The Microsoft Unlimited Potential E-centers in Bhutan: Using ICT for development

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Abstract

This paper will present the potential effects specific to the Microsoft Unlimited Potential community E-centers, as a creative and innovative Information and Communication Technology (ICT) solution to rural development in Bhutan.

It will also explore the impacts that Information and Communications Technologies (ICT) have on four other aspects of development, namely economic growth, political evolution, good governance, and gender equity.

While evaluating the impacts of ICT in general and E-centers in particular on development in Bhutan, this paper will concentrate on the potential value of ICT as agents of change in enabling development, based on the past experiences of such use of ICT in other developing countries.

This paper will also argue in favour of the use of ICT to serve broader development purposes in the ongoing debate about the need and effectiveness of ICT in the developing world, where it has been argued that other areas such as health care and education deserve higher priority.

Information and Communications Technology in Bhutan

The reach of media and information across Bhutan, especially in the rural villages, is scarce and difficult as its population is scattered across a mountainous terrain. Yet, the Bhutanese government is aware of the tremendous impact Information and Communication Technologies (ICT) have in enabling development and the need to utilize the resources that ICT

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offer that can to benefit her people and begin Bhutan's integration in the global knowledge economy. As a result, several policies have been put into place, which reflect this growing sensitivity to the role ICT play in development efforts. The Bhutan ICT Policy and Strategies document lists, among significant policies: the Telecommunications Act; the Copyright Act; and an Information, Communications and Media Act; all of which serve to strengthen the regulatory environment in which ICT can be used and developed.

In terms of infrastructure, Bhutan's current teledensity has been estimated at 4.3 percent nationally, with a significant discrepancy between urban (15%) and rural areas (1%). Teledensity in an area measures the number of landline telephones in use for every 100 individuals living within that area. A teledensity that is greater than 100 means that there are more telephones than people. The ICT infrastructure backbone of the country lies in an East-West microwave radio, which is further connected to the Indian border through an optical fibre link.

In terms of international connectivity, Bhutan is connected through a satellite earth station in Thimphu to the rest of the world. In addition, all the district headquarters are connected to each other either via the microwave backbone or through the radio links. There also exist cable TV networks operating throughout the country and plans to connect all villages in the country through telephones (BIPS, 2004).

The above scenario shows that rural communities are connected not only to one another but also to the wider world. How Bhutan exploits this connectivity for its development is now the interesting and important question to consider. However, before looking into ways in which Bhutan may employ such connectivity for its development goals, it is helpful to understand ways in which ICT can impact development.

ICT and Development

There has been much emphasis on the need to close the 'digital divide' in the developing world in order to allow the

benefits of ICT to seep in and ultimately alleviate poverty in the developing world. The closing or widening of the 'digital divide' however, is not an effective measure of the success of ICT in a country if one heeds McNamara's (2003) view that such measures are at best 'proxies' for the more significant impacts ICT have in a country. Based on a concept of ICT as a tool that enables change, more appropriate and informative indicators would be what has been termed as 'indicators of change', such as increased efficiencies in markets and governments, improved performance of the economy, higher rates of literacy, and fewer number of diseases in communities with access to ICT. It is through changes such as these that we fully appreciate the role of ICT in enabling development.

Such indicators of development provide a more holistic and perceptive approach when assessing the real value ICT have on a country. However, at present the impacts of ICT in a country are assessed largely by simplistic measures such as the number of PC per household or the bandwidth in a country. For example, foreign firms and companies decide whether or not to make an investment based on such indicators. In either case, whether the impacts of ICT are measured through qualitative or quantitative indicators, the need for ICT indicators and the use of these indicators in affecting economic growth, and thereby development efforts, reflect the growing importance attached to the value of ICT penetration in a country.

In this paper, I employ qualitative indicators to depict the impact ICT have in assisting various fields of development, since the application of ICT must be viewed in a broader context if it is to successfully influence development and not just 'decrease' the digital divide.

