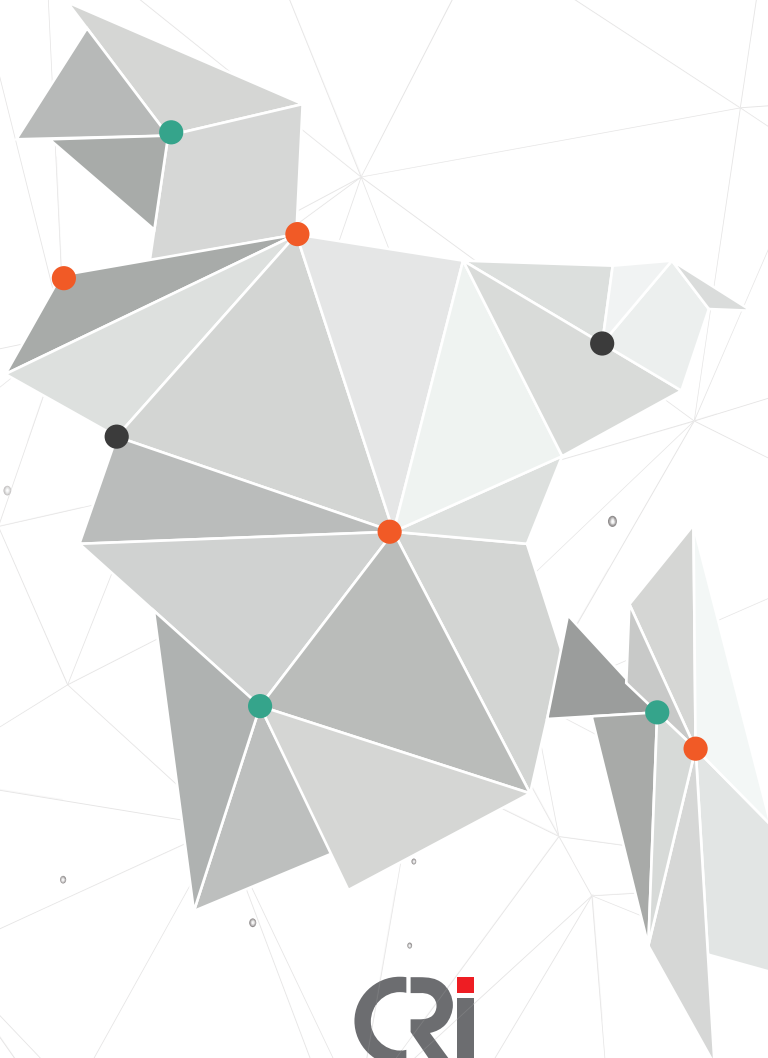
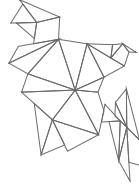


BANGLADESH'S DIGITAL REVOLUTION



Bangladesh's Digital Revolution



www.cri.org.bd

Introduction

Over the last seven years, Bangladesh witnessed a strong surge of growth in most of the development indices-spanning from the economy to human and social development. Powered by the Awami League Government's Vision 2021, which aimed to turn Bangladesh into a middle income country by 2021, the country has witnessed record economic development and poverty reduction since 2008. In the last several years, every year has seen new records in remittance earnings, foreign exchange reserves, export earnings and foreign direct investment.

One of the key tools for achieving Vision 2021 was the earmarking of the 'Digital Bangladesh' approach, the brainchild of Prime Minister Sheikh Haisna and her ICT Affairs Adviser Sajeeb Wazed, to utilize the usage of ICT (Information and Communication technology) as a tool for development and sustainability. The aim was to transform Bangladesh into a technologically advanced nation by 2021. To that end, the country has come a long way. Driven by widespread digitization in the public and private sectors, the country has seen exponential growth in its internet connectivity, mobile phone usage, IT export earnings and use of ICT in education and accessibility of public services. ICT training by the Government has opened a new horizon in youth employment through outsourcing.

When the Digital Bangladesh efforts got underway seven years ago only 20 million of Bangladeshis were accessing mobile phone. Today that number has grown to more than 120 million and is still climbing. A total of 5,275 digital centers have been set up across the country that already served people 120 million times with services like registration of 70 million births, and providing essential information to more than 2 million overseas job-seekers. Around 1.3 million ICT professionals, along with, 10,000 ICT entrepreneurs have become self-reliant, helping the country earn around \$300 million over the years and turning Bangladesh as an emerging hub for ICT outsourcing. The total size of the ICT market in Bangladesh was merely \$26 million in 2008 which now has reached \$600 million. With the introduction of the country's first satellite, the country is set to enter the space age by 2017.

This publication looks at the journey of 'Digital Bangladesh' so far, especially in terms of its impact in enabling the people to empower themselves and turn around their fates.

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Suffice it to say, even only as back as 2007, Bangladesh did not feature on the world map for ICT potential. All that changed, when Prime Minister Sheikh Hasina, with the help of her ICT Affairs Advisor Sajeeb Wazed, unveiled the Awami League's 'Digital Bangladesh' aspiration in 2008. The plan was to transform Bangladesh into a technologically advanced nation by the year 2021. For the first time, such an ambitious vision was incorporated into the electoral manifesto of any political party. This vision was put into motion right after the Awami League formed the Government following a landslide electoral victory in December 2008.

