Road Towards Bangladesh 2030: Readiness and Priorities for Digital Transformation

Bangladesh Miracle Series Webinar

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Policy Advisor, a2i
ICT Division/Cabinet Division/UNDP Bangladesh
## Comparison with Neighbouring Countries

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<tbody>
<tr>
<td><strong>GDP</strong></td>
<td>172 billion</td>
<td>310 billion</td>
<td>2.04 trillion</td>
<td>2.8 trillion (growth 37%)</td>
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<tr>
<td></td>
<td>(growth 104% or more)</td>
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<tr>
<td><strong>Literacy</strong></td>
<td>61%</td>
<td>75%</td>
<td>74%</td>
<td>77%</td>
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<tr>
<td></td>
<td>(growth of 23%)</td>
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<td></td>
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<tr>
<td><strong>Unemployment</strong></td>
<td>4.39%</td>
<td>5.3%</td>
<td>5.60%</td>
<td>6.9%</td>
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</table>

- **Per Capita Income**: Bangladesh $2064, India $1130
- **GDP Growth During the Pandemic**: Bangladesh 5.2%, India 0.4%
- **Reserve**: Bangladesh 42 billion, India 20.8 billion
- **Average Lifetime**: Bangladesh 72 Years, India 67 Years
- **Child Mortality Rate Under 5 Years**: Bangladesh 25 per thousand, India 59 per thousand
- **Primary Education**: Bangladesh 98%, India 72%
- **Private Bank**: Bangladesh 44, India 22
Moving from ‘Business as Usual’ to ‘Leapfrogging Mindset’ Facilitated by Vision 2021 Digital Bangladesh Agenda

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2021</th>
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<tbody>
<tr>
<td>Poverty, income</td>
<td>40%, $650</td>
<td>21%, ~$2,227</td>
</tr>
<tr>
<td>Electricity</td>
<td>27%</td>
<td>95+%</td>
</tr>
<tr>
<td>Internet</td>
<td>&lt;1%</td>
<td>65% (100+ times)</td>
</tr>
<tr>
<td>Mobile</td>
<td>20 mil</td>
<td>174+ mil (8 times)</td>
</tr>
<tr>
<td>Digital Services</td>
<td>&lt; 10</td>
<td>1,000+</td>
</tr>
<tr>
<td>One-stop Centres</td>
<td>2</td>
<td>7,000+</td>
</tr>
<tr>
<td>Govt. websites</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>CIO</td>
<td>56 e-Gov Focal Points</td>
<td>1,000 Chief Innovation Officers leading Innovation Teams</td>
</tr>
</tbody>
</table>
Impact Measured in TCV Reduction Mandated by Annual Performance Agreement

SAVED BY CITIZENS

1.92 BILLION DAYS SAVED
8.14 BILLION USD SAVED
1.004 BILLION VISITS

85% Time
63% Cost
63% Visits
Innovative Research

Eradication of Terrorism & Drugs

Encouraging Culture & Sports

Power of Youth

Spirit of Liberation War & Social Values

Demand-Driven Human Resource Development

Employment & Entrepreneurship

Safe Migration

16 Peace, Justice, & Strong Institutions

17 Partnerships for the Goals

10 Reduced Inequalities

15 Life on Land

13 Climate Action

11 Sustainable Cities & Communities

19 Peace, Justice, & Strong Institutions

4 Quality Education

8 Gender Equality

6 Industry, Innovation & Infrastructure

11 Responsible Consumption & Production

12 Sustainable Cities & Communities

9 Industry, Innovation & Infrastructure

1 - NO POVERTY

4 - Quality Education

6 - Gender Equality

8 - Clean Water & Sanitation

9 - Industry, Innovation & Infrastructure

10 - Reduced Inequalities

11 - Sustainable Cities & Communities

12 - Responsible Consumption & Production

13 - Life on Land

16 - Peace, Justice, & Strong Institutions

17 - Partnerships for the Goals

18 - Peace, Justice, & Strong Institutions

19 - Life on Land
STRATEGIC DIRECTIONS IN THE 8FYP

1. Leveraging Line Ministry Centric Digital Economy Opportunities

2. Adopting the Five Helix Approach

3. Establishing cooperation between Industry, Academia, and Government

4. Intellectual Asset and Local and Global Market Centric Start-up Success Creation and Youth Empowerment while leveraging on local opportunities

