

Booming Data Economy An opportunity on hold for lack of enabling taxation regime



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Editorial



It gives me immense pleasure to announce that Bangladesh mobile industry's newsletter ConneXion will hit the stands again, now with more exciting contents. We are printing the Bangla newsletter this time. English and Bangla versions with the same content are also available in PDF format for the online reader.

ConneXion focuses on the mobile industry's contribution to building a digital-savvy society, and how it improves people's lifestyles. It will shine lights on expert, professional, and user views, experiences, and their expectations about the sector.

It is not new in Bangladesh that the robust mobile network covers almost the entire land and serves around half of the population with more than 160 million connections uninterruptedly, though the tax burden is tremendous. The industry is already overwhelmed with super high tax, which is the second-highest in the world, yet facing more levies in the current tenure. However, the industry is trying to provide the best possible services to its valued customers.

In this edition, we have covered a widely discussed topic—data economy linking to the taxation regime in Bangladesh and how the rapid digital progress may face or experience difficulties due to the ongoing regulatory frameworks. Also, we have covered some articles, opinions, and interviews of the experts and industry leaders.

Mobile users have always been in the center of the industry. Their experiences are the key elements of the service providers. How mobile services are transforming their lifestyle from the user point of view. We have also included a knowledge-based article in the issues to let the general readers understand the ecosystem of the industry.

I hope our valued readers will find useful updates in the publication that will enrich their perceptions about the industry.

Brig Gen S M Farhad (Retd.)
Secretary General, AMTOB



AMTOB President's Message



The last few months have presented the telecom industry with a multifaceted outlook; we have seen both positive and some not-so-positive developments. The Association of Mobile Telecom Operators of Bangladesh (AMTOB) has been actively working to align industry concerns and the long-term growth potential of the industry in support of the overall economy.

At AMTOB, we strongly feel that the 'strength' that stems from the coexistence among the players is integral to the overall sustainability of the entire telecom industry. I believe our October edition of 'ConneXion' newsletter will provide an insight into the activities and challenges of the industry.

The services and infrastructure that mobile network operators (MNOs) provide play a very important role in the realisation of the government's aim to have a digitally inclusive ecosystem in Bangladesh. However, some recent developments are not conducive to this objective.

The national budget for fiscal 2019-2020 has increased the general cost of using mobile services (voice & data) and reduced the overall affordability of smart devices, which is a prerequisite to achieving the Digital Bangladesh vision. These actions also put an extra burden on the end users of mobile services.

The telecom industry contributes over 6.2% of the GDP and is a critical engine for digitalisation. While I am a firm believer in the opportunity presented by Bangladesh to foreign investors, the arbitrary and unprecedented actions of the Bangladesh Telecommunications Regulatory Commission (BTRC) over the few past months has detracted from the realisation of Digital Bangladesh.

Once again, the customers are the ones who will continue to suffer. The silver lining here is that we are preparing ourselves with better infrastructure to support 5G technology within the next few years and now looking towards the government to create an enabling environment.

Michael Foley
Chief Executive Officer, Grameenphone Limited

>> AMTOB Executive Council

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Chief Executive Officer
Banglalink Digital Communications Limited

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Chief Executive Officer
Grameenphone Limited

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Managing Director
Teletalk Bangladesh Limited

Brig Gen S M Farhad (Retd.)
Secretary General, AMTOB

>> About AMTOB

Association of Mobile Telecom Operators of Bangladesh (AMTOB) is a national trade body representing all mobile telecom operators in Bangladesh. AMTOB has emerged as the official voice for the Bangladesh mobile Industry for interacting with relevant government agencies, regulators, financial institutions, civil society, technical bodies, media and other national and international organizations. It provides a forum for discussion and exchange of ideas between the stakeholders and industry actors for the development of mobile telecom industry through public private dialogue. AMTOB facilitates an environment which is conducive for its members and industry stakeholders with a view to establish a world class cellular infrastructure for delivering benefits of affordable mobile telephony services to the people of Bangladesh to eliminate digital divide.



Booming Data Economy

An opportunity on hold for lack of enabling taxation regime

Shahed Alam

The fourth industrial revolution is very much up to each of us and with that comes a lifetime opportunity to rethink our way of life to make it better and more sustainable. Innovative digital technologies like robotics, Big Data, Internet of Things (IoT), Artificial Intelligence (AI), Augmented Reality, etc. are slowly but surely leaving the labs and finding their way to our lives.

At the core of this revolution lies the ever-increasing use of data in our lives. Without data, the digital lifestyle we are getting accustomed to will be unworkable. Be it availing mobile banking services, purchasing goods or services online, complementing academic pursuits with m-education and availing ridesharing services, enjoying the bounties of digital entertainment data is the key enabler. This is not just a global phenomenon, but a rapidly expanding reality for the people of this country.

The journey we have made in this regard as a nation over the last decade or so is unprecedented to say the least. The number of internet users in the country has reached 9.6 crores now. Interestingly, 94% of the users are hooking up to the internet through the mobile telecommunication infrastructure created by the mobile telecom sector. In this context, it is very clear

that the digital revolution that is taking place in the country around the growth of data services is entirely propelled by the mobile telecom infrastructure.

Such profusion of data usage may lead people thinking that the mobile telecom operators are awash with profits. In fact, it is not that it may, it already has percolated down the layers of our society at various levels. The irony is that this commonly held perception could not be further from the truth.

Please allow me to share some statistics to dispel this myth. The mobile phone operators in Bangladesh have already pumped \$1.5 billion for delivering 4G to the furthest corners of the country. For 3G only, the operators have invested \$4 billion since 2013 and in return could only recoup \$1 billion from the market so far. Despite the explosive growth in the data usage, revenue from the data services only contributes 20% of the operators' total revenue but it consumes half of the network infrastructural resources to deliver the services to the customers all over the country.

