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INTERNET  
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(ISP)



## **An Overview of Internet Service Provider (ISP)**

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Bangladesh has joined the net from 1996 through Information Service Network (ISN) Limited with first ever 64kbps VSAT transmitting and receiving data via Hong Kong gateway. It was the first company which provided internet service. Though it was somewhat late, over the past few years growth has been rapid. The number of companies providing internet services has increased. An Internet Service Provider (ISP) is a firm that provides individuals and companies access to the Internet and other related services. ISP's are regulated by the Bangladesh telecommunication regulatory commission (BTRC) through the Bangladesh Telecommunications Act. 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. In the early 1990s, Bangladesh had dial-up access to e-mail using the Bulletin Board Systems (BBSs) of a few local providers, but the number of users was not more than 500 in total. In 2013, internet users in Bangladesh increased to 33 million. As of 2005 more than 180 Internet Service Providers has started operating in the country. Over the past couple of years, internet services have gathered much greater value and scope, resulting in many premium services which may be priced. According to the BTRC, all the licensed ISP organizations are divided into two categories: Nationwide ISP License and Non-Nationwide ISP License. Bangladesh Telecommunication Regulatory Commission (BTRC) has issued a license to a total of 434 Internet Service Providers (ISPs) in six categories. The regulator handed over the nationwide license to 126 ISPs while 62 licenses for central zone, 17 zonal (south and east) licenses as well as ISP along with a cyber cafe, license to 175 operators under A category, 29 license under B category and 24 licenses under C category. Under Nationwide ISP License, there are 94 organizations providing their services throughout the country. Under Non-Nationwide ISP License, there are Zonal and Category A, B, C (Police Station Based) licensees. Total 112 ISP licenses awarded in the category A, 22 licenses in the category B, and 8 licenses in category C. Furthermore, there are 6 Mobile and 12 Public

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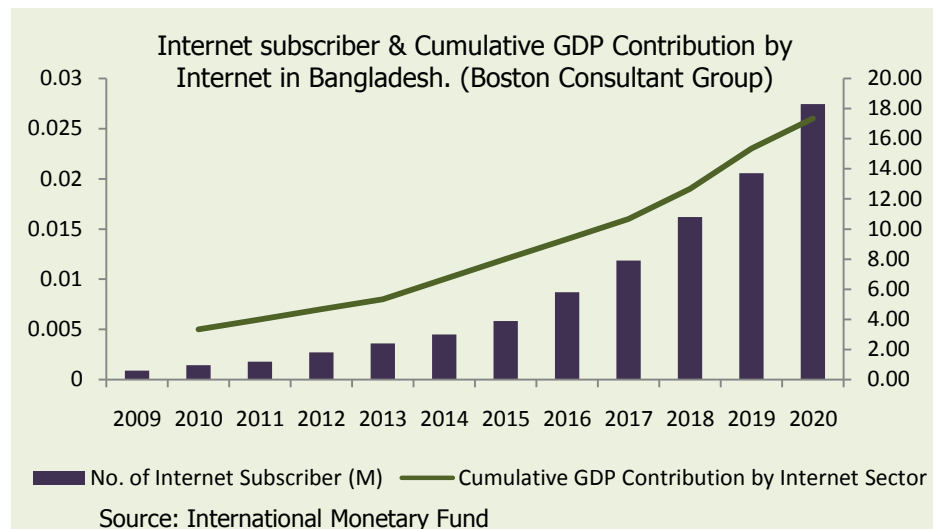
Switched Telephone Network (PSTN) Operators providing Internet services to their subscribers under Value Added Services (VAS).

