Investigating the Benefits of Information and Communication Technologies (ICTs) on Practices of Enterprises: The Nigerian Perspective

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Abstract

Information and Communication Technologies (ICTs) are widely used by organizations to enhance enterprise competitiveness. This study provides an overview of the current state of affairs of the ICT adoption in SMEs in private and public organizations in Nigeria. It investigates ICT infrastructure, productivity and business application software used, drivers for ICT investment, perceptions about business benefits of ICT, outsourcing trends and availability of help and advice on ICT adoption. The study has also investigated major barriers in ICT adoption and the findings of the study are consistent with other similar studies. The study identified the need for more training facilities for adopting ICT in SMEs. Additionally, the study identified that there is a need for the Government to provide guidance on suitable ICT products and services at an affordable cost as well as provide incentives to promote ICT investment and usage e.g. soft loans, availability of professional advice and consulting at no or low cost to SMEs. This is the first study on the status of ICT adoption and usage by SMEs in Nigeria. The findings of this research will provide a foundation for future research and will help policy makers in designing policies to further enhance usage and ICT adoption in SMEs in Nigeria. This is expected to improve productivity and competitiveness.

KEYWORDS: Information and Communication Technology (ICT), Nigeria Enterprise Practices, Business Management.

Introduction

Information and Communication Technologies (ICTs) have an important impact on businesses in developed and developing countries. ICT is creating new opportunities by enabling design and delivery of digital goods, allowing firms to increase margin and revenue by accessing foreign markets directly. Papaioannou [1] explored the effects of ICT on productivity and economic growth in both developing and developed countries and concluded that ICT has a positive and meaningful effect on productivity and economic growth. VanDijk [2] indicated that ICT is being seen as an agent of economic development in South-East Asian countries especially in South Korea. Burke [3] observed several important benefits from owning websites, such as having new customers and additional sales by firms. Certain infrastructure must be in place in order to benefit from ICT adoption so as to deliver better services and explore new business opportunities. According to Limi [4] infrastructure is one of the most important driving forces for economic development. Measuring ICT at the firm level could help countries improve the

production and quality of their ICT for development. The analysis of data on measuring the impact of ICT on enterprise practice aims at providing organization policymakers with better tools to design, monitor, and evaluate their ICT strategies. Aside from infrastructure, other factors that help ICT success are availability of skilled ICT personnel and budget to invest in ICT [4]. ICT is one of the key ingredients to enhance a company's competitiveness. ICT platforms (such as PCs, mobiles, internet, etc.) have four main contributions to organizations. First, they give more visibility to business enterprises. Second, they provide more information to small firms. Third, they allow enterprises to overcome traditional trade barriers. Finally, they facilitate financial transactions [5]. ICTs make services more easily tradable and increase productivity in manufacturing enterprises. Furthermore, the use of e-mail, e-commerce, and social media network have significantly cut down on the physical transportation involved in sending mail, banking, advertising, and buying goods. Clift [6] notes that the private sector should not only be able to invest in an ICT infrastructure but also use ICTs as a means of competitive advantage to conduct business in the form of commercially-driven connectivity, software, technology, e-commerce, online transactions and so on. Based on the above studies, there is little doubt about the benefits of the ICT as a tool to access the global market. Still, underdeveloped countries have their own challenges in adopting ICT and reaping the benefits that developed countries have gained through ICT.

Little research is currently available that discusses ICT status of ICT adoption and usage in organizations in the Middle East in general, and Gulf Cooperation Council (GCC) countries, in particular. The purpose of this paper is to fill in this gap by investigating the current state of ICT adoption in Nigerian enterprises. The term ICT in this research refers to a wide range of information and communication technologies, including IT infrastructure, wired or wireless networks, business productivity software, enterprise software, and data storage. The aim of this research is to investigate the current state of ICT adoption in Nigerian enterprises. The outcome of the study would be of particular interest to private and public enterprises who would like to enhance their use of ICT in Nigeria. The findings will also have implications for other West African countries as they seek efficient and effective ways to improve their ICT. The sections covered in this paper includes: 1) – The Literature Review; 2) – The Research Methodology; 3) – The Research Findings & Results; 4) - Conclusions of the paper with Limitations and Suggestions for future research.

