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Digital Divide – "Haves" and "Have-Nots": A Modern Inequality of 21st Century

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Abstract:

Inequality is obvious throughout the history. Wide spread of globalization and effective use of Information and Communication Technology (ICT) changed the picture of modern society. Digital resources are playing a gigantic role in the present Knowledge Society. But there is wide disparity in terms of access to the digital technology. In one hand we have very skilled human resource which is making use of digital resources effectively; on the other hand we have group of people those who don't have skill and access to the digital technology. Information, its access, dissemination and control, is at the core of this revolutionary phase of human development and as a result, economic and social structures and relations are being transformed in the contemporary phase of human development In 21st century's knowledge society, digital resources dividing human society in to two groups called 'Digital Haves' and 'Digital Have Not's.

Key words: Inequality, Modern Inequality, Digital Divide

Introduction

"Digital Divide refers to the discrepancy between people who have access to and the resources to use new information and communication tools, such as the Internet, and people who

do not have the resources and access to the technology. The term also describes the discrepancy between those who have the skills, knowledge and abilities to use the technologies and those who do not" (Webopedia).The Digital Divide refers to any inequalities between groups, broadly construed, in terms of access to, use of, or knowledge of information and communication technologies. The Digital Divide, or the digital split, is a social issue referring to the differing amount of information between those who have access to the Internet and those who do not have access.

The term "Digital Divide" became popular among concerned parties, such as scholars, policy makers, and advocacy groups, in the late 1990s. The difference is not necessarily determined by the access to the Internet, but by access to ICT (Information and Communications Technologies) and to Media that the different segments of society can use. With regards to the Internet, the access is only one aspect, other factors such as the quality of connection and related services should be considered. Today the most discussed issue is the availability of the access at an affordable cost.

Information Age – A New Era of Human History

The Information Age, also commonly known as the Computer Age or Digital Age, is a period in human history characterized by the shift from traditional industry that the industrial revolution brought through industrialization, to an economy based on the information computerization. The onset of the Information Age is associated with the Digital Revolution, just as the Industrial Revolution marked the onset of the Industrial Age.

During the information age, the phenomenon is that the digital industry creates a knowledge-based society surrounded by a high-tech global economy that spans over its influence on how the manufacturing throughput and the service sector operate in an efficient and convenient way. In a commercialized society, the information industry is able to allow individuals to explore their personalized needs, therefore simplifies the procedure of making decisions for transactions and significantly lowers costs for both the producers and buyers. This is accepted overwhelmingly by participants throughout the entire economic

activities for efficacy purposes, and new economic incentives would then indigenously encouraged, such as the knowledge economy.

The Information Age formed by capitalizing on the computer microminiaturization advances, with a transition spanning from the advent of the personal computer in the late 1970s, to the Internet's reaching a critical mass in the early 1990s, and the adoption of such technology by the public in the two decades after 1990. Bringing about a fast evolution of technology in daily life, as well as of educational life style, the Information Age has allowed rapid global communications and networking to shape modern society.

An Overview of Digital Divide

Information, its access, dissemination and control, is at the core of this revolutionary phase of human development and as a result, economic and social structures and relations are being transformed in the contemporary phase of human development. Yet the vast majority of people in the world remain untouched by these revolutionary developments in information and communication technologies and explosive growth of knowledge. Although this transformation to information age and knowledge society offers many potential benefits to developing and transition countries, increasing reliance on digital information and advanced communication technologies carries, at the same time, the real danger of a growing digital divide/gap among and within nations.

Digital or knowledge divide refer to the gap between the technology-empowered and the technology-excluded communities in the world around; as well as to the lack of information transfers in and between these communities. The developing world and transition economies comprise the largest portion of the digital and knowledge divides. While global teledensity shows signs of improving the gap between those with and without access to the Internet continues to increase throughout the world. The 'digital divide' has created a knowledge gap between information rich and information poor peoples, which has the potential to give rise to a new form of 'illiteracy.' The 'digital divide' promotes information and knowledge poverty and limits the opportunities for economic

growth and wealth distribution. ICTs spur the creation of economic and social 'networks' of individuals and communities. The power of these networks is their ability to connect diverse groups by allowing them to access and exchange information and knowledge that is crucial for their socio-economic development. Traders and entrepreneurs benefit from ICTs through the opportunities created by promoting their businesses nationally, regionally and globally. As well, ICT offers the possibility of delivering basic health and education services more efficiently because people can have access to them from their own communities. Unfortunately the accessibility to ICT to the larger population is very limited and hence their chances for taking advantage of these technological developments is very limited creating a division among people.