These miserable revenue figures must be coming as a shock for a commoner. But that is the dire reality the industry operates right now. It is worth dissecting the problem to get to the bottom of it. Firstly, let's have a look at the VAT imposed on the customers for using the data service. In 2018-19 financial year, the VAT was lowered from a hefty 15% to a more reasonably sounding 5%. But there was a big catch.

In the previous VAT structure, the operators were allowing to claim rebate from the tax authority that was linked to the VAT payment by the customers. While the tax authority cut the VAT, they took away the rebate facility from the operators, effectively making the reduced VAT on customers ineffectual. Because, the operators' cost base for delivering data service went up due to the measure.

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In terms of the overall taxation regime on the sector, Tk 47 out of every Tk 100 revenue goes to the Government exchequer. Nearly 13% our total revenue goes to BTRC
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As if the measure was not bad enough, the tax authority followed up with an even more punishing tax regime by doubling the supplementary duty (SD) from 5% to 10% in 2019-2020 fiscal year. Therefore, at the moment, for Tk 100 spent on availing data service, 5% VAT, 10% supplementary duty and 1% surcharge go directly to the government exchequer.

In terms of the overall taxation regime on the sector, Tk 47 out of every Tk 100 revenue goes to the government exchequer. Nearly 13% our total revenue goes to BTRC, another 34% of revenue goes to NBR in the form of SIM tax, VAT, SD, surcharge and customs duty. When you consider that we offer one of the cheapest data services even within the highest taxation regime in the world, you can very well imagine why the smaller mobile phone operators especially are struggling to sustain in the market.

In fact, the data price is now at such a low level in Bangladesh that the mobile phone operators are





subsidising the data service from the voice revenue. While the data usage keeps galloping ahead, the voice revenue keeps on declining due to intense market competition and the OTT (over the top) players. This means that the operators' ability to invest in digital innovation is reducing drastically. As the country gears up to avail the boundless opportunities of the fourth industrial revolution driven by data services, this weak financial state of the industry doesn't bode well at all.

Unfortunately, alongside the self-defeating taxation regime, the market ecosystem is also stifling the growth of the industry. Smartphone, being the key component of delivering digital lifestyle, is absolutely crucial to create a thriving market for data business. Having smartphone penetration touching 39% in the country certainly augurs well for the industry. Besides, with 20% penetration of 4G enabled smartphones, the operators are restricted from growing their data business around 4G technology, even though they have invested on delivering it to around 70% of the population within less than two years of launching the service.

When the industry needed an enabling environment to increase smartphone penetration, the tax authority again jumped in on it to spoil the party by increasing the import duty for smartphones from 10% to 25% in this year's budget (2019-20).

While it is appreciable that the tax authority is trying to encourage the country's nascent smartphone

manufacturing industry, we can't afford to lose sight of the fact that the local production only accounts for 30% of the total smartphone demands in the market. At a time when the operators are ready with 4G network and planning to launch VoLTE (voice over LTE) soon, imposition of such high tax on imported smartphone only makes for another sorry story of lost opportunity in the country.

As a country, we have to very quickly wake up to the fact that the investors are looking for opportunities to make a decent return on their investments. If the bleak financial outlook continues, it will be very difficult for these operators to convince their shareholders to continue pumping money when they have many other countries to invest in.

Bangladesh by all means is poised for a meteoric rise as an economic powerhouse in the world. However, if this rise doesn't afford the investors enough space to do business, they may decide to cease investing in our dreams. We can't find fault with them if they take such a decision, because we lured them to our country with plenty of promises. It is time the country honours these promises and raises its profile in the world as the preferred destination for the foreign investors to invest.

** Shahed Alam works for Robi as the Chief Corporate Affairs Officer. The content of the article is of writer's own view and may differ with others.*

The New Tax Regime Likely to Impede the Digital Revolution Endeavour

Erik Aas

CEO, Banglalink

Country's third largest mobile phone operator Banglalink's Chief Executive Officer Erik Aas has been serving the telecom sector in Bangladesh for many years and is a veteran witness of many events. Recently, he has shared his concerns over the latest fiscal measures related to the telecom sector, regulatory environment, future investment, data pricing, quality of service, etc.

You have been observing Bangladesh mobile market for long. How do you evaluate this year's budget taking the sector's present situation into account?

