

INTERNET USE IN BANGLADESH: PROBLEMS AND PROSPECTS

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Abstract: Bangladesh is one of the most densely populated countries in the world. Most of the people live in villages. Most of the city dwellers also come from villages. Bangladesh is a small but resourceful country of South Asia. Internet is very essential in modern world it gives this world in our doorsteps. There is a internet user between developed and developing countries. The digital divide around the world is usually measured through statistical indices such as the number of telephone lines, personal computers, websites and Internet users and their ratio to the total population. With an estimated internet user-base of around 10 million coming into 2013, representing just under 6.6% user penetration by population, the local internet industry has been preparing to move into the next stage of its development. Internet is a part of our life in present day. If we have an internet connection, the whole world in our hand. If most of the people of the country get the facility of internet, they get a digital life and we get a digital life and we get a digital Bangladesh, which is a developed country. Digital Bangladesh should be the first step towards the death of distance particularly for the rural people with the secretariat or any other powerhouse with whom the citizens are involved for Governance.

Keywords: Internet User, Population, Digital divide, Internet services, Problems and Prospects.

1. INTRODUCTION

Bangladesh officially the People's Republic of Bangladesh, is a country in South Asia. It is surrounded by India on all sides except for a small border with Myanmar to the far southeast and the Bay of Bengal to the south. Together with the Indian state of West Bengal, it makes up the ethno-linguistic region of Bengal. The name Bangladesh means "Country of Bengal" in the official Bengali language. The borders of Bangladesh were set by the Partition of India in 1947, when it became the eastern wing of Pakistan (East Pakistan), separated from the western wing by 1,600 kilometers (1,000 miles). Despite their common religion of Islam, the ethnic and linguistic gulf between the two wings, compounded by an apathetic government based in West Pakistan, resulted in the independence of Bangladesh under the leadership of Sheikh Mujibur Rahman in 1971 after the bloody Bangladesh Liberation War, in which it was supported by India. The years following independence have been marked by political turmoil, with thirteen different heads of government, and at least four military coups. The population of Bangladesh ranks seventh in the world, but its land area is ranked ninety-fourth, making it one of the most densely populated countries in the world.¹ The pioneering and bold computer magazine of Bangladesh, The Monthly Computer Jagat, expressed its deep concerns regarding Internet access in the country in its July 1996 issue. In an editorial it stated, Revolutions have been created round the world to use Internet for extension of knowledge, scientific activities and education. But, in Bangladesh we have no such initiative to provide Internet access to the educational institutions. Even most prestigious higher institutions like University of Dhaka and Bangladesh University of Engineering & Technology are beyond its reach. Online Internet was legalized in the country on 4 June 1996 and the same day one Internet service provider (ISP), the Information Services Network (ISN), started work. Within one and a half months, Grameen Cyber Net started service on 15 July 1996. At about the same time, two other off-line providers went online by taking leased lines from the major providers. Very recently two big nongovernmental organizations

(NGOs) started online Internet service. But despite the presence of so many ISPs, Internet access is largely underutilized. All the ISPs are capital city based with no immediate plans to extend services outside Dhaka. Moreover, subscribers mainly use the e-mail facilities of Internet, with little Web browsing or newsgroup reading. This regrettable situation has led the authors to conduct a situation analysis study.

2. INTERNET HISTORY OF BANGLADESH

The Internet is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link billions of devices worldwide.² September 2, 1969: First time two computers communicated with each other. October 29, 1969: Message sent from computer to computer in different locations. January 1, 1983: Arpanet adopted the standard TCP/IP protocol. March 1989: Tim Berners-Lee invented the World Wide Web.³ A world-wide computer network that can be accessed via a computer, mobile telephone, PDA, games machine, digital TV, etc. The Internet access service can be provided through a fixed (wired) or mobile network: analogue dial-up modem via standard telephone line, ISDN (Integrated Services Digital Network), DSL (Digital Subscriber Line) or ADSL, Cable modem, High speed leased lines, Fiber, Power line, Satellite broadband network, WiMAX, Fixed CDMA, Mobile broadband network (3G, e.g. UMTS) via a handset or card, Integrated SIM card in a computer, or USB modem. The internet is made up of millions of computers from all around the world, linked to each other by a network of telephone lines, cables and satellite connections. The web or the World Wide Web is the information and the services we can use, thanks to these networked computers. Starting in the early 1990s, Bangladesh had dialup access to e-mail using the Bulletin Board Systems (BBSs) of a few local providers, but the number of users did not total more than 500. Users were charged by the kilobyte and email was transferred from the BBS service providers to the rest of the world by international dialup using UUCP. In June 1996 the first VSAT base data circuit in the country was commissioned and the Bangladesh Telegraph and Telephone Board (BTTB) granted licenses to two Internet Service Providers (ISPs). In subsequent years more liberal government policies led to a rapid expansion of the industry, resulting in over 180 registered ISP's by 2005. ISPs are currently regulated by the Bangladesh Telecommunication Regulatory Commission (BTRC) through the Bangladesh Telecommunications Act. In May 2006 Bangladesh inaugurated new submarine optic fiber connectivity as part of the 16 country consortium SEA-ME-WE 4 project. The landing station is in Cox's Bazar, the southern city near the Bay of Bengal. In July 2008 the Submarine Cable Project was transformed into the company Bangladesh Submarine Cable Company Limited (BSCCL), which is now responsible for all services related to the submarine cable. Between June and August 2012 international Internet service in Bangladesh was slowed following a cable cut on the eastern leg of the SEA-ME-WE 4 optical fiber cable and the fact that Bangladesh does not have an alternative submarine cable or other high-speed international connections. In 2014 the new SEA-ME-WE 5 cable is expected to provide an alternative operating at 100 Gbit/s, roughly 10 times faster than the current connection.