Our increased ability to communicate and share information and knowledge increases the possibility for a more peaceful and prosperous world for all of its inhabitants. However, the majority of the world's people will not be able to benefit from this information revolution unless they are enabled to participate fully in the emerging knowledge-based society. In a universal knowledge society knowledge and information should be easily accessible to all, including those living in rural areas and the disabled. Special attention must be paid to the marginalised, unemployed, underprivileged, disenfranchised peoples, children, the elderly, the disabled, indigenous peoples and those with special needs. The universal human values of equality, and justice, democracy, solidarity, mutual tolerance, human dignity, economic progress, protection of the environment, and respect for diversity are the foundations for a truly inclusive global information society. Now let us examine in the succeeding sections the digital or knowledge divide in relation to skill and infrastructure for knowledge generation and dissemination and employment structure in knowledge societies.

The Digital Divide Among and Between the Global Countries

Today digital divide is a global issue. We can classify digital divide mainly in two categories. One is digital divide with in a country and the other one is digital divide between

the global countries. The 'digital divide' threatens to widen the already existing development gap between the rich and the poor among and within countries. The majority of the world's people will not be able to benefit from this revolution unless they are enabled to participate fully in the emerging knowledge-based information society. Internal divide is between digitally empowered rich and the disempowered poor. Disparities in per capita income and standards of living could translate into the marginalisation of entire societies or segments of society. Also within countries, technological change often means that groups, which were already disadvantaged or excluded — low-income families, rural populations, women, minorities, and the elderly — fall farther behind. For instance India known for being a developing country due to its technological advances, India still however has a wide gap of technological access within its country (Subba Rao 2005). Where the rich have more access to the best use of technology and where the rural/poor have little access to these same equipments and in many cases share essential technologies such as one TV per village.

Indicators of ICT Diffusion across States (per 100 Population)

States	Telephone per 100 Population		Mobile User per 100 Population		Internet subscribers per 100 population		Fixed Line per 100 Population		Percentage of Households having Computer
	2001-02	2005-06	2001-02	2005-06	2001-02	2005-06	2001-02	2005-06	2005-06
Andhra Pradesh	4.93	13.45	0.65	9.15	0.31	0.53	4.14	4.19	0.093
Assam	1.67	5.67	0.11	4.06	0.04	0.11	1.58	1.95	0.004
Bihar	1.08	5.34	0.15	4.34	0.01	0.10	0.91	1.82	0.000
Chhattisgarh	1.25	2.09	_	0.57	0.04	_	1.24	_	0.022
Gujarat	6.37	16.98	0.92	12.05	0.30	0.77	5.60	5.17	0.326
Haryana	5.06	14.47	0.48	9.75	0.06	0.74	4.67	5.31	0.206
Himachal Pradesh	7.48	18.78	0.36	11.21	0.06	0.11	7.17	7.88	0.079
Jharkhand	1.39	2.99	_	1.32	0.04	_	1.38	_	0.025
Karnataka	5.58	17.06	0.76	11.83	0.50	1.02	4.91	5.53	0.069
Kerala	9.51	25.54	1.16	13.50	0.34	1.19	8.45	11.26	0.400

Madhya Pradesh	2.49	7.12	0.35	5.08	0.11	0.36	1.90	3.12	0.073
Maharashtra	25.40	69.83	1.50	14.41	0.80	1.67	6.27	6.66	0.465
Orissa	1.88	7.57	0.13	5.49	0.05	0.16	1.75	2.14	0.049
Punjab	9.15	27.61	1.44	20.73	0.29	1.02	7.92	8.24	0.117
Rajasthan	3.02	9.65	0.21	6.57	0.18	0.48	2.82	3.35	0.092
Tamil Nadu	25.09	75.78	0.89	13.60	0.53	1.23	6.13	6.33	0.071
Uttar Pradesh	1.86	6.87	0.19	5.58	0.06	0.20	1.70	1.98	0.034
West Bengal	13.29	39.23	0.38	7.13	0.16	0.55	2.87	3.28	0.100
All India	**4.29**	**12.74**	**0.63**	**9.01**	**0.32**	**0.69**	**3.67**	**4.04**	**0.120**

Source: Compendium of Selected Indicators of Indian Economy, Lok Sabha Unstarred Starred Question No 469, Rajya Sabha Unstarred Question No 1733 , Indian Telecommunication Statistics, 2004, Annual Report of Telecom Regulatory Authority of India, 2006-07, Lok Sabha Unstarred Question No 3162 & NSSO 61st Round

The increasing number of internet users also very much slow in underdeveloped countries. The following table gives a clear picture of the growth of internet usage statistics from 1998 to 2012.

