

An Appraisal of ICT Adoption in Small and Medium Scale Enterprises in Nigeria

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ABSTRACT

Information Communication Technology is a veritable tool for Small and Medium Enterprises growth and development in Nigeria. All over the world, ICT has transformed the manner in which companies conduct business. However, there is no evidence to show that SMEs have reaped the full benefits offered by ICT Adoption as compared to developed countries.

This paper reviews literature on ICT and SMEs. It also highlights some factors hampering adoption of ICT in SMEs and its solution to Small and Medium Enterprises in Nigeria.

The paper concludes that government should provide ICT infrastructure and enabling environment for SMEs in Nigeria. Also, government and financial authorities should initiative new policies such as provision of capital and support services to SMEs.

Keyword: information communication on technology small and medium enterprises, information system ICT adoption ICT solution, growth and development.

Keywords:

ICT Adoption, Small and Medium Scale Enterprises, Nigeria, Information Communication Technology, ICT, SMEs, development in Nigeria

Introduction

In recent years the adoption of Information Communication Technology by SMEs operators has significantly changed the manner in which organization operation and communicates. ICT plays a crucial role in the present knowledge based economy and is applied in a wide range of areas in organization (Apulu, 2012).

Ashrafi and Murtaza (2005) state that organization around the globe are now utilizing ICT not just for cutting costs and improving efficiency, but also for providing better customer service. According to Spanos et al. (2002), buyers and sellers are able to share information and transfer goods across national borders with the use of ICT, which helps to increase access to global supply chains.

The effective use of ICT remains at central stage in facilitating the change growth of enterprises. Many small and medium

enterprises (SMEs) consider enabler to their development (Dixon et al., 2002).

Also, the increasing awareness and appreciation that ICTs impact on Educational development, economy development through the expansion and growth of Small and Medium enterprises (SMEs) improvement in governance, environmental monitoring, health security and human rights promotion to mention just a few has further brought ICTs to the fore in development discourse. The benefits arising from innovative technological solutions, products and services have therefore transformed and opened up new avenues for Small and Medium Scale Entrepreneurs and government to work together to eradicate poverty, promote sustainable human development, accelerate economic growth and facilitate integration of many countries into the global economy (Usman, 2010).

The adoption of ICT is crucial to SMEs as ICT has become a major catalyst and enabler of organizational change (Hazbo et al, 2008). SMEs in Nigeria have not been able to effectively take advantage of this potential market because of the “digital divide” that exists in Nigeria being a developing nation. The digital divide is the gap between “ICT haves” and “ICT have nots” a tool to take advantage of information and knowledge; ICT is increasingly becoming a foundation of any societies and economies (Kusoro, 2013). Apulu and Latham (2009) note that there is a variation in adoption of ICT solutions between the developed nations and the developing nations. The developing nation like Nigeria and Mali are adopting such solutions at a

slower rate of because the technology is not developed to directly meet the need of developing countries. Thus, there is need for ICT solution developed for developing nations by the people of the developing nations to meet their specific and unique need (Apulu and Ige, 2011). It is on this note that this paper reviews literature on SMEs and ICT. Some factors affecting its adoption, and its solution to SMEs in Nigeria.

Literature Review

Small and Medium Sized Enterprise (SMEs)

SMEs are generally distinguished by the nature of their production and management arrangements, trading relations, financial, practices and internal competence (Ongori and Migiro, 2010). National Association of Small and Medium Scale Enterprises defines SMEs as “business employing less than 50 people and with an annual turnover of one hundred million Naira”. Also, the Central Bank of Nigeria and the Small and the Medium Enterprises Equity Investment Scheme define SMEs as “any enterprise with a maximum asset base of two hundred million Naira excluding land and working capital with its employees ranging between ten and three hundred . According to Hudson et al (2001), SMEs may be differentiated from larger companies by a number of key characteristics such as personalized management with little devaluation of authority, severe records limitations in terms of management and manpower, as well as finance, reliance on a small number of customers, flexible

structures, high innovating potential, reactive, fire-fighting mentality and informal dynamic strategies.