Literature Review

Evidence in research literature suggests that ICTs can contribute significantly to the efficiency, productivity and innovation of a firm. The use of ICT enables the production of goods in a shorter amount of time with the assistance of computerized systems. Studies also show that investments in ICT had a considerable effect on the productivity of the labour force and on economic growth [7]. Previous research also finds that, in addition to computer presence, Internet use and web presence are also reflected in higher labour productivity. ICT has influenced almost every aspect of an organization's activities from customer prospect to post-sales services [8]. However, earlier studies have noted that African countries are still falling behind developed countries in terms of both use and spending on ICT [9, 10]. One study found that while many governments in the African continent have embarked on projects to drive growth through IT

transformation, many governments still lacked all elements necessary to make these projects a success [11].

ICT sector is one of the foremost sectors in Europe and affects economic growth across the economy in many ways. For instance, the ICT sector share of total business value added is 8.5% and the ICT segment employment constitutes 3% of total business sector employment in the EU [12]. Furthermore, ICT investments help to raise labor productivity and the most important benefits of ICT arise from its effective use. ICT is a tool that will only work in enterprises that are structured to use it and that require change. In the USA, the ICT revolution has stimulated enterprise re-organization and has altered the terms of competition. US businesses have become more adept at getting value from their ICT activities. Thus ICT spending in the US has jumped to 5.4 % in 2010 [13].

In the USA, Europe, and Australia, a high percentage of firms have access to the Internet, thereby giving them an access advantage to the global markets. In Asia, Japan, Korea, and China are leading in this regard, and recent ICT product and services have accelerated and expanded their access to world markets [14]. The World Bank [15] emphasized that governments can create competitive markets that grow faster, cost less, facilitate innovation, and respond better to user needs if they would open their telecommunications markets through well-designed reforms resulting in increased private investment and ICT development. For example, Roeller & Wavermant [16] showed that between 1970 and 1990, one-third of Germany's economic growth was attributed to an increase in the penetration rate of fixed telephone lines. Hamilton [17] argued that investment in basic telecommunications in Africa had a positive impact on economic, political and institutional development. A number of scholars have also validated the view that ICTs such as the internet can even inspire speedy democratization in regions of the world such as the Middle East [18]. This has been seen recently through events such as the "Arab Spring" witnessed in Egypt, Libya, Syria, Tunisia, Yemen and other Middle Eastern countries.

ICT Adoption in Developing Countries with Special Reference to the Middle East and GCC countries

ICT can be used as a strategic lever for socioeconomic development and as a competitive tool in an increasingly global and deregulated market [19]. Shih et al. [20] have found that for developing countries to realize potential benefits of IT, policymakers should look for ways to promote IT investment as well as developing investment resources, complementary assets, and openness to external influence. ICT privatization in developing countries has been viewed by many scholars as the key method for modernization and expansion of public telecommunications networks [21, 22, 23, 24]. Privatization of telecommunication infrastructure and ICT in general, has also helped to boost foreign direct investment (FDI), a major source of ICT financing. Heeks [25] found that ICT project failures in developing countries is higher than developed countries, possibly due to lack of technical and human infrastructure. Bodla and Rashid [26] identified that lack of infrastructure, low per capita income, unskilled human capital, political and economic structure and conservative bureaucratic approach were the main barriers in adoption of ICT in developing countries. Mofleh et al. [27] have found that major ICT initiatives in developing countries have failed in achieving major development outputs. Particularly, SMEs in developing countries have been slow in adoption and diffusion of ICT. Kapurubandara [28] classified various factors contributing to the slow adoption of ICT in SMEs in

developing countries into Internal and External Barriers.