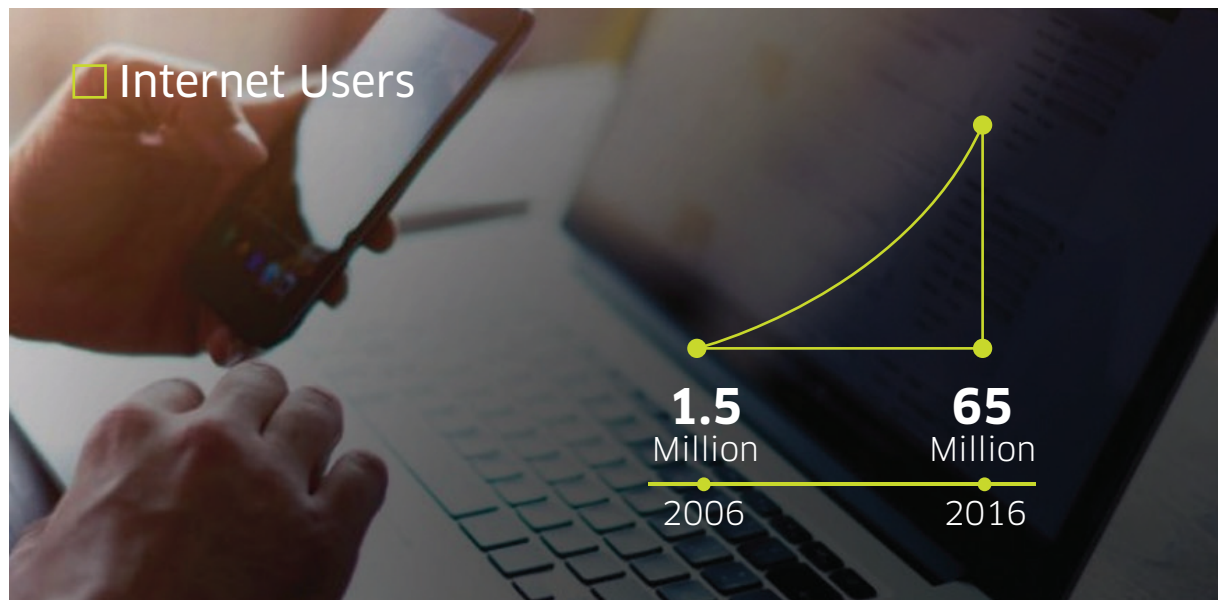
Incorporating the plan of Sajeeb Wazed, Prime Minister Sheikh Hasina put into motion several actionable measures to go about the task of realizing the vision of 'Digital Bangladesh'. The Access to Information (a2i) project under the Prime Minister's Office (PMO) rolled out several initiatives to harness the power of ICT to deliver public services readily to the people, such as the Digital Centres, and nurture grassroots innovation in ICT. The Ministry of Post, Telecommunications and IT was divided into two ministries, the ICT Division and the Post and Telecommunications Division, so that work could be focused and accountability ensured.

Under the Digital Bangladesh, the visionaries set out to achieve mainly four broad aims: Digital Government, Connecting Citizens Digitally, Developing IT Based Human Resources and Promoting the ICT Industry. In the last eight years, owing to the fantastic work done by Prime Minister Sheikh Hasina and her ICT Affairs Advisor Sajeeb Wazed in all four segments, several international awards and recognition have been won by the country, including multiple awards from the International Telecommunications Union (ITU), World Information Technology and Services Alliance (WITSA) and the World Society on the Information Society (WSIS).

INTERNET CONNECTIVITY

Users:

The number of internet users in Bangladesh has grown at an astonishing rate. In 2006, there were only 1.5 million internet users in the country. Now that number has gone up to almost 65 million. Bangladeshis use a range of mediums for accessing the internet, including mobile internet, wireless broadband and fixed broadband facilities. Of the three types, mobile internet is the most pervasive with more than 53 million users at the end of August 2016.



Optical Fiber Connectivity:

To date, the Government of Bangladesh has brought 930 unions under optical fiber connectivity by installing 7,154 KM optical fiber. In the sub-district level, 209 sub-districts have been brought under optical fiber connectivity. The target is to bring 1,200 unions and 290 sub-districts under optical fiber coverage by the end of this year. Under a further mega project, the Government aims to extend optical fiber link to 2,225 unions between January 2017 and December 2020.

Second Submarine Cable:

By the end of this year, Bangladesh will hook up to the EA-ME-WE-5 and joining the 2nd submarine cable to ensure uninterrupted internet connectivity. According to the project paper, the 25,000-kilometre cables would be installed under sea from Singapore to Bangladesh at a cost of US\$ 84.7 million. The second submarine cable will ensure that Bangladesh remains connected to the ICT highway if the first one gets cut off for any reason. Bangladesh will have 1300 GBPS bandwidth at its disposal and connection to the second submarine cable will facilitate 4G services.