E-mail service was started in Bangladesh⁴ through a small private initiative sometime in late 1993. Another private organization came with a bulletin board service (BBS) with Internet e-mails and newsgroups in late 1994 that attracted many subscribers because of its good price package. There was demand from all quarters for BTTB to start VSAT or X.25 lines for Internet and data entry services. But BTTB was not willing. Bangladesh was fortunate that it got three dynamic leaders in the cabinet of the three months' neutral caretaker government formed to conduct the National Assembly election from April to June 1996. The leaders, Dr. M. Yunus (renowned for his micro credit bank for the poor), Dr. Manzoor Elahi, and science educator Dr. Jamilur Reza Chowdhury, took initiative to remove all regulatory bars for setup and use of VSAT in the private sector. As a result online Internet service began in the country on 4 June 1996. Currently, six providers are giving online Internet access; four of them are using their own 64 kilobytes per second (kbps) VSAT and the other two are using leased lines from two major providers. The history⁵ of internet is not that old even in developed countries. The people of Bangladesh had to remain in dark about it for a long time because of the non-availability of the service in this part of the globe. The main obstacle to start the service was to have data circuits to a suitable overseas location. However in this condition a few young talents started dialup e-mail service and made it commercially available for public use. In late 1995 the government of Bangladesh invited applications to subscribe the VSAT (Very Small Aperture Terminal) data circuits. 2nd Submarine⁶ Cable 2013 a) BSCCL signed for SMW-5 submarine cable System b) Probable activation on 2016 c) Will reduce dependency to terrestrial cables in India.

