Facing Digital Divide: A Comparative Picture of Turkey and Bangladesh

Sonia Haq
Department of Public Administration, University of Chittagong, Chittagong, BANGLADESH

Abstract

"Digital Divide" - the catchy term refers to the gap between those people who get the benefits of Information and Communication Technologies (ICTs) and ones who do not. The main factor is not the number of technology used or applied but rather the benefits and information generated from such. After a general discussion on the dimensions and basic facts of digital divide, this article attempts to present a picture of digital divide in different countries with a special emphasis on Turkey and Bangladesh. Some common crucial issues of digital divide which these two countries are facing have been compared. The paper then discusses the initiatives that should be taken to bridge the digital divide. The comparison aims to find out where these two countries stand in their endeavour towards bridging the gap.

Introduction

"Digital Divide" - this catchy expression alludes to the gulf separating the population that reaps the benefits of Information and Communication Technologies (ICTS) and the one deprived of it. It can be elucidated as the disparity between the communities that have the means to access and utilize new information and communication tools, such as the Internet, and the communities that do not have the resources to do that[1]. Generally, it was thought that digital divide referred to the gap between the number of users of ICTs and the non users. But it means more than that - it includes the discrepancy between those who have the skills, knowledge and abilities to use the technologies and those who do not. The concept of the digital divide is based on the hypothesis that there are both "information-haves" and "information-have-nots" in the Internet Age, and that the basis for that division may include any or all of such demographic characteristics as age, gender, income, education, ethnicity, region, and locality[2]. The main factor is not the quantity of technology used or applied but rather the benefits and information generated from ICTs. The digital divide can prevail among the spectrum of different economic classes, between the educated and uneducated or less educated, and between dwellers of rural areas and those of urban areas. It also exists in a global scale, that is, the gap exists between more and less developed countries.

There is a lot of hype related to this matter. There is also a lot of conflicting views related to it. Some views say the gap is widening while others say it is narrowing. Again the extent of the digital divide differs from country to country. The challenges and possible solutions are also not the same in all countries. This article begins with the dimensions and some real facts of digital divide. Then it provides some ICT related facts and figures of different countries with special focus on Turkey and Bangladesh. Comparison between countries helps policy makers to understand whether a particular country is progressing or staying behind. Turkey and Bangladesh fall into two different groups in the digital divide context. Turkey is a developed country and Bangladesh belongs to the least connected category. A comparative picture of these two countries is made based on their achievements and initiatives to face the digital divide.

Dimensions of Digital Divide: The conflicts and controversies regarding digital divide may be many. But the problem of inequality between the information "have" and "have-nots" is a fact and is getting serious. In general there are two major dimensions of digital divide: One is global digital divide; and the other is domestic digital divide. Pippa Norris has conveniently arranged this multifaceted conept into three distinct aspects:

Global divide - divergence of Internet access between industrialised and developing countries; i. Social divide - gap between information rich and information poor in each nation; and, ii. Democratic divide - difference between those who do and those who do not use the new technologies to further political participation[3].

Again lack of access, affordability, economic condition and sometimes lack of willingness and interest leads to the digital divide. Sometimes the people are just not a part of this new technological culture. According to Neilson, there are three stages of digital divide: economic divide, usability divide and empowerment divide[4]. *Economic Divide* refers to the economic inability to afford ICT related materials and facilities lead to this sort of divide. Though it will take a long time to bring computer affordability to the common people in developing countries, the price of computer related items is decreasing slowly. But the

question is will the achievement of affordability take away or solve all the other social disparities generating from technology. Another reason of the divide is the problem of *usability*. The internet is not easily understandable to the people with low literacy level. Some of the web sites require high level of education. Low level literate people compile a large part of the people that the government wants to deliver online service to. Therefore, if the consumers are not able to understand the information about the service delivered to them, the access to government information will be hampered. The older citizens are also ignored in this regard. Companies usually target the young consumers. Although senior citizens may become a good target if the internet is designed keeping them in mind. For these reasons, the high-end users are getting most of the benefit, while less-skilled users are being deprived creating a usability divide. Yet the empowerment divide is the arduous one: regardless of the user friendliness of computers and the Internet, not everyone would fully utilize the possibilities that such technology brings[3]. This participation inequality contributes to empowerment divide.