Bangladesh currently being connected to 2nd Submarine EA-ME-WE-5

AT A GLANCE

BANGLADESH: ICT ESSENTIALS

ICT Education

75,000

ICT professionals being trained by Government

170,000

educational institutions to have multimedia labs

24,122

teachers being trained on ICT equipment

ICT Export Earnings



\$300 Million
in 2016

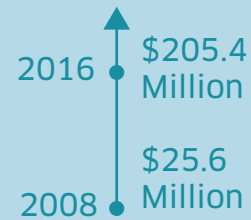
ICT Sector Earnings

\$600 Million

\$26 Million
2008



Budgetary Allocation for ICT



12 years tax exemption for developers

10 years tax exemption IT/ITeS companies

No VAT on e-commerce

Incentives for Investors in Digital Bangladesh

100% foreign ownership profit repatriation

Duty free vehicle import

Duty free import of capital machineries

3

MOBILE TECHNOLOGY



Mobile Coverage and Usage:

99% people and 95% geographic area of Bangladesh have been brought under mobile telecommunications service and network coverage. For the first time, the three districts of Chittagong Hill Tracts (Khagrachari, Bandarban and Rangamati) have also been brought under mobile network. The number of mobile phone users has also risen exponentially in the last seven years. There are now around 130 million mobile users in Bangladesh, which was only 20 million in 2006.

4G/LTE Technology:

To ensure the latest mobile technology for the people, the Government of Bangladesh will soon auction spectrum for 4G/LTE (fourth generation/long term evolution) mobile technology. State-owned Bangladesh Telecommunications Company Ltd. (BTCL) will ensure high-speed broadband in all metropolitan areas, districts and sub-districts under the 'Wireless Broadband Network Connectivity (4G, LTE) for Digital Bangladesh' project. Through LTE, even people from inaccessible parts of the country and wetlands will be able to enjoy high-speed broadband internet.

Safer Use of Mobile:

The Government of Bangladesh, in collaboration with the mobile operators, conducted one of the most comprehensive mobile registration schemes in the world between December 2015 and June 2016. To cut down mobile based crimes, and ensure safer use of mobile technology, nearly 130 million mobile SIM cards were biometrically referenced during this time with the National ID cards of the users. All new SIM cards have to be registered in such manner.



99% People

Under Mobile Coverage



130 Million SIM

Cards Biometrically Registered



95% Area

Under Mobile Coverage



4G Technology

to be Launched in 2017

Mobile Users



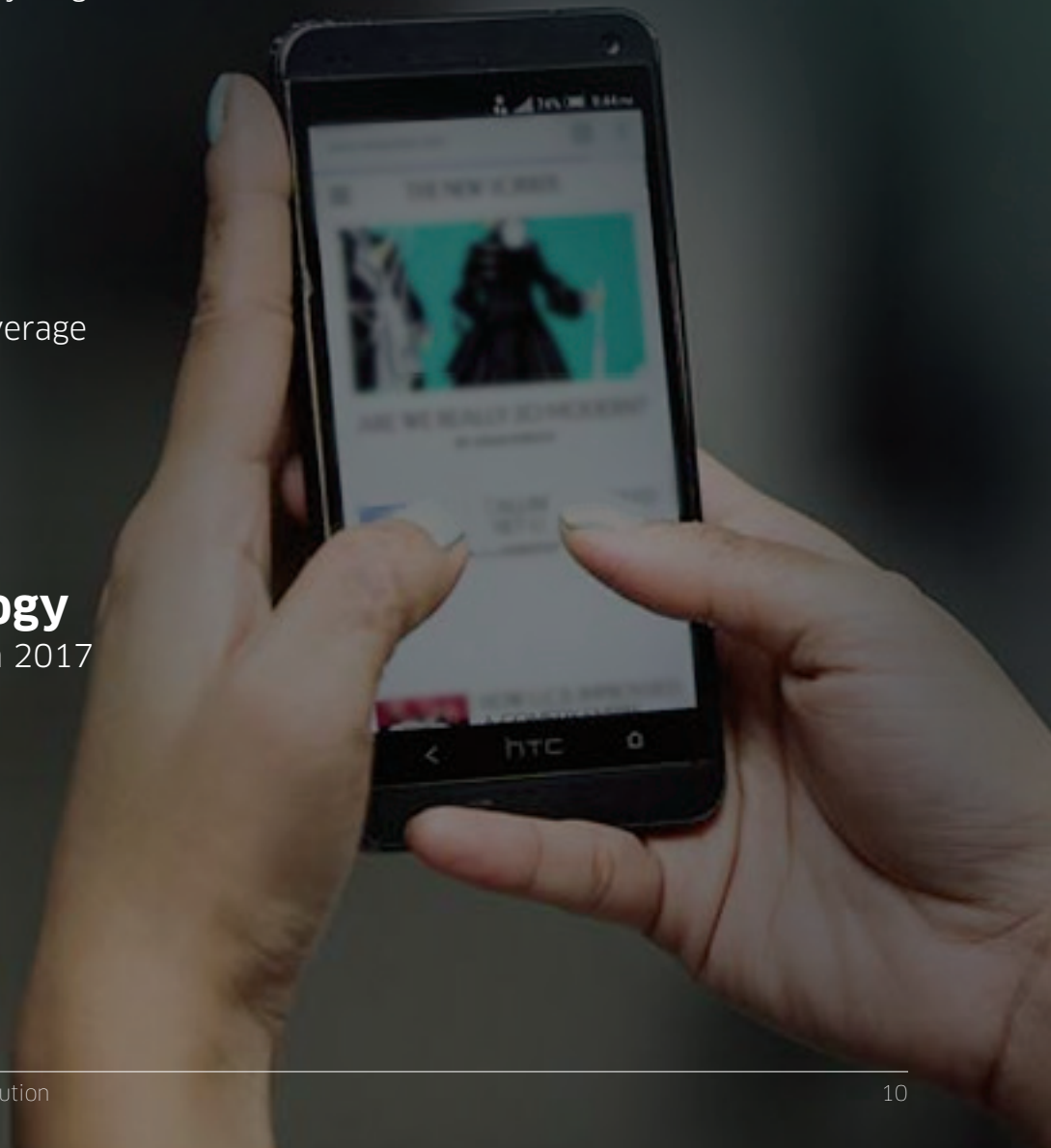
20
Million

2006



130
Million

2016





4

RAPID EXPANSION IN OUTSOURCING

Owing to a raft of measures to equip the youth force with soft skill trainings, the country has seen a rapid rise in the outsourcing landscape while international ratings put Bangladesh in the league of top ten destinations around the globe.