In the late 1990's, Middle Eastern governments invested heavily in ICT, enabling them to not only renew, but expand their ICT infrastructures by implementing new technologies. From 1995 to 2002, ICT spending on equipment, software and telecom services in the Middle East increased sharply. GCC enterprises still face key challenges as they strive to increase ICT adoption and effectiveness. For instance, in human lack of information about suitable ICT solutions and implementation were some of the major barriers in adopting ICT [29]. Booz Allen [30] has identified lack of key enabling resources, inadequate infrastructure, transient funding and oversight as the main barriers in ICT adoption in GCC countries.

Privatization of telecommunications in the Middle East and the role of telecommunications provider in the expansion of ICTs, started in the early 1980's with the establishment of Kuwait's Mobile Telecom Company (MTC). Between 2000 and 2008, the percentage of firms with access to the Internet has increased substantially across all GCC countries. The highest rate of uptake of Internet in the ranking of GCC countries was in UAE followed by Saudi Arabia, Kuwait and Qatar. According to El-Shenawy [11], Arab ICT indicators are still not sufficient, not available and not publicized. Abdallah and Al-badri [31] examined the literature on ICT in the Arab world in order to glean the level of ICT investment and acceptance, and to attempt to understand the interplay of cultural practices and values on the successful implementation of ICT initiatives. Hamade [32] has categorized major reasons for ICT adoption in Arab countries into two categories: one related to the basic infrastructure and the other related to government's policies and regulations. ICT has played a major role in the Middle East recently, with the Internet being central in driving the political upheavals and revolutions witnessed in the region since the beginning of this year. Social networks have been essential in this process, allowing people to connect and mobilize [33].

ICT Adoption in Nigeria

The establishment of the National Information Technology Development Agency (NITDA) in 2001 was one of the first high-level policy initiatives to improve and promote ICT for development in Nigeria. This governmental agency leads Nigerian's implementation of ICT initiatives to help ensure a balanced investment in technology, research, and development leading to the development of new products and processes that spur productivity and efficient operations. One of the identified agents through which the world will constantly experience change is technology. In the business of trying to make information available in the right form to the right user both at the personal and organizational levels, and at the right time, the bid to cope with great flood of information has led to the need for a more sophisticated way of handling information faster and better. According to Anyakoha [34], information technology is "the use of man-made tools for the collection, generation, communication, recording, re-management and exploitation of information. It includes those applications and commodities, by which information is transferred, recorded, edited, stored, manipulated or disseminated". Hawkridge [35] describes information technology as a revolution which has penetrated almost all fields of human activity, thus transforming economic and social life. UNDP [36] asserts that even if sustainable economic growth facilitates the creation and diffusion of useful innovations, technology is not only the result of growth but can be used to support growth and development. ICTs are credited with the ability to transform,

and deep and significant changes are expected from their widespread use in Africa. From this stand point Africans can take maximum advantage of the new technologies even if major challenges remain. These challenges include adapting ICTs to local conditions and uses in developing countries, and allowing each country understand those innovations and adjust them to their own development needs.

Therefore, development in Nigeria depends on the country's capacity to create wealth to significantly reduce poverty and to raise its capacity to create wealth at a sustainable level. In June 1996, the United Nations Commission on Science and Technology Development (UNCSTD) in collaboration with IDRC proposed five development indicators that focused on the improvement of the quality of life: education, health, income, governance, and technology [37]. If we consider these five as key indicators of development for Nigeria, ICTs can be socially beneficial only if they contribute to poverty eradication (higher income), improved health and education, better use and more equitable sharing of resources, and raising participation in the decision-making processes (and in this regard, access to information is crucial).

ICTs have been the basis for human existence from time immemorial and this has driven man to continuously seek ways to improve the processing of information and communicating such information to one another irrespective of distance and on a real-time basis [38]. Surviving in the information age depends on access to national and global information networks. ICTs are the bedrock for the survival and development of any nation in a rapidly changing global environment, and it challenges us to devise initiatives to address a host of issues such as reliable infrastructure, skilled human resources, open government, and other essential issues of capacity building [39]. At the heart of technology lie two main or branches of technology: computing and telecommunication. The technologies covered are the computer system, Internet/electronic mail (e-mail), mobile phone, and fax machine.

