CONTRIBUTION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN ACHIEVING NATIONAL GOALS

1.0 INTRODUCTION

Information Communication Technologies (ICT) can be described as goods, applications and services used to create, produce, analyses, process, package, distribute, receive, retrieve, store and transform information. It is a feature of the technological advancements of this period in history where there has been tremendous innovation in information management and communication so that in many countries, information and knowledge is easily conveyed, accessed and used.

The pace of technological change and what is available for use by people has revolutionized how they interact and socialize (by electronic communication for instance), do business, engage in politics including advocacy by technology, find health, improve their education and find recreation and entertainment. A recent article quoted by Dr. Spio-Garbrah of the Commonwealth Telecommunications Organization as saying that "the growth of mobile technology has cut transaction costs of businesses in both the formal and informal economies but remains a challenge for Africa to harness information and communications technology as a traded commodity for the interest of Africans" ("ICT: Africa's Electronic Future" by Michael Addo in The Chronicle Friday October 6, 2006 edition. Page 14).

Very often, when ICT is mentioned the more recent modes of communication such as telephones (fixed lines and mobiles), satellite communication, computer hard- and software as well as the electronic media, come to mind. However, the more traditional modes of communication such as radio, television and print media must be included. Given the potential ICT has for educating people and assisting them to make decisions relevant to their lives, the implications for enhancing popular participation in governance. The use of ICTs could therefore complement the conventional agricultural extension methods in Ghana just like India.

1.2.0 ICT INFRASTRUCTURE IN GHANA

In response to global policy changes in the ICT industry, Ghana was among the first African countries to reform its ICT sector and establish the necessary legal and regulatory framework to support the growth of the sector. Since 1990, the government of Ghana has liberalized the telecommunications sector with the aim of enabling the private sector to actively participate in the provision of services to increase access and coverage, introduce value-added services and boost consumer access to the state-of-the-art technology (Frempong and Atubra, 2001).The liberalization policy was based on a 5-year Accelerated Development Programme (ADP) for the telecommunication sector, introduced in 1994. It aimed at increasing teledensity from 0.31 percent to about 1.5-2.5 percent through provision of public and private pay phones; improve public access in rural and urban areas; expand coverage of mobile services; promote Ghanaian ownership of telecommunications companies; and retain overall public regulatory control of the sector through the creation of a single agency (Frempong et al., 2005).By 2000, the ADP had achieved an increase in teledensity from 0.34 lines to 1.16 lines per 1,000 inhabitants and public phones from 0.001 to 0.16 per 1,000inhabitants. A Second National Operator (SNO), Wastrel, was licensed, and numerous private FM and TV stations were operating (Wilson III, 2005).

The government of Ghana introduced its Information and Communication Technology for Accelerated Development (ICT4AD policy) in the latter part of 2003.According to the basic premise of the policy, Ghana's development process can be accelerated through the development, deployment and exploitation of ICTs within the economy and society. The overall aim of ICT4AD was to engineer an ICT-led socioeconomic development process with the potential to transform Ghana into a middle income information-rich, knowledge-based and technology-driven economy and society.

1.2.1MOBILE TELEPHONY

Access to telephone services improved considerably in the early stages of the liberalization. With respect to the market, telephone penetration at the end of 2008 was 52.4%; composed of 99% mobile and 1% fixed. The equivalent access lines in service were Eleven Million, Five Hundred and Seventy Thousand, Four Hundred and Thirty (11,570,430) mobile; and One Hundred and Forty-Three Thousand, Nine Hundred (143,900) fixed (National Communications Authority,

2008). As at April 2013 the voice subscriber base stood at 26,591,124 with MTN having the largest market share with 12,039,527 subscriber base while Expresso having the lowest subscriber base of 156,721.

1.2.2 INTERNET USAGE

The emergence of new wireless and satellite-based solutions is positioning the country to take advantage of the benefits to be derived from ICTs (Cohbinah, 2003). The use of computers has increased tremendously while the numbers of Internet Service Providers (ISPs) have also increased. At the end of 2008, the National Communications Authority (NCA) had licensed a total of 114 companies to provide Internet services in the country. Out of these, 36 had actually commenced business (National Communications Authority, 2008).Internet penetration in Ghana is relatively low. According to Statistics available from the International Telecommunication Union, (ITU), the number of Internet users in Ghana increased from 30,000 in 2000 to 1, 597,000 in 2012. Even though the increment in terms of absolute figures was encouraging, the penetration rate was 6.2%,which was lower than the African average rate of 11.5% (ITU,2012). As at April 2013,the total number of data subscribers in the country had increased 8,696,434 with MTN having a data subscriber base of 5,820,168 and expresso again having the lowest base of 47,092.

1.2.3 Broadcasting

As at the first quarter of 2013 NCA has authorized 316 FM radio stations out of which 240 are in operational and 28 TV stations, 20 stations are free on air, 7 are Pay per view and one for research purpose (NCA, 2012).