According to the technology website, Tech in Asia, Bangladesh is ranked as the 7th most popular destinations for outsourcing among 186 countries. According to the latest estimates, there are over half a million registered freelancers in Bangladesh and the number is growing steadily. Capital city Dhaka enjoys the 3rd position in Odesk, a freelancing platform, among the global outsourcing cities.

Given that the ICT sector has been announced as a 'thrust sector' by the government of Bangladesh, apart from the various private outsourcing training centers, there are many initiatives being undertaken by the government itself. So far, the ICT Division has trained 3,342 people under "Freelancer to Entrepreneur" programme to create entrepreneurs in the ICT sector. Under the Leveraging ICT for Growth, Employment and Governance (LICT) Project, the Government is going to provide a six-month extensive training to 10,000 youth on online outsourcing. Steps have been taken to develop standard manual and courses by a team of local and foreign experts for the training keeping provision to participate in the bids offered by the online marketplaces and give delivery of the desired services after winning jobs. Under the 'Learning and Earning' project, training to 5,120 youth on professional outsourcing is ongoing. Previously, this project trained 20,000 women and 1,920 media professionals.

The government has launched seven digital training buses for providing training to 166,000 women on IT/ITES under 'Sustainable Women Development on ICT' programme by the next three years across the country. The government is also going to provide special high-speed internet package for freelancers. The ICT Division of the Government of Bangladesh organizes an annual international standard BPO Summit to give further impetus to the sector. The government also plans to set up more than 500 business process outsourcing (BPO) centres soon.

■ Rapid Expansion in Outsourcing

More than US\$ 100 million is projected to be the earnings from the sector by 2020 as per current growth trajectory. However, given the various initiatives taken by the Government, the aim is to help the industry earn \$1 billion in software export and outsourcing by 2018, and take the figure to \$5 billion by 2021. Plans have been also laid out to generate 200,000 employments in outsourcing every year from 2021.

The latest Global Service Location Index (GSLI) by one of the world's top management consulting organizations A.T. Kearney has reaffirmed Bangladesh as among the top outsourcing locations in the globe. This year's Index puts Bangladesh four steps ahead from the previous year's ranking for successes in IT Outsourcing, Back Office or Offshoring, Business Processing Outsourcing (BPO), Voice Service, etc. Bangladesh debuted on the index for the first time in 2014 and was positioned at 26th spot. This year the country ranks in 22nd.

□ Bangladesh and Outsourcing

500
BPO
Centres
Planned

7th
Most Popular
Outsourcing
Destination



3rd
Position in
oDesk

200,000
Outsourcing
Jobs Annually
from 2021

22th
Position
AT Kearney's
GSLI 2016

Target Export Earnings

1
Billion
US\$
2018

5 Billion
US\$
2021

5 ICT AND SKILLS DEVELOPMENT

To create an IT-friendly and adaptive manpower, the Government has taken a number of steps to train the youth and create 2 million IT professionals by the end of 2021. Through ICT division's LICT project, government has already provided 10,000 graduates and post-graduates with 'Top Up IT' training while 20,000 youths, having at least higher secondary degree, are offered foundation training. Already, school and college goers, numbered around 5,000, have received such trainings. Target has been set to train 10,000 more youths with high value training in IT and 5,000 government officials and non-government IT professionals. Another initiative, titled 'Support to Development of Kaliakoir Hi-tech park' project has trained 6,041 youths including 1305 girls. Under the employment scheme, 1,286 trainees have been hired by several IT firms and renowned business organizations. For the youth at grassroots level, Government is providing training on e-commerce to create 'Info-leaders'. Already 3,500 youth have received such training.

□ TRAINING IT PERSONNEL

34,000 TO BE TRAINED THROUGH LICT BY 2018

20,000 WOMEN TRAINED THROUGH LEDP

35,000 TO BE TRAINED ON OUTSOURCING BY 2017





6

LARGE SCALE IT INFRASTRUCTURE

Aiming to change the course of national growth, works are well underway for construction of a good number of infrastructure facilities. To ensure world class IT infrastructure in Bangladesh, the government has a plan to establish a high-tech park, an IT park and a software technology park in every district gradually. To that end, the government has already implemented or initiated a number of large scale projects, including:

Hi-Tech Parks:

Bangladesh's first Hi-Tech Park is being built over 355 acres of land at Gazipur's Kaliakoir. Work on two blocks of this park started in February 2016. Once complete, this Hi-Tech park would create IT related employment for 1 million people in the next ten years. However, this is just one of 15 more such parks which are in the pipelines for the Government to construct in the coming years.

