ICT: A Case Study of the Darjeeling Hills

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Abstract

ICTs stand for information and communication technologies and are defined, for the purposes, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broad casting technologies (radio and television), and telephony.1 Communication can play a major role in supporting the three essential processes relevant to innovation: network building, supporting social learning and dealing with dynamics of power and conflict. The main thrust of this article is to highlight the role and limitations of ICT in India, with special reference to the Darjeeling hills where ICT emerges as a dominant force of knowledge and economic activity. However, the paper starts with a general introduction of ICT. The paper observes the role of ICT in various vital fields such as in Information Technology, Education & Research, Business (e-commerce), Tourism and Rural Development both in India and in the Darjeeling hills. The paper analyzes the limitations of ICT as a whole and tries to furnish few suggestions for the better implementation and growth of ICT in the Darjeeling hills.

Keywords: ICT, Social networking, Facebook, Chat, Twitter, Darjeeling

Introduction

Information and communications technologies have considerable potential to promote development and economic growth. In the hands of developing countries, and especially small- and medium-sized enterprises (SMEs), the use of ICTs can bring impressive gains in employment, gender equality and standards of living - Kofi A. Annan

ICT is a broad terminology referring to multiple communication technologies which range from simple and complex namely Cell Phone applications (SMS), Digital Cameras, Internet, Wireless (WiFi and WiMAN), VOIP, GPS, GIS, Convergence (data, voice, media), Digital radio, etc. The telephone, websites and e-mail, alongside face-to-face facilities, could be alternative services; or they could be portals into a wide, flexible and well-harmonised network of services.

Information and communications technology (ICT), is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. The phrase ICT had been used by academic

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1 http://ict-adv-disadv.blogspot.in/ (accessed on 5/Dec/2012).

researchers since the 1980s, but it became popular after it was used in a report to the UK government by Dennis Stevenson in 1997 and in the revised National Curriculum for England, Wales and Northern Ireland in 2000. The onset of the Information Age is associated with Digital Revolution, just as the Industrial Revolution marked the onset of the Industrial Age.[2] The increasing use of technology in all aspects of society makes confident, creative and productive use of ICT an essential skill for life. ICT capability encompasses not only the mastery of technical skills and techniques, but also the understanding to apply these skills purposefully, safely and responsibly in learning, everyday life and employment. ICT capability is fundamental to participation and engagement in modern society. ICT acts as a powerful force for change in society, and citizens should have an understanding of the social, ethical, legal and economic implications of its use, including how to use ICT safely and responsibly.[3]

ICT sector plays an important role, notably by contributing to rapid technological progress and productivity growth. Firms use ICTs to organize transnational networks in response to international competition and the increasing need for strategic interaction. As a result, multinational firms are a primary vehicle of the ever spreading process of globalization.[4]

Export marketing is an area where ICT already plays an important role for developing the firm in a country. Studies by the Asia Foundation and others have shown that email and Internet use for promotion, market research, and management of customer relationships, for instance, have already had strong up-take among developing country firms and exporters, more specifically. In terms of production, India is an example of the growing importance of this sector: software and IT services are expected to represent 10 % of the country's GDP in 2008 - five times more than in 2002 -and create four million new jobs. Outsourcing is another largely untapped area for developing economies. Companies in industrialized countries are taking advantage of the growth in IT capacities in developing countries to commission on-line services.[5]

Very many new systems e.g. computer based communication systems, information networking systems, electronic media, etc. have evolved to very high standards that have improved dissemination of information and communication thereby reducing the world to a global village.[6] Thus, ICT is a dynamic phenomenon which is revolutionizing the world.

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[2] URL: http://en.wikipedia.org/wiki/Information_and_communications_technology (accessed on 7/Dec/2012).

[3] URL: http://www.teachfind.com/national-strategies/importance-ict (accessed on 28/Dec/2012).