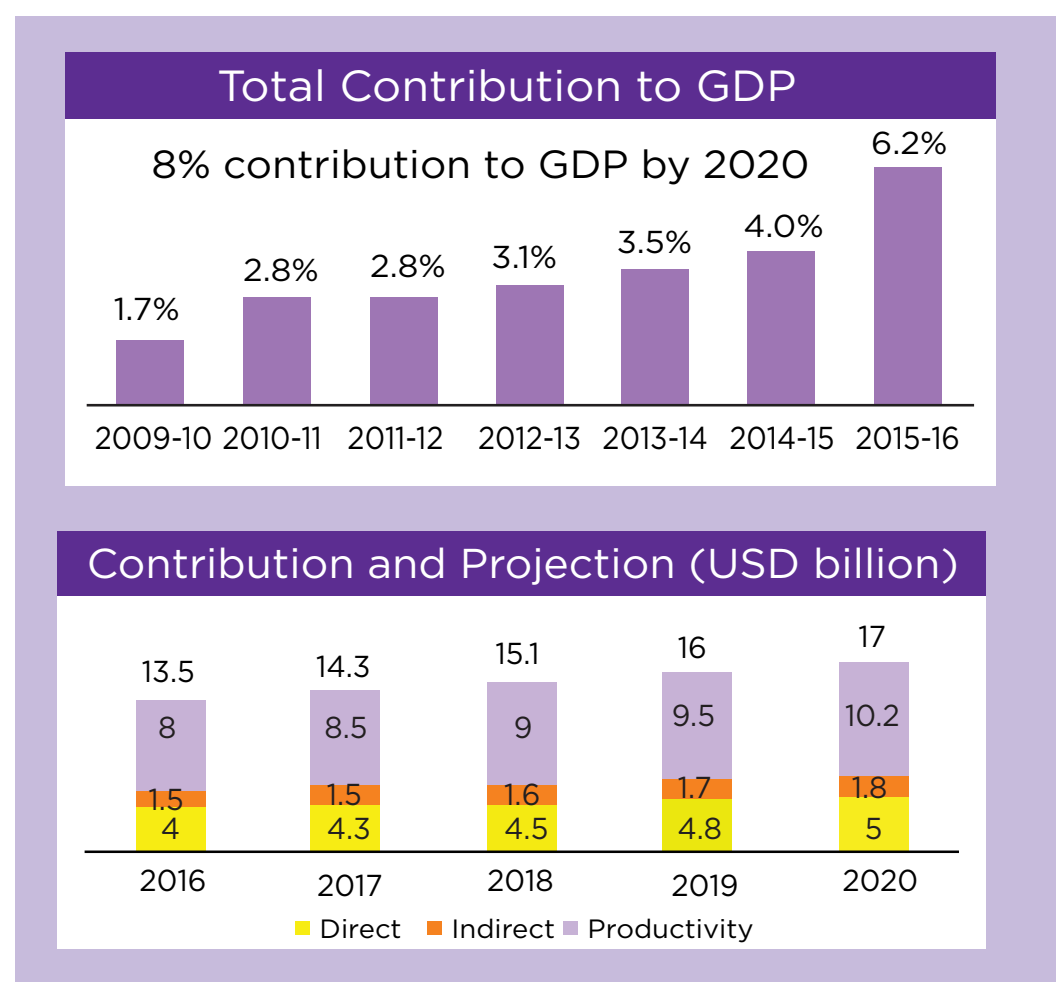
There is no denying that Bangladesh's telecom industry has made significant progress over the years. But in order to ensure a sustainable growth of the industry, it is necessary to reconsider a number of issues such as ensuring a level playing field, current taxation regime and high spectrum price etc. However, in contrast to our expectations, the supplementary duty on all the services provided through mobile phones, and the customs duty on imported handsets have been increased in the budget. The SIM tax has been doubled from Tk 100 to Tk 200 as well. All these impositions will result in costlier services at the customers' end, which will ultimately discourage them to use the services. Moreover, the minimum tax on a mobile operator's turnover has been increased from 0.75% to 2% in the budget. It will only add to our burden and make our tasks more challenging in the days to come.

What was your expectation from the government regarding the budget?

We expected that the authorities would take the key industry issues into consideration. We demanded the reduction of taxes on telecom services and devices so that people could easily afford them and utilise various digital facilities. It is really unfortunate that our demands were overlooked once again, and the taxes have been increased further. The budget does not reflect the financial concerns of the mobile operators either.



Mobile Industry's Contribution in Bangladesh Economy



The overall condition of Bangladesh's telecom industry is so challenging that only one mobile phone operator is making profits currently. Although the smaller operators are still facing financial challenges, the minimum tax on a mobile operator's turnover has been increased. If our financial challenges continue to increase, the foreign investors are likely to feel discouraged to invest in this market, which will be an alarming sign for the entire industry.

How will the MNOs face or manage the taxation regime? What will be the impact?

It will be extremely difficult for us to tackle the financial challenges caused by the new taxation regime. As we need to somehow compensate for the increased tax rate, our services might become costlier in future. As I've already mentioned, we're already running our operations incurring losses. I'd like to highlight a few figures to demonstrate the issue. Along with investing BDT 24,000 crore in this market, Banglalink has given BDT 21,000 crore to the national exchequer so far. The amount is 51% of our total revenue earned from 2009 to 2018. The telecom operators have always strived to facilitate the digital movement in the country. The new taxation regime will undoubtedly hinder the efforts we have made in this respect.

What do you think about the overall telecom regulatory environment in Bangladesh?

Apart from the issues I've already discussed, there are several other factors that need to be taken into consideration to make sure that the regulatory regime is serving the purpose of the customers and helping the operators move forward. Along with implementing the SMP guidelines properly, the regulatory authorities should ensure a tower sharing regime that is acceptable to both telecom operators and tower sharing companies. Some of our sites went down due to the unresolved issues, which caused dissatisfaction among many customers. Moreover, active sharing and national roaming should be permitted so that smaller operators can provide better network coverage across the country more cost-effectively. I think the ILDTs policy needs a revision too, as it is making our functions more complex by allowing many gateways and operators to exist in the eco-system. Most importantly, the Telecommunications Act should be reviewed to make sure that it does not become a barrier to 5G rollout in future.

How do you evaluate Banglalink's digital transformation and its recent performance?

Since the beginning of Banglalink's operation in the country, its objective has always been providing affordable telephony services to customers. Having accomplished that goal, we're now focusing on ensuring their access to quality digital services. We're still going through a digital transformation and striving to empower people through various digital initiatives. The success of Banglalink's digital endeavour is reflected by its recent quarterly results. In the Q2 2019, Banglalink's data revenue increased by 28% YoY, which contributed to its 5.4% YoY total revenue growth significantly. It clearly shows that we're emerging as a key digital player capable of catering to the demands of the customers.

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Before fixing a timeline for launching a highly advanced technology like 5G, it is necessary to assess whether users are really prepared to adopt it.
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It is often said that the price of mobile internet in Bangladesh is higher than in many countries. What's your opinion on this issue?

It is a misconception that the price of mobile internet is high in Bangladesh. According to a global survey on mobile internet price conducted by cable.co.uk, Bangladesh ranks 13th in terms of providing mobile internet at low prices. The overall cost of mobile internet in the country is much lower than what it was five or ten years ago. Currently, the mobile operators are offering better value for money to customers by providing more data at the same price. However, it is necessary to mention that the mobile internet can be made more cost effective if the tax imposed on it is reduced significantly.