Software Technology Parks:

A 12-storied 'Software Technology Park' has already started its operation in Dhaka's Karwan Bazar. Spaces are being allocated in this establishment of 72,000 sq. office space to various IT and ITeS firms in this establishment. Another such park, with 232,000 sq. feet office space, is being built at Jessore's Bejpara at a cost of US\$ 36.3 million. The completed and under constructions STPs will allow fantastic opportunities for investment (both domestic and foreign) in such areas as computer software development, freelancing, call-centers and research and development. 5 more such STPs are in the pipelines to be built and developed by the private sector.

■ Large Scale Projects for IT Infrastructure

Tier-IV Data Center:

In October, 2015 the government launched a project to set up Tier-IV level national data centre aimed at ensuring secure and safe data storage as well as optimum uses of ICT for the "Digital Bangladesh". Once the \$194.6 million data centre is installed on seven acres of land at Kaliakoir Hi-Tech Park, the hosting capacity of the shared data center of the government would be enhanced. Besides, the government would also be able to run its official activities without basing on paper. Bangladesh Computer Council (BCC) is entrusted to implement the project by June 2018.

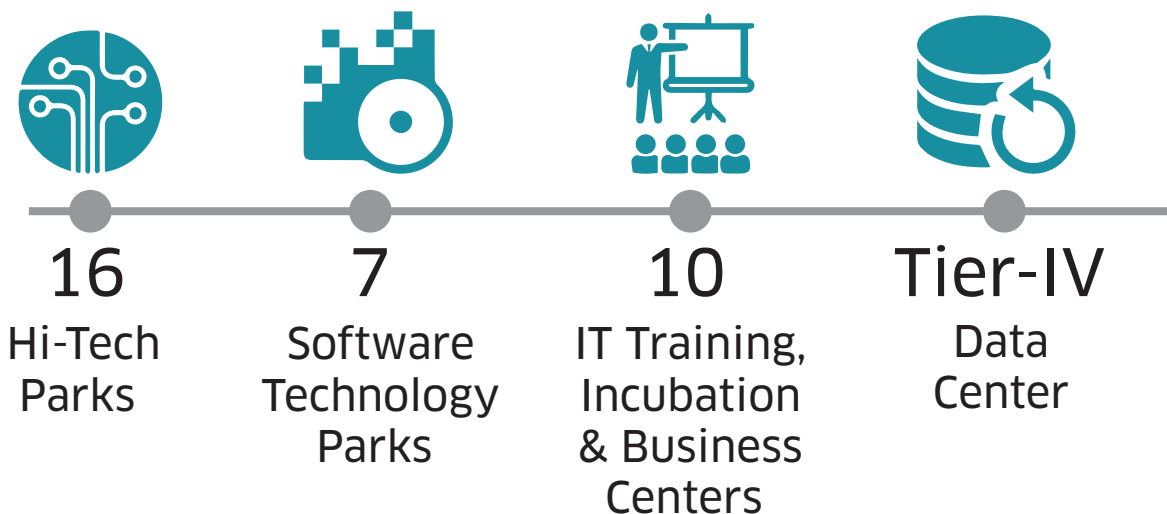
IT Training and Incubation Centers:

In July 2016, Bangladesh's first IT Incubation Center launched in Dhaka. This center, which would provide mentoring and support to IT based startups, is expected to create 100,000+ jobs in the coming years. Another such IT Training and Incubation Center is being set up at Nature, to be complete by June 2018. Another proposed project waiting in the pipeline is the CUET IT Business Incubator Project in Chittagong University of Engineering Technology, Chittagong. The Government also has plans for setting up 7 more such IT training and incubation centers across the country.

Other Projects:

The Government is constructing an 'Electronic City' on 162.83 acres of land in Sylhet's Companyganj. The Electronic City is being realized on a public-private-partnership (PPP) model, and once complete, this project will create employment for around 45,000 people. The Government has also plans to set up a 'Silicon City' in Rajshahi and an IT Village in Mohakhali, Dhaka. Government has also given nod to establish an academy to provide assistance for the IT innovators and business entrepreneurs.

□ Some Planned ICT Infrastructure





7 USE OF ICT IN GOOD GOVERNANCE



24,907
tablet PCs
distributed
among
government
officials



**Smart
Cards**
launched



Judiciary
being
digitized

In order to ensure that the benefits of digitization reach all corners of the country, a number of initiatives have been taken to equip the administration and civil service. To date, 24,907 tablet PCs have been distributed among government officials. All public offices in Dhaka have been connected with district and sub-district headquarters through a high-speed fibre optic network. The Government has built a network of internet protocol telephony for public offices to ensure better communication. A specific mobile application has been built to be used by Government officials only.

More than 800 video conferencing systems have been set up across the country; 303 digital centers have been set up in the various city and municipal corporations; Integrated Financial Management System (IFMS) has been introduced in government offices; the first phase of digitizing the judiciary is done, further works are progressing rapidly.

Most public services are available online such as tender, procurement, filing tax returns, paying utility bills, viewing results, applying for admissions, recruitment and filing applications. E-Governance and e-procurement has been introduced to make public administration more transparent. E-Service centers have been set up in all districts and sub-districts. Every district and sub-district now have their own web-portals. Government has digitized the process to provide pension to primary school teachers. They can complete every steps from the education offices at Upazilla level. In 2008, National Identity Card (NID) was launched by the Caretaker government. But public facilities couldn't be received through this card as it was less modernized. In 2016, the government has launched Smart Cards, replacing the NID which will enable the citizens to get public services as well as pay utility bills without any harassment.