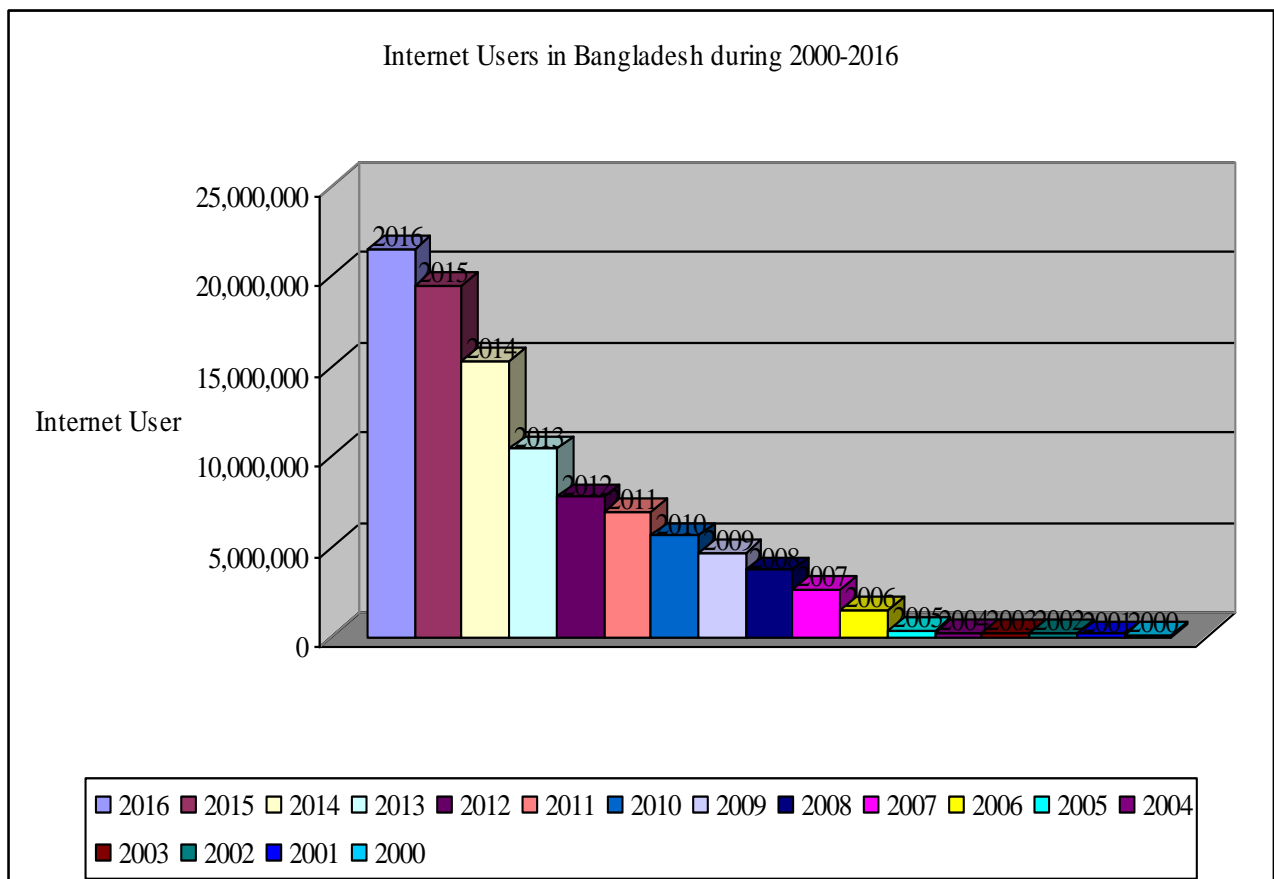
3. STATEMENT OF INTERNET USERS IN BANGLADESH

Table No. 1: Statement of Internet Users in Bangladesh during 2000-2016

Year	Internet Users	Penetration (% of Pop.)	Total Population ⁷	Non Users (Internet Less)
2016	21,439,070	13.2%	162,910,864	141,471,794
2015	19,420,674	12.1%	160,995,642	141,574,968
2014	15,271,441	9.6%	159,077,513	143,806,072
2013	10,419,535	6.6%	157,157,394	146,737,859
2012	7,762,869	5.0%	155,257,387	147,494,518
2011	6,903,253	4.5%	153,405,612	146,502,359
2010	5,609,821	3.7%	151,616,777	146,006,956
2009	4,647,081	3.1%	149,905,836	145,258,755
2008	3,706,312	2.5%	148,252,473	144,546,161
2007	2,638,668	1.8%	146,592,687	143,954,019
2006	1,448,392	1.0%	144,839,238	143,390,846
2005	345,372	0.2%	142,929,979	142,584,607
2004	280,330	0.2%	140,843,786	140,563,456
2003	227,135	0.2%	138,600,174	138,373,039
2002	190,611	0.1%	136,228,456	136,037,845
2001	173,652	0.1%	133,776,064	133,602,412
2000	93,261	0.1%	131,280,739	131,187,478