This paper recognizes that there has been, thus far, no significant methodical study on the role of ICT in assisting development, with most of the literature being anecdotal accounts and not based on precise indicators of success. The relatively early introduction of more advanced ICT such as computers and Internet access in developing countries has also been an impediment in assessing impacts of ICT in

development. There is, however, compelling evidence in the form of comparative studies, anecdotes and accounts of lessons learned, suggesting the multi-layered and widespread role of ICT in ensuring development. It is based on such evidence that I examine how ICT can act as agents of change in various fields of development.

ICT and Economic Growth

The integration of the global economy after the cold war, in the new era of globalization has brought about tremendous change in the way we acquire information, in the way we do business and in the way governments and other institutions operate.

Local economies are increasingly affected by global trends. Even in Bhutan, the tourism industry suffered a setback after the 9/11 terrorist attacks in New York City. Increasingly it is not local governments or local environments that impact the economy but events happening thousands of miles away in distant countries. The impact of the attack in New York City provides an example of globalization and the reach of globalization in every corner of the world. Globalization has been facilitated through advances in ICT which have eliminated barriers of time and distance and increased access to global markets. This access to global markets is rendered possible through what Friedman (2000) calls "the democratization of information". The democratization of information refers to the ability of every consumer who is connected to the Internet to have instant access to the information they require, whether it is information on interest rates, value of stocks and bonds, or government forms. This manner of doing business has revolutionized the economies of the developed countries, through increased efficiency, transparency, and competition.

Similarly the economies of the developing countries can benefit from the use of ICT, thereby resulting in increased information flows in and out of domestic economies and improvement in the efficiency and transparency of the economy, both of which render the economy more competitive

and responsive. The access of local economies to global markets is dependent on the ICT infrastructure of a country. It is therefore vital that there are adequate ICT not only to increase the efficiency and transparency of the economies, but to diversify the economy through increased access to global markets for various commodities and services and additionally to render the economy more alluring to investment from foreign firms and companies through foreign direct investment, in order to ensure sustained and rapid economic growth.

Developing countries, including Bhutan are liberalizing their economies and opening up to foreign investment. In today's globalizing world, this is more of a necessity than a choice, if one is to ensure sustained and rapid economic growth. This can occur only if the economy is attuned to the business practices of the developed countries, where ICT are employed to ensure maximum efficiency.

Therefore the important correlation between economic growth and ICT penetration in a country must not be undervalued, if an emerging economy is to maintain consistent growth.

ICT and Political Evolution

ICT can play a vital role in the political processes in developing and developed countries by fostering participation, empowering citizens by informing them of their basic rights and providing a voice for the disenfranchised**.** In rural communities, the effectiveness of ICT becomes all the more apparent since rural communities are often isolated and marginalized when it comes to accessing information and communicating their needs and interests.

ICT provide a mechanism for citizens to express their opinions and concerns, thereby helping to ensure that their voices are heard in decision-making processes about policies that affect them. This can lead to governments and institutions becoming more responsive to the needs of the people they're serving. ICT offer the additional advantage of allowing diverse views to be heard. The Internet, for example,

with websites that communicate information indiscriminately, provide differing and dissenting views about political or social issues such as gender equity and environmentalism.

ICT will have a particularly large and meaningful role to play in Bhutan's democratization process. ICT in the form of print and broadcast media as well as Internet news websites can serve to ensure accountability in governments, increase participation at all levels of society, and enhance public debate through the inclusion of diverse views. For example, the recently launched website of the Anti-Corruption Commission in Bhutan provides a forum whereby corruption and abuse of power can be instantly reported, anonymously if preferred. This strategy is expected to go a long way to improving citizen participation and boosting public debates.

The media, as ICT tools assisting Bhutan's democratization process, will not be limited to providing information but will shape public opinions on political and social issues. In this context, the diversification of media sources in Bhutan, with the introduction of two privately owned newspapers in addition to the only newspaper *Kuensel*, provides an opportunity for varied reportage, presenting different stances on political and social issues, and offering readers an interesting mix of opinions which should ultimately help them shape their views in informed and reasoned ways.

