

NATIONAL DIGITAL TRANSFORMATION STRATEGY

ICT Division Reform Roadmap

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INTRODUCTION

Comprehensive Digital Governance and Reform for Bangladesh

Bangladesh is at a critical juncture in its digital transformation journey. With rapid advancements in global ICT and increasing demand for digital public services

Bangladesh is at a pivotal moment in its digital transformation journey. With rapid advancements in global ICT infrastructure and emerging technologies like AI, blockchain, and digital public infrastructure (DPI), Bangladesh must establish a robust, inclusive, and secure digital ecosystem & must adopt a **comprehensive digital transformation strategy** to drive economic growth, governance efficiency, social inclusion and ensure sustainable development.

This roadmap provides a structured timeline from 2025 to 2030 to:

- Establish interoperable digital infrastructure
- Strengthen cybersecurity & data governance
- Reform the ICT Division for efficient service delivery
- Expand digital services for citizens & businesses
- Enable a thriving digital economy & innovation ecosystem
- Upskill and expand the ICT workforce to 7-8 million professionals by 2030
- Train 20,000 cybersecurity experts by 2027, and 50,000 by 2030
- Massively upskill the RMG workforce to sustain employment amid AI & 4IR challenges
- Establish an independent Data & AI Authority under the Supreme Court to ensure data governance free from governmental, administrative, and law enforcement interference
- Adopt UNESCO AI Readiness Assessment Methodology (AI RAM) to ensure ethical AI deployment and governance

CURRENT DIGITAL LANDSCAPE & CHALLENGES

Institutional Silos & Data Fragmentation

Bangladesh's ICT ecosystem is hindered by **fragmented digital assets** across different ministries and agencies. Major data repositories—NID, BDRIS, CRVS,

Bangladesh Bank, BBS, NBR, Health MIS, BANBAIS etc.—lack secure **interoperable mechanisms**. These silos lead to:

- Redundant infrastructure and increased operational costs
- Lack of coordination among government agencies
- Citizen data vulnerabilities

Data Governance & Security Risks

Bangladesh has faced **serious data breaches**, including exposure of NID, birth & death registrations, financial transactions, and mobile banking details on the **dark web**. The lack of a structured **data protection policy** and cybersecurity framework has led to:

- **Unauthorized access & misuse** of citizen data
- **Cybersecurity vulnerabilities**, including weak firewalls and absence of a national cybersecurity response unit (CERT)
- **Mismanagement of government digital infrastructure**, leading to inefficiencies

Lack of End-to-End Digital Service Delivery

While **350+ services have been digitized**, many remain partially digital, requiring physical visits for verification and approvals. The **MyGov** and **D-Nothi** platforms have not been fully adopted across ministries, causing inefficiencies.

Digital Economy Bottlenecks

Despite hosting over **100 million digital financial accounts**, Bangladesh lacks:

- A **universal payment ecosystem** integrating banks, mobile financial services, and government transactions
- Interoperable taxation, VAT, and financial reporting mechanisms
- A **startup-friendly regulatory environment**, limiting FDI inflows

Skills Gap & Weak Policy Framework

- **Limited digital literacy & workforce capacity** in AI, cybersecurity, cloud computing, and data science
- **Outdated ICT laws** that fail to address AI, blockchain, and data protection
- **Lack of incentives for local and international ICT investment**

NATIONAL DIGITAL TRANSFORMATION STRATEGY:

VISION & KEY THEMES

Vision: "Transforming Bangladesh into a digitally empowered, innovative, and inclusive society through ICT-driven sustainable growth."

Mission: "Drive digital transformation by strengthening governance, improving service delivery, and fostering economic development through strategic ICT initiatives."

Key Themes & Strategic Objectives:

The roadmap focuses on nine core pillars:

1. **Empowering Citizens** – Expanding digital access & enhancing service delivery
2. **Efficient Government** – Strengthening digital governance & workflows
3. **Enabling Businesses** – Boosting the digital economy & startup ecosystem
4. **Interoperable Digital Infrastructure** – Implementing scalable **Digital Public Infrastructure (DPI)**
5. **Connectivity & Physical Infrastructure** – Expanding broadband, cloud computing, and 5G networks
6. **Policy & Governance** – Strengthening **cybersecurity, AI, and data governance** frameworks
7. **Massive AI-driven Upskilling & Workforce Transformation** – Ensuring sustainable employment for traditional industries and expanding the ICT workforce
8. **Independent Data & AI Authority** – A constitutional body ensuring data security, AI policy governance, and national digital architecture oversight, free from governmental and administrative control
9. **Ethical AI Deployment through UNESCO AI RAM** – Aligning Bangladesh's AI policies with global best practices to ensure transparency, accountability, and inclusivity in AI governance

REFORM ROADMAP FOR THE ICT DIVISION

A structured **6-year roadmap** (2025-2030) has been developed to guide the transformation of the ICT Division.