* Estimate for June 30, 2016

** <http://countrymeters.info/en/Bangladesh>

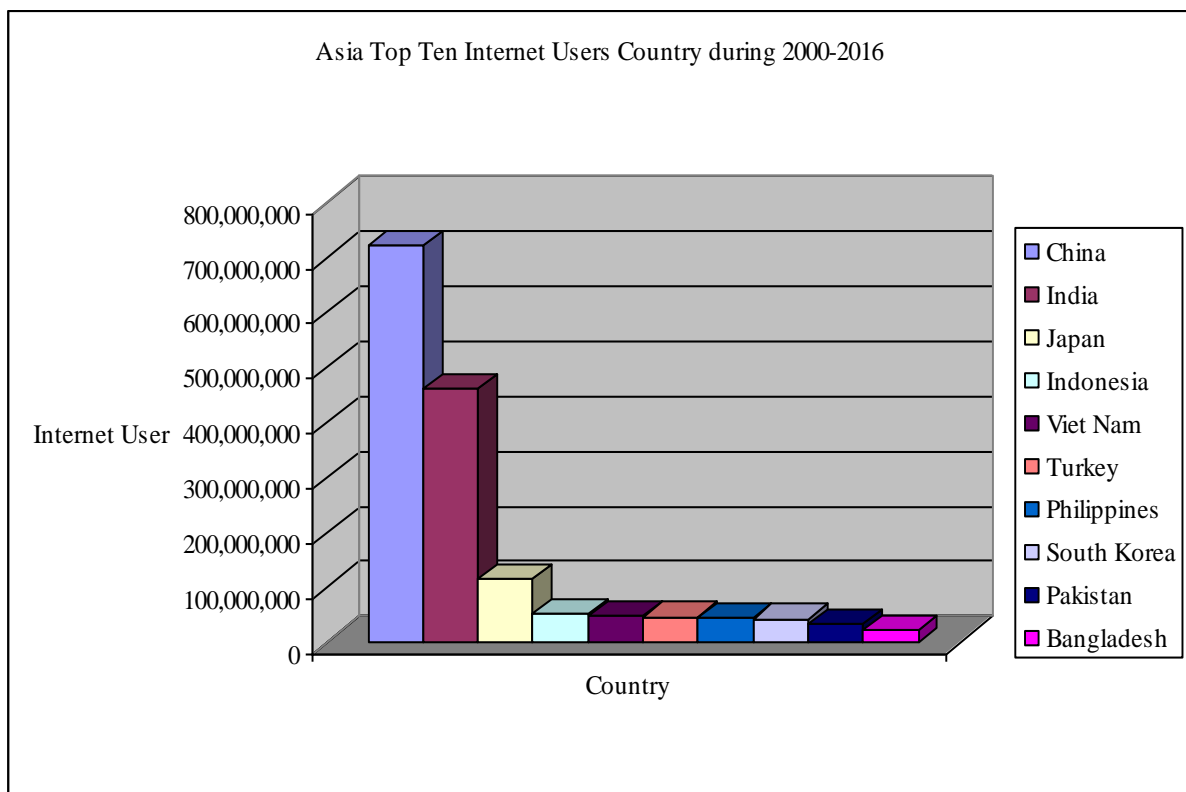


4. STATEMENT OF INTERNET USERS IN ASIA

Table No. 2: Statement of Asia Top Ten Internet Users Country during 2000-2016

Country	Internet Users	Penetration (% of Population)	World Population	Non Users (Internet Less)
China	721,434,547	52.2%	1,382,323,332	660,888,785
India	462,124,989	34.8%	1,326,801,576	864,676,587
Japan	115,111,595	91.1%	126,323,715	11,212,120
Indonesia	53,236,719	20.4%	260,581,100	207,344,381
Viet Nam	49,063,762	52.0%	94,444,200	45,380,438
Turkey	46,196,720	58.0%	79,622,062	33,425,342
Philippines	44,478,808	43.5%	102,250,133	57,771,325
South Korea	43,274,132	85.7%	50,503,933	7,229,801
Pakistan	34,342,400	17.8%	192,826,502	158,484,102
Bangladesh	21,439,070	13.2%	162,910,864 ⁸	141,471,794

* Estimate for June 30, 2016



5. INTERNET USERS OF BANGLADESH

An individual who has access to the Internet at home. This indicator does not record use, or frequency of use, but only access. In order to have access, the hardware equipment must be in working conditions, the Internet subscription service must be active, and the individual household member must have access to it at any time (there must be no barriers preventing the individual from using the Internet). The hardware equipment may or may not be owned by the household. There are no age limits (minimum or maximum), so an Internet user can be of any age. There can be multiple devices and services within the household. The data is collected through annual household surveys administered by individual countries based on ITU guidelines. The United Nations Statistics Division has recommended collection of data on households accessing the Internet also outside of home, but this is not a Core ICT Indicator. An “Internet User” is therefore defined as an individual who can access the Internet, via computer or mobile device, within the home where the individual lives.

We collected responses from 110 online Internet users. The respondents were between 18 and 60 years of age with a mean age of 25 (standard deviation 9.6) years. Their professional distribution were: students, 50%; computer professionals, 12%; engineers, 10%; physicians, 8%; managers, 6%; teachers, 5%; businessmen, 4%; lawyers, 3%; and government officers, 2%. They were accessing the Internet from six months to one and one-half years and using online Internet for minimum of four months. Most (85%) pay online bills by themselves and the rest (15%) use the Internet on behalf of their companies. They pay Internet bills ranging from US \$7.50-175 per month, but bills for most users usually do not exceed US \$16 because they don't use areas other than e-mail for fear of extra bills. Web browsers or newsgroup readers usually need to pay more than US \$60 per month. Daily online time varies from user to user and ranges between 5 and 40 minutes (but mostly below 10 minutes) which gives a monthly cumulative range of 2.5-20 hours per user (mostly below 5 hours). Some 83% of the online time is used for e-mails, 12% for Web browsing, and only 5% for newsgroup reading. Everybody blamed the cost factor for not or insufficiently reading Web pages or newsgroups. But there is another side of the coin. The authors have come to know that there is also a group from affluent sections that uses the Internet mainly for entertainment. Staff at some corporate users also abuse Internet beyond the knowledge of their authority; these two groups play a great role in survival of the ISPs.

The number of Internet subscriptions in Bangladesh grew from 186,000 in 2000 to 617,300 in 2009. However, only 0.4% of the population used the Internet in 2009 giving Bangladesh one of the lowest usage percentages in the world, ahead of only North Korea, Myanmar, and Sierra Leone. This limited Internet penetration is due to many factors, including: high costs, little local content, limited or poor service quality, lack of infrastructure with the last mile often limited to dial-up, too many providers competing in a relatively small market, and low literacy rates. By 2011 however, the number of Internet users in Bangladesh had seen phenomenal growth of over 90% bringing the total number of users to 5,501,609 (3.5% of the total population) mainly due to wide availability of mobile Internet access. In April 2010, Akhtaruzzaman Manju, president of Internet Service Providers' Association of Bangladesh, said "we've estimated that nearly 10 million people in the country are using 800,000 Internet connections on sharing basis", adding the number of Internet users in the country is increasing roughly 15-16 percent a year. "This increased Internet penetration will result in a 2.6 per cent contribution to the country's GDP by 2020, while creating 129 thousand more jobs by the same year" the research added.