Research Methodology

The data for this study was collected through a survey questionnaire sent to random companies in which an IT division was listed in the company structure. The questionnaire was based on a similar study undertaken in Libya by [29]. The reason for adopting the same questionnaire was to facilitate comparisons between the status of ICT adoption and practices in the two African countries. The questionnaire survey approach was used for its various benefits: such as to detect relationships that are common across the organizations [4], exhibit considerable precision in collecting and reporting data [41], an inexpensive approach for collecting data [41], and offering anonymity [42, 43]. The questionnaire was structured to obtain data on current usage and adoption of ICT in organizations. It was designed to be answered by a Senior Manager or Head/In charge of the IT (Information Technology) department of the company that participated. The survey consisted of 25 questions which included the current ICT status and ICT use in the company, and the impact of ICT investment on cost reduction, efficiency, performance and effectiveness. A pilot study was first conducted with five companies. Based on their feedback, changes were made to the layout of the questionnaire, with a view to improve readability and to reduce the amount of time to answer the survey.

Survey Questionnaire was mailed, and in some cases personally delivered, to 157 IT managers or Heads of IT departments of public and private organizations in Lagos, Abuja & Port-Harcourt. 102 usable questionnaires were returned from the companies who have adopted ICT and

responded to our survey achieving an overall response rate of over 65%. For the purpose of this research we adopted the following definition of SMEs: businesses with up to 50 employees were classified as Small enterprises, between 50 and 100 employees as Medium enterprises, and more than 100 employees as Large enterprises.

RESULTS

Organization Types

Of the 102 respondents, 26% were classified as Small enterprises and 16% as Medium-size enterprises, and 58% as large enterprises. ICT infrastructure, Internet connection type, IT staff, usage of enterprise software, and type of website were used as a measure for ICT usage.

ICT Infrastructure

Table 1 shows that desktop, laptop, or handheld computers were used by 93% of the surveyed companies. The reason being that our sample was based on only those companies who adopted some form of ICT in their business (e.g. Computers). This result was not very surprising, as in the UK, 30% of micro businesses do not use computers at all [44]. Business productivity software such as Microsoft Word, Excel and PowerPoint were used by 82% of the surveyed firms. Also, network and data storage solutions were used by the majority of organizations surveyed.

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Table 1: IT Solutions Used within Organizations

Rank	ICT Usage	Percentage
1	Computers	93%
2	Productivity Software	82%
3	Wired Networking	74%
4	Wireless Networking	66%
5	Data Storage Solution	65%
6	Network Security Solution	64%
7	Enterprise Software	53%
8	Other Solution	12%

Internet Connection Type

The type of internet connection in organizations largely indicated the required bandwidth. Overall, 92% of the sample companies in our survey used Internet. 6% of the respondents used high speed broadband (ISDN, ADSL, DSL), 65% used very high speed broadband (T1, ATM, frame Relay, etc.), 23% use satellite and 6% either had no internet connection or did not respond. This was consistent with other studies. In a recent survey of SMEs in the UK, 78% of SMEs use Internet in their business [45] while the number of users in Nigeria was more than 92% based on our survey.

IT Staff

Unlike the commonly held belief that SMEs often lack skilled IT staff, 70% of the firms in Nigeria had IT/IS departments with full-time IT staff and only 28% of the surveyed firms did not have full-time IT staff. The remaining 2% did not respond to the question. This may be because 58% of the survey respondents belong to large organizations and 16% to medium organizations and thus could afford to have full-time staff as compared to small organizations (26%).

Usage of Enterprise Software

In our survey, 83% of respondents used Finance and accounting software, 63% used Human Resource Management (HRM) software, and 48% inventory management. One-third used Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) (Table 2). The result seemed to be similar to [29] that indicated 84% of the surveyed SME firms in Oman used

finance and accounting enterprise software. It seems that the level of usage of CRM, ERP, Supply Chain Software.

Management (SCM) and E-commerce is quite low with most of the organizations using Finance or Accounting and HRM .