1.2.4 ICT AND AGRICULTURE

Agricultural Information- It has been useful to the sector in provision of modern technology in terms information leading to bumper harvest in production. It is indicating where to purchase fertilizers' to 'how to use them', information on pesticides, herbicides, storage to information on speedboats etc.

1.2.5 Health and ICT

Information and communication Technology play a major role in the achievement of health sector goals. ICT is increasingly applied to the global health sector because it can significantly enhance and improve facets of health services delivery.

In health, ICT help in handling the outbreak of certain epidemics, especially where to get the best treatment for different ailments.

1.2.5.1 Telemedicine Services

Information and Communication Technologies (ICTs) contribute to improving the coverage of national health services in rural areas (Zappacosta, 2001). The application of ICTs to health-care delivery, called telemedicine, enables access to professional expertise irrespective of the geographical location of the patient or the doctor. ICTs have helped rural health workers to communicate easily with the district and regional health directorates for fast and prompt supply of drugs and medical equipment to save lives in Ghana .Patients are also able to communicate easily through mobile phones with health workers to report side effects of drugs administered to them at health centers and clinics.

1.3. Political Information

ICT has contributed to partisan politics in sharing of decision with the electoral commission, the chieftaincy institution has also benefited through the provision of desktop,labtop,printers etc.and state institution responsible for information have modern use of ICT technology in cause of work. .There is also the important role being played by ICTs in gathering and updating information from rural areas to help the central government to build databases on issues such as climate change, environmental pollution, food production and deforestation. In particular, satellite and remote sensing technologies are increasingly being used for planning purposes and the rural areas stand to benefit from them. A growing body of information indicates that ICTs have enormous potential for promoting economic and social development. ICT development has been linked to innovations in economic activities, employment opportunities, social resources such as accessing health-related information and education.

ICT has been used by governments for various initiatives in sharing information. Various government organizations in Ghana have developed web-sites, have had documentaries made

and presented information on resource allocation on the internet, such as the Common Fund Administrator's Office. The National Statistics Office has presented population statistics on compact disc. The newspaper article by Addo referred to earlier indicates that mobile telephones in particular have enabled ordinary citizens to participate in governance processes and democracy through call-ins to radio and TV discussion programmes. Telephones have alerted law enforcement agencies to robberies and crimes. People feel better connected decision-makers and government officials because they can call them as well as public offices up.

1.4 ICT Contribution to Education:

The contribution of ICT to Education are numerous and cannot be underestimated, In Ghana ICT is part of the Education syllabus right from basic school level to Secondary. Admission of students to the secondary schools is done through computerized school selection and placement system. Also, application to tertiary institutions is done through the internet and students academic records are also checked online. Research is done through the use of internet. The introduction of distance education in Ghana by most public universities in Ghana provides learning opportunities to rural people, who, because of geographical distance to the centers of education or for limited financial resources, would be otherwise excluded from improving on their educational qualifications. The use of radio, television and video in education is now common in Ghana. Currently four public universities offer distance education programmes. These are University of Cape Coast, University of Ghana, Kwame Nkrumah University of Science and Technology and the University of Education, Winneba. All the four universities have study centres in most of the ten regions and some district capitals in the country. Computers have been acquired for the Study Centres so that both tutors and students can make use of them to facilitate effective teaching and learning.

1.5 Automation and Networking of Banks

One of the major beneficiaries of ICTs in Ghana is the banks. Through ICTs and the internet many commercial banks in Ghana are now automated and networked. This has saved many Medium and Small Scale Enterprise, traders and farmers in rural and urban areas from carrying huge sums of money on them for their transactions since they can now deposit their money at

one bank and withdraw it in another bank with ease. Ghana has moved a step further to provide International Money Transfer Services for the rural dwellers in their areas of operation. In Ghana, a vibrant MSE sector in the rural areas is very important since 56.2% of the population reside in these areas where poverty is more pronounced with 86% of the population living below poverty line (Ghana Statistical Service,)

1.6 ICT CONTRIBUTION TO GHANA's GDP

According a paper presented by the Ministry of Finance and Economic Planning website by Dr. Daniel K. Twerefou, who is a senior lecturer at the Economics Department of the University of Ghana, Contribution of ICT (Information Communication Technology) sector to Ghana's real GDP (Gross Domestic Product) is difficult to determine despite some efforts to estimate that, a recent study has shown. Preliminary findings of a study carried out recently under the LICOM project in Ghana and copied to Ghana News Agency, has shown that the ICT sector is making significant direct and indirect contributions to almost all sectors of the economy but its actual contribution to GDP is unknown.

The study was carried by the Science and Technology Policy Research Institute (STEPRI), a subsidiary of the Council for Scientific and Industrial Research (CSIR) in Ghana.

The preliminary findings presented by Dr Daniel K. Twerefou, indicates that "It is very difficult obtaining information on the contribution of Information Communication Technology (ICT) to national output because the sector was lumped with other sectors .In 2000, the World Bank's statistics, however, indicated that the sector's contribution for Ghana was 1.8 per cent of GDP.