Do you think the operators are providing the expected QoS (Quality of Service)?

The operators are relentlessly trying to provide quality services across the country. Due to our combined efforts, the overall quality of telecom services has improved remarkably over the years. However, I'd like to reiterate that we're not the only responsible entities when it comes to providing the expected QoS. The entities such as ICX and IGW operators also play a crucial role in ensuring the expected quality. For this reason, it is necessary to prepare separate QoS guidelines for all the entities involved in the entire telecom ecosystem.

The government is willing to launch 5G in the country by 2021. Is it going to be a challenge for the mobile phone operators?

Before fixing a timeline for launching a highly advanced technology like 5G, it is necessary to assess whether users are really prepared to adopt it. The adoption of such technologies in Bangladesh is still a matter of concern for us. For example, we launched 4G last year, but 4G-enabled smartphone penetration rate is still very low in the country. Moreover, the extremely high spectrum price and the current regulatory regime are likely to impede the 5G rollout process in future. For this reason, it is necessary to reduce the spectrum price to an acceptable level and revise a few policies according to the existing condition of the industry.



Mobile Broadband has the Potential to Help Achieve All 17 SDGs

said Head of Ericsson Bangladesh

One of the top global telecom infrastructure and service provider LM Ericsson Bangladesh's Country Manager, Abdus Salam said mobile broadband has the potential to help achieve all the 17 Sustainable Development Goals (SDGs) and in some cases, accelerate their achievements. Similarly, technologies like IoT, advanced robotics and AI, promise substantial gains across the entire global economy, he added.

In an interview with ConneXion, Abdus Salam who is also the head of Network Solutions Customer Unit Malaysia, Sri Lanka and Bangladesh, said the telecom industry is an important part of Bangladesh's socio-economic fabric as it enables digital inclusion and aids delivery of essential services in addition to creating jobs. "We enable access to mobile broadband which is fundamental to Digital Bangladesh. We are also a key player in supporting the achievement of the Vision 2021 initiatives, as well as the UN's Sustainable Development Goals."

Salam said about the telecom industry that as enablers of connectivity, we are uniquely positioned to play a critical role in the development of digital societies, with access to mobile services, devices and content helping to bridge the digital division, which in turn would contribute to achieving the goal of making Bangladesh a middle-income country.

He added that Information and Communication Technologies (ICT) is already enabling a lot of benefits in Bangladesh — for example, the provision of financial services via Smartphones or Mobile Money. It is one of the most dynamic innovations in the industry and has provided significant social and economic benefits for users. Mobile money is expanding access to financial services.

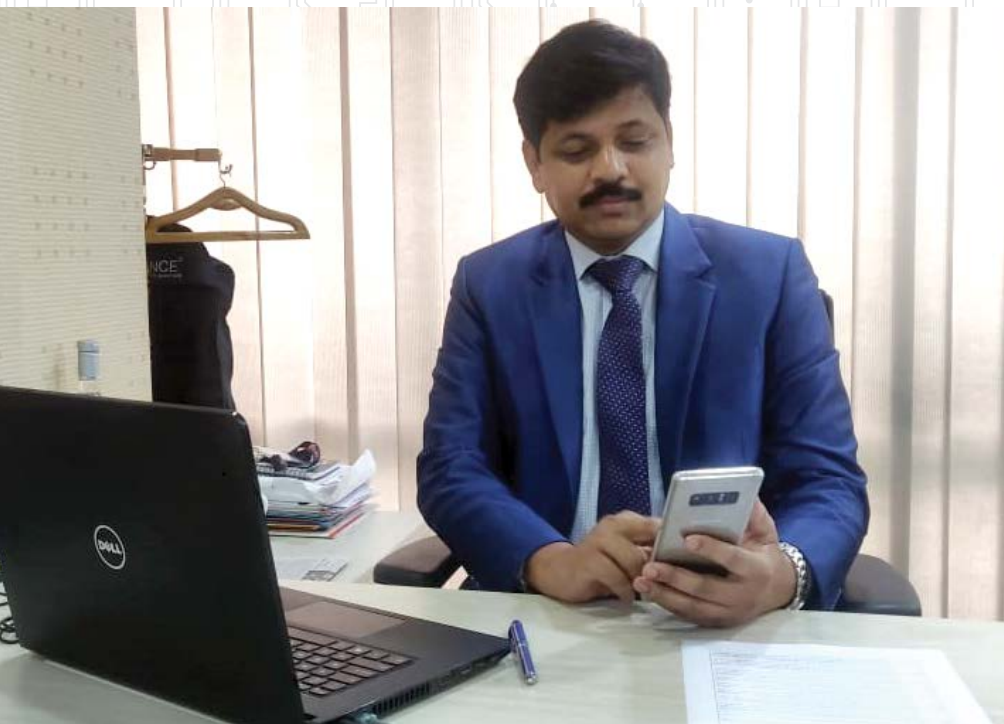
Salam stressed that the mobile industry in Bangladesh has scaled rapidly over the last decade to become the fifth largest mobile market in Asia Pacific, with 89 million

unique subscribers in June 2019 — more than half the population. With fixed line penetration still being low, mobile communication seems to be the way forward when it comes to connecting the unconnected in our country. "In our research projects and studies with partners we've found that on average, a 10% increase in the mobile broadband adoption ratio causes a 0.8 percent increase in GDP."

Speaking about Ericsson's work in Bangladesh, Salam said, "We are working with the telecom operators to further expand mobile broadband access for people across the country. We recently deployed our Automatic Shared Carrier solution in Robi's network to enhance 4G user experience and enable up to 300% increase in data speeds for their customers. But this is just a start, and there is a long way to go. We expect that over the next 6-8 years, a combination of improving affordability and greater penetration of mobile broadband as well as availability of content and services would bring Bangladesh to the next level of digitalisation."

