies					
computer aided design					
Accounting software records income and expenditure and helps take care of VAT, tax and PAYE					
Use spreadsheets to manage project budgets and produce reports for trustees, managers and investors					
Identify trends, problems and possible solutions					
Control of machines					
Data storage and information					
Make it easier for people to communicate with your organization, using email, telephone, your website and text messaging					
Prepare information for monitoring and report to investors					
Collect, manage and report performance information to help run your organization better					
Microsoft Power Point Presentation					
Real estate listing					
Use remote monitoring systems to ensure the safety of tenants or residents					
In real estate advertisement					
Monitoring data can be collected from the client record system rather than collated manually					
For supply chain network					



Graphic analysis on projects					
Any other					

**Section C: Benefits of ICT in Resource Management**

13. To what extent do your organization benefit from the use of ICT? Use 1- No extent at all, 2- Little extent, 3-Moderate extent, 4-Large and 5- Very large extent.

	1	2	3	4	5
Enabling people to carry out task previously not possible					
Reduce labour cost					
Improving capabilities of people to carry out tasks					
Facilitates human in the analysis of complex information					
Helps in strategic planning					
Competitive advantage over competitors					
Reduce operation costs in the organizations					
Increase organizational revenues					
Increased organizational profits					
Create new opportunities					
Facilitate data collection					
It has generate economic growth in the industry					
It is part of economic infrastructure that support global production, trade and investment.					
It has linked real estate's with their suppliers, internal manufacturing process and expansion in real time					
Transformed how business in real estate is being done					
It has promote innovation and coordination in the business					

It has improved customer relationship management					
It has increased support needed for maintenance, data entry and record keeping					
Real estate companies have become more client oriented					
Better decision making					
Brand positioning					
Online advertisement					

**Section D: challenges of ICT in organizational resources**

14. To what extent have your organization experience challenges in resource management due to the use of ICT?

Use 1- No extent at all, 2- Little extent, 3-Moderate extent, 4-Large and 5- Very large extent.

	1	2	3	4	5
Increased cost of doing business					
It has lead to poorly managed data in the organization					
Led to environmental dangers					
Difficulties in purchasing agreement negotiations					
Incompatibilities in information systems					
Inadequate expertise to handle complex organization tasks					
Led to market strategies shifts in the ICT industries					
Managing organization knowledge is challenging					
Problems of subcontracting some jobs to logistical and supply organizations					
Poor infrastructure of ICT in resource management					
Maintenance of ICTs equipment in the organization					
Implementation problems					