Meanwhile, Dr Twerefuo added that a current report on innovation and ICT in Ghana had also estimated overall contribution of ICT industry to GDP in Ghana at about USD 750 million a year (about 1 per cent of GDP). ICT as an enabler, he said, is used by other sectors to ensure efficiency and competitiveness in trade, education, agriculture, health, financial services and aviation among others.

Inefficient functioning of the ICT sector, he said, would have multiplicative effects on all other sectors by posing a barrier to development. Dr. Twerefou said ICT as a business, provided

services directly used by consumers-communication services, sale of equipment and ancillary services. He stated that direct and indirect employment by telecommunication sector continued to increase and the country's IT-enabled service industry provided direct employment for about 2500 people .Dwelling more on ICT impact to development, he said, "The financial sector in Ghana was revolutionized by the ICT." He said under the period banks had networked to provide efficient service to its customers.

He said the introduction of mobile and internet banking helped customers to check their statements, order cheque books and pay their bills using the mobile phones. Other services that revolutionalised the banking sector include money transfer such as Money Gram, Vigo and Western Union Money Transfer, use of debit cards, credit cards and other smart cards which made Ghana part of the global financial system. .

1.7 CONCLUSION

There is a great potential for the use of ICTs in development of Ghana. Unlike some other African countries, Ghana is fortunate to have developed an ICT policy, which indicates the government's commitment to support ICT programmes in Ghanaian market. What is required now is policy implementation. One of the ways of improving access to ICT in Ghana is through the promotion of community ICT Centres .This has the advantage of mass usage, maintenance, the security of both service and equipment and the easier collection of charges. Individual communities should be assisted to build their own knowledge centres where indigenous knowledge is combined with exogenous knowledge to improve livelihoods. The government alone cannot carry out this programme. Support is needed from various non -governmental organisations, corporate bodies and individuals in this area. In all these, the urban-rural disparity in the distribution of ICTs which has created a localized digital and information divide must be tackled and dealt with decisively to enhance their socio economic development of the Nation.

REFERENCES

Alemna, A.A. (1993) Agricultural information provision in Ghana. *Quarterly Bulletin of*

IAALD, 38 (1), p. 22-26. Alemna, A.A. (1998) Information in African society. *Information*

Development, 14 (2), p. 69-72.

Alemna, A.A. (1999) The impact of new information technology in Africa. Information

Development, 15 (3), p. 167-170.

Cobbinah, J.R. (2003) Enhancing strategic competitiveness in information and

communication technology (ICT) Ghana Country Paper. *Telematics and Informatics, 20,*

p.1-9.

Engineering in Medicine and Biology Society, 2007. EMBS 2007. 29th Annual International

Conference of the IEEE.

Falch, M. (2004) Telecentres in Ghana. *Telematics and Informatics*, 21, p. 104.

Frempong, G.K. and Atubra, W.H. (2001). Liberalization of TELECOMS: the

Ghanaian experience. *Telecommunication Policy,* 25, p. 197-210.

Frempong, G.K. et al. (2005) Towards an African e-index:household and individual

ICT access across 10 African countries. Chapter 6: Ghana. [online]. Available at

http://link.wits.ac.za/papers/e-index-ghana.pdf.Accessed4 August 2011.

Ghana Government, (2002) Final Report on Population and Housing Census. Accra: Ghana

Statistical Services.

International Telecommunication Union.(2005) Basic Statistics. [online]. http://www.itu-

int/ITU-D/ict/statistics/at-glance/basic. Accessed 4th December, 2011.

Mensah, Stephen K.E. and Owusu-Mensah, Francis. (2002) *Priorities and strategies for*

capacity building in tertiary distance education for human resources development in

Ghana. [online]. Available at http://u,wwl.worldbank.
org/education/tertiary/documents/Ghana,Distance Education Study.pdf. Accessed
4th August 2011.

Michael sakyi boateng.- the role of information and communication technologies in ghana's rural
development
Nov 2012

Momodu, Margaret O. (2002) Information needs and information seeking behaviour of rural

dwellers in Nigeria: a case study of Ekpoma in Esan West

National Communications Authority (2008) Industry statistics: sector overview.[online].

Available at http://www.nca.org.gh. Accessed 4th August, 2011.

National Communications Authority (2011) Industry statistics: sector overview.

[online]. Available at http://www.nca.org.gh. Accessed 7th January, 2012.

Neumann, (1994) Strategic information systems: competition through information technologies,

New York : Maxwell Macmillan International.

Summary of Budget Statement and Economic Policy of the Government of Ghana for the 2012
financial year, (2011, November 14) Accra, Daily Graphic, P3.
The Ghana ICT for Accelerated Development (ICT4AD) Policy. (2003 September 6)
Accra, Daily Graphic, p. 54.

Wilson III, Ernest J. (2005) *Negotiating the `Net': the case of Ghana*. [online]
http://www.cldcm.umd.edu/w11son/chapter 9_Ghana.pdf. Accessed 5th December 2011.