There are around 40 ISP companies in Bangladesh and Global online, Agni system Limited, Bangladesh Online, AB Network Limited, Access Telecom Limited, Limited, Asia Limite, BD com Limited, Aftab IT Limited, InfoLink are some of the leading players in the market and 4 of the ISPs are also listed in Dhaka Stock Market. BTRC collects the subscriber number of ISPs on the basis of a monthly report. Bangladesh received initial capacity of 7.5 Gbps. In 2005 capacity of Bangladesh in SEA-ME-WE-4 Submarine Cable System of BSCCL is around 200 Gbps. 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. Bangladesh has 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. As of April 2014, Bangladesh ranked 138<sup>th</sup> out of 190 countries on the Household Download Index by Net Index. In Bangladesh, mobile subscribers just over 118.93 million and mobile internet access over 34.91 million users. The total number of Internet Subscribers has reached 44.625 Million. After forecasting BTRC data, it has been found that the total number of internet subscribers will be 59.54 Million by 2020; mobile internet subscribers will increase rapidly compared to any other internet subscribers which are 58.39 Million by 2020; interestingly result shows WiMAX subscribers fall to zero after 2016. Competitions among the Internet Service Providers are very intense. Most of the Internet service provider is providing homogenous product including Fabre broadband, wireless broadband, IP telephone and also other value adding services such as software and hardware development tools, Business email, and the Web hosting domain. Internet price has been slashed down by 16.66 percent and it is set at BDT 10,000 per megabyte per second (Mbps),

Operator	Subscriber (Mill)
<b>Mobile Internet</b>	43.167
<b>WiMax</b>	0.208
<b>ISP+ PSTN</b>	1.250
<b>TOTAL</b>	44.625
Source: Bangladesh Telecommunication Regulatory Commission report (2015)	

which was BDT 12,000 before, for the leased internet access via submarine cable. But the cut in prices would have a minor impact on the end users, as the operational cost is still high. BTRC has announced the price reduction to be effective very soon. Bandwidth costs account for 20 percent to 25 percent of the total expenditure of the ISPs. In Bangladesh, the total number of Internet Subscribers has reached 36.25 million at the end of August 2013 which is around 23 percent of the total population. The Broadband Penetration rate required to be pulled up from 7 percent in 2011 to 30 percent within the year 2015.

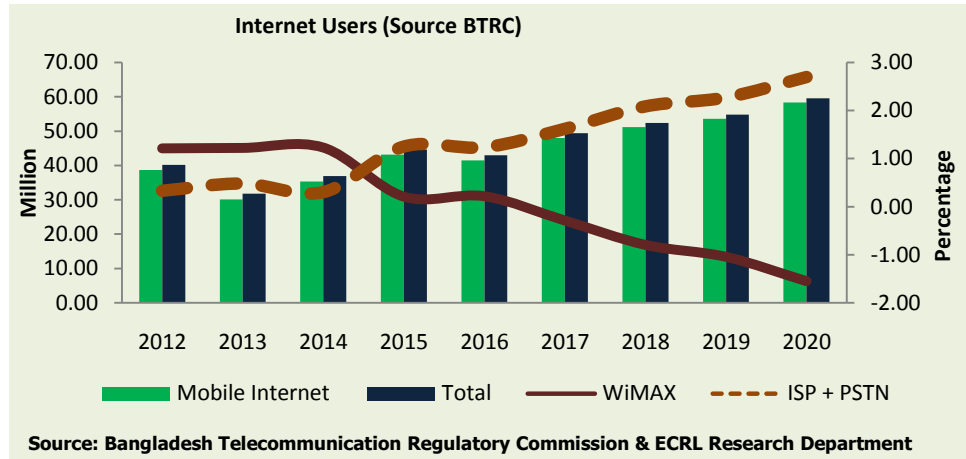
In April 2010, Nearly 10 million people in the country are using 800,000 Internet connections on sharing basis and the number of Internet users in the country is increasing roughly 15-16 percent a year. It is estimated that this increased



Internet penetration will result in a 2.6 percent contribution to the country's GDP by 2020 while creating 129 thousand more jobs by the same year. According to the World Bank (WB), the internet remains unavailable, inaccessible, and unaffordable to a majority of the world's population including in Bangladesh where 148 million population remains offline (The Business Recorder of Pakistan, 2016). Only India, China, Indonesia and Pakistan have more offline population than Bangladesh (World Development, 2016).