An important consideration noted by McNamara (2003) is that "thoughtful government policy and smart regulation" should not be eliminated with the possibilities presented by ICT and by liberalization and privatization of the media sector. Here again, we see ICT as an enabler, as tools for further use under a broader context.

ICT and Good Governance

Achieving good governance requires efficiency, accountability, and transparency in the day to day functioning of governments. ICT can help create more efficient and effective governments in developing countries by easing administrative procedures, by improving information flows within and

outside governments as well as exposing government officials to global knowledge relevant to their fields.

In developing countries, information flows within governments are very poor, compounded by rigid bureaucratic procedures that render access to information very difficult. ICT can improve this access, with information being digitized and made available online. Bhutan has begun the process of information sharing in the government. The commitment to information sharing in the government in Bhutan has been reflected in an important policy document, the Good Governance Plus document.

Administrative procedures in governments in developing countries are extremely time-consuming and imbedded in bureaucracy. The automation of administrative procedures renders governments much more effective and efficient. It could also help deter corruption, since government documents, registration forms and permits will no longer have to be administered through a bureaucrat but will be easily available online (McNamara, 2003). This is of particular relevance to improving the government procedures of developing countries like Bhutan, where farmers have to walk miles to get a permit to cut trees for their own consumption, where entrepreneurs need to go through several bureaucratic procedures to register a business, and where visitors take weeks to process visas to enter the country.

Governments who are under obligation to share information will be forced to be more transparent, for example about information about resource allocation or policy decisions. The sharing of public information can empower citizens and make governments more accountable and less susceptible to corruption.

However, the ways in which governments respond to these new technologies are beyond the influence of ICT. Several governments with hierarchical structures and rigid bureaucratic cultures have faced sizeable resistance to the effective use of ICT in governments according to a 2003 synopsis on e-Governance.

ICT and Gender Equity

The introduction of ICT in developing countries, more prominently so in countries in Africa, brought about the realization that ICT can be used as a productive resource, the same way land and capital are used as productive resources (Hafkin, 2000). The access of women to ICT is crucial to empower women, in much the same way that access to other resources empowers women because they acknowledge and support women's economic and political roles.

However, women's access to ICT is not assured. Growing evidence suggests that ICT are not gender neutral, although many proponents of ICT have emphasized their 'liberating potential' and their ability to surmount hierarchical social structures. Women are constrained because typically they do not have the time, knowledge, or income to access ICT and benefit from them.

According to Rathgeber (2000), one of the ways of addressing this disparity in the access and use of ICT by women is by incorporating a gender dimension in ICT policies. For example, software could include gender-sensitive content and information relevant to women's needs. Information could also be designed in ways that are accessible by non-literate women.

In developing countries including Bhutan, women's access to ICT could mean that women will be better informed about farming methods, public health issues, and government procedures available online. In addition, access to information could empower women by giving them a political voice and thereby ensuring that their opinions and interests are heard.

In Bhutan, the government is committed to enhancing gender parity. The decision by the Bhutanese government to bring state parties to the "Convention on the Elimination of all Forms of Discrimination against Women" attests to this commitment. Evidence indicating the unequal access of women to ICT in other countries must provide cues to the additional attention needed in Bhutan in devising strategies to addressing disparities in women's access to ICT, whether it

is through developing original software, relevant content or creating awareness.

E-centers in Bhutan

Numerous developing countries, in particular in Africa and the Indian subcontinent, are experimenting with community E-centers to increase rural communities' access to ICT's. Community E-centers were envisioned to empower rural communities through the dissemination of vital information and knowledge, whether in farming techniques, distance education, or citizen rights. Similarly in Bhutan, the Department of Information and Technology is collaborating with several international partners and governments to introduce community E-centers in the country. Under the Microsoft Unlimited Potential project, a total of 60 community E-centers will be established, concentrated mainly in rural villages, in regions with low population density and low purchasing power, where Best and Maclay (2000) report that the services of ICT are generally unavailable mainly because they are beyond the reach of commercial interest.