Initially every ISP took US \$ 250 for registering an earning subscriber and US \$ 125 from a student subscriber. Today the rate has dropped to US \$ 125 and US \$ 75, respectively. The online charge is 7.5 cents per minute. Since December 1996 the government has imposed a 15% VAT (value-added tax) on the online charge. So users must pay 8.6 cents per minute for Internet access. Now, if a subscriber on average uses the Internet for one hour a day and 30 hours a month, his online bill per month will amount to US \$ 155, which is certainly too much for a country with per capita annual income of US \$ 230. Moreover, as the speed of data transmission in the telephone lines is slow because of low-speed telephone cables and around 40 phone lines connected with the 64 kbps VSAT-based server, Web browsing is very expensive. As a result users remain alert regarding consumption of time and use mainly off-line e-mails.

The good days are ahead for the ecommerce industry in Bangladesh.⁹ Despite all the talk concerning the growth of the sector, only a meager 2% of the entire population and 23% of internet users shop online, according to a B2C UNCTAD eCommerce Index 2016. Among the developing countries, Asian Tigers, Korea, Hong Kong (China) and Singapore, with high Internet penetration and well-developed logistics lead the pack followed by United Arab Emirates, Qatar, Uruguay, Kuwait, Chile and Malaysia. Bangladesh stands at 121. The reports also explored why people don't shop online. Among the reasons reported by the participants in various high, middle, and low-income countries are payment problem, lack of online shops and delivery issue top the list. The eCommerce industry has experienced a tremendous growth in recent years in Bangladesh. The market size has grown rapidly. We have seen some very promising companies like Chaldal, Ajkerdeal, Bagdoom,

6. INTERNET SERVICES OF BANGLADESH

National Internet Exchanges (NIXs) and International Internet Gateways (IIGs): All ISPs and equivalent service providers in Bangladesh exchange traffic via two systems, the National Internet Exchange (NIX) and International Internet Gateways (IIGs). The IIGs provide global Internet connectivity, while all domestic Internet traffic is routed via the NIX to minimize usage of international bandwidth. The NIX consists of two exchange points known as the Bangladesh Internet Exchange (BDIX) established in August 2004 and operated by the Sustainable Development Networking Programme and the Peering Society of Bangladesh and the Bangladesh Society of Internet Exchange (BSIX)

established in May 2004. In June 2012 the BTRC announced plans to issue an unrestricted number of additional NIX licenses. There are two IIGs in service operated by, Mango Teleservices Limited and the government owned Bangladesh Telecommunications Company Limited (BTCL). There are concerns that, with a limited number of NIX operators, only two IIG operators, and with BSCCL holding a monopoly as the only operator of the SEA-ME-WE fiber optic cables, limited competition will keep the cost of raw bandwidth high.

Internet Service Providers (ISPs): In 2005 there were more than 180 ISPs operating in the country. ISP's are regulated by the BTRC. In 2015 there were 126 licensed ISPs providing services nationwide and 84 ISPs providing services in the central zone.

Mobile Operators: Because fixed line penetration rates are and are expected to remain low, most Bangladeshis' first experience with the Internet is likely to be via mobile services. An estimated 90% of Bangladesh's Internet users got their access using mobile services in 2010. Out of the six mobile operators, Grameenphone and Banglalink offer 3G services in 64 districts of Bangladesh, others offer 3G Internet service on some specific areas and EDGE or GPRS GSM Internet service on rest of the areas. Operators are working on expanding their 3G services on all areas. The sole CDMA operator, Citycell, offers EVDO.

Broadband: Broadband Internet and e-commerce in Bangladesh is slowly progressing. In 2009 there were 50,000 fixed broadband Internet subscribers. Though broadband Internet access is available, the charges for high speed connections are higher than in other south Asian countries, though this is changing. In Bangladesh Broadband is legally defined as 128/128 kbit/s, which is not in line with the ITU's definition and many broadband Internet services may not be considered true broadband internationally.

WiMAX: Three companies, Banglalion Communications Ltd., BRAC bdmil Network Ltd., and Augere Wireless Broadband Bangladesh Ltd., won licenses to operate WiMAX in Bangladesh in September 2008. The three firms purchased the licenses at auction for 2.15 billion BDT (US\$31 million) from the BTRC under an agreement that pays 27.50% of revenue to the government. Brac bdmil declined to start the service. Banglalion and Augere (branded as Qubee) launched commercial WiMax services by the end of 2009.