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. Mobile operators are providing substantial services in and outside urban areas using 3G/EDGE or WiMax. In order to spread the internet facilities into the rural areas of Bangladesh, BTRC has been working hand in hand with the ISP organizations. It is also reflected in the National Information and Communication Technology Policy, which outlines

issues of human resource development, development of ICT infrastructure, facilitation of research and development of ICT's, and



development of ICT industries on a priority basis. In addition to usage of mobile phones for voice calls, there is a substantial increase in internet usage through mobile communications in rural and urban areas. In last one year, the number of users increased by around 31 percent. In Bangladesh, we have 120 million handphone users, 10.9 million PSTN users and 44 million Internet Users (BTRC, 2014). As of June 2015 internet subscribers have reached 48.347 million users. According to a research conducted by Boston Consulting Group (BCG), Bangladesh could have 18.3 million subscribers by 2020, resulting in a 10 percent increase in internet penetration rate. It also states that this 10 percent increase in penetration may result in 1 percent increase in new business formation which will create 129,000 new jobs. It is also expected that percentage of household with at least one internet subscription would be 32 percent and business adoption will be 66 percent by 2020.

Increased internet use will boost productivity in both service sector and manufacturing sectors. It is expected that the service sector will gain the highest productivity, reaching to 3.5 percent in 2020 and the manufacturing firm will gain up to 1.8 percent. The above figure shows Internet Subscriber Trend in Bangladesh (BTRC, 2014). A recent study also reveals that Bangladesh could have nearly 20 million internet subscribers by 2020 (Corporate Communication Department Grameenphone Ltd., 2015). Currently, ISPs have been providing internet services to about 5,437,000 users and this number is growing day by day (BTRC). The average growth rate is 3.83 percent (BTRC). Internet users increased to 27 percent of the population from 0.4 percent during 2014.

The Internet plays a very big role to develop a country. Currently, Bangladesh is connected to the internet via a Submarine Cable and the protocol used to communicate via the internet is

IPv4. So the Internet Society starts developing a new Protocol name IPv6, which is currently at the production stage. All Traffic from or to the internet goes through 2 International Internet Gateway (IIGW). The backbone network is about 15,000 km with a bandwidth of 44.6 Gbps (Gigabyte per second) that is connected through Optical Fiber and only 1 Submarine Cable (APNIC Labs, 2014). The ratio of the total user and the IPv6 user is 1.11 percent which depicts that, users are very much reluctant in the adoption of IPv6. Internet Protocol version 6 (IPv6) has been introduced to replace the IPv4 which has become inappropriate due to lack of address space and security problems. Owing to some misconceptions and obstacles in expansion IPv6 is yet to be omnipresent.

The government's high internet tariff is impeding the growth of this sector. Recently the government has decided to reduce the tariff 50 percent. Contributing to the exponential growth of internet usage in the country are the mobile operators offering 3G internet packages. Urban areas are no longer the only location with access to fast internet connectivity since the 3G coverage from Teletalk, Grameenphone and Robi reach all ends of the country. Teletalk seems to be the preferred option whilst Grameenphone and Robi are more popular in Dhaka, where the signal is strong. Undoubtedly, internet connectivity is improving, and as it is becoming more accessible, there will be more users. Soon, the entire nation will be connected by the fastest internet.

WiMax providers in Bangladesh come with impressive speed and excellent service. But the downfall is their coverage outside of Dhaka; Chittagong and other regions like Rajshahi only have a strong signal in specific areas where there are more concentrated users and demand is higher. The bulk of the GDP contribution coming from the increased productivity internet users enjoys in services, manufacturing, including agriculture, as well as increased diversification of sources of income. Due to limited coverage and poor quality of fixed lines in Bangladesh, it is expected that the majority of internet subscribers in Bangladesh will be using wireless technologies of which more than 90 percent of connections could be wireless in 2020 (Corporate Communication Department Grameen phone Ltd., 2015). Moreover, the government has imposed a 3 percent tax on fiber optic cable import. Cumulative GDP contribution by the internet (Boston Consulting Group) increased internet penetration may bring significant

economic benefit. The research also states that over this ten-year-period internet could contribute 4.6 percent of government revenue.

