

Role of Information and Communication Technology Solutions on the Growth of Small and Medium Enterprises: Case of Nairobi County

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Abstract

The study set out to assess the role of E-commerce tools on the growth of Small and Medium Enterprises (SMEs), analyze how the use of Customer Relationship Management systems (CRM), Enterprise Resource Planning (ERP) systems, and use social media technologies affects the growth of SMEs. Descriptive survey design was used; a sample of 60 SMEs was selected using quota sampling in Nairobi County. Primary data was collected using semi- structured questionnaires. Analysis was done using Statistical Package for Social Science (SPSS). Study findings indicated that e-commerce tools were highly adopted by SMEs with mobile payment systems being the highest adopted, online shopping and online catalogues for products and services. Adoption of e-commerce tools related to growth of SMEs. CRM systems were highly adopted by SMEs and had a moderate positive correlation their growth. Findings indicated that high growth SMEs was mostly associated with usage of social media. The study recommended that SMEs should consider wide flexible solutions of open source software solutions, scalable platforms to allow progressive upgrade to meet increasing use and cloud solutions. Research should be conducted to identify additional challenges that will enable SMEs operations to be efficient, cost-effective to ensure their growth and sustainability.

Keywords: E-commerce, Small and Medium Enterprises (SMEs), Enterprise Resource Planning (ERP) systems, Customer Relationship Management systems (CRM).





Background to the Study

Over the years, technology in business has been changing rapidly as the global environment becomes highly competitive and innovative. The use of Information and Communication Technology (ICT) has become very vital to businesses that intend to remain competitive in the market. In the words of Cravens (2000), the drivers of change in today's world include, deregulation, global excess capacity, global competition, changing customer expectations ICT, demographic shifts and changing work and lifestyles. These changes have led organizations to embark on activities that will provide a source of competitive advantage and embrace the usage of ICT. ICT is often viewed as a necessary ingredient to most businesses in recent times. This view of ICT has led to a rush to implement IT systems by most businesses. The view that there exists a link between improved performances due to implementation of ICT in a business's operations is a presumed truism, opposing views on which opinion offered is divisive. To an extent, it is often a struggle for many scholars and academicians to properly link a firm's ICT infrastructure to the extent to which it defines firm performance (Bharadwaj, 2000). IT refers to "Information Technology" and as such refers to any investment made by the company in the form of computer and communication technologies and shareable technical platforms and databases (Ross, Beath, and Goodhue, 1996). To redefine the term in a more discernible way, we can refer to IT as any technology that helps to produce, store, communicate and disseminate information.

Small and Medium Sized Enterprises (SMEs) play an important role in economic development of a country. Several theories elaborate on connection between information technology, economic development and social change. Almost all agree on the importance of information and communication technology adoption in SME, while the importance of SME as engines to economic growth is well acknowledged worldwide. Information technology, particularly the Internet is having a significant impact on the operations of SME and it is claimed to be essential for the growth of nation's economies in general and SME in particular (Guba, 2010). According to Loretta (2008), Information and Communication Technology is changing the economy and traditional business become more dependent on new technologies. Compared with traditional business, new technologies facilitate an increased interactivity, flexibility, cheap business transactions as well as improve interconnection with business partners and customers. Information technology is having a significant impact in sector of Small and Medium Sized Enterprises (SME), especially where industries are in decline or when unemployment levels are high. In Kenya, SME development is drawing attention too and modern trends of businesses and information technology usage are taking place (Alendo, 2010). This study will be carried out in Nairobi. Nairobi is the capital and largest city of Kenya. The city and its surrounding area form the Nairobi County. Nairobi is the most populous city in East Africa, with a current estimated population of about 3 million. According to the 2009 Census, in the administrative area of Nairobi County, 3,138,295 inhabitants lived within 696 km². Nairobi is currently the 12th largest city in Africa, including the population of its suburbs according to Kenya National Bureau of Statistics (KNBS, 2009). Nairobi is now one of the most prominent cities in Africa politically and financially. Home to thousands of Kenyan businesses and over 100 major international companies and organizations, including the United Nations Environment Programme (UNEP)



and the main coordinating and headquarters for the UN in Africa & Middle East, the United Nations Office in Nairobi (UNON), Nairobi is an established hub for business and culture. Nairobi County is divided into eight administrative divisions namely Central, Dagoretti, Embakasi, Kasarani, Kibera, Makadara, Pumwani and Westlands (KNBS, 2009).