Gholami et al. (2010) regards SMEs as firms that have fewer employees and a lower annual turnover and assets than large firms such as multi-national companies. The authors state that in SMEs decision-making is centralized and key decision such as IT adoption are made solely by high authority individual in the firm such as this chief executive officer or information system (IS) manager. However, there have been numerous reports on SMEs lacking in resources, experience, skills and knowledge often placing SMEs at a disadvantage when competing with big companies in a globalised world (Bell et al, 2014). Bruque and Moyano (2007) advocate that SMEs face greater risks in IS implementation than large firms due to few or resources and limited education about information system.

Information Communication Technology Information and Communication Technology (ICT) according to Akunyili (2010), SMEs can be defines as an umbrella term that covers all technical means for processing and communication information. Ashrafi and Murtaza, (2008) refer to ICT as any technology that enable communication and electronic capturing, processing and transmission of information. These technologies include products and services such as desktop computers, laptops, hand held devices devices, wired or wireless internet business productivity software such as text editor and spread sheet, enterprise software, data storage and security and so on.

Modern ICTs such as software, internet, fax, emails, and mobile phones have become available to many countries of the world in recent years and they are effective means of communicating knowledge and information to rural agricultural communities (Richardson, 1997: Kweku, 2006).

ICT ADOPTION IN SMEs

According to Turan and Urkmez (2010), adopting new technologies is very important in initiating the movement toward higher quality and competitiveness in the world of SMEs. It is widely seen as critical for the competitiveness of SMEs in the emerging global market and has resulted in more effective use of time.

Moreover, Hazbo (2008) argues that ICT has become a major catalyst and enabler of organizational change. Ashrafi and Murtaza (2010) assert that ICT helps SMEs to enter new markets, supply new products and services increase their added value, change business processes increase performance and productivity of the organization, employ new business channels and provide a rapid response to competitors' activities. Levy et al (2002) also posits that SMEs can act proactively in relation to the use of ICT.

In addition, the use of ICT enables SMEs to partake in knowledge economy and offers enormous opportunities to narrow the social and economic inequalities that will assist SMEs in achieving broader development goals (United Nations, 20017) Beekhuyzen (2005) believes that access to ICT continue to be a global problem

especially in developing countries. Sahlfeld (2007) reinstates that there is no indication that the benefit of ICT experienced by development countries, such as reduced business costs and increased access to information, would not also amass to that of developing countries.

Also, Golding et al (2008) affirms that there is a digital divided which shows that ICT adaptations vary between developed and developing countries with developing countries adoption ICT at a slower rate due to several challenges hampering the adoption.

FACTORS AFFECTING ICT ADOPTION IN NIGERIA

Nigeria is one of the developing nations of the world where most people have a low income and low standard of living with less access to goods and services as compared to most people in higher-income countries (Leslie and Gaskill, 2006).

Woherem (1993) notes that the lack of skilled human resources is a principal barner blocking the diffusion and effective utilization of ICT in developing countries. Kunda and Brooks (2000) also states that the operational problems are faced by developing countries due to technical and economic constraints which include the non-existences or reliable background statistical information and inadequate capital to financing ICT and lack of skilled personnel.

Adenikinju (2005), Akpan-Obong (2007), LaI (2007) and Apulu et al (2011) amongst others have identified one or more factors that affect the adoption of ICT in various sectors in Nigeria, including SMEs. These factors include: lack of infrastructural facilities, lack of funds, lack of awareness, lack of appropriate government policies, lack of skills and training, cultural factors, electricity constraints, corruption low levels of education, illiteracy, lack of proper information and so on.

Achimugu et al (2009), Lal (2007), Ihua (2009), Oshikoya and Hussain (2007) state that lack of physical infrastructures and or environment are barriers or ICT adoption in Nigeria.

Arendt (2008) and Abor (2010) argue that lack of skills and capital are the major challenges hampering ICT adoption SMEs in Nigeria.