Cyber cafés and Local Service Providers (LSPs): Expensive and slow connections available from individual homes have created a demand for cyber cafés with higher than average bandwidth. The number of cyber cafés was estimated to be roughly 800 in 2009, unchanged from 2005. Cyber cafés were first regulated by the BTRC in 2009, but fewer than 150 had obtained the required license by the end of 2011. Many cyber cafés have expanded as Local Service Providers (LSPs) as a way to make use of their idle (out of business hours) bandwidth. Because the root problem of scarce bandwidth remains, LSP subscribers continue to suffer from slow connections and inadequate bandwidth (96-128 kbit/s on average). A general complaint of customers and internet users is that such subscriptions are good for nothing except for surfing rich-text and images over the web. The younger internet users in the urban areas have started to familiarize themselves with other more data demanding internet applications and usage. But streaming applications fail to work over low bandwidth. Games, voice, video-conferencing and the like also suffer from latency issues. Further, these LSPs are known to forcefully cache web resources (transparent proxies) and to aggressively block traffic related to the following applications in order to save bandwidth: Windows update, Team Viewer and similar remote assistance applications, Torrent trackers and other P2P ports/patterns, voice/video applications which mostly make use of P2P architecture, online gaming and just about anything else except WWW. Some LSPs generally block all ports except HTTP/HTTPS. Bandwidth/latency benchmarking sites including SpeedTest.net are blocked to stop customers from complaining about their share of bandwidth. Despite these limitations, LSPs succeed by keeping the majority of the customers happy with local FTP servers, mostly filled with unlicensed movies, software, games and TV shows.

7. INTERNET USE IN BANGLADESH: PROBLEMS AND PROSPECTS

The main obstacle to using the Internet in Bangladesh is its distribution. The Internet is still an urban privilege because telephone connections are more concentrated in urban areas, particularly in and around Dhaka. Mobile operators are providing substantial services in and outside urban areas using 3G/EDGE or WiMAX. However, recently Bangladesh has seen phenomenal growth in Internet usage. Due to government various initiatives known as a2i project (open Hotspot zone, government offices with internet facility, Reduce bandwidth price etc.) have impacted the growth of users. As of June, 2015 internet subscribers have reached 48.347 million users. The Internet's speed in Bangladesh is not among the

fastest in the world but it has significantly developed in the recent past. As of April 2014, Bangladesh ranked 138th out of 190 countries on the Household Download Index by Net Index. Internet connectivity with acceptable quality and reliability is generally quite expensive in Bangladesh. Since connecting to the SEA-ME-WE 4 cable in 2006, the country has seen Internet bandwidth prices drop significantly. In 2008, the Bangladesh Telecommunication Regulatory Commission (BTRC) slashed wholesale Internet bandwidth prices drastically, from BDT 80,000 (approximately US\$1,125) per Mbit/s to BDT 18,000 (approximately US\$250) per Mbit/s. In 2009, after complaints that retail prices were still too high for slow, unreliable connections, the BTRC indicated that they were going to begin monitoring ISPs to ensure that retail prices reflected the reduced wholesale prices. The government sees information and communication technologies (ICTs) as a key driver of socioeconomic development. This is reflected in the government's "Digital Bangladesh" plan as well as the National Information and Communication Technology Policy. Bangladesh is slowly moving up in the world-wide ICT rankings, rising from 130th in 2009 to 113th in 2012 in the "networked readiness index". But, while its ITC ranking has improved, Bangladesh still lags behind other low-income countries of its stature. Progress is limited due to deficiencies in the regulatory framework and infrastructure development. And ICT leaders are concerned that the annual budget does not support the government's ICT goals.¹⁰

Internet is very important thing in this present world. It is difficult to pass a single day without internet. Internet gives this world in our hand. Internet provides all facility which is needed in our life. We can easily do any kind of work by the help of internet. In modern world internet is essential. But the use of internet is very poor. In Bangladesh most of the people are not known about internet use. So, they are backdated. They cannot get the happiness of a digital life. They pass their life by the lifestyle of before. There are some problems regarding this problem. The economy of our country is not well.¹¹ Our government should not take sufficient steps which can do well for internet users. Government take step to provide laptop but it is not sufficient for the huge number of people of Bangladesh. Our government should provide the allocation of money which is big in amount of present time. The respective concerned persons of this side are not aware about providing more internet facility to general people of the country. They are busy for their own internet business which is not useful for country. So, government should distribute a big amount of money to reduce the problem of internet user. People are not proper educated to use internet and computer. Windows operating system and internet in english also another problem. For that, they cannot use computer and internet. Fourth, ISPs who are doing their business in the country are not careful about their customers. They charge a high amount for their service. Many people are not getting their internet connection for the high charge of using internet. After providing the internet connection, the customer service is not sufficient.