People do not know or are not interested in knowing the proper way to use search engines. They do not use the proper formulation; are unaware of all the features of advanced search results and most of the times select the first search results. In this way they fail to get the fullest of the benefits available to them. In addition, they also fall prey to the wishes of the internet vendors. For example, they choose the search engines provided by the Internet Service Providers (ISP) rather than the ones that suit them. In the same way users waste their time in the "free" web applications that come to them in the form of advertisements.

Some Real Facts

Different studies reveal some underlying facts about digital divide: The gap is growing, the privileged groups use ICTs more effectively, and accessibility and affordability of ICTs are crucial[5,6].

The Gap is Growing: The use of ICTs has spread around the world to a great extent. Even the poor and less developed countries are increasing their use of ICTs and access to information. But it is too little in comparison to the rate of increase in the developed countries. The less developed countries simply cannot compete with this rate. Therefore, the gap still remains and is increasing.

Upper-to-middle classes usually have superior-quality access to digital technology as the general impression of technologists is that, creating technology designed specifically for this class is much more profitable than creating technologies for the poor. As a result, the digital technology the poor have access are of inferior quality. Furthermore the digital technology they do have access to, is often of a design and interface that ends up being detrimental rather than productive. Technology is being

delivered to the poor on a commercial basis and as a source of entertainment. This, in turn, widens the digital divide. For example, the spread of cyber cafes was thought to have a shrinking affect on the digital divide. But, in reality, it is seen that a teen age boy in rural Africa may be spending his study hours playing video games in cyber cafes. He is not benefiting anything from this use of technology; rather it is harmful for him. Therefore, this technology designed for the rich when used by the poor is becoming harmful and thus widening the gap. Without proper education the poor will not be able to get the most of ICTs.

The Privileged Groups Use ICTs More Effectively: Privileged groups or the information-haves acquire and use technology effectively. This effective use of technology benefits them in various ways. Consequently they turn out to be even more privileged.

Accessibility and Affordability of ICTs: The issue of accessibility and affordability is very crucial regarding digital divide. Widespread access to the Internet is mandatory to curb the discrepancy in a society which dominant functions and social groups are increasingly organized around the Internet[7].

However, internet access is highly expensive for people with low income level. Access to ICTs includes investment in a computer, phone line, modem, various soft wares etc. In addition, there are other related costs for maintenance and training. Most people in the developing countries cannot afford this. As a result, they are left behind. The financial resources of the majority of schools and not-for-profits in the developing countries are scarce. Therefore, they are often not able to procure new equipment. For example, in countries where the average daily wage is $1, purchasing brand new PCs is not feasible for the vast majority of schools and community organization[8].

The Scenario in Turkey

Having a very high IDI value of 7.90, Turkey, the country with the second highest population in Europe, ranks in 68th position in the ICT Development Index (IDI) in 2013[9]. According to the International Telecommunication Union (ITU), Turkey had approximately 27.2 million internet users in 2009, for a 36 percent penetration rate[10]. There are 117 internet-service providers (ISPs) in Turkey, but this number is not a true representation of the plurality of the industry as the majority of ISPs act as resellers for the dominant, partly state-owned Türk Telekom, which provides more than 95 percent of the broadband access in the country (Freedom House). However, compared to its counterparts in the European region Turkey has the minimum proportion of Internet users which is less than 50 per cent[6].

Despite high Internet prices at OECD scale, access to the Internet among households has increased by almost 40% over

the last three years. Also, the difference between the urban and rural areas has reduced by approximately 10% in the last 2 years[11]. In Turkey, marked differences are observed between the rates of computer and Internet use among demographic groups among male citizens the rates of computer and Internet use are 53.4% and 51.8% respectively, while these rates among females are 33.2% and 31.7%; usage rate of computer and Internet among rural residents are are 25.6% and 23.7% respectively, but for urban residents these are much higher 50.6% and at 49.2%[12].

