

# Are Nigeria SMEs Effectively Utilizing ICT?

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## Abstract

This paper investigates reasons for the non-utilization of ICT by SMEs in Nigeria using a survey of 180 SMEs. The results of the study indicates that majority of Nigeria SMEs utilizes basic ICT such as word processing, fixed landlines, printers and fax machines but rarely use the computer for advance functions such as business analysis, planning and decision making. However, there are key factors that inhibit these SMEs from effectively utilizing ICT in their various businesses. The survey suggests that electricity and infrastructural inadequacies are the most prevalent factors for non-utilization of ICT amongst SMEs in the region. The overall study is relevant to SMEs in general; policy makers and stakeholders in creating initiatives that will assist in the development of these SMEs.

**Keywords:** ICT, Effective, Utilization, SMEs, Nigeria

## 1. Introduction

In both developed and developing countries, Small and Medium Sized Enterprises (SMEs) play important roles in the process of industrialization and economic growth (Adekunle and Tella, 2008). SMEs contribute significantly to the economic development of Nigeria. These contributions are remarkable as about 10% of the total manufacturing output and 70% of the industrial employment are by SMEs (Aina, 2007). Also, Ihua (2009) states that about 97% of the entire enterprises in Nigeria are SMEs and they employ an average of 50% of the working population as well as contributing up to 50% to the country's industrial output. Information and Communication Technology (ICT) is regarded as a driver and enabler of economic development in most economies including Nigeria. ICT has brought about changes in the way businesses are conducted amongst SMEs as they play a major role in storing, retrieving, processing and disseminating information (Apulu and Latham, 2009). Ifinedo (2006) states that SMEs in Nigeria can increase their market reach, enhance customer service and reduce both marketing and distribution cost through e-business. However, majority of Nigeria SMEs are not utilizing ICT which is the foundation of e-business due to some major barriers as identified in this study. Hence, this paper highlights the causes of non-utilization of ICT amongst SMEs in Nigeria.

## 2. Literature Review

### 2.1 Significance of SMEs

SMEs have been discovered to be a key driver for a country's economic growth (Schmiemann, 2009) hence SMEs cannot be overlooked in the economic development of any country. Okongwu (2001) argues that SMEs are recognized as the main source of economic growth and a major factor in promoting private sector development and partnership, in developed and developing countries. SMEs help to create employment and are often seen as very important for the growth and innovation of dynamic economies (Mutula and Brakel, 2006). Therefore, economic growth and development in Africa can be achieved through the emergence of strong SMEs,

which will later grow to become major players in the developing economy. SMEs help to diversify economic activities that have significant contributions to imports and exports, they are flexible and can adapt quickly to changing market demands (Ongori, 2009). Thus, SMEs contribute more and more to the national and international economies of the world.

According to Wattanapruttipaisan (2003), the significance of SMEs for growth, productivity and competitiveness of the economies in both developed and developing countries is acknowledged universally, since SMEs bring about substantial local capital formation, contribute to improved living standards and achieve high levels of productivity. SMEs are identified as a major means of achieving equitable and sustainable industrial diversification.

### *2.2 ICT in Nigeria*

Nigeria has a population of about 150 million people; it is believed that it has one of the largest markets in Africa (Broadgroup, 2005). The GDP growth rate is estimated to be more than 6% per year. This gives opportunity for businesses to participate in various services. According to Asaolu (2006) in recent times, computers are deployed to every sectors of the economy. These are noticeable with the improvement in computer processing, applications and tools developed on regular basis.

Akpan-Obong (2009) states that Nigeria is a major actor in the ICT sector in Africa. The author added that Nigeria could take the lead in the ICT sector in Africa as a result of its policy approach to growing ICTs and the active roles of the SMEs. Nigeria has so far recorded significant achievements in ICT utilization, and has recorded higher growth rates in the penetration and diffusion levels of ICT. Akpan-Obong (2009) further added that Nigeria could lead the way to harnessing ICT for socio-economic growth. Also there are prospects for SMEs development and economic growth with the application of ICT despite the poor state of infrastructures in the country. Hence, there is a need for Nigeria SMEs to utilize ICT.