[4] Oguz Esen & Ayla Ogus (ed.), 'Proceedings of the International Conference on Emerging Economic Issues in a Globalizing World', Proceedings of the IUESUNY Cortland Conferences in Economics, Izmir University of Economics, May 2008

[5] URL: http://www.infodev.org/en/Project.36.html (accessed on 3/Jan/2013)

[6] Third World Organisation for Women in Science, PROCEEDINGS: International Conference on *"Women's Impact on Science and Technology in the New Millennium"*, Jawaharlal Nehru Centre, Bangalore, 2007, p.930

ICTs are advances in technologies that provide a rich global resources and collaborative environment for dissemination of ICT literacy materials, interactive discussions, research information and international exchange of ideas which are critical for advancing meaningful educational initiatives, training high skilled labour force, and understanding issues related to economic development. Likewise, in the domain of Research, ICT provides Internet Access Web Based Resources, E-Journals, E-Books, Electronic Theses and Dissertations (ETD), Digital Library and Archives. Knowledge has always been a factor of production, and a driver of economic and social development. However, the capacity to manipulate, store and transmit large quantities of information cheaply has increased at a staggering rate over recent years. The digitisation of information and the associated pervasiveness of the Internet are facilitating a new intensity in the application of knowledge to economic activity, to the extent that it has become the predominant factor in the creation of wealth.

From the implementation of mainframes and desktops, through to cloud computing and smart phones, business has adapted to changes in Information Communication Technology (ICT). Whilst what a business needs to change slowly (the need to be customer centric and make a profit), how a business operates (the use of ICT to better service customers) has brought significant rapid change to a business. Changes in ICT create a business environment about global reach with local service. Currently, Tele-marketing[7] is the need of the hour. Everyone feels comfortable to order the products from Tele-marketing. Bill Gates (1999) emphasized in his book *Business and the Speed of Thought* that business is going to change more in the next 10 years than it has in the past 50. This trend to a large extent is caused by the emergence of new information technologies and, as a result, the ease with which information can travel across the globe and information acts as a catalyst for change.

The role of ICT and e-commerce / e-business in supporting socio-economic and sustainable development in developing countries has been emphasized since the last decade of the millennium, especially by international institutions, including the United Nations, OECD (Organization for Economic Co-operation and Development), and other organizations in different scales. Foreign direct investment flows and the linkages between local producers and transnational corporations will be important determinants of the growth of B2B (Business to Business) e-commerce in developing countries. The information technology (IT) industry is one of the world's largest industries and accounts for 22 per cent of developing countries' exports. In the recent years e-commerce has grown tremendously with new technologies and innovations have transformed the traditional business supply chains and online marketplaces.[8]

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[7] Tele-marketing is often used by media companies, especially 'sales departments' to generate appointments with potential customers. Company Directory Software is used to identify decision makers within companies, capturing their details. Often electronic versions of customer database lists are purchased, allowing sales to contact potential customers directly.

[8] URL: http://www.oxbridgewriters.com/essays/business/ict-and-ecommerce.php (accessed on 17/Jan/2013).

The global online community has grown from 16 million internet users in 1995 to about one billion users in 2005. Thus the fast growing knowledge society poses both challenges and opportunities particularly for developing countries in gaining access to financial, technical, and medical knowledge.[9]

Role of ICT in the Indian Context

ICT plays a vital role in broader development of India, especially in education sector and rural development. In the era of Globalization, India is also prospering in the path of ICT. One of the vital elements of ICT in India is Information Technology. IT industry in India comprises of software industry and information technology enabled services (ITES), which also includes business process outsourcing (BPO) industry. On the other hand, the growth of Telecommunications is also alarming. IT is today at the top of the India's agenda as an important agent for modernization of the economy. IT is making profound inroads into the very fabric of our society and economy as a nation in the global community. Reliance Chairman Dhirubhai Ambani stresses:

> New Internet-based technologies are changing people's lives and the way business is conducted. Fundamental shifts are occurring in the global economy, owing to evolutionary advances in technology. These have led to the convergence of the communication and information businesses. We call this the 'infocom' revolution and firmly believe that there is a one-time opportunity for the Indian economy to leapfrog from its current equate infrastructure to a world-class one.[10]