Two legal documents directly address the problem of digital divide. These are the Turkish Information Society and Action Plan documents prepared in 2006 and the Universal Service Law of 2005. The items mentioned in the Action Plan to bridge digital divide are to provide basic IT education to government employees, adults, soldiers of the Turkish army; set up Public Internet Access Points (PIAPs); ensure easy and low cost internet access; use of computers of school labs by the general citizens; provide vocational e-learning, online health service; promote online commerce; integrated e-library system, education portal and information system; and termination of special tax to lower cost in using ICTs[13]. In commensurate with the Action Plan, PIAPs have been set up all over the country.

Although internet penetration has increased, not all users have the proper skills to garner the full benefit of ICTs. Policies should put more emphasis on training in relation to ICTs. Another major issue in relation to internet accessibility is the routine blocks on various websites including popular ones like youtube, metacafe etc. by the Government. Policy makers have to rethink the restriction on websites in order to keep up with the world which is day by day becoming more reliable on information. Turkey has reached a significant position in bridging the digital divide but still has moderately some more way to go ahead.

The Case of Bangladesh

Like many other developing countries the digital divide exists in Bangladesh for more or less all the reasons mentioned above. The accessibility to ICTs has increased due to the fast growth of private sector mobile industry. According to the Report conducted by Boston Consulting Company (BCG) for Telenor Group, this industry has brought 90% of geographical area and 98% of population in Bangladesh under mobile communication coverage. In only a brief stretch of time the industry has aided the increase in national tele-density reach to around 34% from less than 0.4% in 1997 (as of Nov'09-BTRC)[14,15]. It also states that the access price is high, especially in relevance to income. Bangladesh (USD 1.41 or PPP$ 4.0 per month) has an exceptionally low prepaid mobile-cellular price in the world. This show that even with affordable prices customer circles can be expanded without hampering the efficiency and profit of the operators[6].

Although the connectivity level has grown, it is inadequate. ITU Report (2009) shows that internet penetration rate is only 4% in

Bangladesh which stands at the second last position among 8 countries of Asia[11]. Only 2% of the households subscribe for internet and the awareness level regarding internet is below 50%[11]. The increase in mobile communication coverage - development towards bridging the digital divide - has been hampered by the low literacy rate and the lack of proper know-how about using computers. Majority of the population mainly residing in rural areas rely on radio and terrestrial television for information. Bangladesh has advanced one rank from 2012 and stands at 145th position in the ICT Development Index in 2013[6] (ITU, 2014). However, the rapid development in this sector has taken Bangladesh four places up in the IDI raking between 2011 and 2012. In 2013 Bangladesh is 27th in the Asia and Pacific region[6]

The constitution of Bangladesh emphasizses on equality of employment and opportunity for all citizens irrespective of race, gender, and ethnicity. ICTs can be utilised to bring together all the resources in a timely and cost efficient manner. The Government of Bangladesh (GoB) has pledged to change Bangladesh in to a "Digital Bangladesh" by the year 2021. It has undertaken an ICT Policy in 2009. The vision of the policy encompasses the following features: Expand and diversify the use of ICTs to establish a transparent, responsive and accountable government; Develop skilled human resources; Enhance social equity; Ensure cost-effective delivery of citizen-services through public-private partnerships; Support the national goal of becoming a middle-income country within ten years and join the ranks of the developed countries of the world within thirty years. This vision is closely related to the national goals and has the potential characteristics of bridging the digital divide. The policy highlights social equity, widespread access and enhancement of ICT measures in its major strategic objectives.

The Ministry of Science and Technology of GoB has established over 1600 computer labs in different educational institutions and 20 cyber centers in universities and university colleges. To bring the services to the doorsteps of the citizens the Government has set-up 152 community e-service centres at the sub-district (upazila) level and district web portals in 64 districts. GoB has taken initiatives to interconnect all the government organisations through the internet. Proposals have been invited for the project 'Bangla Gov Net', which is a major step towards achieving this objective. This will allow easier and faster information sharing.