8

ICT FOR INCLUSIVE GROWTH

Digital Centers:

One of the principal methods of the current Government of Bangladesh to spread the benefits of digitization to the smallest units of local government is 'Digital Centres'. In seven years, 5,275 digital centers have been set up in union levels. These centers are providing 200 types of digital services to the rural people. Around 4 million people are benefitted by these services every month. These centers are also promoting entrepreneurship in the local level. More than 10,000 entrepreneurs are involved with these centers. Monthly income of these entrepreneurs is more than US\$ 600,000. The total income from these centers in 2015 was around US\$ 180 million.



5,275
Digital Centers



200
Services for People



US\$ 0.6 Million
Monthly Income of
Local Entrepreneurs



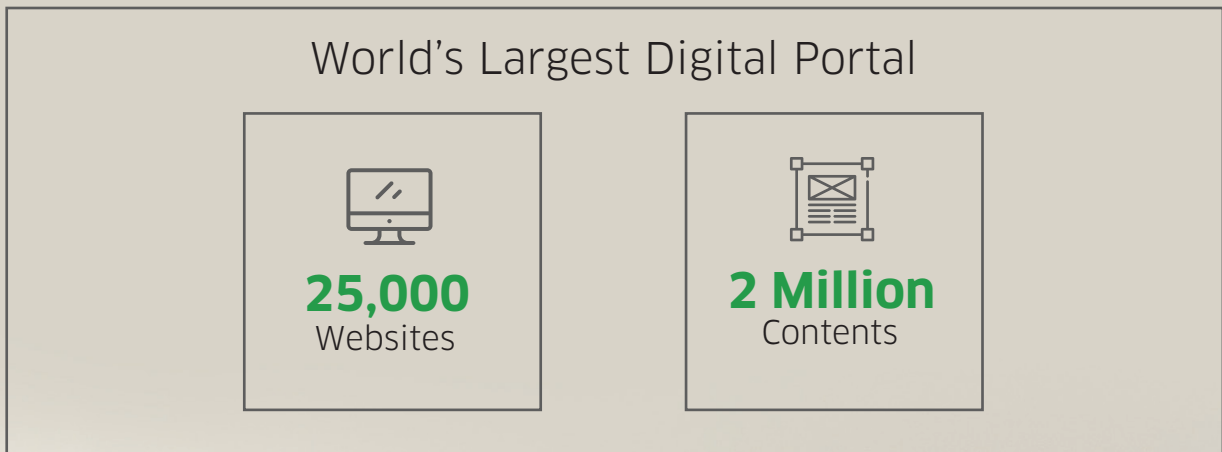
4 Million
Monthly Users

Post e-Centers:

The government, apart from digitizing the postal service, has also embarked on a project to transform 8,500 post offices, from across the nation, into e-centres for spreading IT service to the rural people. Of the 8,500, 8,000 post offices are at the union level, while the rest are from sub-district level. To test the efficacy of the project, e-services were firstly provided from 2,500 post offices on a trial basis. Under the 'Post e-Center for Rural Community' project, till April 2016, 5,006 Post e-Centers have started operation. By June 2017, the services would be operated from all planned 8,500 post offices across the country. These centers are providing rural people with the opportunity to, among others, browse the internet, transfer remittance, see academic results, fill up application forms, and gather information about agriculture, education and health.

National Web Portal:

To make public information more easily accessible, the Government has set up one of the world's largest digital portals, National Web Portal. Made up of 25,000 government websites, the public can instantly access information regarding unions, sub-districts, districts as well as receive basic services and utilities such as admissions, recruitments, bookings, passports, utility bills, agriculture, applications, registrations, tax, health etc.



9

MOBILE BANKING

bKash
“bKash
revolutionizing
banking
for poor”
-Bill Gates

Bangladesh is one of the developing world’s leading examples when it comes to ensuring financial inclusion through such innovative measures as the widespread use of mobile banking. On impact, a lot of people who would have otherwise been left out from the conventional systems of banking, are now actively part of the mainstream financial system.

The Government of Bangladesh first made provisions for mobile banking in March of 2010. The country’s central bank, Bangladesh Bank, immediately formulated a detailed guideline, followed by a revised guideline. 20 banks have been approved for providing mobile banking services, of which 18 are currently providing such services in the market. Among the mobile banking service providers, the local enterprise ‘bKash’ is leading the market with 80 percent share. Bill and Melinda Gates Foundation is the first investor in ‘bKash’.

Since then, the sector has seen enormous growth. In September 2016, the average daily transactions, through mobile banking in Bangladesh, amounted for more than US\$ 83.3 million. In the same month, the number of average daily transactions amounted to more than 3.9 million. In September, the number of registered users of mobile banking stood at 38 million, of which 30.6 million are active users.

Mobile banking in Bangladesh saw 53% growth year-on-year in 2015. The central bank is expecting more than 30% growth of the sector in 2016. Bangladesh Institute of Bank Management (BIBM) has forecasted that by 2020, the total number of mobile banking customers in Bangladesh is likely to exceed 50 million, or 47% of the adult population.