The software industry, in the past year has witnessed an upswing in its fortunes, once again, thanks to the Internet. Web software programmes have suddenly become a rage with corporate giants as well as dotcom firms. These programmes are fashioning e-businesses, that is, linking companies with Customers and Suppliers.[11] Like any other technological change, information technology is expected to increase productivity, enhance the quality of life, reduce price, and create new economic activities and new employment opportunities as well as generate wealth. ICT helps in improving living standards in rural areas by providing important social, educational, economic and health benefits. In a developing nation like India, the role of ICT in overall development becomes more important. ICT initiatives in rural India emphasises the use of a more systematic approach for liking traditional knowledge systems (TKS) & ICT to ensure sustainability of rural e-governance. The main issue to be resolved is the lack of localisation for rural communities in rural ICT initiatives. Therefore, it is necessary to adopt the system-approach to integrate TKS & ICT in the design of e-governance system for rural development. Today urban and semi urban areas are blessed with different modes of media which has virtually changed their lifestyle. In the rural

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[9] Third World Organisation for Women in Science, p. 766

[10] N. Vittal & Dr. S. Mahalingam, '*Information Technology: India's Tomorrow*', New Delhi, Manas Publications, 2001, p. 84

[11] *Ibid* 292

arena, various successful e-governance initiatives, the improvement of infrastructure and many ICT projects for development are giving hope to abolish the *digital divide*[12] in India. To eradicate the digital divide between the rich and poor, we require adequate financial support , support of the government, industry, community participation, encouraging private partnerships, massive campaign on e-governance involving rural people. Many technologies are developed for the literate class but we need to build those technologies for the masses.[13] Many developing countries India being in the lead is beginning to understand the beneficial role ICTs can play in reducing high poverty rates in both rural and urban areas. In most developing countries majority of people live in rural areas and this is where access to ICTs is lowest. Government policies to increase rural access are therefore important.[14] The adoption of technology has led to the following benefits: greater productivity, profitability, and efficiency; faster service and customer satisfaction; convenience and flexibility; 24x7 operations; and space and cost savings. This is the age of e-banking. ATMs started as a substitute to a bank to allow its customers to withdraw cash at anytime and to provide services where it would not be viable to open another physical branch. The ATM is the most visited delivery channel in retail banking, with more than 40 billion transactions annually worldwide. In fact, the delivery channel revolution   is said to have begun with the ATM. Much of modern business is conducted on-line, and company websites are very important. Experiments using ICTs to combat poverty started with community participation, eNRICH (a local web portal and database developed by the National Informatics Centre of the Department of Information Technology, Government of India). In this way locally relevant information like health care, educational facilities, phone numbers of all the doctors, schools, colleges, police stations, tourist info, timings of the trains, news piece from users, and job application forms became available within the centres. ICT is potentially important contributor towards development in India but only through their integration in wider socio-technical interventions. ICTs should be seen as an integral part of development policies and projects aimed at bettering the lives of all Indians, including the poor and disadvantaged.

Role of ICT in the Darjeeling Hills

ICT connects individuals and local communities with information and resources beyond their geographic boundaries, encouraging information dissemination, information

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[12] The *digital divide* is the gap between those who have access to digital technology and those who do not. The term garnered popular attention in the mid-1990s through a series of reports by the U.S. National Telecommunications and Information Administration (NTIA) that measured Internet access disparity in relation to racial groups, socioeconomic status, and geographic location. For those who saw the Internet as a revolutionary means to redress social inequality, the digital divide was the main barrier to an equality wired and thus egalitarian world.

[13] URL: http://unllib.unl.edu/LPP/PNLA%20Quarterly/nwosu-ogbomo75-4.htm (accessed on 3/Mar/2013).