YEAR	Users	Population	% Pen.	Usage Source
1998	1,400,000	1,094,870,677	0.1 %	ITU
1999	2,800,000	1,094,870,677	0.3 %	ITU
2000	5,500,000	1,094,870,677	0.5 %	ITU
2001	7,000,000	1,094,870,677	0.7 %	ITU
2002	16,500,000	1,094,870,677	1.6 %	ITU
2003	22,500,000	1,094,870,677	2.1 %	ITU
2004	39,200,000	1,094,870,677	3.6 %	**C.I. Almanac**
2005	50,600,000	1,112,225,812	4.5 %	**C.I. Almanac**
2006	40,000,000	1,112,225,812	3.6 %	**IAMAI**
2007	42,000,000	1,129,667,528	3.7 %	**IWS**
2009	81,000,000	1,156,897,766	7.0 %	**ITU**
2010	100,000,000	1,173,108,018	8.5 %	**IWS**
2012	**137,000,000**	1,205,073,612	11.4 %	IWS

Internet Usage and Population Statistics of India
http://www.internetworldstats.com/asia/in.htm

One can easily observe digital divide across the world. The access to ICT is not equal among developed, developing and

third world countries. On a global scale, it divides the countries according to their ability to use, adapt, produce, and diffuse knowledge. Most reports on disparities in ICT access within countries look at the problem according to socio-economic criteria such as race, income, geographical location, education, age, gender, and disability.

The following table indicates the digital divide in three tiers of countries.

| Country	Population (2012 Est.)	Internet Usage, 30-June-2012	% Population (Penetration)
	Developed Countries		
United States	313,847,465	245,203,319	78.1 %
United Kingdom	63,047,162	52,731,209	83.6 %
Germany	81,305,856	67,483,860	83.0 %
France	65,630,692	52,228,905	79.6 %
Japan	127,368,088	101,228,736	79.5 %
	Developing Countries		
Bhutan	716,896	150,548	21.0 %
India	1,205,073,612	137,000,000	11.4 %
Libya	5,613,380	954,275	17.0 %
Kosovo	1,836,529	377,000	20.5 %
Chile	17,067,369	10,000,000	58.6 %
	Third world countries		
Afganistan	30,419,928	1,520,996	5.0 %
Ethiopia	87,302,819	960,331	1.1 %
Liberia	3,887,886	116,637	3.0 %
Malawi	16,323,044	716,400	4.4 %
Somalia	10,085,638	126,070	1.2 %

Source : IWS

According to Internet world stats the population of the world crossed 7,017,846,922 by June 30, 2012 at the same time Internet users across the world reached 2,405,518,376. The ratio of internet users in the world is 34.3 %. So it clearly indicates that information is in the finger tips only for 34.3% of the people and 65.7 % of the people is isolated form internet technology which is an outstanding tool for the development of an individual and countries as well. An interesting point is 73.8% of internet users are in 20countries and 26.2% internet users are in rest of the countries. The top 20 countries with the highest number of internet users are in the:

TOP 20 COUNTRIES WITH THE HIGHEST NUMBER OF INTERNET USERS

| TOP 20 COUNTRIES WITH HIGHEST NUMBER OF INTERNET USERS - JUNE 30, 2012					
#	Country or Region	Population, 2012 Est	Internet Users Year 2000	Internet Users Latest Data	Penetration (% Population)	Users % World
1	China	1,343,239,923	22,500,000	538,000,000	40.1 %	22.4 %
2	United States	313,847,465	95,354,000	245,203,319	78.1 %	10.2 %
3	India	1,205,073,612	5,000,000	137,000,000	11.4 %	5.7 %
4	Japan	127,368,088	47,080,000	101,228,736	79.5 %	4.2 %
5	Brazil	193,946,886	5,000,000	88,494,756	45.6 %	3.7 %
6	Russia	142,517,670	3,100,000	67,982,547	47.7 %	2.8 %
7	Germany	81,305,856	24,000,000	67,483,860	83.0 %	2.8 %
8	Indonesia	248,645,008	2,000,000	55,000,000	22.1 %	2.3 %
9	United Kingdom	63,047,162	15,400,000	52,731,209	83.6 %	2.2 %
10	France	65,630,692	8,500,000	52,228,905	79.6 %	2.2 %
11	Nigeria	170,123,740	200,000	48,366,179	28.4 %	2.0 %
12	Mexico	114,975,406	2,712,400	42,000,000	36.5 %	1.7 %
13	Iran	78,868,711	250,000	42,000,000	53.3 %	1.7 %
14	Korea	48,860,500	19,040,000	40,329,660	82.5 %	1.7 %
15	Turkey	79,749,461	2,000,000	36,455,000	45.7 %	1.5 %
16	Italy	61,261,254	13,200,000	35,800,000	58.4 %	1.5 %
17	Philippines	103,775,002	2,000,000	33,600,000	32.4 %	1.4 %
18	Spain	47,042,984	5,387,800	31,606,233	67.2 %	1.3 %
19	Vietnam	91,519,289	200,000	31,034,900	33.9 %	1.3 %
20	Egypt	83,688,164	450,000	29,809,724	35.6 %	1.2 %
TOP 20 Countries		4,664,486,873	273,374,200	1,776,355,028	38.1 %	73.8 %
Rest of the World		2,353,360,049	87,611,292	629,163,348	26.7 %	26.2 %
Total World Users		7,017,846,922	360,985,492	2,405,518,376	34.3 %	100.0 %

Source : Internet World Stats
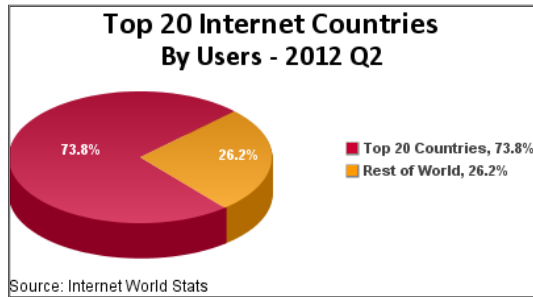
Digital Divide among Continents

The usage of internet among seven continents is not equal. There are 44.8% of internet users in Asia, 21.5 % in Europe, 11.4 % in North America, 10.6 % in Latin America / Caribbean, 7.0 % in Africa, 3.7 % in Middle East and 1.0 %internet users in Oceania / Australia. Unequal distribution of population is a major cause for the disparity of internet users between continents. The growth rate is very high in Africa compare to other continents which created a milestone of 3,606.7 % growth between 2000-2012. The following table gives the statistics of total population, internet users in the year 2000 and 2012, percentage of population connected to internet, and the growth rate between the year 2000 – 2012 of the seven continents.

WORLD INTERNET USAGE AND POPULATION STATISTICS June 30, 2012						
World Regions	Population (2012 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2012	Users % of Table
Africa	1,073,380,925	4,514,400	**167,335,676**	15.6 %	3,606.7 %	7.0 %
Asia	3,922,066,987	114,304,000	**1,076,681,059**	27.5 %	841.9 %	44.8 %
Europe	820,918,446	105,096,093	**518,512,109**	63.2 %	393.4 %	21.5 %
Middle East	223,608,203	3,284,800	**90,000,455**	40.2 %	2,639.9 %	3.7 %
North	348,280,154	108,096,800	**273,785,413**	78.6 %	153.3 %	11.4

America						%
Latin America / Caribbean	593,688,638	18,068,919	**254,915,745**	42.9 %	1,310.8 %	10.6 %
Oceania / Australia	35,903,569	7,620,480	**24,287,919**	67.6 %	218.7 %	1.0 %
WORLD TOTAL	**7,017,846,922**	**360,985,492**	**2,405,518,376**	**34.3 %**	**566.4 %**	**100.0 %**