Problem Statement

A failure to make changes may result in harm to the organization through stagnation, negative growth, loss of customers and failure to introduce new products leading to a potential closure of business (Churchill and Lewis, 1983). This notion on the need for a business to institute change has led to reliance on ICT as one of the tools for aiding business growth. An increased spending on ICT has lead to questions as to whether there is any value for money in ICT for a business as everyone seems to be pushed towards ICT use. Most businesses place such a high premium on use of ICT that they forego basic principles of operating a business in order to concentrate on ICT use (Carr, 2003). With the increased attention and focus being put on Small and Medium Enterprises (SMEs) Investment's survival and growth in Kenya as the important sector that can accelerate sustainable economic growth and help the country reach the Vision 2030 objective of being a middle level income country by year 2030, it is important that the growth of Small and Micro Enterprises be sustained. Much effort and resources has been put on the area of formal credit and financing without addressing other underlying factors that necessitate the Small and Medium Enterprises (SMEs) survival and growth. Although a number of studies have been made in the examination of the role of ICT in small businesses, key among these studies, those by (Cragg and King, 1993, Harrison, Mykytyn and Riemenschneider, 1997 and Igbaria, Zinatelli and Cavaye, 1997), which found out that an increase in spending on ICT has lead to questions as to whether there is any value for money in ICT for a business as everyone seems to be pushed towards ICT use, management is often at the centre of the drive to have ICT systems in place. The studies also found out that small businesses may find technology difficult to implement due to resource constraints. It is with this insight in mind the focus now shifts to the purpose of this study which sought to examine the role that Information and Communication Technology (ICT) plays on growth of Small and Medium Enterprises (SME). This study therefore vindicated the supporters of the bid by SMEs to implement ICT in their operations. This study strived to assess the role of Information and Communication Technology (ICT) Solutions on growth of Small and Medium Enterprises (SMEs) in Kenya.

Literature Review

Further to an analysis of the various studies done on the subject of ICT and firm growth as well as the enumeration of the various determinants of firm performance, it is imperative that the theories that form the basis for the arguments presented herein as well as the subsequent chapters are presented. The main theory is the Resource based theory (Barney, 1986, 1991; Schultze, 1992; Mata *et al.*, 1995; Metville *et al.*, 2004) and a lesser used theory is the Transaction cost theory (Gurbaxhani and Whang, 1991; Melville *et al.*, 2005).

Resource Based Value Theory



The Resource based value (RBV) theory of the firm is the framework which links the success of a firm to resources and skills which are firm specific, rare, and difficult to imitate (Barney 1986, 1991).

The RBV focuses on difficult to copy attributes of the firm that are fundamental drivers of performance (Schultze, 1992). Researchers argue that since investments in ICT are easily duplicated by competitors, investments per se do not provide any sustained advantages, rather it is how firms leverage their investments to create unique IT resources and skills that determine a firm's overall effectiveness (Mata et al., 1995).

Wernefelt (1984) offers a contributing angle in his seminal approach to the subject of Resource Based theory by alluding to the notion of resource position barriers, according to him, that act as barriers to imitation and link resource attributes to profitability. Subsequent studies on the subject matter on the Resource Based Theory examine how resource attributes lead to competitive advantage of a given firm (Amit and Schoemaker, 1993; Peteraf 1993).

A key point to note is that the RBV theory also recognizes the importance of intangibles such as customer orientation and organizational knowledge or the technical know-how. The complementariness of these factors to ICT is of importance in the eventual examination of how ICT impacts on firm growth. It is through a firm's ability to combine these factors with ICT use that gives a firm an ICT capability.