### *2.3 Contribution of SMEs' To Nigeria Economy*

The contributions of SMEs to Nigeria's economy are not contestable as about 10% of the total manufacturing output and 70% of the industrial employment are by SMEs (Aina, 2007). Through the utilization of local resources, SMEs promote industrial and economic development and are responsible for the production of intermediate goods and the transformation of rural technology (Aina, 2007). Nigerian SMEs not only provide employment and income for majority of its citizens but are also recognized as the breeding ground for domestic entrepreneurial capabilities, technical skills, technological innovativeness and managerial competencies for private sector development (SMEDAN, 2005, Aina, 2007).

The assistance of SMEs to any economy are obvious, as SMEs are known to contribute to the development of several economies in terms of output of goods and services and creation of jobs at relatively low capital cost (Apulu and Latham, 2010). SMEs also improve forward and backward linkages between economically, socially and geographically diverse sectors of many economies (SMEDAN, 2005). Thus, the development of SMEs is an essential element in the growth strategy of many economies including Nigeria. The simple and popular definition of SME is a firm with 0-250 employees (DTI, 2007) in (Harindranath et al, 2008). However, the Small and Medium Sized Development Agency of Nigeria (SMEDAN) defines SMEs in the table below:

#### **Table 1 Here**

In Nigeria, SMEs cover the entire range of economic activity within all sectors and share a number of common problems that hinder them from the effective utilization of ICT. These problems, as identified by SMEDAN include low market access to credit, poor information flow, discriminatory legislation, poor access to land, weak linkages among different sectors, weak operating capabilities in terms of skills, lack of knowledge and attitudes, lack of infrastructural facilities among others.

According to Chacko and Harris (2005), the reliance of the world economies on ICT increases every day either to receive, to process or to send out information. However, the small businesses within Africa which forms a large part of the economies are yet to reap these benefits evenly. This is because the SMEs are unable to meet up with the prerequisite level of access to and utilization of ICT which in turn, deprives them from engaging in the regional and global economic business network. However, until these prerequisites are met, SMEs cannot integrate into the global supply chain, and will be unable to bid for outsourcing businesses and increase their internal productivity and efficiency (Chacko and Harris, 2005).

### *2.4 Information and Communication Technology (ICT)*

ICT refers to a wide range of computerized technologies. ICT is any technology that enables communication and the electronic capturing, processing and transmission of information (Ashrafi and Murtaza, 2008). These

technologies include products and services such as desktop computers, laptops, handheld devices, wired or wireless intranet, business productivity software such as text editor and spreadsheet, enterprise software, data storage and security, network security and so on (Ashrafi and Murtaza, 2008). In Nigeria, commonly used ICTs include Internet, Personal Digital Assistants (PDAs), Automated Teller Machines (ATMs), mobile phones and smart cards.

### *2.5 The Role of ICT in SMEs'*

In the present knowledge-based economy, it is important for SMEs to adopt processes that enable them to provide services that will bring about competitive advantage. ICT has a significant positive impact on organizational performance (Maldeni and Jayasena, 2009) and is vital to SMEs. ICT is known as a major catalyst and enabler of organizational change (Hazbo et al, 2008). Without the utilization of ICT, it may be impossible for modern SMEs to compete as ICT has a significant impact on SMEs operations and is claimed to be crucial for the survival and growth of economies in general (Berisha-Namani, 2009). ICT provides opportunities for business transformations (Chibelushi, 2008) and provide SMEs the opportunity to conduct business anywhere (Jennex et al, 2004).

The European Commission (2008), states that SMEs could use ICT in order to grow and to become more innovative. Hence, there is a need to encourage the use of ICT in SMEs and address the high cost of ownership of ICT equipment since it can help to improve technical and managerial skills, making available e-business solutions for SMEs. Love et al (2004) ascertain that the use of ICT offers many benefits to SMEs at different levels (operational level, tactical level and strategic level).

In Africa, the use of ICT is very recent as compared to countries like the UK and USA, which is at a better stage (Harindranath et al, 2008). Chacko and Harris (2005) state that there are two ways SMEs can benefit from ICT, first, SMEs can be the producers of ICT or second, SMEs can be users of ICT with the intention to increase productivity or improve communication for reaching new customers.

Chacko and Harris (2005) also state that the use of ICT by SMEs depends on the benefits the ICT tools can bring to the business, which means its usage depends on the cost effectiveness. The ICTs adopted by SMEs serve as basic tools for their business communication such as using either mobile phones or fixed lines. For example, after SMEs adopt ICT tools, they also use personal computers (PC) with basic software installed. They can enjoy improved communication (with suppliers, customers or employees and so on) and meet information processing needs. Having Internet presence also enable SMEs to enjoy improved communication tools such as email, file sharing, creating websites, e-commerce, among others (Chacko and Harris, 2005).