Source: IWS
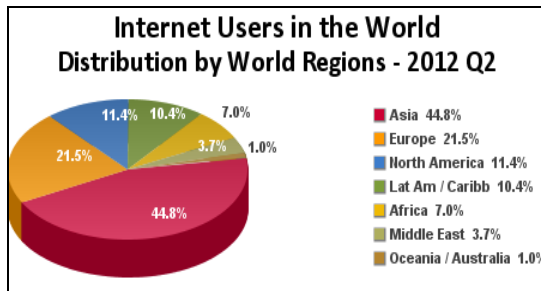
Source: IWS
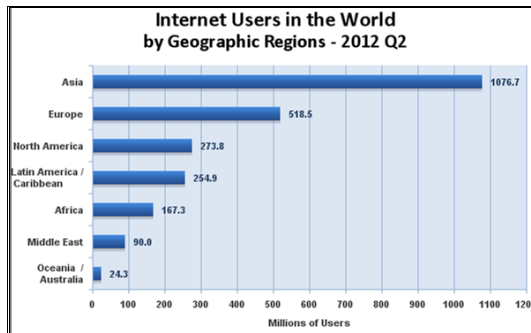
Source : IWS

The Issue of Literacy in Knowledge Society

In the present scenario knowledge is power to each and every country. But this 'knowledge power' will become reality only if one has accessibility to knowledge. The fastest growth ICT boom is unable to reach those who are seeking for knowledge equally. Today the forms of education is transforming from print to digital. Technology becomes an

agent of expanded access of quality education and also increases educational opportunities for the larger community. Literacy is the wealth and the educational programmes have been trading across the border as commodity.ICT enabled learning resources like audio-visual equipments making the learning process much easier and faster than the earlier days. Information is in our fingertips today with the advent of Information and communication technology.

Now universities are transformed into market for the commodities being produced, whereby faculty who conducted research in the role as educators and scholars, has become instead producers of commodities for their employer. 'Much to suffice the commercial end there has emerged close partnership between universities and industries to convert the instructional process into marketable products, such as a CD ROMs, Websites, or courseware which they themselves may or may not "deliver" (Noble 1997). Latchem, C. and Hanna, D.E. (2002) find that in general the 'higher education is experiencing a shift from supply driven to a demand driven pressures due to impact of globalisation and information and communication technology (ICT), competition from new providers, and the need to be self sustaining. Universities are increasingly seeking solutions to these challenges in the open and the flexible and ICT based online or virtual learning, and the ODL system also getting transformed from quality driven and marginal to commercially-oriented and mainstream.

Effective use of Information and Communication Technology in education makes a remarkable impact on a country. While making use of ICT technology in education countries across the world are suffering from two major problems. One is Illiteracy and the other one is accessibility of ICT. Developing and third world countries are struggling to increase the literacy rate. Accessibility of ICT infrastructure is not equal among three tiers of countries. Countries having good literacy rate are emerging as developed countries and the countries which are making use of ICT effectively are ruling world. Digital resources are once again dividing the world. Globally, 91% of children of primary school age were enrolled in schools in 2010. The remaining 9% of the targeted population is still excluded from a basic human right – access to education.

Accessibility of ICT Infrastructure in Knowledge Society — the Internet

ICT infrastructure of Internet based information dissemination technologies act as the backbone of knowledge societies. Internet facilitates exchange of ideas, access to knowledge, and communication between people. The info-technological revolution is restructuring the global social economic equations – shifting from income divide to knowledge divide. But how can Internet and corollary technologies contribute to the building of knowledge societies without universal access to education and information? How can people benefit from the Internet if they lack access or if they are in constant fear of persecution? In the so-called knowledge societies more than 850 million people in the developing countries are excluded from the wide range of information and knowledge. The poor in the developing countries remain much isolated economically, socially and culturally from the burgeoning information and progress in arts, science and technology. Little is known about the barriers to evolution and growth of knowledge societies in developing countries in spite of advancements in the use of information and communication technologies.

