

# **Role of Information and Communication Technologies (ICTs) in Human Development in South Asia**

by

*Chaminda Hettiarachchi*

**Dept of Management of Technology,**

**University of Moratuwa ,Sri Lanka**

Email- [dilhanke@yahoo.com](mailto:dilhanke@yahoo.com), [chaminda@mot.mrt.ac.lk](mailto:chaminda@mot.mrt.ac.lk)

## **1. Introduction**

Technology has been at the heart of human progress, and has been a key feature of human identity and progress right from the days of the printing press and penicillin. 20th century technologies not only improved health standards and food production worldwide, but also had multiplier effects across income levels and innovative capacity. Technical progress accounted for 40-50% of mortality reductions between 1960 and 1990. But today's technology transformations are more rapid than in the past, especially in Information and Communication Technologies (ICTs) areas like processor power (Moore's law), memory storage, bandwidth (Gilder's law), and telecom costs. Global spending on ICT - projected to reach \$5 trillion by 2007 - also opens up niche opportunities for service providers in developing countries. The Internet - with a projected two billion users in 2006 -- is breaking geographical boundaries, making markets more efficient, and opening up global employment opportunities. But though the market is a powerful engine of technological progress, it is not powerful enough to create and diffuse the technologies needed to eradicate poverty. There are still huge North-South gaps, and divides within North and South as well. This gap is normally called "digital divide". This paper tries to identify the problem of digital divide in South Asia and look into possible options to such technology for the human development of the people in the region. In order to do so, it is expected to look at other successful regions such as East Asia, South Africa and countries such as Chile, Singapore, Botswana and South Korea paying attention to particular case situations and policy measures under different context.

## **Literature Review and Theoretical Frameworks**

### **1. Digital Divide in South Asia**

The facts of 'Digital Divide' is not any surprising classification to South Asia and is rather a manifestation of other divides & disparities that already exist within the societies and have to be examined both in terms of technology ownership patterns and of resource distribution modes of our societies. Many other factors such as, lack of education, electricity and other infrastructures, language barriers, costly access to computers, lack of pro-poor ICT policies have also added more complexity to this situation. But unlike any other divides, digital divide deals directly with an economy that is entirely knowledge and information driven. In this economy the productivity and competitiveness of units and agents depends heavily on the capacity to generate, process and apply efficiently this knowledge-based information. Information itself has become the product of the production process. As a result, the relationship between information and development stands in a way where it can be assumed, (a) information leads to resources; (b) information leads to opportunities that generate resources; (c) access to information leads to access to resources; and (d) access to information leads to access to opportunities that generate resources. For the poor without any access to this information would mean more acute form of deprivation of resources that are important for their livelihoods, education, health, survival etc. and recessions in perpetual ways of poverty. Where information is power, denying information to marginalized communities, actively prevents the rural poor from overcoming the unequal power structures that they are trapped within.

ICT may be Web-enabled, networked, or stand-alone and its penetration depends on few other access realities such as access to computers, access to tele-communication facilities, access to Internet, access to electricity, access to English language, access to education, access to skilled human resources etc. Human Development Report 2005 illustrates an interesting fact that the higher the human poverty index, the lower the number of ISPs, telephone lines, PCs and TV sets per 1000 persons. The higher the value of ICT indicators (as in the case of South and South-East Asia), the lower the poverty index. This co-relation between ICT and poverty does not mean that poverty is being created or extended due to

lack of ICT access but sets the background of poor governance of these countries for which ICT penetration is low and subsequently represents the low level of knowledge and use of these tools to eradicate poverty. Most of the decision makers of the poorer countries actually think for sequential mode of development where many other elements come first on development agendas rather than ICT and are unaware of the potentiality and the applicability of these tools in development processes 'Digital Divide' also confronts with the theme whether ICT is a real need for the poor or is just another marketing impulse of big players.

To resolve this:

First: ICT needs to be viewed as a tool, as a means for development not as a magic bullet. ICT can not change the world poverty situation overnight unless some other developments do take place. For example, the impact of improved ICT access on farm earnings through increased knowledge of market prices will be of no use if there are no roads to carry crops to markets, or no markets because of an unreformed agricultural sector.

Second: Even in demand driven economy electricity, telephony and other connectivity cannot grow as long as the demand for such resources is developed. Information network can be viewed as the pipeline through which capital can flow into the villages and poor areas through a new form of non-discriminatory, relatively clean and relatively unoppressive industrial and commercial activities. This ICT based network can actually compensate the rural or underdeveloped economy by providing an alternative means of communication such as online work, trade, payment, networked service delivery system etc. that might allow the users to overcome the problems of weak or poor infrastructure.