The Unlimited Potential project will thus support the changing media landscape in Bhutan from a traditionally passive recipient model in which community members received information largely through the radio to a more pro-active and consumer-oriented model with community members becoming involved in the process of acquiring and shaping their information needs through the community E-centers.

A comprehensive study assessing the definite impact of the community E-centers on socio-cultural, economic, and political spheres in Bhutan will require a prolonged period of time and is still somewhat an early undertaking at this stage of the implementation of the various E-center projects. However, potential effects of the E-centers are predicted in this study, drawn mainly from direct observations during field studies in India undertaken by the author and on studies reporting the E-center experiences of other developing countries, so as to understand and recognize the ability of E-

centers in facilitating and supporting rural development in Bhutan.

Potential Impacts of E-centers on Rural Development

Before pronouncing the potential impacts E-centers can have in assisting rural development, it is worthwhile to understand the components of poverty that could be affected by ICT so as recognize the potential role E-centers could play in supporting the rural poor and rural development.

McNamara (2003) studied the poor and found that they lacked information about significant aspects of their lives. He concluded that increased access to information about resources, job opportunities, markets, and prices could lead to the betterment of their livelihoods. The poor also lacked access to essential knowledge such as knowledge about disease prevention, agricultural methods, and environmental management. All of this information, which is vital to the improvement in livelihoods of the rural poor can potentially be accessed in rural communities through E-centers, if E-centers provide content relevant to local need.

The poor studied by McNamara also lacked power and influence in government and the private institutions that affected their lives. E-centers would provide opportunities for rural communities to voice their opinions and interest through interactive websites, debate forums, and Internet polls.

This lack of access to basic information and to communications that could considerably improve the livelihoods of the rural poor and the lack of voice and power to shape the decisions that will affect them, has been characterized by Amartya Sen (1999) as “the lack of opportunity to make the choices that constitute freedom”.

We can thus conclude that the lack of information which could be accessed through ICT exacerbates poverty. This is because if information flow to the poor is restricted, then information about job and income opportunities, crop prices, better agricultural techniques, as well as public health information remain inaccessible, aggravating their

impoverished status. The larger environment of the poor is also affected by the lack of information and access to ICT. For example, an economy with limited information as was discussed earlier in the paper, functions poorly since lack of information and communications adversely affects investment. Lack of information due to inadequate ICT can augment the inefficiency and lack of transparency of institutions, government or private, rendering them more susceptible to corruption.

E-centers seem to provide the potential for an effective solution to the complex predicament facing the rural poor, which is often exacerbated by lack of access to vital information. There are many ways in which community E-centers can address this predicament, whether it is by giving them a political voice through E-governance, or by helping them boost the local economy through E-commerce, or by improving the health of the community through access to public health information.

One of the potential benefits of E-centers in rural communities in Bhutan is that they will help build on the government's political decentralization process through E-governance. While this process might take many years to come into effect, community members will be able to participate in decision-making that affects their livelihoods through increased access to vital information through their community E-centers. This will become all the more important in Bhutan with the introduction of parliamentary democracy in 2008, where an effective community E-center can offer much needed public information, rendering the functioning of the government more accountable, transparent, and efficient with information being readily accessible to the public.

In addition, as Hilda Munyua (2000) aptly notes in her paper, in which she examines the impact of information and communication technologies on rural development and food security, having access to information could affect the way communities formulate policies and execute them, since an informed and educated community would be able to formulate better policies and strategies.