Furthermore, electricity constraints in Nigeria is described as a factor that affects the adoption of ICT amongst Nigerian Institutions (Agyeman, 2000) including SMEs. Baker (2008) assert that Nigeria is the largest oil producer in Africa and holds approximately one third of the given gas reserves in African but lack of power supply has remained a major problem in the country.

The table that below shows factors hampering ICT adoption in SMEs in Nigeria.

Table 3.1: Factors hampering ICT adoption in Nigerian SMEs

Factors	Related Literature
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Cultural barrier	Adenikinju (2005)
Lack of telecommunication infrastructure	Akpan-Obong (2007)) Oshikoya and Hussain (2007)
Lack of infrastructural facilities	Adenikinju (2005) Apulu et al (2011) Achimugu et al (2009) Chibundi (2006); Ihua (2009); Lal (2007); Mambula (2004)
Corruption	Obayelu (2007); Ayobolu (2006); Dike (2005); Ochulor and Bassey (2010)
Low level of Education	Olatokun (2006) Apulu et al (2011)
Lack of skills and training; technological background	Mambula (2004); Apulu and Latham (2009c)
Cost of implementation	Folorunso et al (2006)
Lack of capital	Abor and Quartey (2010)
Lack of support from banks	Apulu et al (2011)
Electricity constraint	Agyeman (2007); Akpan–Obong (2007); Olatokun (2006)
Lack of support from the government; lack of regulatory policies; institutional framework	Apulu and Ige (2011); Apulu et al (2011); Baro (2011); Adeye and Iweha (2005)

Source: Apulu (2012)

ICT SOLUTION TO NIGERIAN

SMEs

ICT is one of the main drivers of change in organization (Adebambo and Toyin, 2011). ICT helps SMEs cut cost by improving their product through faster communication with their customers and better promoting and distributing their products through online presence (Kuyora and Awodele O. (2013).

Also ICT solution helps SMEs in increasing their productivity and achieving higher business performance (Ongori, 2010).

Some empirical studies by Apulu (2013), Irefin (2012) and Tijani (2012) have confirmed the positive effect of ICT on firm performance in terms of productivity profitability, market value and market share. The findings also reveal that ICT has some effect in terms of intermediate performance measures such as process efficiency service quality cost savings organization and process flexibility and customer satisfaction (Kuyora et al, 2013).

Also, moreover, it is necessary for Nigerian government to develop ICT model that will assist Nigerian SMEs to successfully adopt ICT and technological infrastructures should be put in place by the government to

support ICT an adoption, Finally, Nigerian government should make more funds available to SMEs and put some structure in place in order to ensure a successful investment.

Conclusion

Information Communication Technology plays a very important role in helping SMEs to create business opportunities and to combat pressures from competition. The adoption of ICT is hampered by a lot of factors in Nigeria. This paper only discussed the literature review on SMEs and ICT it also highlighted the adoption of ICT in SMEs, some factors affecting its adoption and ICT solution to Nigeria SMEs.

Recommendation

Based on the finding of this study it is recommended that:

1. Government should boost SMEs capacity in Nigeria by providing workable funding and affordable long term financing.
2. Government should expand electricity infrastructure and develop legal and regulatory framework to aid private sector participation.
3. Government should provide enabling environment for SMEs by involving SMEs in policy formulating and execution and train indigenous

small and medium scale entrepreneurs.

4. Internet service providers should increase bandwidth to enhance intermediate service and reduce the price of bandwidth.
5. Government should legislate and act against corrupt practices
6. Government and financial authorities should initiate new policies for SMEs support and introduce a regulatory policy for micro finance banks owner managers.
7. Government should conduct training sessions for employers in SMEs and identify the skills required for success.
8. Owner-managers should acquire ICT skills and increases awareness of the potentials of ICT.
9. Government should initiate programmes to increase owner-managers awareness by emphasizing the importance of managerial skills and knowledge on ICT adoption and utilization

REFERENCES

- [1] Abor, J. and Quartey, (2010) "Issues in SMEs Development in Ghana and South Africa". *International Research Journal of Finance and Economics*, 39 (2010) pp 218-228.
- [2] Achimugu, P., Oluwagbemi, O. Oluranti, A and Afolabi B. (2009) "Adoption of Information and Communication Technologies in