Another problem is pornography. Most of the young people who can use internet properly are engaged in pornography. They spend most of the time of internet use with browsing pornography websites. So, they cannot get the main benefit of internet. The young peoples are more engaged in pornography. There are not security believe about internet work. Because of illiteracy most of the people have not believe of internet work. Who are expert in internet work, they are not believe the internet. Because, the most of site is fake and illegal who provides the fake work through internet. Seven, the people who are working through internet are not getting proper guideline from any kind of organization or people. The different course fee is so high, so our general people cannot bear the expense. So, they are unknown about internet knowledge.

The ISPs certainly have limitations. They claim "the aggressive centralized commercial attitude of the government-owned BTTB" as the main culprit. It is alleged that the government failed to take appropriate measures in getting connected to the global information superhighway when it was installed and passed through the Bay of Bengal only 50 kilometers away from the shore of the country. As a result, the BTTB had to hire a satellite channel from ASIA-SAT2 at US \$ 9,000 per year for Internet service. But the BTTB charges US \$ 7500 + 15% (= US \$8,625) per month to each major provider who owns a VSAT. Providers are required to make large investments for VSAT (US \$32,500), telephones (@US \$750 *40 = US \$30,000) and business offices. Moreover, they have large monthly recurrent expenditures. When the providers were asked to consider omission of the initial registration fee to attract more subscribers, they simply answered, "No, we cannot take the risk and we have to recover our investment." It is unfortunate that the civil bureaucracy of the government could not play a timely role in creating a pro-computer environment in Bangladesh. Rather, it hindered the growth of digital civilization by imposing high taxes on computers and computer-related accessories. The bureaucracy did not influence the government's political willpower in favor of early introduction of online Internet access for fear of political and cultural openness. Nor did it support rapid computerization of the government administration. In a small study conducted in April-May 1996, it has been found that out of 41 government ministries, 5 had no computers; 24 had 1-5; 5

had 6-10; and 7 had more than 10 computers. The number of computer personnel was nil in 23; 1-5 in 9; 6-10 in 1; and more than 10 in 3 ministries. But a recent initiative by the Ministry of Education is quite encouraging. The ministry is implementing OMR-based script examinations in secondary and higher secondary level schools and also trying to phase in basic computer courses in the elementary schools. Many donor-aided development projects under the government are being flooded with valuable pieces of branded personal computers, with no efficient manpower or effective use. These machines are being used for low-grade word processing rather than data processing or Internet access. This is no doubt wastage of resources.

Although it could do much more, still availability of online Internet service is making significant positive changes in the country. The benefits for business communications, both with respect to cost savings and speed, are noteworthy. Families with members staying abroad are welcoming the Internet for frequent and cheaper communication. Researchers are getting valuable information quickly at modest cost, which was not possible before. A multinational company source stated that the company's monthly e-mail bill has been reduced to less than US \$275 from US \$2,500 after the transformation of the Internet access system from international dialing to VSAT. The company would never consider such communications over faxes or phones. Other business houses and entertainment stars are gradually coming to accept the Internet as their ultimate communication tool. The ISPs are carrying out special promotional activities to provide Web page services. A new social class is being created, mainly amongst the young generation who find the Internet an effective tool for their career development and the globalization of their thoughts and creativity. Many Internet users have stated that a whole new world has been opened to them, they are getting a new source of knowledge, and they are also making relations with many good friends and organizations worldwide. But some say that going online is a very costly habit, which sometimes appears as an addiction and causes a big waste of time. A group of young people, notably from the affluent section of the society, is abusing the Internet by using it mostly for entertainment, which is certainly not a healthy practice for a poor country like us. But the saddest news is that Bangladesh has yet to set up an academic network to provide Internet access to the large number of university teachers, students, scientists, and researchers who play vital roles in building a better nation.

Bangladesh Telecommunications Company Limited (BTCL)¹² formerly Bangladesh Telegraph and Telephone Board (BTTB); Grameen Cybernet; Integrated Services Network (ISN); Teleglobe; InTech Online (IOL); Always On Network Bangladesh (AONB); Banglalion WiMAX¹³; GrameenPhone; Banglalink; Warid Telecom; CityCell; Augere (Qubee); Ollo; New Generation Graphics Limited (NGGL); Bangladesh Internet Exchange Limited (BIEL); Bangladesh Internet Exchange Trust; Novocom. Despite having 50 years of history the government has only from 1997 started the process of developing a national ICT strategy. In 2002 Bangladesh identified ICT as a "thrust sector" as it represents potential for quick wins in reforms, job creation, industry growth, improving governance and facilitating inclusion, and it has high spillover effects to other sectors. Digital Bangladesh does not necessarily mean one man one computer. For the near future neither does it mean Internet literacy for 100% population. But it indicates towards networking with all administrative units like, Upazila, Districts and Division. It definitely means bringing more citizens to the Information Highway-giving a bigger mass of the population access to information.