Table 2: Usage of Enterprise Software in the Organization

Rank	Software	Percentage
1	Finance/Accounting	83%
2	Human Resource Management	63%
3	Inventory Management	48%
4	Customer Relationship Management	38%
5	Enterprise Resource Planning	34%
6	Supply Chain Management	23%
7	E-commerce	19%
8	Others	16%

Types of Website Used

Unlike businesses in developed countries, the sample companies in Nigeria have not managed to utilize and use commercial websites for online sales. Results shows that less than 1% of the firms had dynamic commercial websites which helped them reach new customers and conduct e-business. As for informational websites, 53% of the surveyed enterprises ran websites which simply introduced the business and published their contact information. About 19% of the businesses had no website, the main reason being the lack of internal technical staff and high maintenance costs over the long term. This indicates that companies are not fully utilizing the Internet for buying and or selling goods or services. One of the reasons may be that the level of exposure of the populace to the services of Internet is still at the lowest ebb. Moreover, people can physically visit organizations easily to buy products and/or services and do not need to order online. Another reason might be that organizations are focusing on the local market and have not expanded their business to other countries.

Number of Competitors

A healthy competition drives organizations to be more competitive. Only 4% of the enterprises had more than 20 direct competitors. About 15% of Nigerian companies had 10-19 competitors, 26% between 5-9 competitors and 15% between 1-4 competitors. This shows that there is relatively low competition among companies in Nigeria, whereas in Libya,

Investments in ICT

IT Budget & ICT Investment Drivers

Twenty-two per cent (22%) of the sample companies assign less than 10% of their annual budget to ICT investment while 39% of the firms invest between 10% and 20%. Furthermore, 25% invest between 20% and 40%, and 14% of the surveyed firms assign greater than 40% of their budgets to ICT. This shows that Nigerian companies realize the importance of IT, and are spending a significant amount of their budget on ICT. The main driving forces for ICT investment were to provide better and faster customer service (65%), and to stay ahead of competition (69%). These findings are consistent with [29].

50% of the enterprises had more than twenty direct competitors [29].

Competitive Strategy

One way of competing is to differentiate one's business from the competition. The surveyed companies have chosen the approach of providing the highest quality products and services (40%) to their customers as the principal method for differentiating, as well as establishing, long-term relationships with customers (25%) as illustrated in Figure 1. It seems that a majority of organizations do not have a well-defined strategy for ICT use and adoption. Perhaps they have implemented ICT because their competitors are using it in their respective businesses.

Figure 1: Firms' Approach to Differentiate Business from its Competitors

Barriers to ICT Investment

With regard to barriers to ICT investment, 46% firms felt that a lack of necessary internal skills was a major barrier. Lack of availability of relevant information and advice on suitable and effective technologies was also one of the major barriers. One-third of the respondents felt that the costs of implementation are too high. Other barriers included businesses having no time to implement ICT projects, lack of top management support, bad experiences in the past, and government regulations and requirements (Table 3). These findings are consistent with other studies [45, 29]. These results further emphasize the need for more training facilities in ICT for Nigerian businesses, measures to provide ICT products and services at an affordable cost, and availability of free professional advice and/or consulting services at a reasonable cost to the businesses**.**

As mentioned earlier, the Nigerian government created NITDA in 2001 to assist governmental, educational, and private institutions in becoming technologically connected. However, a number of organizations felt that the monetary costs of ICT solutions and implementation were too high.

Table 3. Barriers to ICT Investment

Rank	Barriers to Investment	Percentage
1	Lack of Necessary Internal Skills	46%
2	Lack of Time to Implement ICT Project	35%
3	Monetary Cost	30%
4	Lack of availability of Information	24%
5	Government Regulation	21%
6	Lack of top Management support	20%
7	Bad experience in the past	19%
8	Uncertain about retain	12%

Realization of Business Performance Improvements

Table 4 shows that those companies who have adopted ICT have realized that ICT has increased better relationships with their customers and suppliers, increased revenue, and helped in cutting costs. These organizations are very positive in continuing to invest and harvest those benefits in the future.