In addition, Chacko and Harris (2005) identified three benefits associated with the use of ICT in SMEs: the benefits it can bring to the business in terms of utilization, the ICT literacy level of its employees and the financial resource available. Levy et al (2001) consider how ICT is utilized by SMEs and point to the operational nature of the investments, which is driven by the consideration of cost and efficiency. However, Chacko and Harris recommend that whichever criteria is used should start with the basic technologies such as fixed line or mobile phone, fax, computers and basic document processing with Microsoft Office software to more advanced technology such as email, e-commerce and information processing systems.

Ongori (2009) states that the use of ICT would help change the way businesses operate in this era of globalization by changing business structures and increasing competition, creating competitive advantage for businesses and by changing business operations. For these reasons, SMEs must have an ability to compete and dynamically respond to rapidly changing markets using ICT. According to Kapurubandara and Lawson (2006), for survival and staying abreast in a competitive global economy it is apparent that SMEs embrace ICT, as it is becoming imperative for SMEs to gain competitive advantage and for stability in international markets. Furthermore, Ongori (2009) states that in the present era of globalization, SMEs must have an ability to compete and dynamically respond to rapidly changing markets as it plays a significant role in an organization's growth and success. This implies that SMEs need to be connected to the digital marketplace. Based on the review of literatures, it implies that there is need for Nigeria SMEs to make good use of the latest technologies and ideas as this may likely assist them stay competitive (Lal, 2007).

### **3. Materials and methods**

The low utilization of ICT amongst Nigerian SMEs is linked to several factors. The factors identified below are based on a survey that was conducted between February and April 2010 with SMEs in Port-Harcourt, Rivers State, Nigeria. A total of 250 questionnaires were sent out to SMEs for the purpose of this study. 180 copies of the questionnaires were received which implied a good response rate.

#### 4. Results and Discussion

This section provides results and discussion on the findings from the data gathered from the survey. The results consider factors that were ranked high by respondents as major factors inhibiting the effective utilization of ICT by SMEs in Nigeria. However, some of the factors identified have been grouped in themes based on their similarities. Of the 180 respondents, 27 were Construction/Engineering Firms, 8 were Pharmacies, 10 were Telecommunication Industries/Mobile Phone dealers, 19 were Whole sale/Retail shops, 5 were Transport companies, 15 were Clearing and forwarding/Haulage companies, 13 were financial service companies, 28 were manufacturing companies, 23 were Oil and Gas companies, 21 were Maritime companies, 2 were Legal practice, 3 were Hotel/Restaurants and bar and 6 were Photo shops/Colour laboratories. The SMEs were selected based on the definition of SMEs in Nigeria (Purposive sampling).

**Table 2 Here**

**Figure 1 Here**

##### 4.1 Electricity

The table reveals that electricity has 81.7% which is the highest among the factors identified in the survey. This shows that the epileptic supply of electricity in Nigeria has a major impact on SMEs utilization of ICT. Baker (2008) in his study identified that less than 20% of the Nigerian population have access to stable electricity supply. Similarly, Gnansounou (2008) also stated in his research that the Nigerian demand for electricity is in deficit of about 80%. This indicates that there is a correlation between the results of this study and that of Baker (2008) and Gnansounou (2008).

##### 4.2 Lack of Infrastructure

Lack of infrastructural facilities is another major barrier affecting the effective utilization of ICT in Nigeria SMEs. This is as a result of the insufficient provision of some major infrastructures needed for the proper implementation of ICT such as Network backbone, fibre-optic backbone for Local Area Networks amongst others that is essential for interconnectivity between SMEs. Iloanusi and Osuagwu (2009) identified similar issues in their research. Based on this study, 71.7% of the respondents' indicated that the lack of infrastructural facilities inhibits their ICT usage. Kapuruandara (2006) highlights that lack of telecommunications infrastructure such as poor Internet connectivity, lack of fixed telephone lines for end user dial-up access, and the underdeveloped state of the Internet Service Providers are factors affecting the proper utilization of ICT amongst SMEs in Sri Lanka. Arikpo et al (2009) in their research, also highlighted the high subscription and infrastructure costs, coupled with the poor quality of service by service providers at inception, as a major hindrance to the use of ICT in education research and development in Nigeria. In this study, the high cost of ICT equipments is estimated to be 36.1% which shows that the acquisition of ICT equipments is also a barrier that inhibits the effective utilization of ICT.