- Developing Countries. An Impact Analysis.” *Journal of Information Technology Impact*, 9 (1), pp 37-46.
- [3] Adebambo S. and Toyin A. (2011) Analysis of Information and Communication Technologies (ICT) Usage on logistics Activities of Manufacturing Companies in South Western Nigeria”. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 2(1), PP. 66-72.
- [4] Adenikinju, A. (2005) “Analysis of the Cost of Infrastructure Failure in a Developing Economy: The Case of Nigeria”. Department of Economics and Centre for Economics and Applied Research Paper 148; African Economic Research Consortium Nairobi.
- [5] Agyeman, O.T. (2007) “ICT for Education in Nigeria. Survey of ICT and Education in African, Nigeria Country Info Dev Report, www.infodev.org.
- [6] Akunyi T.D. (2010) “ICT and e-Government in Nigeria: Opportunities and Challenges”. An Address Delivered at the World Congress on Information Technology, Amsterdam Netherland, 25-29 May, 2010.
- [7] Apulu, I and Lathan, A. (2009) “Information and Communication Technology Adoption: Challenges for Nigeria SMEs. *TMC Academic Journal*, 4 (2), pp. 64-80.
- [8] Apulu, I and Ige O. (2011) “Are Nigerian SMEs Effectively Utilizing ICT?” *International Journal of Business and Management* 6 (6) pp. 207-214.
- [9] Apulu I. (2002) “Developing a Framework for Successful Adoption and Effective Utilization of ICT by SMEs in Developing Countries. A Case Study of Nigeria” PhD Thesis University of Wolverhampton
- [10] Arendt, L. (2008) Barriers to ICT in SMEs: How to Bridge the Digital Divide” *Journal of Systems and Information Technology*, 10 (2), pp 93-108.
- [11] Ashrafi, R. and Murtaza, M (2008) “Use and Impact of ICT on SMEs in Oman, *Electronic Journal Information Systems Evaluation*, 11 (3), pp. 125-138.
- [12] Ashrafi, R. And Murtaza, M. (2010) “ICT Adoption in SMEs in an Arab GCC Country Oman” in: E-Strategies for Resource Management Systems: Planning and Implementation. IGI Global.
- [13] Awodele, O. and Omotunde A.A. (2013) “ICT Solution to Small and Medium Scale Enterprises (SMEs) in Nigeria”. *International Journal of Computer and Information Technology*, Vol 1 (2). Pp 785-789.
- [14] Baker L. (2008) “Facilitating Whose Power? Policy Influence in Nigeria’s Energy Sector” (online). Published by *Bretton Woods Project*. Available at: <http://www.brettonwoodsprojects.org/update/60/bwupdt60a.pdf>
- [15] Beekhuzen, J. Hellen, L. and Siedle, M, (2005) “Cultural Barriers in the Adoption of Emerging