Transaction Cost Theory

Further to the observations by (Melville *et al.*, 2004) on the need to have other supporting theory bases upon which to support the RBV, another theoretical framework that can form a basis to fortify the study is the transaction cost theory. The transaction cost theory provides an understanding to the role that ICT plays in reducing transaction costs to an organization (Gurbaxani and Whang, 1991).

Conceptual Framework

Mugenda and Mugenda (2003), define a conceptual framework as a hypothesized model identifying the concepts under study and their relationships. In this framework, there are certain factors that determine the role of Information and Communication Technology on the growth of SMEs. These factors include but are not limited to E-Commerce Tools, Customer Relationship Management System, Enterprise Resource Planning (ERP) systems and Social Media Tools. For this study, all the four are considered as the independent variables. Information and Communication Technology in growth of SMEs is the dependent variable that is affected by the independent variables.

The role of Information and Communication Technology (ICT) Solutions on growth of Small and Medium Enterprises (SMEs) in the Kenya will be reflected as illustrated in the diagram below:



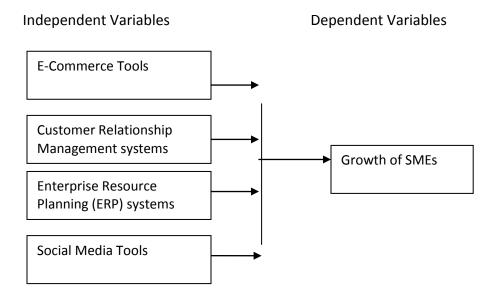


Figure 1 Conceptual Framework

Electronic-Commerce Tools

The advent of Internet-based electronic commerce offers considerable opportunities for firms to expand their customer base and enter new product markets and rationalize their business. Important efficiency gains are associated with the use of electronic commerce, arising from reductions in business costs and a rationalization of business processes. In addition to these static gains, firms may use Internet-based electronic commerce to create added value by producing new products, adopting completely new business practices, or changing the ways in which they interact in the marketplace. Realizing these dynamic gains depends to a large extent on the way in which small firms integrate e–commerce applications into their business functions. The development of effective e–commerce strategies is of fundamental importance for success in domestic and international markets.

Customer Relationship Management System

According to Gaffney (2007), consumers are increasingly interested in communicating with companies via new and multiple channels: not just voice, but also email, web chat, SMS and so on. A company's ability to respond to customer requests wherever they are, and via whatever device they are using at the time, will have an increasingly significant impact on how effectively an organization connects with their customers. Companies that rely on being able to contact customers at home need to address this reality of increasingly mobile consumers. B2B organizations expecting to find customers behind their desks must also develop new interaction models to guarantee being able to contact current and potential customers.

Properly developed, a communications infrastructure can help give the enterprise a competitive advantage; the ability to satisfy current and potential customers quickly and



effectively is rapidly becoming a key differentiator for enterprises that wish to succeed over the long term (Gaffney, 2007).

Enterprise Resource Planning (ERP) systems

ICT can thus play a very important role because it can help SMEs both create business opportunities and combat pressures from competition. Several classifications of factors affecting firm growth have been presented. The general preconditions for growth have been suggested to be (1) entrepreneur's growth orientation; (2) adequate firm resources for growth; and (3) the existence of the market opportunity for growth (Davidsson, 1991).

According to the business professionals' model, a successful firm is one that achieves its highest potential in terms of growth, market share, productivity, profitability, return on capital invested or other measures of the performance of the firm itself (Bridge et al., 1998). An ERP system provides this end to end solution that guarantees efficiency and effectiveness of business operations.

Social Media Tools

It's now become a badge of cool for Kenyan companies to include their social media contacts in their publicity materials. Anyway, a social media presence is an acknowledgement of the importance of these spaces for long-term brand awareness, building and customer engagement. The increasing usage of online sites such as Twitter and Facebook by businesses as applications for the delivery of user services is a case in point. The smartest SMEs and the executives who work for them recognize the value of tapping into "the wisdom of the crowd" to capture the best answers and the most innovative ideas.