Now, in Bangladesh, just as in several parts of the world, there is a migration of people towards urban centers. It is believed that the urban population in Bangladesh will double by 2050, for example. This enormous influx of people moving to cities will pose a set of challenges for our cities. Hence, as a country, we need to look at smarter ways to manage complexities, reduce expenses, increase efficiency, and improve the quality of life. This is also closely related to the UN SDG 11 - to make cities and human settlements inclusive, safe, resilient and sustainable.

The need of the hour is for the industry, government and other stakeholders to come together and work towards a master plan for the country. A forward-looking regulatory framework will be critical to boost the uptake of mobile internet services in the country.



Every tool from the watch to the notebook is inside his smartphone

For **Tajmilur Rahman**

Alarm clocks don't wake banker Tajmilur up anymore. He needs not use a notebook for the office work too. These tasks are done by his smartphone.

"Smartphones have changed our entire lifestyle," he said.

Tajmilur currently works as a senior vice president in a leading bank in Bangladesh. Accordingly, he holds too many responsibilities. After waking up in the morning, he first looks for the mobile device to check out if his boss has sent any important message at night, or simply he needs to let colleagues know about something important like sick leave on a chat-group.

He can call, send text messages, read, play games as well as read and edit documents on the go.

In a recent interview with ConneXion, Tajmilur has shared his experience about use of smartphone to complete tasks and achieve goals.

"It's needless to say everything depends on the mobile phone," he said.

"Everything from searching the route on Google Maps while going to the office to taking a ridesharing service depends on mobile applications. Life without mobile phone cannot be imagined."

The banker said, "Earlier, I used to take a notebook along with me for a

meeting. But now I don't bother. I just use the stylus on my mobile to take note."

The office email is synchronised with his phone. So, he not only receives the emails, but the device lets him know scheduled events and other programmes.

"There is a culture of using chat groups nowadays in corporate offices. This makes working easier. We use several communication applications like Viber, Messenger or WhatsApp."

Sometimes, Tajmilur needs to go out of Dhaka for visiting sites. All the works such as meetings with the clients, taking photos or videos of the sites, recording other important information are done using the mobile device. He also uses the mobile device to scan important documents.

Another important thing made easy by mobile phones is financial services. From sending money to accounts to many banking activities are possible using the mobile phones. "I use it in cashless transaction while shopping and paying other bills," he said.

Mobile phones are convenient devices that can be used for a variety of tasks. Tajmilur can listen to music, watch movies, play games, browse, store notes, make video calls, watching TV, reading news and books, and also set an alarm for his waking up.

"Mobile phones have almost become

the modern day personal assistant," he said.

"Before going to bed, I spend some time on Facebook. I get updated with what's going on with friends and family. We are now connected like never before with smartphones."

Some people even use the phones to track vehicles. Tajmilur thinks this is very important for the security of the car and he hopes to use this soon in the future. But he also uses apps to watch surveillance footage from his home on his phone.

Tajmilur said the voice mail service on the phone helps him a lot too. Sometimes his wife leaves him a message about what to get on his way home. Those then remain available for hearing later.

Regarding mobile service quality, he said the quality of internet is definitely much better than before. At the same time, the quality of the handset has also improved too. So the internet experience is significantly better now.

Tajmilur thinks voice and internet charges are relatively low in Bangladesh. Mentioning neighbouring country India, he said the rates there are reasonable within one network, but if you go across a network that costs more.

"Leaving home without my phone is akin to leaving without my shoes."

The mobile phone helps Swapna Begum raise her two children at her village Melandoho and take care of two others as a housemaid in Dhaka

Swapna Begum is raising four children simultaneously—her two children at Melandoho, a sub-divisional city of Jamalpur district and another two in Dhaka, with the blessing of a mobile phone. She came to Dhaka almost 12 years ago after her husband died from a complicated disease. Then Swapna had no other choice but left home searching for livelihood to maintain her family. She started to work as a housemaid in Dhaka.

She had to struggle to make her son and daughter happy. Over time, Shapla, her daughter, got married and became the mother of a son named 'Salman'.

And her son Swapan is now studying in a school and also learning to become a bricklayer. She shared her story with ConneXion in an interview. She described how the mobile phone helps her maintain the family far from the city she lives in.

"It's the mobile phone that helps me connect with my relatives, son, and daughter. Though, I am far away from them. Using the device, I can solve almost all the issues that arise in my home."

"Many problems I usually face are fixed with the help of the phone," said Swapna in response to a question if she faces any difficulties in taking care of her children.

"I need to pay for my son's school fees. I am to settle some issues with neighbors, which is a very regular event in the village. I need to attend social and family events. But all these things are done through the mobile phone."

She has built a small house with corrugated iron sheets at her fathers-in-law home. She had to communicate frequently with her brothers and workers when the house was being built.



Swapna uses a very basic mobile phone. She has to spend around TK 300 to Tk 400 a month for talk time recharge. "I'm supporting my family with the amount that I receive from taking care of two kids in Dhaka."

The most memorable day of Swapna's life is when she became the grandmother. One day, she received a phone call from her son-in-law that her daughter gave birth to a baby girl. She could not wait a moment and rushed home to see the tiny face of her grandson. She was receiving every development of the situation over the phone until she reached home.

Her busy day starts in Dhaka with dropping a kid to the school and the mobile phone is a must to call the car driver to get ready.

"What is needed to bring from the market in the evening when 'Bhai' (brother) returns home from the office, I call him. I ask him to bring, for example, chili or flour for preparing the next day's breakfast. I can do many more tasks properly with the mobile phone," said Swapna.

As she is illiterate, she cannot read or write short messages and always depends on the voice call services.