Mobile Banking at a Glance



US\$ 83.3
million

Value of average daily transactions



38
million

Registered mobile banking users



3.9
million

Number of average daily transactions



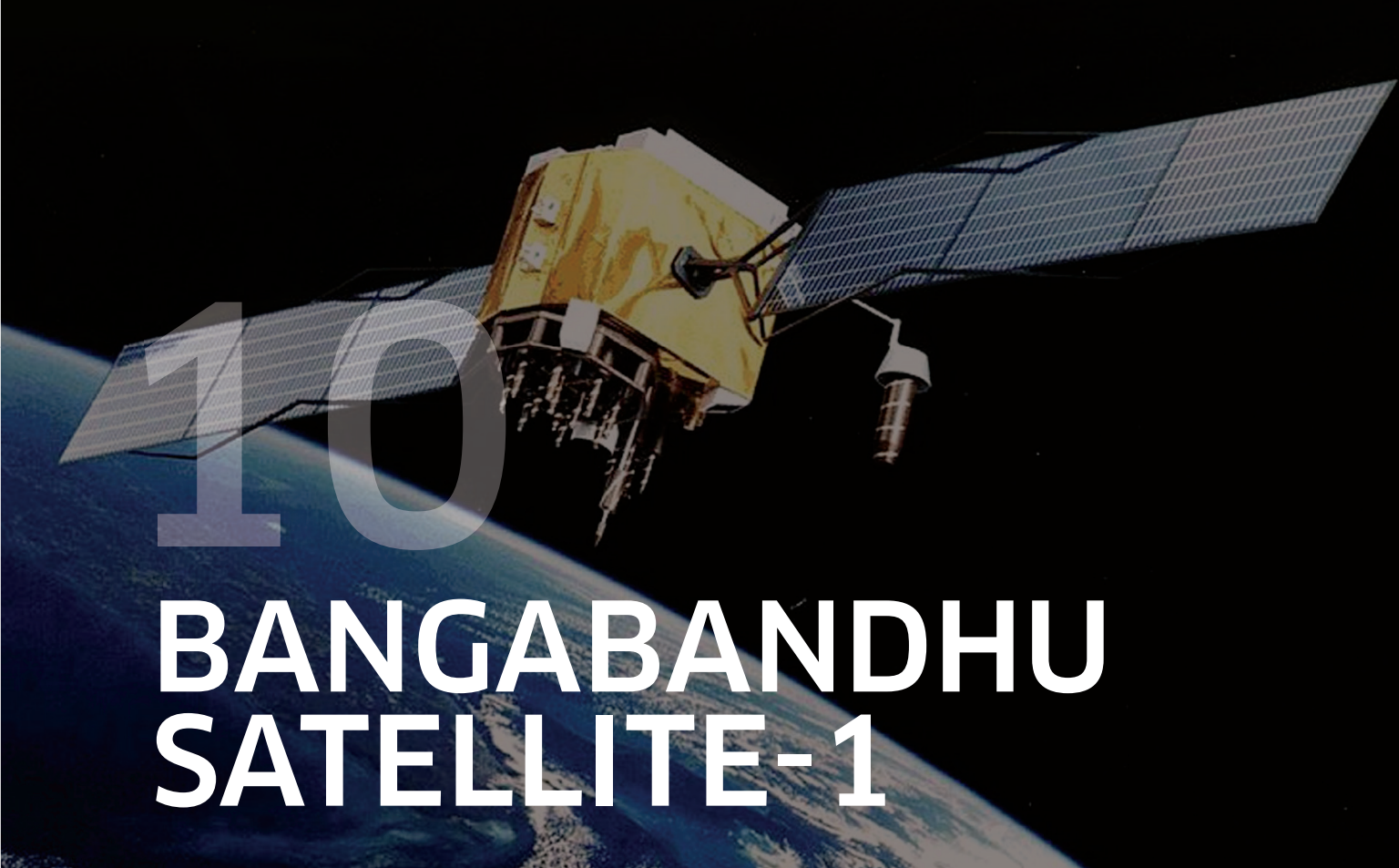
53%
million

Growth of sector in 2015



18

Banks providing mobile services



BANGABANDHU SATELLITE-1

Bangladesh is set to enter the space age with the launching of its first satellite, *Bangabandhu Satellite-1*, into space. The project, costing more than US\$ 381 million, was approved in September 2014. The French company, Thales Alenia Space, was entrusted with the responsibility of building the satellite in November 2015 through an open tender process. The Government has already struck a US\$ 179.7 million deal with HSBC for financing the project through its own means. Under the contract, the French company has to: build the satellite, launch it into space, construct two ground control stations, housing and equipment installations, ensure insurance for launch and post-launch one year, and operate ground station for three years post-launch.

By October 2016, more than 50% work of the satellite has already been finished. Of this amount, 83% engineering work, 56% antenna manufacture, 65% work of communication and service modules and 40% work of the ground station have been completed or developed. The Government of Bangladesh plans to launch the device into space in December 2017 and start commercial operations by March 2018. The satellite is expected to be launched using vehicle SpaceX and Falcon 9 of the United States from the Cape Canaveral Launch Pad.

In January 2015, the Government of Bangladesh purchased a 119.1 east longitude orbital slot from Russia based Intersputnik for 15 years at a cost of about US\$ 28 million. Once complete, Bangladesh will enter the exclusive club of 57 countries of the world owning satellite of their own. With the satellite being launched into space and being operational, the country would be able to save around US\$ 14 million annually which it needs to pay for renting satellites from others and also be able to earn by renting out the satellite facilities.