Growth of the firm

Growth is something for which most companies strive for, regardless of their size. Small firms want to get big, big firms want to get bigger. Organizational growth has the potential to provide small businesses with a myriad of benefits, including things like greater efficiencies from economies of scale, increased power, a greater ability to withstand market fluctuations, an increased survival rate, greater profits, and increased prestige for organizational members. Many SMEs desire growth because it is seen generally as a sign of success and progress. Organizational growth is, in fact, used as one indicator of effectiveness for small businesses and is a fundamental concern of many practicing managers.

Organizational growth, however, means different things to different organizations. There are many parameters a company may use to measure its growth. Since the ultimate goal of most companies is profitability, most companies will measure their growth in terms of net profit, revenue, and other financial data. Other business owners may use one of the following criteria for assessing their growth: sales, number of employees, physical expansion, success of a product line, or increased market share. Ultimately, success and growth will be gauged by how well a firm does relative to the goals it has set for itself. In this study, growth was measured by the percentage increase in number of employees in the last five years.



Research Methodology

The design was chosen for this study due to its ability to ensure minimization of bias and maximization of reliability of evidence collected. Furthermore, descriptive survey design raises concern for the economical completion of the research study. The method was rigid and focused on the objectives of the study. This study adopted a descriptive survey design which according to Churchill (1991) is appropriate where the study seeks to describe the characteristics of certain groups, estimate the proportion of people who have certain characteristics and make predictions. The population for purposes of this study was SMEs incorporated and, or licensed to operate in Kenya. It is estimated that there are 7.5 million SMEs in Kenya (CMA, 2012). The study was carried out in Nairobi County since it houses majority of the SMEs in Kenya. The target population for this study was the SMEs located along Moi Avenue and Tom Mboya Street of Nairobi. These SMEs were targeted as they would have been taken as a representative of SMEs in Nairobi. A sample of sixty SMEs was randomly selected in Nairobi County. Primary data was collected using a structured and semi-structured questionnaire. Responses in the questionnaires were tabulated, coded and processed by use of a computer Statistical Package for Social Science (SPSS) version 17.0 programme to analyze the data.

Findings

Out of the sample size of sixty, forty five were responsive representing a 75% response rate. The respondents were drawn from various SMEs whose ownership form was as shown in the Figure 4.1. Majority of SMEs formation was limited liability company setup (45%) closely followed by sole proprietorship (owner managers) at 35%. Partnerships were 20% of the firms surveyed in this study.

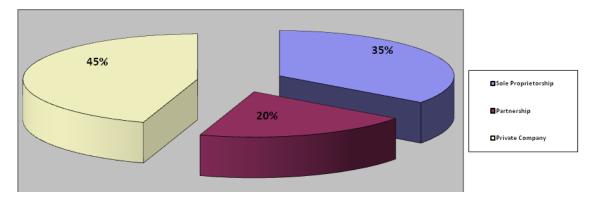


Figure 2Type of Ownership of the SMEs

Commerce Tools and Growth of SMEs

Efficiency gains are associated with the use of electronic commerce, arising from reductions in business costs and rationalization of business processes. The study sought to establish the types of e-commerce tools adopted by the SMEs, and the results are illustrated in the table below.

Table 1: Adoption of E-commerce Tools



	Frequency		Percentage of
E-commerce tool	Those who ha adopted	ve Those who have not adopted	•
Online catalogues	18	27	40
Online shopping	23	22	51
Online payment	7	38	16
Mobile payment	41	4	91

Mobile payment systems such as Mpesa (provided by Safaricom Limited), Airtel Money (provided by Airtel Kenya), Orange Money (provided by Telkom Orange) and Yu Cash (provided by Essar Telkom) were the highest adopted by SMEs at 91% of all SMEs surveyed. This was followed by online shopping at 51% and online catalogues for products and services at 40%. Online payment, was however not mostly adopted with SMEs indicating adopting it being 16%. Kenya is a cash economy, and the SMEs thrive better by cash transactions. Mobile money transfer systems have therefore improved the conduct of transctions, lowering the cost of doing business leading to business growth. The study sought out the specific benefits accrued from these tools that boosted the growth of SMEs. The results of these finding are illustrated in the table below. Table 2: Benefits from E-Commerce Tools