[14] Third World Organisation for Women in Science, PROCEEDINGS: International Conference on *"Women's Impact on Science and Technology in the New Millennium"*, p. 802

exchange and communication.[15] Every nook and the corner of the world are connected with ICT with some exception. Darjeeling, one of the dynamic hill stations in India, is also connected by the ICT. It is the need of the globalized world, country, region and the locality to open up with the novel innovations of ICT. Basically, there is not much of difference between the average rural setting India and the Darjeeling hills in the context of ICT. Some attributes are similar in India and Darjeeling with regard to ICT. In this vein, I would like to discuss some basic attributes which trigger the role of ICT in the Darjeeling hills.

Firstly, Darjeeling is taking stride in the advancement in IT (**Information Technology**) sector. IT has transformed the world into a global village and has laid the foundation of a new civilization. In the context of Darjeeling, IT is booming and students are taking the advantage of new innovations in IT yet the progress of IT needs to be sound. The Information Technology in Darjeeling needs to provide efficient facilities that support and complement the studies of students. In Darjeeling, Information Technology should offer well planned and approved job oriented courses for their students. However, Darjeeling is one of the growing Telecom Centres and many youth of Darjeeling are engaged in BPO industry outside although there is no effective BPO industry in Darjeeling.

Secondly, ICT plays a vital role in imparting Education and Research. One of the effective uses is in Learning. It acts as a catalyst for Education. The adoption and uses of ICTs in education have a positive impact on teaching, learning, and research. Education is the best example of utility of ICT in the Darjeeling hills. The **e-learning**[16] is more important for teaching today. It has developed a new training environment, with new learning form and new way for acquiring the knowledge. Recently, E-learning is becoming very popular among the youth of Darjeeling. A good number of students participate in Video-Conferencing and Online Classes. ICT will assist the teaching-learning process through better communication and higher quality material and hence enhance the teaching of traditional subjects.ICT also provides Online Public Access Catalogue (**OPAC**)[17] and User Services for Research. There are colleges in the hills such as operate the efficient OPAC system which enables the students to use the library effectively.[18] Another aspect of ICT in Education is Distance Learning. Distance learning is a field of education that focuses on teaching students not physically present in traditional educational settings such as classrooms, but in physically distant and often distributed locations. Darjeeling has a significant number of students pursuing their higher studies from Distance Learning. ICT technology is also being used for

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[15] *Ibid 798*

[16] E learning is a learning program that makes use of an information networksuch as the internet, an intranet (LAN) or extranet (WAN) whether wholly or in part, for course delivery, interaction and/or facilitation.

[17] OPAC provides access to the catalogue through a computer terminal. OPAC allows searching the entire catalogue online, conveniently and quickly, using one or more search criteria. One can, for example, search by author, title, keywords, class number or one or more of these combined together. OPAC even shows the current status of a book, whether it is loaned out, available on the shelf or lying elsewhere.

18 Salesian College setup up EBLIS (Electronic Bosco Library System) in the year 2003 .

taking the attendance of teachers as well as students through biometrics.[19] Other facilities like Online Admission, College Blog in Facebook for the students and Alumni and so on.

Thirdly, Tourism is reputed to be the world's largest industry. Its revenues support a significant proportion of the economies of many nations and it is one of the largest employers worldwide. Darjeeling which is world famous for Tourism derives the benefits from ICT. The advent of the Internet is also having profound impacts on the travel and tourism industry of the Darjeeling hills which has become the single largest category of products/services sold over the Internet and the proportion of business being transacted through this medium is constantly growing. So, E-tourism shall enable tourism stakeholders across the globe to access the information. It might increase the sales and generate more revenue into local economy. Tourism education has become the subject of prime concern in the whole world as the number of travelers continues to grow and markets become more sophisticated. Therefore, betterment of educational systems, vocational qualifications, higher studies and sectors and training schemes has been encouraged to improve travel & tourism service quality.[20] Developments and continued growth in ICT and its application in the tourism sector have empowered the tourism consumer and are driving significant change within the tourism industry. Besides, Extensive and intensive Rural Tourism can be promoted through ICT application. Rural tourism can be main economic activity in the Darjeeling hills and can be crucial for agribusiness and rural development. It gives an opportunity for the farmers to profit from tourism directly besides generating new market for the agrarian products in the region.