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Digital Divide in three tiers of countries

Country	Population (2012 Est.)	Internet Usage, 30-June-2012	% Population (Penetration)
	Developed Countries		
France	65,630,692	52,228,905	79.6 %
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Bhutan	716,896	150,548	21.0 %
Chile	17,067,369	10,000,000	58.6 %
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Kosovo	1,836,529	377,000	20.5 %
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Malawi	16,323,044	716,400	4.4 %
Somalia	10,085,638	126,070	1.2 %

Source: IWS

Divide in Employment Accessibility

Technology made great impact on economy of the world. In the contemporary phase of rapid globalisation and revolutionary changes in the technological growth there is a widening gap in terms of country's participation in global economy and the benefits that these countries reap from this participation. Within many countries the gap in terms of access to decent work and incomes and participation in economic and social life is widening between various income groups. Those who have access to knowledge and its related technologies can take maximum advantage of emerging economy. This is very much true in case of both the individuals and nations. Globalisation, declining communication and transportation costs, and the opening of political borders combine to facilitate increased movements of skilled people. This dynamic is de facto leading to a global market for advanced human capital in which individuals with higher education are the most likely to participate (Carrington and Detragiache 1999). This may lead to mobilisation of qualified people from lesser developed to the developed countries, thereby depriving the developing countries the service of their better minds. The poorly educated and trained are generally the losers in the process of economic

change where society as a whole seems to march towards higher order of development. This is what happens in knowledge societies.

In this 21st century marketplace, the richer countries strive to attract and retain the world's best-trained minds in many ways. Among the more powerful "pull" factors are effective policies that stimulate R&D activities and increase direct investment, offer attractive post- graduate training and research opportunities, and recruit younger graduates and professionals (Glanz 2001). Developed countries are attracting more and more skilled human resource. Roughly 25 percent of the science and engineering students in U.S. graduate schools come from other countries. This amounts to somewhere between 50,000 and 100,000 students from abroad who are introduced into the U.S. market for advanced human capital. Most of these students received their basic education and first degrees in their home countries — meaning that the cost of their initial training was probably assumed by the countries of origin rather than by the country of employment (NSF 2000: app. table 4-22).

The developed countries are shining with the help of underdeveloped skilled human resource. For instance The UNDP estimates that India loses $2 billion a year because of the emigration of computer experts to the U.S. Indian students going abroad for their higher studies costs India a foreign exchange outflow of $10 billion annually. The Government of India estimated that there are 30 million Indian Diaspora spread across the world (Source: http://indiandiaspora.nic.in). University of California, Berkeley, study reported that one-third of the engineers in Silicon Valley are of Indian descent, while 7% of valley hi-tech firms are led by Indian CEOs. (Source: Silicon India Readership Survey)

Women and ICT

Because of cultural barriers, lack of understanding and sometimes poor literacy, women are unable to utilize the advantages of Information and Communication Technology. There is also a huge gap in literacy rate between male and female. Women are struggling for equality in all areas and ICT is not exceptional. Women illiteracy is the one which created

gender inequality in current era, on the other hand unequal access to ICT enhanced the gender-gap. ICT also created a new gender inequality we can call it as 'technology-gap'. Women are unable to get ICT related jobs in the present market equally to the men due to illiteracy and unequal access to ICT. International Telecommunication Union (ITU) dedicated the year 2012 to women and girls. In a message on the occasion of World Telecommunication and Information Society Day, UN Secretary-General Ban Ki-moon said, "On this World Telecommunication and Information Society Day, I call again for wide-ranging efforts to close both the digital divide and the gender gap. All people must be able to make the best use of information and communications technology to help create the future we want."

Social mobility

Good education system can change a fate of the country. Several countries in the world are identified education as a major tool for development. Today skilled and literate people are the real wealth of a nation. In the process of having good education and skill to meet the current challenges of the globalised world Information and Communication Technology (ICT) plays a crucial role. Educated people with adequate skills can uplift their living standards. Today to grab the key employment opportunities one should be educated with modern skills. So education, employment and social mobility are interlinked. Majority of modern education and advanced employment opportunities are ICT oriented. If the ICT tools are not accessible among the people in a society, then how can we expect social mobility of the people? Without economic and educational growth how a poor person can hold dignity in a society.

Conclusion

Information and Communication Technology (ICT) plays a crucial role in knowledge society. Knowledge plays an immense role in 21st century's knowledge economy. Digital resources are the most crucial wealth for the development of an individual as well as a country in knowledge society. There

must be an equal access to the knowledge resources in the present globalised knowledge society. Unfortunately the wealthiest resource of the 21st century i.e. digital resources are not accessed equally in the world. In one hand we have very skilled human resource which are making use of digital resources effectively, on the other hand we have group of people who don't have skill and access to the digital technology. In 21st century's knowledge society, digital resources are dividing human society into two groups called 'Digital Haves' and 'Digital Have Not's.

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