	Frequency			
Benefit	Those indicated benefit	who the	Those who did not indicate the benefit	Percent of those who indicated the benefit
Increased sales enquiries	43		2	96
Increased orders	14		31	31
Faster response to customer inquiries	33		12	75
Efficient payment of orders	41		4	91
Less staff for sales and marketing	29		16	64

Study findings presented in the table above reveal that 96% of the SMEs surveyed confirmed that the use of e-commerce tools increased the sales inquiries, 91% indicated that there was improved efficiency in the payment of orders and 75% acknowledged improved response to customer enquiries. Notably, increase in sales inquiries mostly translates into increase in sales



volumes, while improved customer service implies the maintainace of customer loyalty and expansion of the customer base through referrals and customer returns. Several reasons have been cited for the investment in e-commerce tools ranging from technological euphoria to strategic alignments. From the study, 87% invested in these tools due to demand from stakeholders with SMEs indicating management's strategic intent were 80%. Those SMEs that invested in e-commerce due to demand from suppliers were 80% with 76% indicating that they invested in e-commerce tools to leverage on the business competitive environment. Seventy one percent indicated that they invested in e-commerce tools to have better and faster customer support services.

Table 3: Reasons for Investment in E-Commerce Tools

	Frequency		
Reasons for e-commerce adoption	Those who indicated the reason		Percentage of those who indicated the reason
Demands from stakeholders	39	6	87
Better and faster customer support and services	32	13	71
To stay ahead of competition	34	11	76
Following strategy by top management	36	9	80
Advice from consultants	11	34	24
Demand from your suppliers	36	9	80

Customer Relationship Management systems (CRM) and Growth of SMEs

According to Loretta (2008), information and communication technology is changing the economy and traditional business become more dependent on new technologies. Compared with traditional business, new technologies facilitate an increased interactivity, flexibility, cheap business transactions as well as improve interconnection with business partners and customers. A company's ability to respond to customer requests wherever they are, and via whatever device they are using at the time, will have an increasingly significant impact on how effectively an organization connects with their customers. The study therefore sought to establish whether requirements from customers were the main motivations towards adoption of CRM systems.



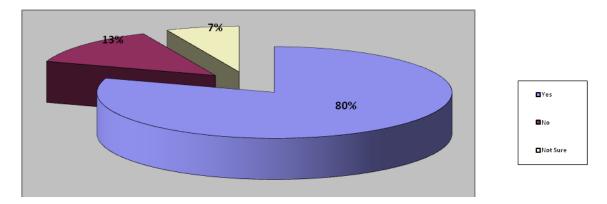


Figure 3: ICT adoption and customer requirements relationship

Study results presented in the figure below illustrates that indeed, the investment in ICT was widely driven by the customers focus in mind at 80 per cent, with only 13 per cent on the contrary opinion. IT-Business strategic alignment advocates for investment in ICT solutions to meet the business requirements to provide value addition services to the customers. The study further sought to understand the customer experience resulting from the ICT initiative in CRM adoption. Respondents were required to rate the experience on the following scale: 5 - Greatly Exceeds Expectation, 4 -Exceeds Expectations, 3 - Meets Expectations, 2 -Somehow Meets Expectations and 1 - Does not Meet Expectations.

Table 4: Customer experience after ICT systems' adoption

Domain	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
Customer Inquiries	7	15	22	49	14	31	2	4	0	0
After Sales Support	9	20	12	27	20	44	4	9	0	0
Training	14	31	9	20	20	44	2	4	0	0
Product Order	23	51	13	29	5	11	2	4	2	4
Payment Transactions	0	0	0	0	3	7	7	15	35	78
Product Information	20	44	5	11	14	31	6	13	0	0

Responses were analyzed on percentages where the results are presented in Table 4.6. Study results indicate that it is only electronic payment sytems that greatly exceeded the customers expectations at 78%. The following exceeded the customers expectations: product information at 13 per cent, payment transactions at 15 per cent, product order at a paltry 2 per cent, training at 4 per cent, after sales support at 9 per cent and customers inquiry at 4 per cent. The other dimension of this finding indicated that ICT adoption does not meet customers' expectations at 51 per cent for product order, 44 per cent for product information and 31 per cent for training.