Fourthly, Business has been revolutionized with the introduction of ICT. The people of Darjeeling apply the tools of ICT such as e-banking, e-marketing, e-ticketing, e-payment and so on. Craftswomen use ICT to sell handicrafts. Today women are relying extensively on the internet to perform their business activities. They are using the net to negotiate fair prices for their products without an intermediary. Women promote sale of their handicraft products via e-marketing in Darjeeling. With e-commerce and e- business the market has more opportunities and possibilities than ever before in the Darjeeling hills. The ability to reach a global audience, obtain instant market information and conduct electronic business transactions has increased economic efficiency and has opened markets for goods and services for Darjeeling.

Finally, the best part of ICT which accelerates the interest of the people in the Darjeeling hills is **Social Networking.**[21] People of Darjeeling love to hang out and chat in the social networks especially Facebook. Social media is place where people with

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[19] Salesian College setup up Biometrics in the year 2011.

[20] http://www.academia.edu/1882193/ Role_of_Tourism_in_Human_Resource_development_in_Darjeeling_ Hills (accessed on 5/Feb/2013).

[21] A social network website is a site that allows user to connect with other users who are friends / relatives, or who share similar interests. Connected users can then share information / pictures / files with each other, send messages, chat, etc.

no restrictions of caste, creed, or nationality join hands. However, one of the main drawbacks pointed about the **social networking sites** is that students get deviated from their studies by spending a lot of time on such sites. On the other hand, the creativity is also enhanced as they remain exposed to diverse ideas and are getting a platform to develop their skills when they come in contact with new friends who too are interested in similar fields. To be safe from any mishaps it is necessary that you maintain certain level of privacy.

Many believe that we are now in an 'information age' and are part of a global 'knowledge economy'. In such an age, access to ICTs to share knowledge, information and ideas seems paramount for social and economic development. DHIR (Darjeeling Himalayan Internet Railway) was a pilot project initiated by UNESCO under its ICTs for Poverty Reduction Project in partnership with the Northern Frontier Railway. There was a tripartite agreement for implementation of the project between UNESCO, the Railways (Government) and COSMOS (a local non-government organisation). The local stakeholders/project management team (PMT) representing the local community was set up to oversee manages and administers the project with the implementing NGO. eNRICH was useful for the community as they could share and voice their opinion, post jokes and local messages, for example, local business advertisements and announcements of the events such as local football matches. The centre became distribution platform for the community and thus empowering in a range of ways. For the beginner eNRICH became a gateway to the Internet. eNRICH was commissioned by UNESCO and used in each of its ICT centre's for Poverty Reduction projects. In Darjeeling, as elsewhere, eNRICH was found to have limitations and it often frustrated the users, but it helped many to think carefully about knowledge management and ways of sharing appropriate information. eNRICH is being further developed to iron out the glitches and explore the use of open source. Even with its limitations, eNRICH and other knowledge sharing activities were valued by users and provided a range of useful information. Another initiative developed by the site coordinators and the users was the Basic English speaking classes. The idea was to empower people in accessing the Internet for emailing and searching the relevant sites, as English is a dominant language on the Internet.[22]

Presently the IT revenue of West Bengal is less than 3% of India's total IT revenue. The State is a late starter in the IT/ITeS sector and at present is in sixth position … To start with, it proposes to create ICT hubs with area development in places like Burdwan, Durgapur, Asansol, Barjora, Bishnupur, Bolpur, Purulia Haldia, Kharagpur, Falta, Kalyani, Darjeeling and Siliguri.

In the Budget Speech for the Financial Year 2012-13, Hon'ble MIC, Information Technology Department, Govt. of West Bengal declares,

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[22] URL: http://egov.eletsonline.com/2004/09/insightdarjeeling-himalayaninternet- railway/ (accessed on 17/ Feb/2013).