5. Leveraging of Redesign Capability for Creating Success in High-tech Devices and Innovation

6. Turning high-tech Parks into Nucleus of Digital, Knowledge and Innovation Economy

7. 4IR Productive Knowledge Acquisition
<table>
<thead>
<tr>
<th>STRATEGIC DIRECTIONS FOR DIGITAL ECONOMY IN THE 8FYP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Economy for Leveraging Fourth Industrial Revolution</td>
</tr>
<tr>
<td>ICT for Greater Transparency, Good Governance, and Service Delivery</td>
</tr>
<tr>
<td>Ensuring Equitable and Fair Share of Bangladesh in Global Digital Value Chain</td>
</tr>
<tr>
<td>Leveraging Digital Economy for Attaining Sustainable Development Goals</td>
</tr>
<tr>
<td>Intensifying Effectiveness and Efficiency, and Encouraging Private Investment</td>
</tr>
<tr>
<td>Developing the Culture and National Innovation System for Leveraging Knowledge Economy</td>
</tr>
<tr>
<td>Harnessing the power of ICT for revival from the effect of COVID 19 and for adaptability to shocks arising from health crisis, natural disaster, climate change, or global shift in competitive landscape</td>
</tr>
</tbody>
</table>
Broadband has become a LIFELINE for all citizens during the hike of COVID-19

- 65% of secondary and 80% of primary level students DO NOT have **affordable and reliable access to internet**
- **43M Students** and **1M Teachers** need internet access for online or remote learning
- COVID-19 has accelerated the use of **telehealth services up to 300%**
- The e-commerce market is currently worth **$2bn** with **2000** e-commerce sites
- Bangladesh has more than **650,000 IT freelancers**, the 2nd largest freelancing community (~16%) in the world, making more than **$200m annually**
- There are **32.3m** active MFS accounts and average daily transactions of **$2.1bn**. (GSMA)

**To ensure equity in accessing education, healthcare, commerce, finance and government services broadband equity is a must**
Ensuring digital access: Service at Citizens’ Doorsteps

Digital Centre: Bridging the Gap Between Digital Services and Analogue Citizens

- **Reducing TCV**
- **Establishing Gender Parity**

- 7,600 Digital Centres
- 567.57M+ Services provided
- 270+ Type of services
- 15,200 Entrepreneurs

8K+ Postal e-Centres transformed to Digital Centers by 2021
Repurposing National Call Center 333

Phone-based Services to Mitigate Digital Gap

0. get government information and services and remedy social problems;
1. get medical advice, post-vaccine services and information on health;
2. get online information and government land service;
3. get relief and other services to meet COVID crisis;
4. lodge a complaint to the appropriate authority for redress of grievances about citizens service;
5. buy medicine or daily necessities;

36 M+ Total Calls
Accessibility by Citizens

- Direct access
  - Mobile-first strategy
  - Internet
- Assistive access
  - Digital Centres
  - 333
- Disability-friendly
- Massive communication campaign

Digitization Tools and Techniques

- Rapid Digitization (50 services/month)
- Custom Digitization (50 services/year)
- Artificial Intelligence
- Blockchain

Capacity of Service Providers

- Citizen-centric thinking and design
- Institutionalization of e-Services with the Innovation Teams in every Ministry/Directorate
- Civil Service 2041 leadership development

Foundation Lego Blocks

- Citizen’s Profile with digital ID
- Workflow & consent
- MyLocker
- FinTech
- Data sharing and privacy
- Digital registries
- e-Marketplaces
- e-Learning
Leaving no Business Behind
CMSME Hub for Digital Acceleration

Digital Transformation & Simplification of G2B Services

Capacity/Skill Development

One-stop shop for CMSME

Access to Finance

Market Access & digitization of supply chain system
## Top 10 4IR Technologies for the Earth

<table>
<thead>
<tr>
<th>Name of The Technology</th>
<th>Details</th>
<th>Relevance in Bangladesh</th>
</tr>
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<tbody>
<tr>
<td><strong>Advanced Materials</strong></td>
<td>Materials with significantly improved functionality, including lighter-weight, stronger, more conductive materials, e.g. nano-materials</td>
<td>Advanced materials extend the natural life of structures, with enhanced protections, while reducing material waste. Can be used in constructing bridges, clothes, etc.</td>
</tr>
<tr>
<td><strong>Cloud Technology including big data</strong></td>
<td>Enables the delivery of computer applications and services over the internet reducing storage and computer power needs.</td>
<td>Complete digitalization of the paperwork can be done through cloud computing and big data. All digital systems will move to cloud. All decisions will use big data. Most companies use only 12% of their data.</td>
</tr>
<tr>
<td><strong>Autonomous Vehicles including drones</strong></td>
<td>Enabled by robots, these are vehicles that can operate and navigate with little or no human control.</td>
<td>Road mishaps can be reduced and emergency medical supplies can be transported in remote areas through drones.</td>
</tr>
<tr>
<td><strong>Synthetic Biology</strong></td>
<td>Inter disciplinary branch of biology applying engineering principles to biological systems.</td>
<td>Unprecedented opportunities for impact is really in agricultural and health sectors. The ability to make proteins and fatty acids - the basic components of food products - is really powerful. New organs can be synthesized.</td>
</tr>
<tr>
<td><strong>Virtual and Augmented Reality</strong></td>
<td>Computer generated simulation of a three dimensional image overlaid to physical world.</td>
<td>AR and VR can be used in entertainment industry, education, military, medical sector, construction Industry etc.</td>
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# Top 10 4IR Technologies for the Earth