Enterprise Resource Planning (ERP) systems and Growth of SME's

Since ERP systems facilitate the flow of information between all business functions within an organization and external stakeholders, the study sought to identify its influence on the growth of the SMEs surveyed. The study sought to establish the ERP systems that the surveyed SMEs applied

Table 5: ERP systems used

	Frequency		
System used	Those who use	Those who do not use	Percentage of those who use
Supply Chain Management	7	38	16
Human Resource Management	14	31	31
Customer Relations Management	23	22	51
Inventory Management	25	20	56
Finance/Accounting	36	9	80

From the results, 80% of the SMEs used ERP systems in finance/accounting with 56% using the systems in inventory management. Study results also indicated that 51% and 31% used the systems in customer relationship management and human resource management respectively. The health of a firm depends on its financial management. One of the SMEs biggest challenges is the management of cash flows as well as the inventory. From the results in the table below the SMEs had various reasons for implementing ERP systems.

Table 6: Reason for using ERP systems

	Frequency		Percentage of those who
Reason	Indicated the reason	Did not indicate the reason	indicated the reason
Reduction of Staff	32	13	71
Reduction of Process turn-around time	35	10	78
Paperless working	30	15	67
More data input and output	39	6	87



accuracy			
Accurate and faster management reporting	38	7	84
Better workflows	27	18	60

The desire for more data input and output accuracy and faster and accurate data processing came out as the most prominent reasons for using ERP at 87 per cent and 84 per cent respectively. Reduction of business process turn-around time was considered at 78 per cent, with improving workflows considered a priority at 57 per cent.

Use of Social Media Technologies and Growth of SME's

Social media implementation has not left the SME sector with 87 per cent, 71 per cent and 44 percent having adopted Facebook, LinkedIn and YouTube respectively. Twitter is not however widely adopted (24 per cent). These findings are shown in Table below

Table 7: Use of Social Media tools

	Frequency		
Social media tool used	Those who use	Those who do not use	Percentage of those who use
Facebook	39	6	87
Twitter	11	34	24
LinkedIn	32	13	71
YouTube	20	25	44
Others e.g. kenyalisting	3	42	7

Most of the SMEs use facebook to attract customers using the individual and group connections. LinkedIn on the other hand is used to develop customer profile enabling the firms to widen their reach to strategic target markets. YouTube videos on the other hand are used to showcase the products and services offered by the firms, as well as to share with the global audience their success stories. The findings concur with the assertions of Gaffney (2007) that consumers are increasingly interested in communicating with companies via new and multiple channels: not just voice, but also email, web chat, SMS and so on.



Table 8: Benefits of Social Media Tools

Benefits	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
Customer satisfaction has increased	0	0	3	7	0	0	11	24	31	69
Our quality of service has improved	4	9	5	11	2	4	13	29	21	47
Business processes are more efficient, tasks are performed more quickly	5	11	2	4	0	0	5	11	33	73
The organization has become more marketable	0	0	2	4	0	0	11	24	32	71
The organization has become more effective	6	13	13	29	3	7	14	31	9	20

The study also sought to establish the value that the SMEs had received from use of social media tools. Various perceived benefits were listed and respondents were required to indicate their level of agreement on whether the SME had received such benefits. The rating was on a scale of one to five, where; 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree. Results are presented in Table 4.10. Social media tools had helped SMEs to achieve various benefits as indicated from the study findings presented in table above. Seventy three percent, 71 per cent and 69 per cent strongly agreed that these tools have improved the efficiency of business processes, made the organization more marketable and increased customer satisfaction respectively. This is a great contrast to 5 per cent and none for the other two who strongly disagree with these gains.