##### 4.3 Poor Service from ISP Provider

Poor service provided by ISP providers is estimated to be 67.2%. The poor services provided by ISPs in Nigeria poses a great hindrance to the effective utilization of ICT due to low bandwidths characterized by very slow speed, high subscription costs, together with frequent disconnection of the networks. Hence, in order to create an enabling environment for the utilization of ICT in Nigeria SMEs, there is a need to put some form of initiatives in place, which will assist in solving this challenge. This includes having the right telecommunications infrastructures in place such as stable internet connectivity, fixed telephone lines for end users and so on.

##### 4.4 Lack of Education

From the findings, lack of education is estimated as 61.7%, illiteracy accounts for 59.4% while lack of technical skills/poor technical knowledge (40%), account as other factors that also hinder the effective utilization of ICT in SMEs in Nigeria. Education ranks high with above 50% of the identified factors. Lack of education and lack of awareness of ICT act as reasons for non-utilization of ICT (Kapurubandara, 2009). Kapurubandara (2009) added that literacy amongst SMEs is generally low and often SMEs do not have access to professional advice to address complex ICT issues. In other words, the poor technical knowledge and lack of expertise of ICT in SMEs deprives SMEs of benefitting from new developments and in turn slows their growth.

##### 4.5 Lack of Support from Government and Banks

The level of support from the Nigerian government is estimated to be 48.3% and banks 45% and is considered inadequate. Presently in Nigeria most banks do not give out loans to SMEs and some banks such as the Agricultural Development Banks that are mandated to give loans to SMEs require collateral such as landed properties, shares and capital but the inability of most SMEs to present the required collateral remains a major

setback (Owoseye, 2010). Furthermore, the government which is meant to be the backbone for SMEs do not fully support the development of SMEs in Nigeria in terms of policies and initiatives. Ling (2001); Rashid and Qirim (2001); Tan and Teo (2000) argue that government policies are meant to assist SMEs to increase their competitiveness and also enable SMEs to have greater influence concerning the use of ICT. Hence the Nigerian government is expected to be a regulator of economic activities between the SMEs and the banks.

#### 4.6 Cost of Training and Maintenance

In the study, the cost of training ranks 50.6% while the cost of maintenance ranks 42.8%. Managers of SMEs often lack sufficient funds to adopt new technologies such as ICT. According to Arendt (2008), most SMEs do not develop ICT training plans for their businesses. The majority of Nigeria SMEs managers are skeptical of investing in ICT due to the high cost of training their employees and also, due to the high cost of maintaining the various ICT equipments. SME managers in Nigeria are often reluctant to train their employees. This is because some managers are scared of loosing their employees after training for better job offers, which is a reason for the low training support from SMEs managers.

### 5. Conclusion

The result of the survey reveals that lack of electricity is the leading factor behind the non-utilization of ICT by Nigerian SMEs, hence efforts need to be made to reposition the power sector in Nigeria in terms of power generation and distribution in order to have effective and efficient power supply. There is the need for the government to have policies and measures to enforce these policies as this will assist to improve the electricity generation and supply problems in Nigeria. This will also assist SMEs to utilize ICT which, in turn will help to drive the country's economy. The findings reveal that lack of infrastructural facilities also contributes to poor utilization of ICT by SMEs, this also relates to the inadequate government support in terms of providing the required infrastructural facilities.

Furthermore, the findings indicate that there are other barriers such as poor services from the ISP providers, financial constraints, lack of education, illiteracy amongst employees, cost of training employees and finally lack of government support. In terms of education and training there is the need to increase the ICT training opportunities in order for these SMEs to fully utilize ICT. The government could encourage SMEs to work in partnership with Universities and accredited ICT training bodies in Nigeria. Also, ISP providers need to lower their tariffs to accommodate SMEs as SMEs usually face the challenge of not being able to subscribe to higher bandwidth of supply. In addition, there is need for the Banks in Nigeria, to review their policies in terms of supporting ICT and the normal request for collaterals as most SMEs can hardly meet up with their demands.