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<td>Artificial Intelligence</td>
<td>Software Algorithms that are capable of performing tasks that normally require human intelligence.</td>
<td>Some specific sectors, such as services, transportation, education, agriculture, health, and environment, can be benefitted through the effective implementation of AI in Bangladesh. Bangladesh now has a National AI Strategy.</td>
</tr>
<tr>
<td>Robots</td>
<td>Electro mechanical machines that automate, augment or assist human activities by a state of instructions.</td>
<td>Robots can reduce human involvement including child labour in industries and emergency situations which are biologically harmful for human. Robots will increase productivity in lesser time.</td>
</tr>
<tr>
<td>Blockchain</td>
<td>Distributed electronic ledger that uses software algorithm to record and confirm transactions with reliability and anonymity.</td>
<td>Blockchains can be used in the banking system of Bangladesh to prohibit money laundering. All documents such as land records, education certificates can use blockchain to prevent tampering.</td>
</tr>
<tr>
<td>3D Printing</td>
<td>Additive manufacturing techniques used to create three dimensional objects based on ‘printing’ successive layers of materials.</td>
<td>3D printing can be used for educational purpose, safe construction purpose and for medical services in Bangladesh.</td>
</tr>
<tr>
<td>Internet of Things</td>
<td>Network of objects embedded with sensors, software, network connectivity that can collect and exchange data over the internet and enable smart solutions.</td>
<td>Internet of Things can be used in agriculture, tourism and hospitality sector, traffic monitoring, health sector etc.</td>
</tr>
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A Study by a2i on 4th Industrial Revolution

<table>
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<tr>
<th>5 Major Industry Sectors</th>
<th>Jobs at risk By 2040</th>
<th>Emerging Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMG &amp; Textiles</td>
<td>60% (27 lakh)</td>
<td>✓ 3D printer operator&lt;br&gt; ✓ Workers with skills on automation and robotics control&lt;br&gt; ✓ Experts on modeling and simulation</td>
</tr>
<tr>
<td>Furniture</td>
<td>60% (15 lakh)</td>
<td>✓ Ready-to-Assemble (RTA) designer&lt;br&gt; ✓ Industrial robotics control</td>
</tr>
<tr>
<td>Agro-Food</td>
<td>40% (6 lakh)</td>
<td>✓ Food technologists&lt;br&gt; ✓ Machinery Maintenance&lt;br&gt; ✓ Automate packaging operator&lt;br&gt; ✓ Industrial robotics control</td>
</tr>
<tr>
<td>Leather</td>
<td>35% (1 lakh)</td>
<td>✓ Footwear design simulation&lt;br&gt; ✓ CAD CAM Training&lt;br&gt; ✓ Pattern Making</td>
</tr>
<tr>
<td>Tourism &amp; Hospitality</td>
<td>20% (6 lakh)</td>
<td>✓ Digital marketing&lt;br&gt; ✓ Data analytics&lt;br&gt; ✓ Cyber security</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55 lakh</strong></td>
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During COVID-19, Class Conducted 1400+ Students Reached 2M+ 2020 Registered Training Service Provider 100+ Registered Industry 1000+ Registered Unemployed Youth 300K+ Government Department 10+

Incorporating new organizations

- 20+ Ministries
- 40+ Industry Association

2018 National Intelligence for Skills, Education, Employment and Entrepreneurship (NISE³)
Challenges

Skills Mismatch

- Emphasizing research and entrepreneurship in tertiary level

- Promoting STEM education in tertiary level

- Strengthening Vocational training based education

Solutions

- Develop matchmaking platform connecting Youth, Skills Providers, Entrepreneurs
- Introduce change in policy to emphasize research, entrepreneurship in tertiary level
- Conduct behavior change campaigns to change perspective towards Vocational Education
Blended Learning Framework

KEY ELEMENTS:

1. Teaching-Learning Practice
   • Prepare learners for the future with 21st century problem-solving skills through synchronous and asynchronous interactions

2. Content & Resources
   • Accessible, affordable, reusable, interactive, and personalized educational contents and resources for all.