Bangladesh is connected to the information super highway through submarine optic fiber network since 2006, under the SEA-ME-WE (South East Asia-Middle East-Western Europe-4) Project 10. The SEA-ME-WE is a group of 16 countries from different regions. The SMW-4 cable has a capacity to handle a 120 Gb bandwidth, of which Bangladesh currently subscribes to 24.12 Gb. and the country uses 23 percent of its capacity domestically[16]. The private sector, especially, the telecom companies have attributed largely to the dissemination of

internet connectivity through mobile phones. The introduction of wireless internet has also added to this contribution but is mainly limited to major cities like Dhaka and Chittagong.

Facing the Digital Divide: Turkey and Bangladesh: Analysing the data presented above it can be observed that, a few years back, Turkey was in the spot where Bangladesh is today regarding digital divide. But Turkey has moved on and has advanced towards its goal in bridging the digital divide, although it still has quite some distance to cover. The point here is to see if it is on the right path.

The major policies and laws of both countries give emphasis on increase in the internet penetration rate. As a result, the governments have set-up internet service centres all over the country. In Turkey they are known as PIAP and in Bangladesh as E-service centers. The other important law in this regard in Turkey is the Universal Service Laws. There are serious criticisms against the vagueness in the definition of the universal service concept in the Law, and the lack of planning and transparency in the use of Universal Service Funds[17,18].

To successfully implement the ICT policy in Bangladesh the policy strategies have to be reviewed on a regular basis. It is specified in the current policy that implementation strategies will be reviewed every three years while the review of the overall policy will take place in every six years. Review in such intervals may hamper the monitoring process. Hence for maintaining continuity the short term policies should be reviewed more frequently.

Table-1
Comparison of Significant Digital Divide Issues in Turkey and Bangladesh

Digital Divide Issues	Turkey	Bangladesh
Major Policies and Laws	Information Society Strategy and Action Plan; Universal Service Laws	ICT Policy
Internet Penetration Rate	46.2% (Internet Live Stats, 2014)	6.86% (Internet Live Stats, 2014)
3 G Mobile Telecommunication	Introduced in 2008	Introduced in 2012

Internet penetration rate in Turkey is much higher than Bangladesh. 36,455,000 people use internet in Turkey (30 june 2012), while in Bangladesh 8,054,190 people. The economy of Turkey is much bigger than that of Bangladesh. Accordingly, Turkey can afford to spend sufficient amount of money for the development of ICT sector which is not the case for Bangladesh. With a comparatively small economy, the funding for technology is also very limited in Bangladesh. The leaders in the ICT sector has argued that, although there is a major fund

proposed in the ICT policy the government has not allocated enough money for this sector in the budget of 2012[19].

In addition to wireless and broadband Turkey is availing the benefits of 3rd Generation (3G) mobile telecommunication facilities which was introduced in 2008. This has enhanced the speed of service delivery and information dissemination and the field has expanded rapidly. Turkey is on its way to embrace the 4G experience by 2016[20]. Bangladesh entered the 3G world when GoB announced its commercial use on 12th October 2012. It was first launced through the state owned company Teletalk and later gradually the other private telecom operators got the permission/ licenses. As of 2014, three private mobile operators- Grameenphone, Banglalink and Robi- cover 64 districts with 3G internet service.

With a 9.6 percent broadband penetration rate Turkey lags behind other benchmarks countries in this area. As majority of the people in Turkey can avail mobile-broadbrand services at a reasonable price, it indicates that nor this or difference in earning and expense is an obstacle in taking on mobile-broadbrand in this country[6].

Bangladesh along with other Asia and the Pacific countries has the lowest entry-level fixed-broadband prices in USD: Viet Nam (USD 2.9), Sri Lanka (USD 4.3), Bangladesh (USD 4.4) and India (USD 4.8) With a countrywide low broadbrand penetration rate of 2 percent (2013) in Bangladesh, Srilanka and India, the major difficult task is to maintain a equal price for the overall population; not just city dwellers who currently enjoy this service rate. To enhance fixed broadband usability feasible steps towards developing ICT competence can be taken[6].