Finally, the government need to develop policies that are geared towards addressing the issues affecting SMEs from effectively utilizing ICT and hence, gaining the benefits associated with ICT utilization.

### References

- Adekunle, P. A., & Tella, A. (2008). Nigeria SMEs Participation in Electronic Economy: Problems and the Way Forward. *Journal of Internet Banking and Commerce*, 12(3),
- Aina, O. C. (2007). The role of SMEs in poverty alleviation in Nigeria. [Online] Available: <http://www.journalanduse.org/Assets/Vol3%20Papers/JOURNAL%2010.pdf> (13<sup>th</sup> December, 2009).
- Akpan-Obong, P. (2009). How Nigeria can win the ICT race in Africa, [Online] Available: <http://ndn.nigeriadailynews.com/templates/?a=14769> (16<sup>th</sup> July, 2010).
- Apulu, I and Latham, A. (2009). Information and communication technology adoption: Challenges for Nigerian SMEs. *TMC Academic Journal*, 4, 2, 64-80.
- Apulu, I., and Latham, A. (2010). Benefits of Information and Communication Technology in Small and Medium Sized Enterprises: A case study of a Nigerian SME. *Proceedings of the UK Academy for Information Systems Conference, 2010*.
- Arendt, L. (2008). Barriers to ICT in SMEs: how to bridge the digital divide? *Journal of Systems and Information Technology*, 10, 2, 93-108.
- Arikpo, I.I., Osofisan, A., and Usoro, A. (2009). Bridging the digital divide: The Nigerian Journey so far. *International Journal of Global Business*, 2, 1, 181-204.
- Asaolu, O. S. (2006). On the emergence of new computer technologies. *Educational Technology and Society*, 9, 1, 335-343.
- Ashrafi, R., and Murtaza, M. (2008). Use and Impact of ICT on SMEs in Oman. *Electronic Journal Information*

*Systems Evaluation*, 11, 3, 125-138.

Baker, L. (2008). Facilitating whose power? IFI policy influence in Nigeria's energy sector, *Published by Bretton Woods Project* [Online] Available: [http://www.brettonwoodsproject.org/update/60/bwupdt60\\_ai.pdf](http://www.brettonwoodsproject.org/update/60/bwupdt60_ai.pdf) (28th June, 2010).

Berisha-Namani, M. (2009). The role of information technology in small and medium sized enterprises in Kosovo, Fulbright Academy Conference 2009, [Online] Available: [http://www.fulbrightacademy.org/file\\_depot/0-10000000/20000-30000/21647/folder/82430/Berisha+Paper+IT+in+SMEs+in+Kosovo.pdf](http://www.fulbrightacademy.org/file_depot/0-10000000/20000-30000/21647/folder/82430/Berisha+Paper+IT+in+SMEs+in+Kosovo.pdf) (15<sup>th</sup> July, 2009).

Broadgroup. (2009). Synopsis: Nigeria, *TNT Venture*, [Online] Available: <http://www.tmtfinance.com/reports/newreports/newreports7.aspx> (6<sup>th</sup> July, 2010).

Chacko, J. G., and Harris, G. (2005). ICT and Small, Medium and Micro Enterprises in Asia Pacific – size does matter. *Information Technology for Development*, 12, 2, 175-177.

Chibelushi, C. (2008). Learning the hard way? Issues in the adoption of new technology in small technology oriented firms. *Education + Training*, 50(8/9), 725-736.

European Commission. (2008). Making SMEs more competitive [Online] Available: [http://ec.europa.eu/enterprise/sme/competitive\\_en.htm](http://ec.europa.eu/enterprise/sme/competitive_en.htm) (30<sup>th</sup> October, 2008).

Gransounou, E. (2008). Boosting the electricity sector in West Africa: An integrative vision. *International Association for Energy Economics*, 17, Third Quarter, 23-29.

Harindranath, G., Dyerson, R., and Barnes, D. (2008). ICT Adoption and Use in UK SMEs: A Failure Initiatives? *Electronic Journal of Information Systems Evaluation*, 11, 2, 91-96.

Hazbo, S., Arnela, C., and Chun-yan, H. (2008). ICT adoption model of Chinese SMEs. *International Journal of Business Research*, 44(2008), 161-165.

