



Digital Bangladesh, a transformation for sustainable development

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Abstract

The study focusses on Bangladesh's strategies and acts toward rapid digitalization. We are on the brink of 4th industrial revolution, a transaction of production process from automation to digitalization. In the everchanging global arena, the nation which are adopting the changes and keeping up pace with science and technological advancement will survive and sustain. Thus, countries throughout the world are competitively coming to the digital platform to match up the global trend. The main objective of the study is to analysis the strategies and actions Bangladesh has taken towards digitalization and socio-economic impacts of the digital transformation. The study is based on mainly secondary sources of data including research journal, published articles, newspapers, thesis papers, books etc. The finding of the study summarized that despite the minimum resources, poorly developed infrastructure and limited human resources, effective strategies, good working model and proper actions in timely manner transform the country into rapidly digitalization and socio-economic modernization.

Keywords: digitalization, technological advertisement, productivity growth, telecommunication, socio-economic development

Introduction

We are in everchanging global arena. Technological advancement and adoption of ICT has turned the world into a global village. Due to increasing interconnectivity and smart automation, economy, industry, social pattern & process are changing rapidly. In this everchanging and overcompetitive global arena the country which keeps up pace with global trend can survive. Concerning the global trend, in 2009 Bangladesh set up a National Development Goals know as Digital Bangladesh or Vision 2021, a blueprint for digital transformation, eradication of poverty completely, and a better and more sustainable future for all, targeted to achieve by 2021. The digital Bangladesh philosophy implies a widespread use of computers and embodies the modern philosophy of useful and effective use of technology in term of implementing the promises in economy, education, ecosystem, health care, job placement and poverty alleviation. It underscores a changing attitude, positive thinking, and innovative ideas for the successes of "Digital Bangladesh". It also comprises ensuring people's democracy and human rights, transparency, accountability, establishing justice and ensuring delivery of government services to the citizens of Bangladesh through maximum use of technology, with the ultimate goal being the overall improvement of the daily lifestyle of general people. This includes all classes of people and does not discriminate people in terms of technology.

The four pillars of Digital Bangladesh are- Human Resource Development, Connecting Citizens, Digital Government, and Promotion of ICT Industry. Digitalization will be revolutionary in Bangladesh where 85% of the total population live in villages where infrastructures are poorly developed, and roads and communications are fragile and vulnerable. GoB (Government of Bangladesh) realized that digitalization and telecommunication will convey

information and services even to the population of the isolated areas, will bring a very potential breakthrough in all spheres including economic, education, innovation, social and political spheres.

But extremely ambitious goal is not easy at all to achieve for Bangladesh, a poor country with low GDP/capita (\$2085) and minimum purchasing power \$5812 (PPP) [World Bank 2020]. Bangladesh took very effective initiatives towards its digital transformation.

1. Objective of Digital Bangladesh

The objectives of Digital Bangladesh are to transfer the country into-

- a digital and middle-income economy by 2021 and further knowledge-based developed economy by 2041
- Eradication of Poverty completely and
- A better and more sustainable future for all

2. Strategies Toward Digitalization

In the digitalization mission, Bangladesh mainly focused on infrastructure and human resource development to achieve its digitalization goals easily effectively.

As part of Infrastructure development Bangladesh brought the whole population-

- To the access to affordable and reliable source of electric energy and
- Under the coverage of mobile and telecommunication network

And Bangladesh developed human resources to create inventors, investors, entrepreneurs, trainers, operators, and skill workforces by whom digitalization will be formed and conducted effectively automatically.

Bangladesh set up short-term, mid-term and long-term to reach the goal

3. Mass Electrification

For its digitalized mission, the first priority of Bangladesh was to bring its entire population to the access of affordable and reliable sources of energy.

Bangladesh installed various power grids including solar power, wind power, hydroelectric power, biogas and biomass power plants which brought the whole population, even the population of remote rural areas, to the access of electricity.

- Solar Panel and solar PVC have been installed in hilly and mountain areas

- Wind power turbines have been installed in the coastal areas
- Biogas and biomass power plants in isolated small communities

By 2018, 90% of the total population had access to affordable and reliable sources of energy. The number has been accelerated to 99.5% of the total population in 2021 with electricity consumption per capita is 565 kwh [World Bank 2021].