- Technologies". Griffith University, Brisbane, Australia. Available at "<http://www.ved-smartinternet.com.au/Document/cultural-Barriers.pdf>"
- [16] Bell, J., Crick, D., Young, S. (2004) "Small Firms Internationalization and Business Strategy", An Exploratory Study of Knowledge – Intensive and Traditional Manufacturing Firm in the UK. *International Small Business Journal*, 22(1) pp. 23-56.
- [17] Bruaus, S. and Moyano, J. (2007) "Organizational Determinants of Information Technology Adoption and Implementation in, SMEs: The Case of Family and Cooperative Firms, *Technovation* 27(5) pp. 241-253.
- [18] Dixon, T., Thompson B. & McAllister, P (2002) "The Value of ICT for SMEs in the UK: An Literature Review, Report for Small Business Service Research Programme", The College of Estate Management.
- [19] Gholami, R., Koh E., and Lim J. (2010) "A Survey on this Post – Adoption of Broadband Internet", *Information Resource Management Journal*, 23 (1).
- [20] Colding, P. Donaldson, O. Tennant, Y. and Black, K. (2008), An Analysis of Factors Affecting the Adoption of ICT by MSMEs in Rural and Urban Jamaica" (online) <http://is2.ise.ac.Uk/asp/aspecis/2008109.pdf>
- [21] Hazbo, S., Arnela, C. and Chun-yan, H. (2008) "ICT Adoption Model of Chinese SMEs". *International Journal of Business Research*, 44 (2008) pp. 161-165.
- [22] Hudson, M. Smart A. and Bourns, M. (2001) "Mercy and Practice in SME Performance Management Systems" *International Journal of Operations and Production Management Systems*, 21 (8), pp 1096-1115.
- [23] Ihua, U.B. (2009) "SMEs Key Failure Factors: A Comparison between the United Kingdom and Nigeria", *Journal of Social Sciences* 18(3) 199-20.
- [24] Irefin I.A. Abdul-Azeez I.A., and Tijani A.A. (2012) "An Investigate Study of the Factors Affection the Adoption of Information and Communication Technology in Small and Medium Scale Enterprise in Nigeria", *Australian Journal or Business and Management Research: Vol (2)* pp 01-09.
- [25] Kunda, D and Brooks, L. (2002) "Assessing Important Factors that Support Component – Based Development in Developing countries". *Information Technology for Development Journal*" Vol (9) pp. 123-139
- [26] Kuteyi, D. (2009) "Poor Funding, Bane of SMEs" Published on Wednesday, 8th April 2009. *Punch Newspaper*.
- [27] Kweku, A.K. (2006) "Demystifying ICT Diffusion and

- and Use Among Rural Women in Kenya” Unpublished Paper Presented to *PROLISSA* 2006 Conference.
- [28] Lal, K. (2007) “Globalizations and the ICTs in Nigerian SMEs”. *Science, Technology and Society* Vol 12 (2) pp. 217-244.
- [29] Leslie, N.J. and Gaskill, L.R. (2006) “Small Business Apparel Retailing in Jamaica: An Expository Investigation into Product Development Processes and Practices”. *The Qualitative Report*, Vol 11 (3)
- [30] Levy, M., Powell, P. and Yetton, P. (2002) “The Dynamics of SMEs Information Systems”: *Small Business Economics*, 19, pp. 341-354.
- [31] Ongori, H. and Migiro S.O. (2010) “Information and Communication Technology Adoption” A Literature Review from Botswana”. *Research Journal of Information Technology*, 1 (2) pp. 79-85
- [32] Oshikoya, T.W. and Hussain, M.W. (2007) “Information Technology and the Challenges of Economic Development in: African E-Markets Information and Economic Development”, Opoku – Mensah A. and Salih M.A. M. (Eds). *Economic Commission for Africa Report* pp 43-76.
- [33] Richardson, D (1997) “The Internet and Rural and Agricultural Development – An Integrated Approach Rome”.
- FAO.<http://www.fao.org/docrep/w6840800.htm>
- [34] Sahlfeld, M. (2007) “How does ICT Work for Development? A Review of the Challenges and Opportunities”. *ATDF Journal*, 4 (1)
- [35] Spanos, Y.E., Pratacos, E.P and Poulymenakou, A. (2002), “The Relationship between Information and Communication Technologies Adoption and Management”. *Journal Information and Management* 39 (8) pp. 659-675.
- [36] Turan, A.T. and Urmez, T. (2010) “Information Technology Satisfaction of Small and Medium Sized Enterprises in Turkey”. *International Bulletin of Business Administration*, 9 (2010). Pp 43-55.
- [37] United Nation Development Programme (2007) “The Role of Government in Promoting ICT Access and use by SMEs: Consideration for Public Policy” APDIP – note 12/2007 (online). Available at; <<http://www.apdip.net/apdipenote/12.pdf>.
- [38] Usman, S. (2010) “Role of ICTs in National Development”. A Keynote Address Delivered on the Occasion of the Galaxy Backbone and Man – One Cable Broad Band Partnership at the Musa YarAdua Centre Abuja, 16th December.
- [39] Woherem, E. (1993) “Information Technology in Africa: Challenges and Opportunities”. ACTS Press, African Centre for Technology Studies.