Table 9: Correlation between ICT tools adoption and growth of SMEs

	1	2	3	4	5
1. Growth	1				
2. E-commerce	.715	1			
3. CRM	.625	.493	1		
4. ERP	.330	.432	.399	1	
5. Social media	.612	.561	.522	.328	1



Findings presented in the table above indicate that all the independent variables were positively correlated with growth of the SMEs. E-commerce had the greatest correlation coefficient with growth (0.715) indicating that growth and e-commerce are strongly positively related. This was followed by CRM (0.625), Social media (0.612) and ERP (0.33). ERP therefore was the least adopted and it had a weak positive relationship with growth of the SMEs. These findings concur with Gurbaxani (2003), who asserted that ICT solutions should in essence be seen as one of the tools that spur on growth of any business.

Conclusions

The growth of an organiation highly depends on the efficiency of its business processes and effectiveness of the e-commerce tools employed. These tools when widely adopted can enhance sales inquiries, improve payment processing and improve customer loyalty. By adopting CRMs, SMEs would be able to exceed their customers' expectations in providing timely inquiries, as well as elaborate after sales services. These attributes are particularly significant in increasing sales volumes that directly facilitates the growth of the firms. The ERP systems also facilitated the flow of information between all business functions within an organization and external stakeholders thereby providing better financial and stock management of the firms. ERP systems also provide a rich business intelligence and analytics tools which greatly reduce business process turn-around time thereby providing a favorable environment for business growth. Risk management is also greatly improved by the use of these technologies, leading to better risk treatment plans. Social media tools as emerging technologies also contributed immensely to the growth of SMEs. LinkedIn is used to develop customer profile enabling the firms to widen their reach to strategic target markets, while YouTube videos is used to showcase the products and services offered, while Facebook has the potential to attract customers using the individual and group connections.

Recommendations

In order to enhance sales inquiries, improve payment processing and improve customer loyalty, E-commerce tools such as mobile payment systems, online payment and online presence (using websites) should be adopted. The growth of any commercial entity is highly dependent on the customer base. While management of both actual and potential customers poises a major challenge, the extensive use of CRMs should be adopted to provide an integrated platform for customer profiling, feedback collection and customer communication interfaces. Improved customer experience is obviously a recipe for business growth.

ICT solutions including the hardware, software and personnel are also very costly to SMEs given their turnover and thin profit margins. It would therefore be desirable for these firms to consider the wide flexible solutions of open source software solutions, scalable hardware platforms to allow progressive upgrade to meet increasing use as well as cloud solutions



(software as a service and platform as a service). These would make the adoption of these solutions sustainable.

Because of the low staff complement, and inadequate specialized skills like in ICT, SMEs should consider outsourcing these tasks to specialized third party organizations. This would ensure cost effectiveness in the provision of ICT services while at the same time enabling the firms to concentrate on their core businesses activities.

Areas for Further Research

The SME business sector development in Kenya has been identified as one of the key elements to Kenya's engine of growth (Sessional Paper No. 2 of 2005) and has become an issue of priority even though many SME(s) are struggling with establishment and doing business. According to the Kenya Economic Survey (2006), the sector contributed over 50 per cent of new jobs created in the year 2005. Further research should be conducted to identify challenges to SMEs in financing and application of ICT and to recommend value adding activities that would enable the SMEs operation more efficiently and cost-effectively. These would ensure their growth, and therefore their sustainability.

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References

Adelman, C. (2000). *A Parallel Postsecondary Universe: The Certification System in Information Technology*. Washington, D.C.: U.S. Department of Education, pp. 45-50

Alendo, J. (2010). *Information Technology and the Corporation of the 1990s*. New York: Oxford University Press.

Bakos, J. Y. and Nault, B. R. (1997). Ownership and Investment in Electronic Networks. *Information Systems Research*, 1997, pp. 321-341.

Bharadwaj, A. S. (2003). A Resource- Based perspective of Information Technology Capability and Firm performance: An Empirical Investigation. *MIS Quarterly*, Vol. 24, No 1, (Mar 2000), pp. 169-196.

Borg, C. and Gall, V. (1989). Business Research Methods, Fifth edition. New York: McGraw-hill

Bridge, S., O'Neill, K and Cromie, S. (1998). *Understanding enterprise, entrepreneurship and small business*. Basingstoke: MacMillan Press.