Finally if the network system can allow the capital to be so readily and easily available to the rural communities, then it will mean more spending to finance basic infrastructure, including roads, dispensaries, water and sanitation systems and so forth. In a context where the poor has 'lack of access to information that is vital to their lives and livelihoods: information about market prices for the goods they produce, about health, about the structure and services of public institutions; about their rights, lack of political visibility and voice in the institutions and power relations that shape their lives' it is unlikely that they would be able to effectively use the technology/solutions even if these are made available to them. In that case the role of intermediaries might be important who would

introduce these technologies to the grassroots level and will run different pilot projects to make the ICTs owned and used by the communities and to make it self-sustainable. ICTs can help a range of intermediary institutions and agents work more effectively and to be more responsive to the needs of the poor. The concept of digital divide has to be viewed in the context of few other access realities and these accesses can be compared and analyzed to each other as in many cases access to electricity, telephone, computers, internet are basically inter-linked and are based on some common denominators.

South Asia has emerged as the most promising region for sourcing information technology (IT) expertise, but this is an achievement that is of use only to the rich nations, say critics. The so-called digital divide between industrialised and developing nations is being replicated within the region, widening the already big gulf between the majority poor and an English language-speaking, Internet-savvy elite, they point out. On average, less than one out of every 10 of the 1.3 billion people in the subcontinent have access to computers and only a small fraction of these use the Internet. The region's emerging prominence as an IT 'superpower', best seen in the case of India, is said to be accentuating the sharp contrast between an educated white-collar 'elite' and the rest. In the past half century, South Asian nations have done little to raise living standards of the majority poor who are a world apart from a microscopic, English language-speaking elite that is close to the centres of political and economic decision making. Only a handful of South Asians can actually take advantage of the region's much-acclaimed IT achievements. In a region where the average annual income is less than 500 dollars, very few can own both a telephone and computer.

## 2. Existing ICT policies in South Asia

ICT is arguably strategically important for economic growth of all less developed countries (LDCs) and particularly true for South Asia. However, government policies tend to emphasize the export-led growth potential of ICT. The successes of countries like India in the IT-export sector is often used as an example to be emulated by countries similarly placed along the development spectrum. It is important to recognize that while IT export-led growth is an attractive goal, it cannot deliver sustainable economic growth to any country. Indeed, pursued in isolation and without a more broad-based IT-enabled growth

strategy, it is unlikely that the goal of It export led growth can be attained. In contrast to that, a policy that stresses the use of ICT within the country will lead to the development of an IT industry that can serve as an engine of growth by its direct contribution to job creation and GDP growth.

The Human Development Report (HDR) by UNDP compiles a new measure called Technology Achievement Index, drawn from technology creation (number of patents), diffusion of recent innovation (Internet), diffusion of old innovation (electricity, telephones), and human skills (years of schooling, technical students). Accordingly HDR 2002, countries fall into one of four categories: leaders (eg. U.S., Sweden, Japan, Korea, Singapore, Australia), potential leaders (Spain, Italy, Hong Kong, Malaysia), dynamic adopters (Thailand, Philippines, China, Indonesia, Sri Lanka, India), and marginalized (Pakistan, Senegal, Nepal). Potential leaders have diffused old technologies widely but innovate little; dynamic adopters have important hi-tech hubs but the diffusion of old technologies is incomplete.

### 3. ICTs in Human Development in South Asia

#### **a. Managing the risks of technological challenge**

The benefits of technology can be far greater than what their creators could foresee, as evinced by the growth of radio, transistor, and PC. But the hidden costs can also be devastating. Thus, it may on occasion be advantageous to be a technological follower rather than a first-mover, and observe the risks played out in other countries. While not every country needs to develop cutting-edge technologies, every country needs domestic capacity to assess and localize potential benefits of such innovations.

But there still needs to be institutional and regulatory capacity to manage risks, in areas like health and environment. Developing countries typically have four choices of policy stances towards new technological innovation, consumer choices, and trade: promotional, permissive, precautionary, and preventive. The freedom to innovate and to take risks will continue to play a central role in global development. Consultative activity forms a big

component of risk communications. The HDR 2005 advocates active feedback loops in society, harmonization of health standards, and regional collaboration between experts.

