THE POTENTIAL ROLE OF ICT FOR RURAL DEVELOPMENT

A. B. Obotivere.; Engr. B. A. Edward and G. Ogbogbo

Abstract

ICT as an enabler of economic change is a key factor in driving production and development. Satellite networks, wireless communications, public telephones, community information centre, cyber kiosk, and telecentres are effective arrangement for reducing information inequality. These contemporary ICTs that enable people to acquire information anytime, anywhere and on anything can be used to integrate rural communities into economic life thereby, raising their income and improving their quality of life. This paper highlights the various ways IT can be used to alleviate poverty by building the citizens economic power. Also, the paper presents a situation statement on how ICT actually impact on the next generation.

Keywords: ICT, IT, Poverty, Telecentres, Rural Communities, Development.

Introduction

Information and Communication Technology (ICT) is the processing and distribution of data using computer hardware and software, telecommunication and digital electronics (Khan, et al, 2008). The acronym Information Technology (IT) or in a broader form of Information and Communication Technology (ICT) is fast becoming a domestic component of every society. In recent time, Information Technology has grown to become a subject of great importance and concern to mankind; it is rapidly consolidating global networks and international trade with multiplier effects in all segment of the world economy.

The potential benefit of Information and Communication Technology (ICT) to make a difference in the lives of people globally is a fact that has come to be accepted by all. With development and innovation going hand in hand and knowledge becoming one of the most important factors in determining the standard of living of people everywhere, most advanced economics and companies today are those that play the knowledge card as a tool to drive development (ITNewsAfrica.com). It is a common believe that no individual can grow or develop beyond what he knows. The development level of any nation is the sum total of what its citizens know and what they do with what they know. Information made available cheaply and widely is a veritable tool to breaking loose from the clutches of poverty. ICTs provide this viable platform for generation, adoption and exploitation of knowledge to create wealth especially as it releases people's creative potentials and knowledge that is embodied in them. IT provides citizens with information about, for instance market price and social services such as health knowledge and education. ICTs provides a viable platform for using sophisticated technology solutions to many of the problems of people everywhere especially in the face of grinding poverty faced by many people in our country today. The realization of the potential impact of ICT on human which is capable of transforming any individual, society or country from financial and economic deficiencies to financial and economic independence is the main purpose for this paper.

Definition of Some Terms

Information Technology (IT)

According to Uwaje (2000), the term Information Technology (IT) includes computer and communication technology as well as the associated software.

Information and Communication Technology (ICT)

Information and Communication Technology (ICT) would imply the convergence of computing and technologies and their use or applications for global internet, extranet, World Wide Web (WWW), visual reality and cyberspace. Information networks provide fundamentally different

means of design, production and organization and thus, represent technological breakthrough which increases economic efficiency and transforms traditional means of bringing products to market.

Poverty

Poverty could be defined as the condition of heavy insufficient resources or income. In its most extreme form, poverty is lack of basic human needs such as adequate nutritious food, clothing, housing, clean water and health service (Encarta, 2006). In addition, in the journal of poverty as quoted by Dike (2002), poverty means more than being impoverished and more than lacking financial means. "It is an overall condition of inadequacy, lacking, scarcity, destitution and deficiency of economic, political and social resources."

Development

According to Encarta (2006), development is an event causing change or an incident that causes a situation to change or progress. In another form, it could be referred to as the improvement of people's lifestyles through improved education, income, skills development and employment.

The Potential Benefits of ICT for Rural Development

Information and Communication Technology (ICT) as an enabler of economic change is a key factor in driving production and development. Satellite networks, wireless communications, public telephones, community information centre, cyber kiosk, and telecentres are effective arrangement for reducing information inequality (Haris, Bala, Songan and Trag, 2001). The use of ICTs in agriculture, non ICT manufacturing and service sections is expected to bring about a fundamental transformation in the nature of production with major implication in terms of labour, productivity, growth and employment. Penetration of ICTs among rural dwellers is expected to reshape their methods of work and market systems and the way in which individual and communities can track and access information and services leading to changes in the structures of market, improve the quality of life and deepen the participatory values of democracy (ICT 4D. 2006).

Some area where ICT could play a catalytic role in developing rural area according to Hilda Munyua (2000) includes:

- ✓ **Empowering Rural Communities**
  With ICT, rural communities can acquire the capacity to improve their living conditions and become motivated through training and dialogue with others to a level where they make decision and contribute for their own development processes.

- ✓ **Creating Employment**
  Through the establishment of rural information centres, ICT can create employment opportunities in rural areas by engaging tele-centre managers, subject matters specialist, information managers, translators, and information technology technicians. The centres can also provide training and those trained, may become small scale entrepreneurs.

- ✓ **Decision Making**
  Sound decision making is dependent upon availability of comprehensive, timely and up-to-date information for example, low food production sometimes experienced in the country is as a result of lack of information on the pattern of rainfall for the year. This demonstrates the need for informed researchers, planners, policy makers, development workers and farmers.

- ✓ **Targeting Marginalized Group**
  Most rural people lack the power to access information. ICTs could benefit all stake holders including the civil society in particular, the youth and women.

- ✓ **Market Outlook**
  Farmers could promote their products and handle simple transaction such as orders over the web while payment transaction for the goods can then be handle off-line. ICT's offers access

to global market information and open up new regional and global markets that fetch better prices and thereby, increase farmer earnings in rural areas.