IoT is the Game Changer

Bangladesh is not behind

Reduan Hasan Khan

Many of us who are following the global IoT trends know the famous prediction of “50 billion IoT devices by 2020” from Cisco. However, sitting in 2019 we realise this is not happening so fast. IoT has not taken off as expected and if we had to single out the one key challenge behind this, it would be “connectivity”.

According to the Mobile Policy Handbook of GSMA, “IoT involves connecting devices to the internet across multiple networks to allow them to communicate with us, applications and each other. It will add intelligence to devices that we make use of on a daily basis and in turn deliver positive impacts to both the economy and broader society.” For example, imagine a device that can examine the soil quality of a piece of land and is connected with a smartphone and provide data is an IoT device; or a connected device that measures the water level of a river. The data archive will help make decisions rapidly or in the long run.

In this year's holy Hajj, a newly invented wearable was given to some pilgrims, which were connected to the smartphone of the team leaders who could track the members. Once a Haji (pilgrim) faces any issue just use the SOS button and could be connected with the leader. This is just the tip of the iceberg as potential is unlimited of the technology. IoT is one of the next big things that is considered as a game-changer and will transform our lifestyles.

Narrow Band IoT is the solution

In the case of our region, wireless technologies available today are not equipped to meet the three key requirements of the rapidly growing IoT applications— better coverage, longer battery life and ability to simultaneously connect a large number of devices – without some sort of trade-off amongst these requirements. However, there is a new technology that can meet all these requirements and is also secure, reliable, affordable and future-proof in comparison to the currently available technologies. This is none other than Narrow Band IoT (NB-IoT), as specified in 3GPP Release 13 in 2016. 3GPP (3rd Generation Partnership Project) is a standards organisation which develops protocols for mobile telephony.

The Narrow Band IoT (NB-IoT) can significantly decrease power consumption of IoT devices thanks to its optimised data communication protocol. NB-IoT also works well in deep indoor facilities, tunnels, basement, underground and rural areas. With a battery life of more than 10 years, it can support a wide range of fixed (pipelines, utility meters, streetlights, parking), nomadic (package tracking, inventory tracking) or mobile (pets, vehicles, shipping containers) use-cases for both consumer and industrial IoT.

Unlike other low-power, short-range wireless communication technologies (e.g. Sigfox, LORA and RF-Mesh), NB-IoT uses licensed frequency channel from the already available 2G/3G/4G cellular network. Thus, it benefits from the security, privacy and economies of scale of these proven and trusted networks with minimal deployment cost and fastest time to market.

While NB-IoT has been an integral part of 4G standard since 2016, 3GPP has agreed that NB-IoT and LTE-M (another 3GPP specified technology) will continue to evolve as part of the 5G specifications. This means that mobile operators and device manufacturers can leverage their existing NB-IoT investments and continue to enable IoT use-cases as a part of their 5G road map. This has made NB-IoT the de-facto communications technology to enable massive IoT with over 100 global launches within just a year of commercial availability.

An operator (Grameenphone) has recently deployed NB-IoT on a limited scale as the first telecom operator in the country. In South Asia, Bangladesh and Sri-Lanka are the only countries that have NB-IoT network – ahead of India and Pakistan

Bangladesh is not behind

Bangladesh is not lagging in this journey. An operator (Grameenphone) has recently deployed NB-IoT on a limited scale as the first telecom operator in the country. In South Asia, Bangladesh and Sri-Lanka are the only countries that have NB-IoT network – ahead of India and Pakistan. One reason why it has been easier for developing countries like Bangladesh to roll out NB-IoT was their delay in launching 4G network. This delay has provisioned majority of their 4G hardware to be supported NB-IoT features. NB-IoT is also much more relevant for Bangladesh where the cost of spectrum is one of the highest in the world; NB-IoT uses only 200 KHz of spectrum compared to LTE-M, which requires 1.4 MHz of spectrum.

To conclude, NB-IoT holds great promise to enable wide-scale adoption of IoT. However, NB-IoT or IoT connectivity in general is just one of the four building blocks of IoT. It needs to be supported further by affordable IoT devices/modules/chipsets, as well as reliable, secure and scalable data processing platforms, such as IoT platforms. Moreover, most importantly, capabilities offered by NB-IoT network, compatible devices and platforms must be used intelligently by the IoT application developers and providers to make the most out of these technologies.

* Reduan Hasan Khan is a PhD Fellow and works at Grameenphone Ltd. as the Head of IoT & ICT. The content of the article is of writer's own view and may differ with others.

Multilayered interconnection regime in Bangladesh's telecom sector: Time to reform the policy