> Our Government is committed to make the public services available to all sections of the society in a transparent and efficient manner through use of ICT. The West Bengal State Wide Area Network (WBSWAN) has been set up by the IT department connecting the administrative framework of State, District, Sub-Division and Blocks with more than 350 Points of Presence (PoPs). I am glad to inform the august Assembly that POPs in **Kalimpong** and **Kurseong** sub-divisions and in Sukhiapokhri and Bijanbari blocks have been operationalised.[23]

The Indian Railways is also employing innovative facilities by the use of technology. The Railways use a facility called Online Transaction Processing (OLTP) whereby the seats in various trains can be easily reserved by the customer in real time. This reduced to considerable level the allocated quota and corruption that prevailed in the Railways at one time.

Limitations of ICT

Though India has a strong and fast growing IT industry, access to ICTs remains very low, particularly in rural areas. So, these limitations of ICT are not prevalent only in Darjeeling but everywhere. Financing difficulties encountered by the local grass root level institutions as well as by the state governments. Drastic steps are needed to inject funds for the development of the ICTs in the rural areas; increasingly by the participation of the private sector. Similar problem can be seen in the rural scenario of the Darjeeling hills. Limitations in electricity, telephony, Internet connectivity and other kinds of basic infrastructure are a key challenge in rural areas of Darjeeling. In the long run, rural ICTs projects could prove to be the most effective means of driving changes in rural areas: (i) *Socially*: by ensuring equal access for less privileged groups; (ii) *Economically:* by creating new kinds of work and financial transactions; and (iii) *Politically:* by improving the quality, speed and sensitivity of state apparatus to the needs of local citizens.[24]

Even though technology is available to upgrade the band-width; not enough resources have been budgeted by the Government to change this scenario.

The presence of multimedia games and online games by internet has been another serious problem that should be wisely handled by the educational institutions. The students have large opportunities to do with multimedia games or online games or browsing *the negative and porn sites*. Having been addicted, the students will have too little time to study, and even do not want to attend classes. Basically, not much of research has been done in this regard but probably students are indulging in these activities even in Darjeeling. Moreover, use of ICT may be difficult for weaker students, because they may have problems with working independently and may need more

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[23] URL: http://www.itwb.org/Budget%20Speech%20English%20&%20Bengali/Budget%20Speech_2012-13%20_English_.pdf (accessed on 8/Mar/2013).

[24] http://www.cijournal.net/index.php/ciej/article/view/313/429 (accessed on 9/Feb/2013).

support from the teacher. The other limitations of ICT use in education are technology related. The high cost of the computer, interruptions of internet connections, and poor supply of electric power are among the technology related limitations of ICT use in education. The infrastructure challenges that may exist are absence of appropriate buildings and rooms to house the technology, shortage of electric supply and telephone lines, and lack of the different types of ICTs.

The chronic limitation of ICT is **Cyber Crime**. However, Cyber Crime is not so common in the Darjeeling hills yet it can be crucial for the people. Cyber-Crime is the latest category of the crimes which might be the dangerous affect of ICT. Cyber crimes such as Hacking, Phishing, Vishing, Cyber squatting, etc. causing a great harm to the individual or society. Let's take the example of **Hacking**.[25] A hacker may break into a system just out of curiosity or for the challenge - can they get through the system's defences? But, it is more likely that they are breaking in to **access data,** usually because the data has **value**.[26]