Having access to information online can also be translated into economic gains, as can be seen in developed countries where electronic commerce means the transactions of multi-million dollars deals online (Gurstein, 2000). It is evident from the dominant role that E-commerce plays in the present global economic scenario that rural economies could substantially benefit from the opportunities that E-commerce presents. For example, farmers in South India have online access to the various prices offered for their agricultural commodities such as vegetables and grains at their community E-centers, thereby enabling them to sell their commodities for the best price.

While the use of E-commerce could seem a little premature in Bhutan at this stage because of the relatively underdeveloped local economy, in the future years, it can be expected that community E-centers will become a hub of commercial activity with the export of traditional Bhutanese artifacts, textiles, and agricultural goods and the provision of tourism services. The rural communities could, in addition, use the services of their community E-center for managing their businesses through book-keeping and accounts management.

Other benefits of the community E-centers are that they could be used to improve existing services in health and agriculture. Community E-centers can help educate the public and disseminate information regarding public health through interactive multimedia animations designed for such purposes. In a village in Chennai, the author observed that the community E-center served as a facility for telemedicine where a patient's basic vital signs such as heart beat and blood pressure were taken and sent, along with other information about a patient's medical history, to a doctor who was thus able to 'examine' the patient virtually. Such usage of the community E-centers in Bhutan could prove to be particularly beneficial considering that the reach of the medical experts in rural communities is quite limited.

Other significant advantages of the E-centers will be their potential effect on agriculture, which is the mainstay of rural communities in Bhutan. E-centers can work with the current

agricultural extension units in providing knowledge about the best global practices in order to increase and contribute to the community's knowledge about farming techniques, agricultural practices, seed varieties, soil management, pest control, and diseases, as well as agro-meteorology.

In Trivayaru, in South India, farmers consult their community E-centers in the event of a disease outbreak. If the information required is not available on the local website which contains general information, questions are transferred to an agricultural scientist through video-conferencing.

Another positive impact of the community E-centers, as discerned in India, is the enhancement of gender parity in decision-making as a result of having access to crucial public information. Bhutan is fortunate in that women enjoy equal social, economic, political, legal, and voting status with men. Although there is strong commitment in the government to enhance gender parity, the recent trends in leadership in Bhutan show that women are under-represented at decision-making levels, both in the communities and at the national level. The establishment of E-centers could advocate the empowerment of women with essential information by promoting and supporting them to shape their political voice and participate meaningfully in their communities.

Perhaps the most visible impact of the E-center in communities in Bhutan will be on communication patterns through the use of e-mails, chats, and discussion groups. Oral traditions while being impacted will not be obliterated since there is opportunity for oral as well as other public culture to be documented, preserved, and disseminated through the community E-centers. Communications at the E-center will not only contribute to networking but can also substantially result in the scaling up of development projects in the community.

Challenges and Strategies

Some of the challenges facing the success of ICT delivery in rural communities in developing countries are related to inadequate models of community E-centers assuring

economic sustainability. Lack of relevant content for rural communities is another concern, and finally a lack of knowledge and awareness of the potential benefits of community E-centers creates a difficult environment for ICT's to flourish.

Best and Maclay (2002) proposed a market approach driven by the private sector and entrepreneurs in order to address the economic sustainability issue facing community E-centers. But this private market driven approach does not seem well-suited to Bhutan at this time. There are two significant shortcomings if this approach is to be adopted in Bhutan. The first is that E-centers in Bhutan were envisioned as a public service. Therefore the primary focus of the E-centers is to provide services that would benefit the public, not as a revenue-generating asset. Assigning community E-centers as public property, the profit aspect becomes minimal, and community E-centers would levy only nominal charges for the use of the centers.

The second shortcoming is that if community E-centers are to be privatized, it would eliminate the possibility for ownership of the project by the community, which is a core component of its social sustainability. As a result of these considerations, the model of community E-centers adopted in Bhutan is a hybrid of the business and social models in which the government and other donors provide assistance and subsidies for the operational activities of the E-centers in order to establish an initial enterprise, and where the centers also levy minimal charges in order to render them economically sustainable in the long run.