ICT in Agricultural Production

ICT and rural development will provides crop, weather or market information for example, current prices of produce, information regarding the availability of local production support services (availability of extension services, fertilizers, livestock, inspection services) online production, counseling services, weather and crop advisories (Gurstein, 2000). ICT can immensely improve the status of agricultural production and marketing in the rural communities by providing the following items via the telecentres:

1. Crop information services.
2. Farmers crop database which should include kinds of crop that can be cultivated in a particular area, size of cultivated area, time of harvest and yields (Jane, 1998).
3. Production techniques and information inquiry system which integrate production technique and information developed by research institutes.
4. Production equipment inquiry service system is a system that requires the service of a trained personnel to train the end user who could translate the development needs of a local rural community into the internet search criteria; and sift, interpret and translate the returned information into a form that is useable by the local community. A major benefit of this telecentres to the rural community will be increased access to agricultural and market information. Farmers will be able to learn the current market prices of their produce through the internet resulting in increased economic efficiency.

Area of ICT Transformation

Education: Information and Communication Technology (ICT) as learning tools enhances the capacity building for teachers; it promotes and encourages self-dependence, creative learning and team work spirit.

Food Production: Information and Communication Technology (ICT) gives local farmers access to international market. E-commerce can help both the seller and the buyer to communicate in less time and use internet to carry out transactions. Farmers can find research on new types of products and search for information on better package of their produce. However, farmers have to be equipped with basic education and computer literacy.

Health Services: With the role of ICT capacity to rapidly collect, compile and disseminate information with sophisticated tools for data analysis, field workers can easily obtain updated technical or consultation information regarding the prevention and treatment of disease/health condition (Ajitha, 2006). It is obvious that ICT put to its best use, can address many concerns and sectors of human development in rural areas.

Government/NGO Partnership

It is envisaged that government agencies and NGOs could work co-operatively to attack poverty using ICT. This could involve the use of GSM phones, electronic village halls and internet connectivity. The following points are as follows:

(i) Use of GSM and Internet to dynamically receive a wealth of new business ideas from the populace to enable the same information to be relayed to those they can benefit.
(ii) Proper monitoring and opportunity creation for the disadvantaged.
(iii) A well articulated pursuit of professional development, business development, high technology apprenticeship and the repackaging of the individual in a way that enhances self worth, create new employment opportunities and enhances income levels.
(iv) Use of ICT to transform the mindset of the present generation (especially the disadvantaged) to one of positive values, self confidence, integrity, honesty and dependability.
(v) Business and engineering skills training.
(vi) Identification and development of potentials.

(vii) Advocating the enhancement of the equality of life in rural Nigeria through the effective use of mass connectivity to bridge the digital divide, and the proper harnessing of such connectivity to take democracy dividends to the hinter land.

(viii) Creation of powerful ICT based communities to facilitate mutual beneficial interaction both among groups within the nation and across large geographical divides.

Conclusion

In view of the foregoing, ICT has a great significance in the lives of our rural dwellers. With ICT, there is a window of opportunities to transform the fortune of rural community dwellers. This is only possible when there are an integrated approach and plan to link up the rural dwellers to the outside communities. ICTs provide rural dwellers the opportunity to acquire information anytime, anywhere, and on anything which they can use to develop themselves socially, culturally and economically. With recent advancement of ICTs, Telecentres can serve as a means of disseminating information for socio-economic development.

Recommendation

The rate of internet and mobile phone access and penetrations in some developing countries is promising and encouraging. What is lacking are the basic infrastructural development to increase the bandwidth and speed up access so as to enjoy all the benefits derivable from information and communication technology. Study has shown that only a negligible proportion of less than 10% of internet access in developing countries is broadband. The cost of access to internet and mobile phone is prohibitively high in developing countries. These are attributable to lack of reliable infrastructure such as high speed satellite communications and fibre optic cables. However, despite all these enormous potentials of ICTs, it will not be realized unless there are sufficient supporting strategies on ground to enhance its realizations. According to Uwaje (2000), in order to achieve all the benefits of ICT and enhance the socio-economic development of the developing nations, the following recommendations are proffered:

1. Solar power can be provided to improve supply to community based-telecentres.
2. Appropriate awareness creation among the rural communities on the use of ICTs for self employment as a viable option for poverty alleviation.
3. Collaborative effort to provide the necessary infrastructure to ensure effective ICT implementation in rural communities by government (at all levels) and NGO who are stake holders in the development of such areas.
4. Capacity building and training. In addition to ICT skills, rural dwellers should also be trained on other skills such as financial management skill, time management funding investment opportunities on net etc.
5. Effort should be geared towards the promotion of mass literacy among rural dwellers.

References

Ajayi, G. O. (2002). African response to the information communication technology revolution. *Case study of the ICT Development in Nigeria (ATPS Special Paper Series No 8)*.

Ajitha, Saravanan. (2000). ICT diffusion for social-economic. Retrieved April 19, 2008. From: www. i4D.csdms.in.

Uwaje, C. (2002). Impact of communication and information technology on agricultural production. *Paper delivered to the 13th Nigeria Academy of Science Forum.*

Dilanthe, Withanage. (2003). The Use of ICTs for Poverty Reduction. From: www.unescap.org/rural/ICTEGNov/2003/Srilanka_Dilanthe

Dike, V. E. (2002). Poverty in Nigeria. *The Daily Independent (Opinion Column)*. October 6, 2002.

Efem, Nkanga. (2007) Nigeria: ICT and wealth creation. Retrieved 19/04/08. From: ITNewsAfrica.com

Encarta. (2006). 1993 – 2005 Microsoft Corporation. *All rights reversed*.

Gurstein, M. (2000). Rural development and food security. *A community informatics based framework for FAO; the Technical University of British Columbia.*

Khan, M. I. et al (2008). The Role of Information and Communication Technology in addressing conflict management issues. *proceedings of the 1st National Engineering Technology in addressing Conflict Management Issues. Pp 266 - 269.*

Munyua, H. (2000). Information and communication technologies for rural development and food security: *Lesson from Field experience in Developing Countries. CAB International, African Regional centre.*