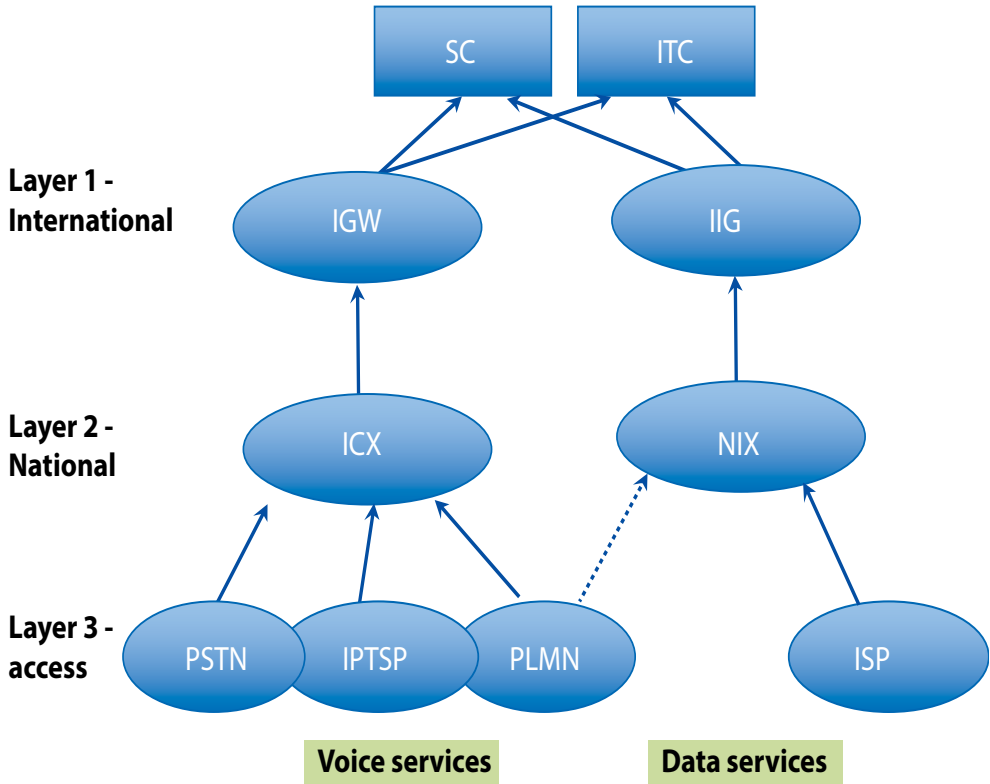
Ahmad Mashroof Al Mamun

One may find it odd that in a relatively small country like Bangladesh, calls generated from Access Network Service (ANS) operators such as Grameenphone, Banglalink, Robi or Rankstel need to go through a termination process controlled by a third party exchange to reach another operator. Overseas calls have to pass through a third party gateway as well.

Is this roundabout system really beneficial to the entire telecommunications ecosystem? Wouldn't it be more efficient and cost effective if the operator at point 'A' had direct agreement and connectivity for call exchange with the operator at point 'B'?

Wouldn't such a simplified exchange system enhance the Quality of Service (QoS) and eventually guarantee customer satisfaction?

While the answer to these questions from an unbiased point of view might be 'yes', the changes in the interconnection regime following the introduction of the International Long Distance Telecommunication Services (ILDTS) policy 2007 and its amendment in 2010 actually have greatly helped make the industry sustainable, ensure healthy competition, fight illegal call exchanges and curb revenue losses. In a nutshell, the introduction of the multilayered interconnection was the right move at that



time, and it produced effective results. Before the introduction of ILDTS policy, the operators (ANS) had to directly connect with each other separately for interconnectivity. On the other hand, international calls could only be routed through the state-owned Bangladesh Telecommunications Company Ltd (BTCL) in a monopolistic manner. It caused heavy revenue losses to the government and illegal call termination could not be traced. Due to the introduction of multilayered interconnection, it has become difficult for the fraudsters to terminate illegal calls and it also increased monitoring power of the government. Illegal call

termination leads to major problems like caller ID hide and loss of government revenue. On the other hand, the introduction of the IGW operators created a competitive environment which increased the amount of successful international calls and the overall call quality. This process strengthened the monitoring power of the regulator and enabled the regulator to regulate tariff effectively and subscribers got the opportunity to take services at affordable price. Additionally, according to the ILDTS policy, all sorts of internet connectivity between Bangladesh and the rest of

the world had to be made through International Internet Gateway (IIG) operators, while local internet data had to be handled via National Internet Exchange (NIX) operators. The introduction of IIG and NIX operators made internet available to the end users at a reasonable price. It also opened up opportunities for the local businesses to grow, which resulted in employment of many Bangladeshis in the telecommunications sector.

A multilayered interconnection regime does have its drawbacks too as ANS operators need to depend on the intermediate entities to be able to successfully establish calls and maintain quality. The local and international exchanges also need to be provided with additional interconnection costs which add up to a significant amount at the end of each month for the ANS operators. The modern technologies demand a delayering of the interconnection regime as the advanced services that they have to offer can only be provided to customers satisfactorily if multiple layers are omitted eliminating latency, removing non-compatibility and improving quality.

The Bangladesh Telecommunication Regulatory Commission (BTRC) has already commissioned a consultation involving International Telecommunication Union (ITU) experts and the industry on how ILDTS Policy can be revised. The plan is to better shape up the interconnection regime to adopt all technological developments that have been deployed so far along with the ones that will arrive in future such as 5G.