For Bangladesh, the priority should be to provide Internet access to academic institutions and to the intellectual communities. Also, private users should be more encouraged to create their own access to online Internet. Having an Internet account is the primary thing, but not all: using the Internet for productive purposes and for real benefits is the main issue. From the above discussions, it is clear that high service charges by the providers, a poor telecommunication system, government policy, and low buying power of potential clients are major barriers. But a more congenial and rational government policy may improve the whole scenario tremendously. A democratically elected government should not be governed by sacrificing the future of its people for immediate benefits. There is no reason for the BTTB to impose high costs on private VSAT use. The current charge of US \$8,625 per provider per month can easily be reduced to at least US \$1,000. This will encourage more providers and will ensure healthy competition between them, ultimately reducing the online charge and improving service quality. Rapid privatization of the telecommunication sector may remarkably enhance the speed of renovations through open-market competition. A national unity between the ruling party and the opposition is essential on this vital issue in order to resist workers' unrest. Unless more competitors, more investments, and more innovations are encouraged in the field, only government effort will bring proportionate value for money in this sector. National newspapers may play a key role in creating such unity. Buying power of potential clients will not immediately increase, but government may introduce lucrative consumer loan policies and may reduce taxes on computers and accessories to enable people to have their own PCs.

Now, the question comes: who will build the national academic network? Certainly, the government! For Bangladesh, we will propose two other national networks: one for health (as academic institutions for health are controlled by the Ministry of Health) and another for government administration. But the government's policy makers will require influence or pressure from external sources to establish these networks. The Internet activists should come forward to make a national lobbyist group to liaise with the government and also to mobilize the national newspapers in creating social awareness and demand. The newspapers should not depend on Western media for glamorous Internet features; rather they should publish articles for building a productive domestic policy for the Internet. Institutional support from the international donor agencies has an obvious role. The donor initiatives for building African national networks are noteworthy, and similar initiatives should immediately be started in our part of the world. The role of the World Bank and other major development agencies in formulating policy of developing countries is well known. We stress not moral, but financial and technical assistance from these sources. The donors should take special initiative to support the government of Bangladesh to create a connection with the global information superhighway that will enable the country to obtain the cheapest and speediest access to the Internet.

The advent of the Internet kindles hope of bridging the wide information gap between north and south created over the past several decades. Nothing in human history has had greater potential to make more information more readily available to more people at low cost. A recent G7 ministerial conference on the information age reflected a widely held belief that the new technologies will hasten the integration of developing countries into the global economy, and will enable them to "leapfrog entire stages of development in setting up their own infrastructures". But the question is how and when. Although the international bodies have definite responsibility to create a favorable environment, it is emphasized that the developing nations themselves should play major roles in solving their own problems. This paper has discussed many aspects of the situation in Bangladesh that may match similar conditions in other developing countries, and the recommendations might contribute in part to a solution of the problem.

The following notable problems¹⁴, which can be observed in ICT applications in developing countries like Bangladesh.

- Inadequate ICT infrastructure support as compared to other countries in this region
- Inadequate budget provision for establishment, maintenance and expansion of computer networks in the country
- Lack of holistic approach to infrastructure creation
- Lack of skilled manpower in public and private sectors
- Inadequate man machine ratio
- Lack of Internet facilities in sub-urban and district level
- Lack of suitable networking among the research institute
- Reliable power supply is a major hindrance to develop telecom infrastructure in the rural areas
- Lack of any centralized policy to progress of ICT in the country
- Lack of proper motivational activities to promote e-commerce and e-government
- Use of ICT within the government is still limited as only a small number of civil servant have Internet access and the know how

8. CONCLUSION

The internet came late to Bangladesh with the country gaining connectivity in 1996. In the last few years it has grown considerably, although obviously from a very low base. The country must work hard to overcome obstacles associated with the country's lowly economic status and still developing ICT infrastructure, not least of which being an overly bureaucratic government. Despite the presence of online Internet service in Bangladesh, its scope is largely underutilized. The reasons include high service charges, lack of awareness, poor telecommunication systems, government policy, low buying power of potential clients, and lack of institutional support. This paper is an overview of the situation of Internet use in Bangladesh based on the above information, which also describes the impact of Internet availability in Bangladesh together with barriers and possible solutions. The situation may match similar conditions in many developing countries,

where the recommendations may be replicable. Most of the people of Bangladesh have no computer and Internet facility and other technical knowledge they are backdated and they can not yet the happiness of a digital life. It is the main problem of Internet use in Bangladesh. The economic condition of our country is not well. Most of the people of Bangladesh are living under living standard. So, they cannot bear the extra charge for living or for a standard and updated person. They cannot buy the computer and Internet modern or connection for Internet use. So, they can not use internet. We hope that our government should take sufficient steps to provide the easier way of internet which can help the country to be a developed country in modern world.

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