Table 1: Mass Electrification of Bangladesh

Year and indicators	2009	2012	2015	2018	2021
Total amount of electricity	3268 MW	4994 MW	13883	2000 MW	25548 MW
Access to electricity	57.07%	65.41	74.44	91.80	99.5%
Electricity consumption/capita	247.26 kwh	283.46 kwh	325 kwh	510kwh	565kwh
Renewable sources of energy	266.5 MW	309 MW	404 MW	579 MW	650.33 MW

Source: BPDB 2021, UN Chronical 2015 Energy Track Asia 2021

4. Mobile and Telecommunication Network

Massive installation of mobile network and telecommunication channels by private and publication organization bring the whole country under mobile and telecommunication network rapidly. Privatization of ICT sectors has brought innovation, speed, and competitiveness in the sectors. By 2012, 100% of the total population come

to the mobile and telecommunication network coverage with 55 million mobile subscribers and 1 million internet subscribers, the figures rose to 160 million and 111 million respectively in 2021.

The sector also creates 1.2 million jobs and the contribution of the sector to the national GDP in \$37 billion, 7% of the total GDP of Bangladesh [BRTC 2021].

Table 2: Mobile and Telecommunication Network

Year/indicator	2009	2012	2015	2018	2021
Population under telecommunication network coverage (%)	10	100	100	100	100
Number of telephone subscriber	1 million	55 million	93 million	130 million	160 million
Number of internet subscriber	100000	1 million	50 million	75 million	111 million
Employees	50000	100000	500000	1 million	1.2 million
Revenue	\$1 billion	\$10 billion	\$18 billion	\$29 billion	\$37 billion

Source: BTRC 2021, UN Chronical 2015,

5. Creation of Human Resources

For the digital transformation, human capital is the most significant component by whom digitalization will be formed and conducted effectively. To create proper human capital, Bangladesh focuses on science, technology and research based technical and modern education through modernizing education curriculum, attracting and involving quality staff, developing infrastructure and environment, allocating budget etc. The most remarkable initiatives of the GoB in the regards are-

- Development of the old institutes and establishment of new ones with modern facilities. The educational institutes include universities, research institutes, polytechnical and vocational training institutes etc.

- A computer lab with high-speed internet connection in every primary school, high school and college where basic computer training is free and compulsory for all
- ICT labs and computer training centers in every community including rural remote areas to improve the basic skills in computing and to reach the digital facilities to the root level

As of today (July 2021), there are 53 universities including 19 science and technological universities, 49 polytechnical and 37 vocational training institutes which are graduating 300000 students (every year), serving in administrative, education, industrial, financial, commercial or various service sectors or entrepreneurial activities [UGCB 2021].

Table 3: Scenarios of Education Sector

Year/Indicators	2009	2012	2015	2018	2021
No. of university	29	32	35	43	53
No. of science and technological university	11	13	14	15	19
No. of polytechnical institutes	49	49	49	49	49
Literacy rate	55%	57.86%	73.91		76%
Budget in education (Billion \$)	5.1	5.4	5.8	6.5	8.5

Source: University grant commission of Bangladesh 2021

6. Impacts of Digital Transformation in Bangladesh

a. E-governance

Electronic governance or e-governance is a tremendous breakthrough for Bangladesh thanks to digital transformation. IT and modern technologies are delivering government services, exchange of information, communication, transactions as well as integration of various stand-alone systems between government to citizen (G2C), government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E) and back-office processes and interactions within the entire government framework which has brought speed, transparency and accountability of the government services in one hand on the other hand people are getting the services setting at homes or working places, brought a revolutionary changes in all spheres.

b. Digital Banking

With the benefit of ICT and proper human capital, Banking sector has been digitalized rapidly when all 6 state banks and 43 private commercial banks are conducting their banking activities online. Moreover, all banks have commenced agent branches with 3 staff and providing banking services online in the remote areas where operating a bank with full capacity is impossible. Rapid growth and online services accelerate the number of clients, amount of deposit, amount of loan disbursement, amount of loan outstanding, financial transaction, and money liquidity several folds.