Carr, N. (2003). IT Doesn't Matter. Harvard Business Review Vol 8, pp. 38-40.



Churchill, D. L. (1991). Research Design: *Qualitative, Quantitative, and Mixed Methods Approaches*. Retrieved from: http://www.amazon.com/Continuity-Implementation-Management-Solutions.

Churchill, Y. and Lewis, P. (1983). Strategic Payoff from EDI and use of EDI as a function of EDI Embeddedness. *Journal of Management Information Systems*, pp. Vol 18, pp. 195-224.

Cohen, B., Manion, C. and Morrison, A. (2007). *Essentials of education and social science research methods*. Canada: Masolp publishers.

Cragg, P. B. and King, M. (1993). Small-Firm Computing: Motivators and Inhibitors. *MIS Quarterly*, Vol 14, pp. 47-60.

Cravens, L. (2000). The structure and growth of Micro enterprises in Southern and East Africa: Evidence from Recent Surveys. *Information Systems Research*, Vol. 16 No.1, pp.61-84.

Davidsson, P. (1991). Continued entrepreneurship: ability, need, and opportunity as determinants of small firm growth. *Journal of Business Venturing*, 6 (6), 405-429.

Gaffney, A. (2007). Improving Customer Satisfaction through More Effective ICT Strategies. Retrieved from: http://www.alcatel-lucent.com/enrich/v1i22007/

Government of Kenya. (2005). Sessional Paper No. 2 of 2005 on development of micro and small enterprises for wealth and employment creation for poverty reduction. Nairobi: Government Printers.

Guba, J. (2010). Banking the Unbanked: technology's Role in Delivering Accessible Financial Services to the Poor. Lome; SEMBA Consulting.

Gurbaxani, D. (2003). Determinants of Firm performance: the relative importance of economics and organizational factors. *Strategic Management, Journal*, Vol 10, No 5, pp. 399-411.

Harrison, A., Mykytyn, P. and Riemenschneider, C. (1997). Executive Decisions about Adoption of Information Technology in Small Business: Theory and Empirical Tests, *Information Systems Research*, Vol 34, pp. 171-195.

Igbaria, M., Zinatelli, N. and Cavaye, A. L. M. (1998). Analysis of Information Technology Success in Small Firms in New Zealand. *International Journal of Information Management*, Vol 54, pp. 103-119.

Keen, W. (1991). Information Systems and organizational change. *Journal of Communications of the ACM*, Vol 24, No. 1, pp 95 - 107.

Kenya National Bureau of Statistics. (2006). *Kenya Economic Survey (2006).* Nairobi: Government Printers.

Kenya National Bureau of Statistics. (2009). *Population and Housing Census*. Nairobi, Government Printers.



Khan, P. (1993). Research Methodology: A Step-by-Step Guide for Beginners. New Delhi: New Age.

Kothari, C. R. (1990). Research Methodology: A Step-by-Step Guide for Beginners, 5th ed. New Delhi: New Age International.

Loretta, M. (2008). *Biochemetric security for mobile banking*. Markets enterprise white paper. Washington: World institute publisher.

Mugenda, O. M. and Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. 2nd ed. Nairobi: Acts press.

Ngulube, P. (2003). *Preservation and access to public records and archives in South Africa*. Unpublished PhD Dissertation. Pietermaritzburg, University of KwaZulu-Natal.

Orodho, A. (2003). *Essentials of education and social science research methods.* Nairobi: Masola publishers.

Ross, J. W., Beath, C. M. and Goodhue, D. L. (1996). Develop Long-term Competitiveness Through IT Assets. *Sloan Management Review*, Vol 18, pp.31-45.

Saunders, M., Lewis, P. and Thornhill, A. (2009). *Research methods for business students*. 5th ed. Harlow: Prentice-Hall.

UNIDO, (2007). *Policy Arena- Finance for Small Enterprise Growth and Poverty Reduction in Developing Countries.* Washington: United Nations Industrial Development Organization