3. Assessment (Formative/Continuous)
   • Real-time, performance based formative assessment through use of AI-driven tools

4. Teacher’s Capacity Development
   • Blended & personalized Continuous Professional Development opportunities to prepare for Education 4.0

5. Inclusive Infrastructure:
   • Digital Friendly Physical Environments:
   • Open, inclusive and accessible learning Spaces for all

ENABLING FACTORS

Policy
• Comprehensive and practitioner-driven policy

Management
• Real-time and data driven monitoring and mentoring

Partnership
• Public-private-people partnership
Evidence-based Policymaking

- Collective-19 Collective Intelligence System
- SDG Tracker
- My Constituency
- Open Government Data
COVID-19 Collective Intelligence System

Data collection
- Citizen Self-report
- Automated Contact Tracing
- Report from COVID-19 Tests
- Frontline Workers Self-report
- Report by CST

Doctors’ Pool (4,000 doctors)
- Medical advice
- e-Prescription

Data Analytics

Verification by Doctors
- High-risk cases
- Hotzones
- Recommendations

Decision making
- Dashboard for Healthcare Providers (DGHS, IEDCR, public and private)
- Medical decisions
- Dashboard for Govt. Administration (Cabinet, field admin, police)
- Admin decisions
- Multi-stakeholder Communication
corona.gov.bd
TV, radio, community radio, phone, social media
Open data fosters a culture of creativity, ingenuity and innovation.

**OPEN GOVERNMENT DATA**
Integration of agency silos to create a universally accessible data platform for citizens, researchers, private and public agencies and policy makers.

**SDG TRACKER**
Track Bangladesh’s indicator-wise SDG achievement progress through an integrated data platform and advanced analytics.

**MY CONSTITUENCY**
Accelerate the progress of Global Development Agenda constituency-wise by evidence-based development planning and decision making.
COVID-19 Socio-economic Recovery Tracker

Impact of Covid-19 on Education

35,000 Institutions  20,873,064 Students  621,158 Teachers

District wise Affected Institution

- **Chattogram District**
  - Edu. Institution: 1,283
  - Student: 1,184,208
  - Teacher: 25,102

- **Dhaka District**
  - Edu. Institution: 1,218
  - Student: 1,685,775
  - Teacher: 49,371

- **Cox's Bazar District**
  - Edu. Institution: 1,183
  - Student: 868,952
  - Teacher: 20,229

- **Mymensingh District**
  - Edu. Institution: 1,183
  - Student: 673,847
  - Teacher: 18,649

- **Dinajpur District**
  - Edu. Institution: 1,156
  - Student: 490,278
  - Teacher: 19,150

- **Rajshahi District**
  - Edu. Institution: 1,071
  - Student: 470,147
  - Teacher: 21,496

- **Jashore District**
  - Edu. Institution: 907
  - Student: 428,768
  - Teacher: 18,329

- **Bogra District**
  - Edu. Institution: 957
  - Student: 523,127
  - Teacher: 17,795

- **Tangail District**
  - Edu. Institution: 888
  - Student: 522,907
  - Teacher: 14,287

Source: BANBS and Data of higher secondary to tertiary education

Map data © OpenStreetMap contributors.
Challenges

Data availability

Data sharing hesitancy

Data anomaly and biased algorithm

Solutions

Build National Data repository

Data Sharing Policy

Regular Testing of the Process
South-South Network for Public Service Innovation (SSN4PSI)

- On the sidelines of the 71st session of the United Nations General Assembly in September 2016, establishment of a collaborative South-South Network for Public Service Innovation (SSN4PSI) was proposed by Government of Bangladesh, and UNDP administrator.
- SSN4PSI was launched at Global South-South Development Expo in Antalya, Turkey in November 2017 jointly by United Nations Office for South–South Cooperation (UNOSSC) and Government of Bangladesh.
Achievements of the Network

- 39 Countries
- 15 webinars
- 17 Initiatives Replicated
- 15 Match-making workshops
- 3 Knowledge Products
- 16 Field Visits
Paradigm Shifts for Inclusive Governance Reform

Role-reversal: Services go to citizens

Unleashing Data: Analytics for decision making

No big-bang: Bottom-up and iterative development

Gov-entrepreneurship: 'Failure is OK' and competition

Break silo: Whole-of-government and whole-of-society

End of subsidies: Business model and PPP

“Culture eats strategy for breakfast.”
Thank you