Including the Excluded: The journey: The digital divide is not a single thing on its own. It is a complicated patchwork of varying levels of ICT access, basic ICT usage, and ICT applications among countries and peoples (www.bridges.org). In Internet the differences are exceptionally visible for a paradoxical reason: it diffuses exceptionally fast. 15 years ago, no-one had access to the Web[21]. Today, in many countries almost a third of the population uses the internet[22]. However, people are still often excluded from using technology or discouraged from using it based on gender, ethnic, or other socio-culturally based inequalities. Some initiatives can lessen the gap of the digital divide in the future. A few examples of what Turkey and Bangladesh has done in this journey have also been presented here.

Need for Integrated Resources and Cooperation: Dealing with the digital divide is beyond the scope of any single initiative. While it is important for organisations doing community ICT projects to meet the needs of their clients as comprehensively as possible, the issues at stake in international and domestic digital divides are huge, and organisations should cooperate to tackle problems collaboratively.

In Turkey this cooperation is visible in some areas. For example, the establishment of large number of PIAPs is the result of a collaborative effort of various ministries, private companies and NGOs. The Ministry of Education, Ministry of Transportation and Türk Telekom are all actively establishing PIAPs in educational institutions, libraries and community centres[14].

Policy makers and users must be able to critically assess which kind of technology is suitable for the intended use of the locality. Technology related companies should treat developing countries as defined markets. They should also develop targeted products to meet their requirements. Though some ICT related charity programs for low income people have had commendable effect but they have not been able to stand strong with time.

Essential Role of Private Sector: ICT facilities are reaching even larger groups of people but are not focused on the poor population. This broadens the gap between countries as the privileged section of the population are gaining higher accessibility to technology. The ICT related costs like, the price of hardware, phone lines, electricity, internet connection, software, and maintenance should be within an affordable range. It must not be too expensive so that it hinders many people and organisations from availing technology. Competition in the communications industry will assist in reducing the price level. International Telecommunications Union[18] suggests that: i. Privatisation without competition is good, but privatisation with competition is better, ii. Introducing private sector players is good but allowing them the freedom to compete is better, iii. Creating regulators is good, but giving them adequate powers and independence is better, iv. Creating a duopoly is good, but allowing open competition is better; and v. Introducing competition is good, but introducing it at an early stage is better.

But, "if the utilization of ICT opportunities in disadvantaged groups is left purely to time or 'natural' market processes, the process of digital exclusion will continue to increase rapidly"[23].

In Bangladesh, the private telecom companies have played a pioneering role in connecting people through mobile phones. Major companies like Grameenphone, Banglalink, Airtel and others provide education, banking facilities, English learning courses, professional healthcare advice etc. The private sector in Turkey is significantly contributing in bridging the digital divide. One initiative among two taken by Microsoft Turkey is called 'Partners in Learning' which involves one partner who has knowledge about technology and the other person being a newcomer in this field. The other initiative is known as 'Those Who Know Teach the Ones Who Do Not Know'. In association with UNDP and some NGOs, such as Habitat and Agenda 21 Youth Association, 40 young computer users from different parts of Turkey were trained as ICT educators in this program, who in turn provide training to other computer instructors[24].

Relevant and Sustainable Application: The people must know how to use technology effectively and understand the potential of technology. Education in this case plays an important role. The information provided digitally must be relevant to the country's culture, language etc. Ignoring these factors will not lead to a sustainable solution. In Bangladesh, a study[25] (GoB and UNDP) recognised the risk of embracing Western-led approach of building a "knowledge society" which may add to growth but may miss the equity parameter highly. However to get the full benefit, first, it has to be ensured that the required information is available on the websites. The content of the web pages have to provide relevant information for all citizens. One tracked concentration on technology may induce further inequity in the form of digital divide[21]. The digital divide is not a new problem. Economic development, technology transfer, and sustainable development are all interrelated. Many of these ongoing programs have an impact on digital divide. Coordination between these fields will aid both parties.