Project Costs

US\$ 381

Million

Work Already

Complete (Oct 2016)

50%

Cost for
Orbital Slot

US\$ 28

Million

**Bangabandhu-1
Satellite**

58th

Country to have
own satellite

Annual Savings

US\$ 14

Million

Launch into Space

**December
2017**



Work on Bangabandhu Satellite-1 progressing rapidly

11

FUTURE OF DIGITAL COMMUNICATION

For taking Bangladesh's connectivity to the next level, the Government of Bangladesh has recently formulated the ambitious and very relevant National Telecommunications Policy 2016. Under this policy, the principal aims are to ensure "Telephone and Internet for All". In order to achieve these aims, the following short-term, mid-term and long-term targets have been set to be achieved by 2018, 2021 and 2025 respectively:

Achieve By 2018	Achieve By 2021	Achieve By 2025
90% teledensity	100% teledensity	Increasing internet penetration to 90%
45% internet penetration	65% internet penetration	Reaching broadband facilities to 90%
20% people to have fixed-broadband	40% people to have fixed-broadband	50% residences and organizations to have optical fibre connectivity
64 districts, 490 sub-districts and 2,000 unions to have optical fibre connection	4553 unions to have optical fibre connectivity	

12

WHAT THE WORLD SAYS



Technological innovation important in poverty reduction and Bangladesh recognized that very early
World Bank President Jim Yong Kim



Bangladesh, a shining example of digital technology used for delivering financial services to the poor
Microsoft Founder Bill Gates



In terms of digitization, Bangladeshi people are doing extremely well
**Secretary General of ITU
Houlin Zhao**



I am amazed to see how enthusiastically Bangladesh is taking opportunities to access international markets through ICT
US Representative for California's 17th congressional district, Silicon Valley, Mike Honda



Bangladesh 3rd in the global list of countries for rapidly digitizing. Bangladesh has the capacity to fulfill its ambitions in the ICT sector and online outsourcing
**President of World Information Technology Services
Santiago Gutierrez**



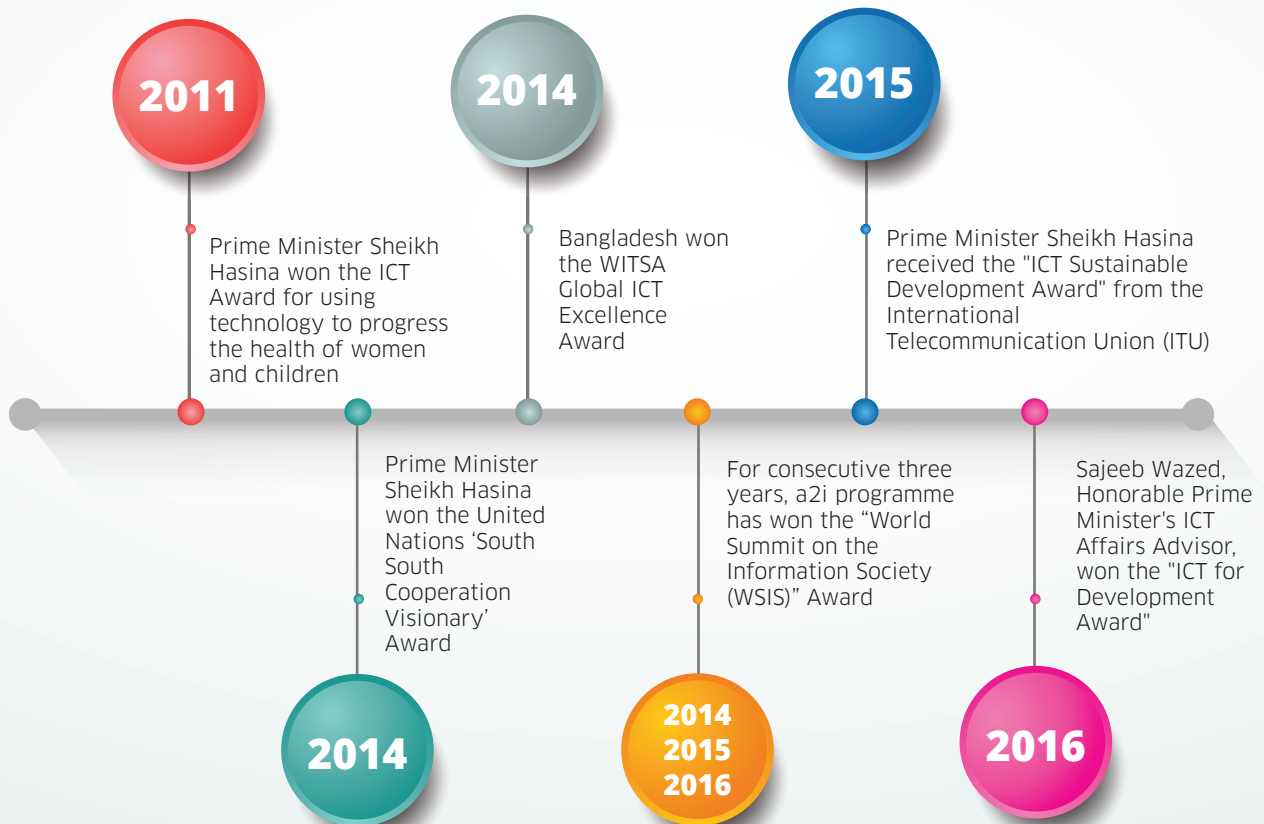
Bangladesh one of 50 countries listed for growth in smartphone uptake, mobile broadband and high-speed internet access
Huawei Global Connectivity Index 2016



Bangladesh to be the 10th largest internet using country by 2020
Groupe Speciale Mobile Association (GSMA)



AWARDS FOR DIGITAL BANGLADESH





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