#### **b. ICTs for domestic uses**

There are a number of reasons why IT-export led growth can be considered less optimal than alternate strategies. The production of IT related products and services targeted for export markets is generally done in high-technology enclaves. The benefits of the production and the use of IT is therefore limited to the small number of producers in South Asia and the users of the products in the importing developed countries. The products address the needs of the importing countries and they gain significantly from the use of IT produced at low cost in the South Asia. While the IT-export sector may be earning foreign exchange through IT production, there is no benefit from the use of IT products and services to the country as a whole. The vast majority of the people are completely unaffected and do not obtain any gains from the use of IT; only the producers of the IT products increase their human capital. Consequently, the digital-divide within the country itself grows. For economic development to be sustainable, it has to be broad-based. IT-export led growth alone cannot result in broad-based growth because the knowledge-goods produced by the country are targeted not to a domestic market but to an export market.

Economic growth models emphasize the importance of capital – both human and state of the technology – and on the dependence of growth on the size of the market. Clearly expanding the market for the IT products and services to include the domestic population will lead to a balanced IT enabled economic growth that is broad-based. First, the use of IT in the domestic sphere will more efficiently increase human capital. Technology adoption growth models show that economic growth is a result of a rapid diffusion of IT.

Second, there is the demand side effect. Domestic demand for IT products and services will spur the domestic production of IT and knowledge-goods. There are important forward and backward linkages in the domestic consumption of IT products and services that go beyond the benefits attained by IT exports alone. For instance, the use of IT in the education and health sectors will provide a large user base which will not only have access to new technology but also participate in the information economy.

### **c. ICT for Economic Growth**

Most of us believe that the ICT does have a positive effect on growth. The general conclusion was that there is substantial evidence to show that the new technologies are transforming some sectors of some societies. The impact, is however, not as deep or pervasive as the debate about the benefits of the global information society sometimes makes it appear. As yet, the evidence that ICT will transform the world and bring benefits to all its citizens is inconclusive. However, that there is sufficient evidence of their potential to indicate that it would be wise for all governments and other stakeholders to take the steps needed to access and use these technologies.

In recent years IT has had a strong influence on economic growth in industrial countries and at least in those newly industrialised countries (that is, Korea and Singapore) studied in this volume. Admittedly, however, developing countries seem to have neither invested in IT nor benefited from such investments to the same extent as industrial countries. There is concern that information is becoming a factor, like income and wealth, by which countries are classified as rich and poor. To prevent this from happening, developing countries need to formulate national IT strategies to promote the use of these new technologies. Investment in ICT for developing countries is not anymore an option than investing in a transportation network is an option. It is absolutely necessary, although it is far from sufficient to ensure growth. The two most important functions for ICT are these. First, improving the functioning of markets. What to produce, how to produce, what to sell, how to sell, where to sell – all these are critical questions that directly affect growth. Clearly ICT is indispensable for this function. The second function is in the area of production and delivery of educational content. When the majority of the population is illiterate, the resources needed for educating them (and not just making them literate) would be formidable. ICT provides the only hope of leveraging limited resources to address this problem.

## **5. Conclusion**

ICTs have provided a new set of tools to solve mighty development problems faced by regions like South Asia. Recent trends have given high expectations about the applicability of such technologies. However, current uses are not necessarily focused towards human development. In order to effectively use ICTs in human development in the region, there should be a shift in paradigm of thinking about ICTs. This includes rethinking of government policies, integrating ICT policies with economical goals, combining ICTs with other development tools and active participation by normal people.

## **References**

DOI2001, *Creating a Development Dynamic, Final Report of the Digital Opportunity Initiative*, Accenture, Markle Foundation and UNDP, 2001.

d'Orville, H., 2000, "Knowledge and Information- New Levers for Development and Prosperity in the World Economy of the Future", UNDP, March 23, 2000.

eStats 97, <http://www.emergeinc.com>, April 1998

Global Reach 2005, <http://www.glreach.com>, June 30, 2005

Gilhooly, Denis *ICT for Development* May 2002 United Nations Development Program

Hammend, Alen *Digitally Empowered Development* Foreign Affairs, March/April 2001.

Human Development Report 2005 by UNDP, 2005

IndiaExpress Bureau 2005, <http://www.indiaexpress.com>, October 28, 2005

Nua Internet Survey 2005, <http://www.nua.ie>, October 4, 2005

TeleGeography 2005, <http://www.telegeography.com>, October 2, 2005