E-commerce especially e-payment in the light of prevailing trend in cyber crimes poses a challenge for all. In remote areas like Northeast India, the added challenge is lack of cyber law manpower, inadequate surveillance infrastructure because of the 'internal digital divide' which exists in India. The Cyber Crime Investigation Cell of Mumbai Police was inaugurated on 18th December 2000. It deals with the offence related to the computer, computer network, computer resource, computer systems, computer devices and Internet.[27] One of the negative aspects of ICTs is the use of the Internet for women's sexual exploitation and harassment. The pernicious elements include trafficking of women through the Internet, pornography and sexual harassment. Women need secure spaces online where they can be safe from harassment and exploitation. Legislation is needed to prevent ICTs from threatening human rights.[28] Internet, though offers great benefit to society, also present opportunities for crime using new and highly sophisticated technology tools. This includes not only educational and informative material but also information that might be undesirable or anti-social. It is a well-known fact that terrorists have been using the Internet to communicate, extort, intimidate, raise funds and coordinate operations. The Government should also take note of this slow but worrying development and put in place a proper mechanism to curb the misuse. Recently, the Government of India enacted the historical IT Act 2000 to give legal recognition to and regulate e-commerce and it also comes down heavily on cyber crime.[29] As the UN Human Development Report, 2001 points out, "technology is created in response to market pressure- not the needs of poor people, who have

[25] The word 'hacking' has several meanings, but in the context of ICT, it is normally taken to mean breaking in to a computer system.

[26] URL: http://www.igcseict.info/theory/6/hack/index.html (accessed on 7/Feb/2013).

[27] URL: http://cybercellmumbai.gov.in/ (accessed on 7/Feb/2013).

[28] Third World Organisation for Women in Science, PROCEEDINGS: International Conference on *"Women's Impact on Science and Technology in the New Millennium"*, p.801.

[29] N. Vittal, Dr. S. Mahalingam, *'Information Technology, India's Tomorrow'*, p. 7.

little purchasing power". It correctly asserts that it is a pre-requisite for governments to first recognize that technology policy affects a host of development issues, including public health, education and job creation.[30] Is there any isolation between the urban and rural population implementing ICT? Can ICTs play a key role in development and poverty reduction? Can ICTs promote the delivery of basic services, and enhance local development opportunities? Is ICT responsible for Digital Divide? There are many questions which need to be answered.

Suggestions

There are some basic requirements of ICT in India and in the Darjeeling hills such as in Education, Rural Development, Tourism, Business, etc. The following requirements if applied properly then the people can be benefitted at large.

- Adapting global technology to local requirements

- Affordable high bandwidth Internet connections

- Availability of electricity and telephony

- Providing Youth with Skills, Training and Employment Opportunities through ICT Initiatives

- Facilitating the students to do edutainment or educational games

- Specifically, drivers and barriers to ICT use need to be identified, including those related to curriculum and pedagogy, infrastructure, capacity-building, language and content, and financing.

- New Courses needs to be introduced such as Electronics, Bio-Informatics, Agricultural Marketing and courses on IT.

- The strategies for national and regional e-tourism should be developed.

Conclusion

Developments in ICT have made significant impact on all spheres of human life. The impact has been rather prominent in case of service activities such as banking, health, transportation, education and libraries. So, Darjeeling is also not an exception. Information and Communication Technology has great relevance in today's world. If implemented properly ICT can surely bridge the gap between economically and technology backward and forward classes. With the IT boom in India technology is easily accessible to the government machineries with relevantly cheaper and convenient manner. Proper training and implementation of ICT programmes in simple way and language which is easily understandable by the rural people can surely bring about revolution in rural development. To conclude, Darjeeling hills has the caliber to adjust and improve to the dynamics of ICT which would foster the students for the better

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[30] Third World Organisation for Women in Science, p. 801.

future and make the life of common people much easier and comfortable. Eventually, I would like to conclude this article with this quote-

> Advances in electronic-based information and communication technologies (ICTs) are rapidly transforming social and economic conditions across the globe. As the cost of ICTs continues to fall and their capabilities increase, their applications are becoming even more vital to all sectors of the economy and society. The increasing spread and uses of ICT create new opportunities for countries to harness these technologies and services to promote social and economic development and human justice.[31]

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[31] Vicky Katsoni, "The Role Of ICTs In Regional Tourist Development", *Regional Science Inquiry Journal,* 3(2011)2, 95-111, School of Business and Economics, TEI of Athens.