Table 4: Benefits due to ICT Adoption

Rank	Benefits due to ICT Adoption	Respondent %
1	ICT will increase better relationship	90
2	ICT has increased better relationship	82

3	ICT will reach new customer	81
4	ICT will increase revenue growth	80
5	ICT will expect cut in cost	78
6	ICT has increased revenue growth	66
7	ICT has cut cost	62
8	ICT helped beyond area	53

ICT Implementation and Outsourcing

Figure 2 shows that, overall, 89% of organizations outsource some portion of their ICT functions. Figure 2 also shows that 27% of Nigeria businesses outsourced more than 50% of their activities, 32% outsourced 25% to 50% of their activities, 15% outsourced between 10% and 25% of their activities and 15% outsourced less than 10% of their ICT activities. It seems to contradict with the earlier result in which 70% of organizations had an IT department, possibly indicating that they may not have all the capabilities they need, thus the need to outsource. A study by Harindranath et al. [45] found that 50% of the firms in their survey used external consultants for ICT matters.

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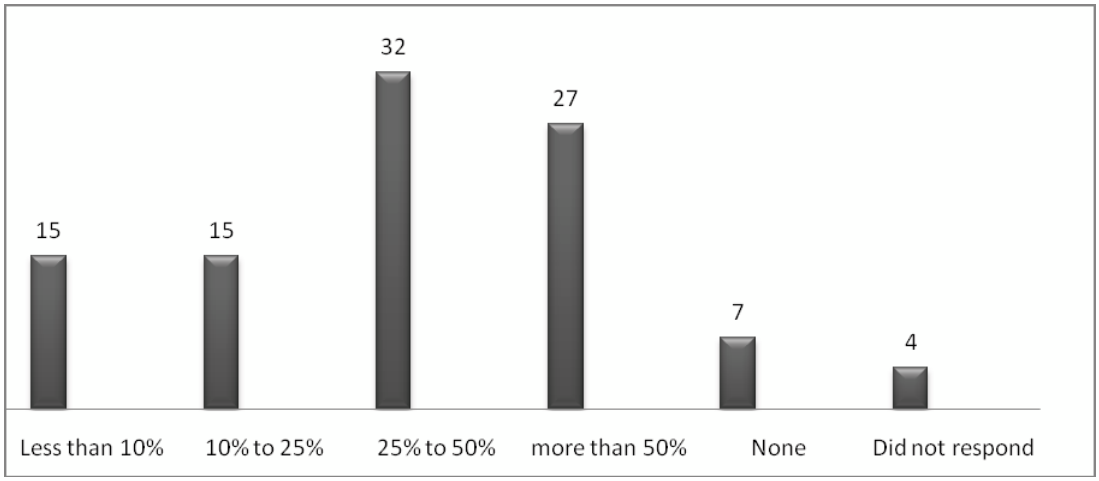

Figure 2: ICT Outsourced Percentage

Resources Used for ICT Implementation

While it is important to understand which ICTs were adopted and used within Nigerian companies, it is also important to understand which internal or external resources were used to implement these technologies. Most of the enterprises surveyed used internal resources to implement basic technologies such as the installation and setup of desktop or laptop computers, data storage hardware, or business productivity software. As technologies become more sophisticated, such as the use of enterprise software applications, wireless networking or the use of mobile phone applications, the firms tended to use external resources.

A number of firms used both internal and external resources to implement some of the technologies. It was observed that companies often used external resources to initially implement the technology, and then tended to use internal resources to maintain and upgrade the implemented technologies. This shows that most of the Nigerian business enterprises have resources to implement basic ICT; however, they lack skills and resources in

more advanced/specialty functions such as ERP, and data storage and network solutions and utilized external help in these areas of ICT. This further emphasizes the need for ICT training amongst companies in Nigeria. Harindranath et al. [45] and [46] also found that the lack of ICT expertise was one of the main barriers in their study.