Due to the effective and easy financial service, SMS, self-employment, and entrepreneurial activities have been accelerate rapidly and women’s involvement in financial activities has been enhanced significantly.

Moreover, mobile telephone transaction has brought a revolution in money liquidity. People are now transferring and receiving money and paying bails through mobile or mobile-to mobile network even without holding a bank account. Bkash, Rocket and Nogod are the 3 prominent platforms for mobile money transaction.

c. E-commerce

Due to the technological advancement and rapid and countrywide spread of ICT, E-commerce has been grown in short order since 2009 when Bangladesh Bank, the central Bank of Bangladesh, commenced online transaction. As of August 2021, there are more than 2000 ecommerce sites and 50,000 e-commerce pages on social medias. E-commerce is now \$2.5 billion’s industry with 1.5 million employees which further accelerated by more than 1 million due to individual entrepreneurship in E-commerce platform [BTRC 2021].

The major types of e-commerce in operation in Bangladesh are-

- **B2C** (Business to consumer)
- **B2B** (Business to Business)
- **B2G** (Business to Government)
- **C2C** (customer to consumer)

The most popular e-commerce websites of Bangladesh are-Clickbd; evalley; Daraz; Bikroy; Pathaw etc. With around 1 million free lancers, Bangladesh is world’s 2nd largest suppliers of online labors after India.

d. Agriculture

Agriculture is the biggest financial source which innovate 41.6% of the total labor force and contribute for 14.23% of the nation GDP of Bangladesh [World Bank 2000]. Digitalization and ICT has brought a revolted changes in agricultural sectors including cultivation, livestock farming, fisheries, agro entrepreneurship etc. Providing distance agro-consultation, latest invention in agriculture, most productive methods, and strategies as well as financial and other relevance services online in timely miners to the marginal farmers and rural communities has led the revolution. The factors have enhanced the productivity in agriculture sector and accelerated the agro entrepreneurship.

Table 4: Agricultural productivity growth

Year/segment	2009-10	2020-21
Food grain	40 million ton	55 million ton
Growth/hector	4176 kg/h	479kg/h
Fishes	2.5 million tons	4.7 million tons
Growth/hector	3 ton/h	4.1 ton/h
Livestock	95 million	187 million
Density/hector	3.74/h	7.37/h

Source: Banglapedia 2021

e. Health and Sanitation

Digitalization and ICT has brought a very revolutionary changes in medical service and healthcare sector. Till before 2012 mortality rate, mostly among children and elderly population of rural population, was very high. Every year a million of pregnant women of rural remote areas would die to give birth. The factors were for lack of Medicare and treatment facility in timely manner due to distance hospital and clinic and poor road communication facility and infrastructure. Setting up satellite health center in every village, Telemedicine services, videoconferencing for the treatment of diseases thanks to technological advancement and rapid spread of ICTs, the condition has been improved significantly.

f. Economic Growth and Poverty Alleviation

The digital transformation has brought a rapid socio-economic change in Bangladesh. All economic indicators have been accelerated and the poverty rate has been dropped rapidly in Bangladesh. The total GDP has been accelerated to \$409 billion in 2021 from \$102.47 billion in 2009, GDP/capita has been accelerated to \$2554 in 2021 from \$702 in 2009 and poverty rate has been alleviated to 20.5% in 2020 from 30.9% in 2009 [World Economic Outlook 2021].

Table 5: Economic indicators

Year/Indicators	2009	2012	2015	2018	2021
GDP (\$ Billion)	102.47	133.36	195.08	218.13	409
GDP/capita (\$)	681.12	856.34	1210.16	1675.08	2554
GDP Growth Rate (%)	5	6.52	6.55	7.5	6.8
Unemployment rate (%)	11	8.7	4.38	4.29	4.2
Poverty rate (%)	33.05	28.7	25	21.0	20.5

Source: World Economic Outlook 2021

Conclusion

To confront the challenges of 4th Industrial Revolution digital transformation is very effective component. To its digitalization mission, Bangladesh took very effective

initiatives. The impacts of digitalization are enormous in Bangladesh. Digital transformation has conveyed the administrative, educational, and financial services to the root level, has brought a socio-economic development in rural disadvantaged areas.

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