Ifinedo, P. (2006). "Factors Affecting E-Business Adoption by SMEs in Sub-Saharan Africa: An Exploratory Study from Nigeria", IN Al-Qirim, N. (Ed.) *Global Electronic Business Research: Opportunities and Directions*. Hershey, PA, Idea Group Publishing

Ihua, U.B. (2009). SMEs Key Failure-Factors: a comparison between the United Kingdom and Nigeria. *Journal of Social Sciences*, 18 (3), 199-207.

Iloanus, N. O., and Osuagwu, C. C. (2009). ICT in Education: Achievements so far in Nigeria. *Research, Reflections and Innovations in Integrating ICT in Education*. Badajoz: FORMATEX, 1331-1335. [Online] Available: <http://www.formatex.org/micte2009/book/1331-1335.pdf> (15<sup>th</sup> March, 2010).

Jennex, M. E., Amoroso, D and Adalakun, O. (2004). E-commerce infrastructure success factors for small companies in developing economies. *Electronic commerce Research*, 4, 263-286.

Kapuruandara, M. (2006). Model for Adoption of ICT and E-Commerce in the Developing Countries: A Pilot Study of SMEs in Sri Lanka, [Online] Available: <http://bai2006.atistr.org/CD/Papers/2006bai6370.doc> (15<sup>th</sup> July, 2009).

Kapurubandara, M. (2009). A Framework to E-Transform SMEs in Developing Countries. *The Electronic Journal on Information Systems in Developing Countries*, 39, 3, 1-24.

Kapurubandara, M., and Lawson, R. (2006). Barriers to Adopting ICT and e-commerce with SMEs in developing countries: An Exploratory study in Sri Lanka, *University of Western Sydney, Australia*, [Online] Available: [http://www.collector.org/archives/2006\\_December/07.pdf](http://www.collector.org/archives/2006_December/07.pdf) (15th June 2009).

Lal, K. (2007). Globalization and Adoption of ICTs in Nigerian SMEs. *Science, Technology Society*, 12(2), 217-244.

Levy, M., Powell, P., and Worrall, L. (2005). Strategic Intent and E-business in SMEs: Enablers and Inhibitors. *Journal of Information Resources Management*, 18, 4, 1-20.

Levy, M., Powell, P., and Yetton, P. (2001). SMEs: Aligning IS and the Strategic Context. *Journal of Information Technology*, 16, 133-144.

Ling, C. Y. (2001). Model of factors influences on electronic commerce adoption and diffusion in small & medium sized enterprises. [Online] Available: [http://ecis2001.fov.uni-mb.si/doctoral/Students/ECIS-DC\\_Chong.pdf](http://ecis2001.fov.uni-mb.si/doctoral/Students/ECIS-DC_Chong.pdf) (5<sup>th</sup> May, 2010).

Love, P. E. D., Irani, Z., and Edwards, D. J. (2004). Industry-Centric benchmarking of information technology benefits, costs and risks for small and medium sized enterprises in construction. *Automation in Construction*, 13, 4, 507-524.

Maldeni, H. M. C. M., and Jayasena, S. (2009). Information and communication technology usage and bank branch performance. *The International Journal on Advances in ICT for Emerging Regions (ICTer)*, 2, 2, 29 – 37.

Mutula, M.S and Brakel, P.V. (2006). E-readiness of SMEs in the ICT sector in Botswana, with respect to information access. *Electronic Library*, 24, 402-407.

Okongwu, D. A. (2001). Fostering the innovation potential of SMEs in the globalization era: The role of patents. WIPO Milan Forum on Intellectual Property and Small and Medium-sized Enterprises organized by The World Intellectual Property Organization (WIPO) and the Ministry of Industry and Foreign Trade of the Government of Italy. February 9 -10, Milan, Italy,

Ongori, H. (2009). Role of information communication technologies adoption in SMES: evidence from Botswana. *Research Journal of information technology*, 1, 2, 79-85.

Rashid, M. A., and Al-Qirim, N. A. (2001). E-commerce technology adoption framework by New Zealand small to medium size enterprises. *Research Letters in the Information and Mathematical Sciences*, Institute of Information and Mathematical Sciences, 2, 63-70.

Schmiemann, M. (2009). SMEs were the main drivers of economic growth between 2004 and 2006, [Online] Available: [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-09-071/EN/KS-SF-09-071-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-09-071/EN/KS-SF-09-071-EN.PDF) (16<sup>th</sup> July, 2010).