Discussion and Implications of the Results

The analysis revealed that organizations in Nigeria are taking a comprehensive approach to their ICT investment, focusing on both strategic and operational aspects of their businesses. The impact has resulted in changes that include the enrichment of the ICT culture among employer and employee, and better accessibility to information.

This analysis also revealed that companies in Nigeria are making significant investment in ICT and there is a low competition amongst companies in the marketplace. The main driving forces for ICT investment were to provide better and faster customer service, and to stay ahead of the competition. The study found that about two-thirds of the respondents have realized business benefits of ICT adoption such as better customer relationships, increase in revenue and in reducing costs. About 80% of the respondents are very positive about increasing their business performance in the future.

With regard to barriers to ICT investment, the majority of firms felt that a lack of necessary internal skills and high costs of implementation were the major barriers. More than half of the respondents felt that the costs of implementation were too high. Lack of availability of relevant information and advice on suitable and effective technologies was also one of the major barriers. Other barriers included companies having no time to implement ICT projects, lack of top management support, negative past experiences, and adhering to government regulations and requirements. These findings were consistent with other studies [45][29].

Overall, 89% of the surveyed organizations outsource some portion of their ICT functions. More than one quarter of the participants outsourced over half of their ICT activities. This can be related to the lack of in-house capabilities in ICT identified as a major barrier. These results also confirm findings of [45][29][46] and re-emphasizes the need for ICT training in business enterprises. The findings of our research show that the surveyed companies lacked necessary ICT knowledge and skills as well as the mechanism to find and receive advice and support. Our study found that Nigerian firms have adopted basic technologies (computers, productivity software, internet, and accounting and HR packages) but are limited in the more sophisticated technologies such as wireless, data storage, and network security solutions, ERP, CRM, SCM and E-Commerce. In order for Nigerian organizations to move to the next level of ICT adoption, and to be more competitive it is suggested that the Nigerian government:

- Should increase awareness among SMEs of the benefits of ICT adoption in order for them to become more competitive;
- Develop policies, procedures, standards, and guidelines for the various sectors of the ICT industry; provide incentives for ICT adoption in the form of soft loans, or special arrangements with vendors to provide ICT products and services at affordable prices; and allocate more resources to upgrade the telecommunication infrastructure within the country

Additionally, organizations in Nigeria could become more competitive by investing more in the training of their employees in ICT. Finally, trade organizations (Ministry of Trade & Investment and the Chamber of Commerce) could establish special departments to focus on providing up-to-date information on appropriate ICT

solutions to SMEs and to provide consulting services at no cost or at a very low cost on ICT adoption.

Conclusion

The study provides an overview of the current status of ICT adoption in private and public organizations in Nigeria. The analysis revealed that Nigerian companies are focusing on both strategic and operational aspects of their business. The impact has resulted in changes that include the enrichment of the ICT culture among employer and employee, and better access to information. This study revealed that organizations in Nigeria have made a significant investment in ICT to date. There is relatively little competition amongst companies in the marketplace. The majority of the respondents have realized business benefits from ICT adoption such as better customer relationships, increase in revenue and cost reduction. The main drivers for ICT investment were to provide better and faster customer service, stay ahead of the competition, and follow management directives. Lack of internal skills and the high costs of ICT were the major barriers in adopting ICT. An important contribution of this paper is that it provides preliminary exploratory data on the various aspects of ICT in Nigerian organizations. The findings of this research will provide a foundation for future research and will help policy makers in understanding the current situation regarding usage and the impact of ICT on companies in Nigeria.

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Limitations of the Research and Directions for Future Research

This study was a preliminary exploratory study to learn about the status of usage and adoption of ICT in enterprises in Nigeria. There are a number of issues such as legal, regulatory, interventions from the government in the adoption of ICT that require further investigation. These results are based on a sample of 102 companies. Data was collected from Nigerian companies who use some form of ICT in their business thus the vast majority of businesses in Nigeria who do not use computers (mainly micro business) were excluded from the research sample. The results show a general trend and practices of the use and impact of ICT on business enterprises in Nigeria. A larger sample is needed to further validate these results and trends

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