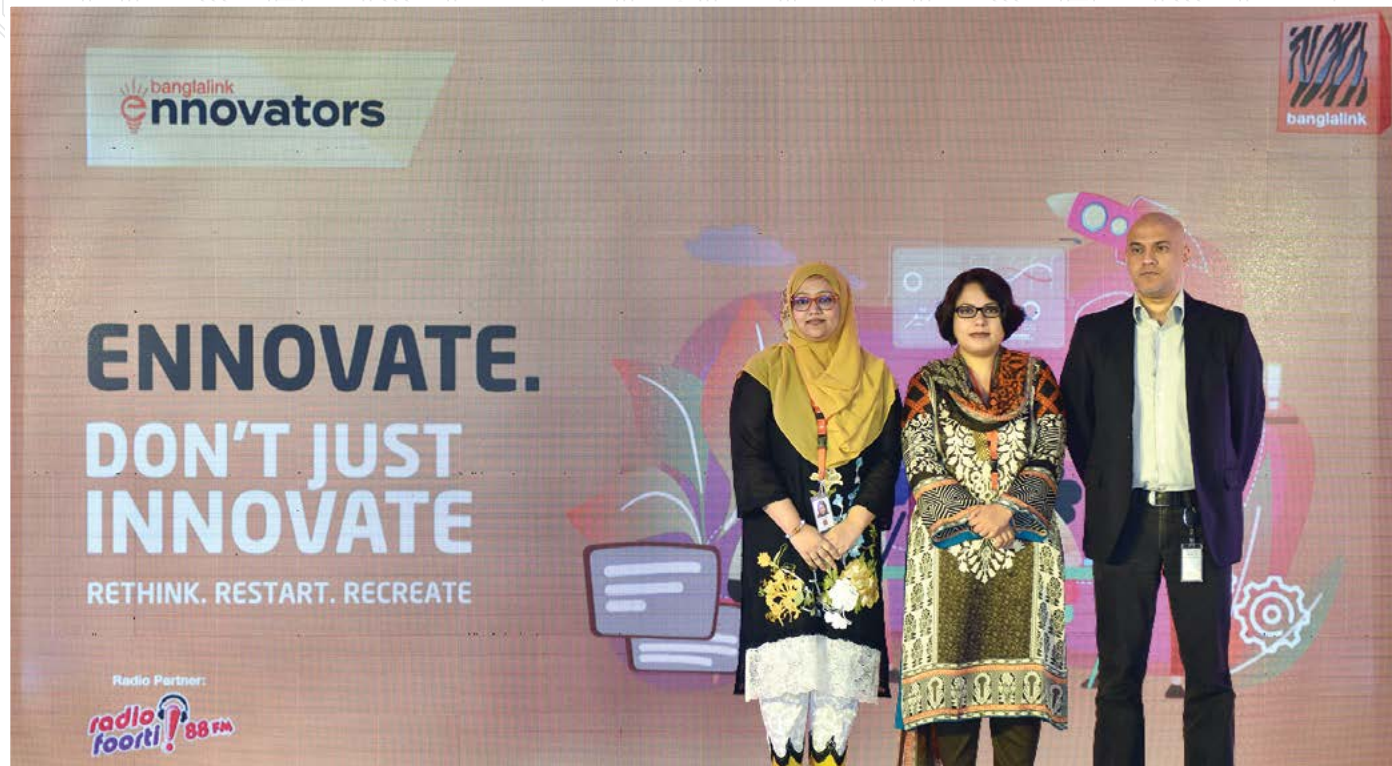
However, the overall business impact of the current stakeholders needs to be deeply analyzed prior to any change. A graceful migration of the interconnection regime is necessary for any entity that would require to exit the

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ecosystem or shift to a different license class and grab a different business opportunity to get the best out of the altered ecosystem. **Ahmad Mashroof Al Mamun works for Banglalink in Corporate & Regulatory Affairs Division as a Sr. Manager. The content of the article is of writer's own view and may differ with others.*



Bangladesh Government handed over 4G licences to the mobile phone network operators on February last year.



Banglalink launched the third edition of “Ennovators” contest as part of its initiative to empower promising youngsters by inspiring them to innovate and enhance their professional skills.



Banglalink launched the pilot of “Learn from the Startups”- a platform to equip and educate students on the entrepreneurial mindset and motivate them to think outside of the box. The insights and learning acquired from the successful completion of the pilot programme helped revamp “Learn from the Startups 2.0”. The program is more relevant to the students and has greater impact for the startups.



Grameenphone, Telenor Group and UNICEF signed a partnership agreement on July setting out an ambitious strategy to further strengthen and scale online protection for children in Bangladesh. The agreement was signed by Ole Bjorn, Chief Corporate Affairs Officer, Grameenphone and Dara Johnston, OIC Deputy Representative, UNICEF.



Ookla, the global leader in internet testing and analysis, has once again recognised Grameenphone as the ‘Fastest Mobile Network’ in Bangladesh for quarter-1 and quarter-2 of 2019.



With the technical support of WaterAid Bangladesh, Robi has set up ten water plants in ten of the busiest railway stations of Bangladesh. The slogan of the initiative is “Nirapod Pani, Sushtho Jibon”



Posts and Telecommunications Minister Mustafa Jabbar inaugurated an experience center of Teletalk Bangladesh Limited in Rajshahi on September 27 with Ashoke Kumar Biswas, Secretary to Posts and Telecommunications Division and Md. Shahab Uddin, Managing Director of the operator, attending.



Robi launched a social awareness programme titled #CommonSense with an appeal to the people for continuing to apply common sense as they become ever more sensitised with life in the digital domain.



Md. Shahab Uddin, Managing Director, Teletalk Bangladesh Limited, recently received the licence for technology neutral spectrum from Md. Jahurul Haque, Chairman, Bangladesh Telecommunication Regulatory Commission. Other BTRC top officials were also present at the event.



Abdus Salam, LM Ericsson Bangladesh Limited Country Manager (middle), delivers his speech at a conference organised by Infocom, India's leading Technology, Business and Leadership, on July 2019 at a hotel in Dhaka.



Huawei Technologies (Bangladesh) Ltd. donated some essential equipment to the PFDA-Vocational Training Centre, a specialised center for training people with neurological disabilities on May 13. The equipment includes ultrasound therapy, ultra-red radiation, shortwave diathermy, and traction (pelvic and cervical) with bed, electrical muscle stimulator and CCTV system. will help the institute's students to get immediate physical aid in emergencies.



Abdus Salam, LM Ericsson Bangladesh Limited Country Manager (right) speaks at the BASIS Soft Expo 2019.



Huawei Technologies (Bangladesh) Ltd. announced outstanding ICT talents of Bangladesh under its largest CSR programme 'Seeds for the future' 2019 after a selection process of two months. Later, the winner students were taken to the headquarters of the company in China to get week-long hands-on learning experience with advanced ICT technologies.



AMTOB recently arranged a reception programme for the Posts and Telecommunications Minister Mustafa Jabbar at a hotel in Dhaka.



Top leaders of AMTOB recently paid a courtesy call on the newly appointed Bangladesh Investment Development Authority Executive Chairman Sirazul Islam and discussed several pressing issues.



AMTOB briefed reporters about its formal reaction to the national budget at a hotel in Dhaka on June 18.



Brig Gen S M Farhad (Retd.) recently delivered his speech at the Mobile World Congress in Shanghai, China.

Some of the images and graphics have been taken from different internet sources



AMTOB

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