Awareness of Benefits: Leading to Empowerment: New technologies should be used to empower the poor, like they now empower the rich. ICT industries are in the continuous pursuit of providing new technological solutions to the users. They want to fulfill the needs of users and empower them. Therefore, closing the digital divide must surely concern empowering the poor. "What is needed is a new paradigm, a bottom-up approach that empowers individuals and communities to manage their own development by giving them access to the information, tools, and services they need"[26]. In order to achieve this, circumstances and reinforcing elements of poverty must be reduced.

A major step to empowerment is to raise awareness about the benefits of ICTs especially economic benefits. Because the poor are naturally more concerned about economic benefits and are likely to be more motivated by this factor than other factors. Corruption prevails in almost all developing countries. People can avoid going through the hassle and money spending process of public offices if they are aware that the required information is available online. This awareness can save both money and time. In addition, people can benefit economically through telemedicine, advice and information service for business and so on.

Legal Framework, Trust and Political Will: People must have trust in the ICTs and the providers of ICTs. In most developing countries, there is lack of trust in various government agencies. Therefore, the agencies providing ICT facilities must gain the trust of the citizens first. The private sectors should also do the same. For this the legal framework regarding technology should be able to provide security and ensure privacy. Most initiatives go in vain in developing countries like Bangladesh due to lack of political commitment. The political parties should set aside their own interests and commit themselves to the effective implementation of the policies taken.

The event of creating a platform for the 'social preparation' of an 'e-transformation' by investing in human resources thereby enhancing the economic advancement can only take place when the problems of ICT access and usage, digital divide or exclusion, low educational level and the internal/external inequalities in socio-economic structures can be resolved[19]. Therefore, the attempt to resolve the divide must start with the people who are excluded rather than developing the included section.

Conclusion

Resolving the digital divide is beyond the scope of any single initiative and technology is also not the panacea for all global dilemmas. But technology can contribute to resolving inequalities, development and other issues through disseminating valuable information to the people. ICTs related organisations worldwide should work together from a global perspective as well as an entrepreneurial approach.

Both Bangladesh and Turkey are facing the dimensions of digital divide based on economic condition, education, gender, location and other factors. These factors have the same effect on both the countries though the extent of the gap may differ. People who are better off avail the privileges of ICT more than the poor. Female citizens both in Turkey and Bangladesh have a low access rate to ICTs compared to their male counterparts. The rate of ICT users go up with the level of education. In other words, people with less education tend to use less ICT than more educated people. In terms of location, people living in urban areas have better and more access to ICTs than those living in rural areas.

Turkey has gone ahead from Bangladesh in some major areas in bridging the gulf due to its developed economy. It has managed to achieve a significant internet penetration rate and has also introduced 3G mobile technology. Countries like Turkey should focus more on policies that improve accessibility and distribution of ICT facilities and more importantly training. Bangladesh needs a stronger economy for faster growth of the ICT sector. Nevertheless, the use of mobile phones has brought about phenomenal change. Online banking, bill pay and other electronic services will tend to spread more only if the basic elements like education and electricity are ensured. For developing countries like Bangladesh, basic inequalities need to be eliminated and proper distribution of resources ensured. The government should not only see the problem from a technological aspect but also from political, socio-cultural and economic aspects also and have the political will and commitment to ensure equality. Both the countries follow more or less similar strategies in bridging the digital divide although Turkey has managed to implement its strategies more successfully. As Turkey has made substantial progress in this area, Bangladesh also seems to be on the right path to achieving its objective. The thing that lacks in Bangladesh is political and economic stability.

There are many suggestions for closing the gap of digital divide. Most of the suggestions and information provided are based on internet connections and computers. If the concentration is only on the use of ICTs then it will be difficult to narrow or close the divide. All the elements of the patchwork have to be given equal importance. For this, affordability, local capacity, relevant content and services, applicability and sustainability of applications, socio-cultural factors, legal and regulatory framework, economic environment, and political situation will have to be taken in to consideration. One very important point note is that, if people are really benefiting from the increasing use and accessibility of ICTs. To actually garner the benefits, three things have to take place. First, people should be aware and skilled enough to access the required information. Second, the appropriate information also has to be adequately provided in the websites from concerned agenciesAnd third, people should realize that they will benefit economically by using ICTs.

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