Bangladesh wants to secure the cyberspace for the people of the country as well as ensure the benefit, for which the government is providing at bulk-level to end user level. The telecommunications division of Bangladesh informed that few big internet service providers have already submitted the lists of their sub-agents. Apart from the authorized ISPs, a huge number of unauthorized ISPs based on the small areas in the capital and other parts of the country are offering internet services by collecting bandwidth from the license holders. But, offenders carry out different cyber crimes using the internet line from the unauthorized ISPs as well as cyber cafes. Currently, the internet gateways are paying BDT 625 instead of BDT 1,068 for 1 Mbps bandwidth for 10 Gbps slab. Officials informed the government had trimmed the bandwidth price to BDT 18,000 from BDT 27,000 and later it re-fixed to BDT 10,000 for per Mbps bandwidth from BDT 18,000. According to the ISPAB, the deprivation of the end users that they are not getting the actual benefit of the reduced price of bandwidth due to the high transmission charge imposed by the Nationwide Telecommunication Transmission Network (NTTN) companies which are being forced on the ISPs to collect extra money from the end users. And so, small ISPs would disappear in future due to the impractical business of NTTN. 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. 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.

The number of fixed broadband users in Bangladesh is growing even though the growth is much less than that of mobile internet subscribers in 2015. In a month, the number of such subscribers has increased by 47 percent. According to a report of BTRC, the number of subscribers of ISPs and Public Switched Telephone Networks (PSTNs) crossed 1.9 million in September. In August, their subscribers were 1.3 million shows that within a month user

number increased by 600,000 during the same period in 2014. If ISPs give actual figures, then this number will be around 2.5 to 3 million. According to a BTRC estimate, 490 ISPs are operating in the country at present. Besides, Bangladesh Submarine Cable Company Ltd published that currently, more than 500 ISPs are working in the country making the market too competitive. The International Telecommunication Union and UNESCO's "The State of Broadband 2015" report placed Bangladesh at 149th position among 189 countries worldwide in internet proliferation. In the ranking of internet use at home, Bangladesh's position is 101 among the developing countries. In March 2015, Internet Subscribers in Bangladesh has reached 44.625 million. Nationwide ISP reached 126 and Dhaka Metropolitan area 74 ISPs including the cyber cafe.

On the other hand, BTRC has canceled licenses of 30 Internet Service Providers for not renewing their respective licenses on time. Legal and licensing department of the BTRC served a notice in this regard that if the ISPs don't pay the pending amount within the specific time, the regulatory body will take legal action as per Telecommunication Act 2001. The bandwidth price cut will hardly do much for the end users paying high internet price in the wake of National Technical Transfer Network (NTTN) charges (BTRC, 2015). Two NTTN company's monopolies, BTRC's lack of monitoring, high cost on under-cable network and equipment are main barriers to reducing the internet prices at the end users' level. If the end users want to get reduced internet prices, the government has to take initiative to decrease those costs like cable and equipment, said an internet service provider. Bangladesh Submarine Cable Company (BSCCL) Ltd announced that each megabit per second (Mbps) bandwidth has been fixed at BDT 625 while it will cost BDT 800 for internet service providers. Internet Service Providers have to pay BDT 2 for per meter under-cable line which is very much costly and to get an ISP license, an ISP has to pay BDT 3 crore. Moreover, equipment, cable prices are very high that shoot up the total cost. Bangladesh's submarine cable, whose lifetime will end in next 12 years, has a bandwidth capacity of 200 Gbps, while it sells only 32 Gbps. Bangladesh will get another undersea cable of around 1,400 Gbps in 2016. Industry insiders say the country's demand for bandwidth may reach 210 Gbps by 2021. The Government has formulated the new standard of Broadband and the bandwidth has to be at least 5 Mbps to meet that standard. To implement the policies and the Vision 2021, a large amount of bandwidth needs to be made available to the Government which will be provided by the Submarine Cable. Bangladesh has still got



opportunities to lease out submarine cable bandwidth to landlocked neighboring countries like Nepal and Bhutan. BSCCL is presently working to design for links to Indian North-Eastern provinces for transport of IP transit as below;

- Cox's Bazaar – Chittagong – Comilla – B. Baria – Akhaura – Agartala
- Cox's Bazaar – Chittagong – Comilla – B. Baria – Sylhet – Tamabil – Shillong (Meghalaya).

There is a demand for BSCCL bandwidth in Myanmar also. If BSCCL could be involved to beat the Telecom requirements of those parts of the Globe, it could earn a good deal of foreign currency during the lifetimes of the submarine cables.

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