Tan, M., and Teo, T. S. H. (2000) Factors influencing the adoption of internet banking. *Journal of the Association for Information Systems*, 1, 5, 14.

Wattanaputtipaisan, T. (2003). Four proposals for improved financing of SME development in ASEAN. *Published in Asian Development Review*, 20, 2.

Table 1. Definition of SME

S/N	Size Category	Employment	Assets (₹ Million) excluding land and building
1	Micro Enterprises	Less than 10	Less than 5
2	Small enterprises	10-49	5 - less than 50
3	Medium enterprises	50-199	50- less than 500

(SMEDAN, 2005)

Table 2. Causes of Low use/utilization of ICT in SMEs

Causes of Low use/utilization of ICT in SMEs	Number of Respondents	Percentage
Lack of Electricity	147	81.7
Lack of infrastructural facilities	129	71.7
Poor service from ISP providers	121	67.2
Financial constraint	113	62.8
Lack of Education	111	61.7
Illiteracy amongst employees	107	59.4
Cost of training employees	91	50.6
Lack of government support	87	48.3
Lack of Support from Banks	81	45.0
Cost of maintenance	77	42.8
Lack of technical skill/poor technical knowledge	72	40.0
High cost of ICT equipments	65	36.1
High cost of ISP providers	53	29.4

N = 180

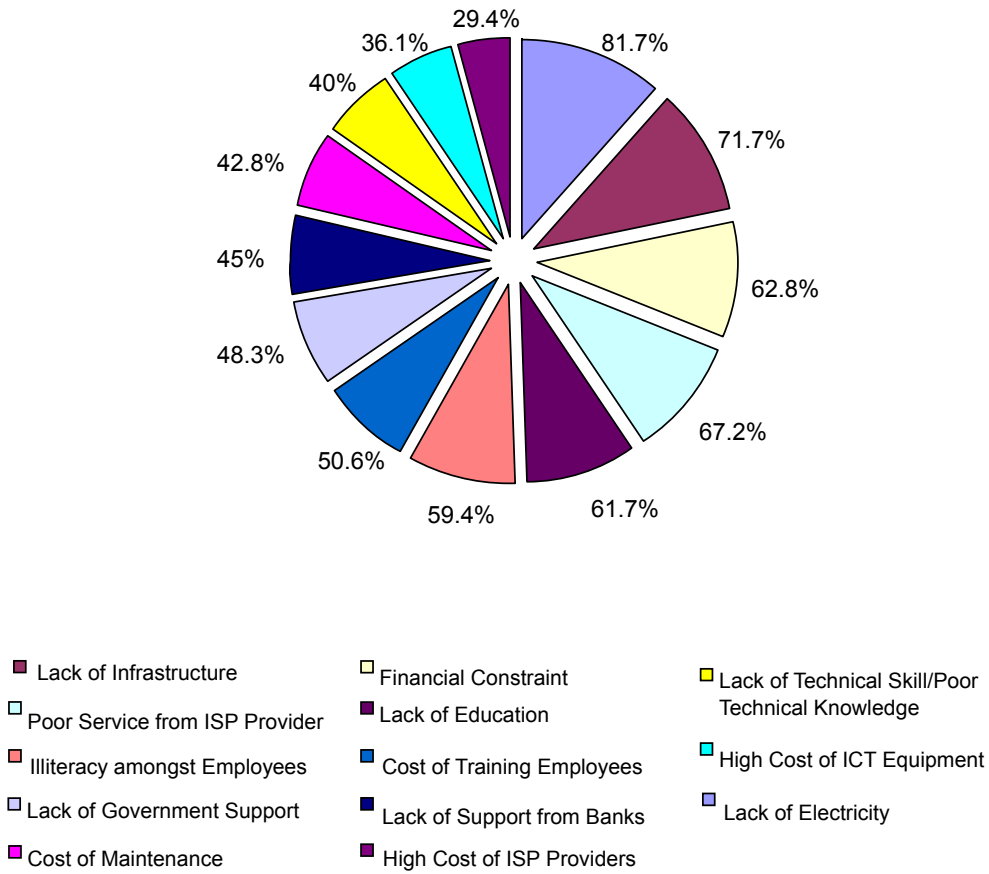


Figure 1. Causes of Low Utilization of ICT in SMEs

Note: All percentage figures are approximated to the nearest 10