Introduction:
E-Adoption and Technologies for Empowering Developing Countries

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ABSTRACT

The Internet and other Information and Communication Technologies (ICTs), in the form of e-adoption, have been used for social and economic development around the world. Information and Communication Technologies for Development is a growing research area and researchers worldwide have been conducting studies highlighting how the use of the Internet and ICTs are helping in socio-economic development in the fields of medicine, health, agriculture, education, and government. This chapter discusses the general impact e-adoption has on empowering developing countries for development.

INTRODUCTION

The e-adoption in form of the Internet and other information and communication technologies (ICTs) applications have been delivering basic services in a wide range of sectors including health, agriculture, education, public administration, and commerce. The evidence from several research studies indicates that e-adoption has resulted in social and economic development in developing and least developed countries, worldwide (Bongo, 2005). Internet proliferation, wireless computers and other innovations are quietly eliminating huge barriers to development in poor parts of the world. The UNESCO 2010 report indicates that the e-adoption contributed to poverty reduction and improving health and education in several countries in South Asia (Asia Pacific Research Group, 2005, OECD, 2005, Tandon, 2004). The literature also suggest that Information and Communication
Technologies are helping developing countries to “leapfrog” to enhance public administration efficiency, increase access to information and knowledge, and reduce bureaucracy (UNESCO 2010 report, Ahmed et al., 2006, Bayes, et al., 1999, Baliamoune, 2002, Fong, 2009).

The Internet, through various satellite networks, has been linking remote villages to urban markets, bringing classroom education to communities too small or poor to support secondary schools, as well as connecting patients or doctors, or disparate family members for improving health standards. The Internet kiosks that access a global marketplace are used to access political information or organize grassroots campaigns in emerging democracies.

The e-adoption revolution has benefited all sections of society as well as small and large businesses and medium-sized enterprises. All kinds of businesses use the Internet for advertising their products and services, exploring new markets for their products, investigating new sources for their supplies, and connecting with clients, partners, and suppliers.

ICTs are a forceful tool to improve government and strengthen democracy and citizen empowerment. It can help foster more transparent governance by enhancing interaction between government and citizens, promoting equity and equality, and empowering minorities (United Nations Economic and Social Council, 2010). It provides a voice to women who have been isolated and invisible. ICTs can contribute to increasing women’s networking for social participation in the political process, supporting the work of elected women officials, and increasing women’s access to government and its services (Daly, 2003, Martinez & Reilly, 2002).

In recent years, all around the world, e-government has become a priority in delivering government services and promoting transparency and accountability. This is helping to strengthen the public voice to revitalize democratic processes, as well as improving capacity to deliver basic services.

The literature also suggests that e-adoption has created new opportunities for men and women for networking as well as for electronic commerce activities. Although in many developing nations, several reasons, such as poverty, lack of access and opportunities, illiteracy (including computer illiteracy), and language barriers, still prevent women from using ICTs, including the Internet. These developing nations must take steps to provide equal access to women for ICT-related education and training (Daly, 2003).

E-ADOPTION AND EMPOWERMENT

Various studies have confirmed the positive relationship between e-adoption and economic growth. These studies suggest that e-adoption has the potential in alleviating poverty, improving governmental services, improving health and education, and creating economic opportunities for underprivileged population groups in developing countries. Researchers worldwide are conducting studies on the impact of e-adoption for development and empowerment. The literature in this field is growing in leaps and bounds. Jensen’s (2007) micro-level study on fishermen in Kerala, information economy through wireless networks in villages in Robib, Cambodia, (oneworld radio, 2006) for accessing medical and health services, and the global marketplace for their cottage industry are such examples where e-adoption has been exploited for sustainable development and empowerment (World Bank Report, 2006, United Nations Development report, 2010). Several successful e-adoption experiments, worldwide, have resulted not only in improving economic development, but also creating a new world of educational, social, and political opportunities.

A number of e-government initiatives enabling and assisting governments, citizens, and businesses to communicate efficiently, increased
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efficiency in government processes, delivery of government services to remote populations are found in the literature. For example, the e-government projects of Bhutan, Mongolia and Papua New Guinea, Democratic People’s Republic of Korea, and the Palestinian Authority, improved communication amongst government officials and enhanced workflow. Facilitating access to government information services and online government transactions as well as empowering citizens and businesses through e-adoption to interact more efficiently with government are among the well-documented e-government project solutions in Azerbaijan, the Kyrgyz Republic, and Uzbekistan (Martínez & Reilly, 2002).

Mobile phones are quickly becoming an affordable and accessible tool to many poor communities around the world, not only for communication, but also to improve socio-economic opportunities. Several studies highlight the benefits of increased proliferation of Internet-enabled mobile phones among communities in developing countries. The studies indicate that Internet-enabled phones have certainly empowered citizens for their day-to-day business and other activities. For example, the Senegalese telephone company Sonatel, and Manobi, a French company, provided cell phones with Web Access Protocol (WAP) to rural women agricultural producers in Senegal, thereby extending their access to the Internet to obtain information about market prices of the inputs for their food processing activities and for the sale of their produce. Mobile phones for rural women in Senegal is also helping to improve education on gender equality, health and environmental issues, and strengthening poor women’s rights and citizenship through the use of Internet radio (Goodman, 2005, Coyle, 2005, Hafkin & Odame, 2002, Holmes, 2004).