Concerning the issue of relevant content in the community E-centers, the author has observed that relatively successful models of community E-centers in India carried out detailed information needs assessments in order to deliver information and content that was demand driven and knowledge specific. Similarly in Bhutan, such needs assessments are being replicated, in order to facilitate the provision of information relevant to local needs.

The third significant challenge facing the effective delivery of ICT services is lack of knowledge about the benefits of ICT

and illiteracy. This challenge can be addressed through initiatives to build human capacity and training in technical skills. The national population and housing census of Bhutan conducted in 2005 indicated that 59.5 percent of the population was literate. This achievement is a result of the sustained efforts in the education sector since planned development was initiated in Bhutan in the 1960's. Although this accomplishment bodes well for harnessing the potentials of ICT, there exist still a large percentage of rural communities that are illiterate in Bhutan.

The 2005 census also showed a discrepancy between urban and rural areas when assessing the literacy rate. The Microsoft Unlimited Potential project in Bhutan aims to address this divide by providing training for rural communities in basic computer fundamentals. Another strategy that is relevant for illiterate people is developing innovative software such as image and voice based technologies.

One of the particularly insightful strategies proposed in a concept note on "The Real Access/Real Impact framework for improving the way ICT is used in development" is the need for political will combined with public support in order to effectuate the wide-ranging use of ICT. The importance of the need for political will in the case of Bhutan is particularly pertinent, since the government is the main drive behind socio-economic development activities. However, as suggested in the concept note, political will solely cannot translate grand visions for an ICT focused approach into practical steps that implement such approaches. Therefore, public support of such policies and activities are crucial to ensure ICT-led development. Public involvement in designing and implementing such policies and activities creates awareness of the stake they have in ICT-led development and informs them as to the relevance of such policies and activities in their lives.

Conclusion

In the ongoing debate about the need for ICT in developing

countries, many have argued that certain areas in development require greater priority, such as the health and education sectors. This view has been well countered by Rathgeber (2000) who suggests that such views are based on "a linear approach of human development, in which advancement is seen as a progressive, step-by-step process". In addition to concurring with Rathgeber's argument that such views are confined, it is also appropriate to acknowledge the ability of ICT to engage in a wide-reaching and all-inclusive manner while influencing socio-economic development. Therefore, instead of a linear approach, a parallel approach of developing ICT at the same time as development in education and economy will be synergistic so that developments in ICT will promote development in these other areas and those developments will simultaneously promote the use of ICT.

This paper has attempted to demonstrate the numerous ways in which ICT can impact development in several areas such as economic growth, gender parity, good governance, and political evolution, with particular reference to Bhutan. ICT, as Best and Maclay (2002) predict, can have "staggering new opportunities for social and economic integration". It is therefore of significant importance that the potential impacts of ICT's in assisting development and the potential benefits of community E-centers in supporting rural development are understood so that the multi-stakeholders in this undertaking (government agencies, rural communities or policy makers) employ ICT's and community E-centers as agents of change to realize Bhutan's broader development goals.

Bhutan's leaders and people are resolved in their decision to enter the information age with leverage while seeking a balance to preserve the country's culture and conserve its environment. This resolve is reflected in the articulation of a unique development philosophy: Gross National Happiness, as pronounced by His Majesty the King of Bhutan, Jigme Singye Wangchuck. His Majesty asserted that material wealth alone should not be viewed as the end goal of development, but rather a holistic approach to

development should be adopted. This Bhutanese development paradigm includes various facets of development such as cultural preservation, good governance, and environmental conservation while simultaneously progressing economically—all of which will be dependent on the active participation of all its citizens. Therefore, the access to and rights of the Bhutanese people to information must be viewed as vital aspects of Bhutan's development aspirations. Achieving Gross National Happiness in Bhutan demands that information and communications technologies be made central to its development quest. The establishment of the Unlimited Potential E-centers in Bhutan is a step in that direction.

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