The Internet-enabled motorcycles project in Robib, Cambodia, has allowed villagers to get connected with their friends and businesses. The poor communities are getting medical advice from the world’s best doctors and schoolchildren are getting their schooling from the best teachers. The Internet-enabled motorcycles project is fueling the village economy by letting local villagers sell their handmade silk scarves on the global market (http://www.prnewswire.com/news-releases/remote-cambodian-village-establishes-internet-telemedicine-link-aimed-at-closing-digital-divide-71328982.html).

Low literacy rates, diverse indigenous languages, limited electricity, strong oral traditions, and nomadic lifestyles or livelihoods are some of the contributing factors that make it difficult for communities in developing countries to e-adopt. The challenge also remains particularly for rural communities in developing countries, where building Internet infrastructures is not economically attractive due to the high cost of reaching users with low purchasing power. Rural tele-density in developing countries is still very low. The lack of good communications infrastructure in rural areas is exacerbated as a result of limited electricity, few fixed-line telephones, and low-income levels. Examining country data reveals a global digital divide between developed and developing nations and unless that digital divide is removed, the e-adoption revolution will not be able to remove income and spatial inequalities within countries (Rice & Katz, 2003).

The e-agriculture projects implemented in several developing countries, such as Honduras, Mauritania, Myanmar, Nicaragua, Kyrgyz Republic, and Samoa, enable rural farmers not only get latest real time market price information for their produce, but also help them to connect directly with buyers and markets (http://www.e-agriculture.org/blog/e-agriculture-rural-women-farmers-wougnet-experience). This has empowered the rural population in these countries for improving agriculture-based economy. In Africa, it was found that information available through the use of mobile phones enabled farmers in Senegal to double the prices of their crops and herders in Angola to locate their cattle through GPS (global positioning system) technology (oneworld radio,
Another example of empowerment is drawn from the Technology Access Community Centers (TACCs) project in Egypt. The TACCs project offers a unique delivery mechanism that empowers local communities to get a variety of services including telephony, fax machines, copiers, personal computers, software libraries, and Internet access. The TACCs project also provides training, seminars, workshops, roadshows, specialized training, and technical and technological expertise for professionals as well as for the general public. This has resulted in socio-economic development for many communities in Egypt (Hashem, 2001).

The Internet radio has opened a new vista for disseminating information, particularly in rural areas. In Zambia, a radio-based training system is now delivering primary education to out-of-school children, a third of which being orphans. The variety of radio programs covers not only schooling, but also health-related information like hygiene and nutrition. In Bolivia, a rural-based Internet radio helps farmers to deal with worms that devour the crops. Working online, the Swedish experts guide them to identify the worm and broadcast the information on pest control to the entire community (http://unpan1.un.org/intradoc/groups/public/documents/unpan/unpan032690.pdf)

Cell phones have emerged as a leading form of leapfrog technology. The best-known example is Bangladesh’s Grameen Phone, which has established a network of pay-per-use cell phones throughout the country. A similar network in South Africa has created a network of over 1,800 entrepreneurs, operating “phone shops” in over 4,400 locations across the country. Information that is gathered by cell phones allows farmers in Senegal double the price they get for their crops, and herders in Angola track their cattle via GPS (Ahmed et al., 2006, Bayes, et al., 1999, Fong, 2009, Samuel et al., 2005).

A project in the Mekong region of Thailand and Laos uses the Internet to educate young women and girls on immigration issues, employment alternatives, and health services. It’s a way of helping a group that is often only semi-literate, and particularly vulnerable to HIV/AIDS, drug abuse, and sexual exploitation (http://www.policyproject.com/pubs/generalreport/ACF1B3.pdf)

In the post-Soviet country of Armenia, development teams are using the Internet for everything from teacher training to employment counseling. A fisherman, based in Singapore, learned of an earthquake and tsunami and transmitted the same information to Sri Lanka and Thailand through the Internet. This information was passed on to fellow villagers, who used the village’s tele-centre to broadcast a community alarm. This resulted in the safety of lives and property (http://alexandra-samuel.com/writing/2005-01-17-TorontoStar-leapfrogging.pdf)

DISCUSSION AND SUMMARY

Several successful e-adoption examples described above, across the world, highlight the fact that e-adoption in form of the Internet and other information and communication technologies have been helping in empowering men, rural women, organizations, and citizens in the local government. The Internet and other ICTs are bolstering the unrestricted flow of information, freedom of expression, and protection of individual liberties. People around the world are using new technologies in unprecedented ways for networking, political participation, and advocacy. With the use of ICTs, women are empowered to promote women’s rights. The ICTs have been acting as powerful catalysts for political and social empowerment of women and the promotion of gender equality (Ahmed, et al. 2006, Hafkin & Odame, 2002, Daly, 2003, Holmes, 2004).

The e-adoption revolution may help developing nations transition from the industrial era into
the information age, taking the developing world directly from agrarian to post-industrial development. E-adoption also provides governments and businesses a tremendous opportunity to leapfrog. However, in spite of the significant growth in the use of information technology and the Internet, there are still several impediments including the absence of electricity/electricity interruption, lack of some ICTs in the villages/communities, lack of ICTs skills, high cost of ICTs, high cost of access charges, lack of awareness on some of the ICTs, absence of tele-center/information center/cyber café, and illiteracy. These identified impediments need to be taken care of in order to exploit the full potential of e-adoption (Fong, 2009).

REFERENCES