Phase 1: Immediate Priorities (2025-2026)

Data Governance & Interoperability

- **Launch Bangladesh National Digital Architecture (BNDA)** – Enable seamless **data exchange** among government agencies
- **Create a National Data Exchange (NDX)** – Integrate databases (NID, CRVS, financial records, tax systems)
- **Implement the Personal Data Protection Act (PDPA)** – Establish clear **data privacy & security regulations**
- **Develop a National Cybersecurity Taskforce (N-CERT)** – Strengthen cyber resilience

E-Government Acceleration

- **Digitize 800+ government services** through a unified service platform
- **Expand AI-driven automation** in public services
- **Strengthen MyGov & D-Nothi adoption** across all ministries
- **Develop a digital tax & customs system (e-Tax, e-VAT)**

Strengthening Digital Economy & Innovation

- **Launch a Universal Payment Gateway** – Enable real-time transactions across banks, MFS, & gov platforms
 - **Attract FDI in ICT & startups** by improving regulatory frameworks
 - **Establish a National AI & 4IR Hub** – Train 50,000 professionals in AI, cloud computing, cybersecurity
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Phase 2: Scaling & Optimization (2027-2028)

Digital Infrastructure Expansion

- **Full-scale rollout of 5G & fiber-optic broadband**
- **Establish a National Cloud Policy** – Secure cloud hosting for government & enterprises
- **Deploy secure, AI-driven identity verification (e-KYC, digital signatures)**

Cybersecurity & AI Regulations

- Operationalize the Cybersecurity Ordinance (2024)
- Strengthen AI, fintech, and blockchain regulations
- Implement digital forensic capabilities across ministries

Talent & Industry Development

- National Digital Literacy Program – Train 1 million youth in ICT & emerging tech
 - Revamp ICT university curricula – AI, blockchain, IoT, and digital finance
 - Create a Digital Research & Innovation Fund
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Phase 3: Full Digital Economy & Smart Governance (2029-2030)

Smart Government & DPI Deployment

- Bangladesh DPI fully operational – Digital ID, payments, data exchange
- AI-powered predictive governance – Data-driven decision-making
- Bangladesh ranks in Top 15 on UN E-Government Development Index

Digital Economy at Scale

- \$5 billion ICT export revenue
 - 50% increase in startup funding & global partnerships
 - Bangladesh established as an AI & 4IR hub in South Asia
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GOVERNANCE & IMPLEMENTATION FRAMEWORK

The reform process will be overseen by a **National Digital Transformation Taskforce (NDTT)**, including:

1. **ICT Division & Ministry of Post & Telecom** (Implementation)
2. **Bangladesh Computer Council (BCC)** (Technical support)
3. **Cabinet Division, Ministry of Finance Bangladesh Bank, NBR, BTRC**, (Financial & regulatory oversight)
4. **Chief Adviser Office (Prime Minister's Office)** (Overall Gov oversight)
5. **Development Partners (JICA, EU, UNDP, World Bank)** (Funding & knowledge sharing)

Monitoring & Evaluation

- **Biannual progress reports** tracking key ICT KPIs
 - **Global benchmarking against peers (Vietnam, Malaysia, India)**
 - **Public feedback loops** for refining policies & services
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CALL TO ACTION

The **National Digital Transformation Strategy** is a **multi-phase, structured approach** to modernizing Bangladesh's ICT ecosystem. The reforms outlined will **eliminate data silos, improve service efficiency, and foster a thriving digital economy**.

Immediate next steps:

- Finalize BNDA & NDX implementation roadmap
- Strengthen cybersecurity capabilities & AI regulations
- Drive full-scale digital governance adoption
- Adopt new Data Governance & AI Authority that remains independent of ministries.

This transformation will position Bangladesh as a **regional leader in digital innovation**, ensuring **inclusive growth, transparency, and sustainability** in the digital age.

IMMEDIATE ICT REFORM: KEY ACHIEVEMENTS & ONGOING INITIATIVES

1. ICT Master Plan (JICA Collaboration)

- An **ICT Master Plan** has been developed with JICA's assistance, outlining a **roadmap until 2030**.
- Various ministries have reviewed the plan, and the final version was submitted in **February 2025** after policy advisors' input.
- Consultation will be held with **academia, industry experts, Bangladeshi expatriate tech professionals**, and **Bangladeshi university professors abroad**.
- Coordination with **Bangladesh Bank, Ministry of Finance, NBR, and the Cabinet Division** will ensure broad stakeholder alignment.

2. Data Governance Framework (EU Collaboration)

- A **Data Governance Framework** is under development with **EU support** to enhance **data storage, transfer, and security protocols** for citizens' information.

3. Bangladesh National Digital Architecture (BNDA)

- In collaboration with the **EU EGA Team**, a **National Digital Architecture Master Plan** is being formulated.
- The **National Data Bus** will integrate **government & private organizations**, establishing a **robust digital economy foundation**.

4. Optical Fiber & Network Visibility Reform

- **Since 2017**, Summit and Fiber@Home have used BCC's fiber network but **failed to provide a digital map** or visibility reports.
- The **fiber infrastructure's operational status was unclear**, with an **imbalanced 90:10 revenue-sharing model**.
- The **ICT Policy Advisor & BCC Executive Director** have instructed the companies to submit a **digital network map, hardware inventory, router/DWDM details**, and fiber visibility reports.
- **As of January-February 2025**, all inventory data has been collected, ensuring fiber network transparency.

5. Data Center Expansion & Disaster Recovery

- BCC's **Nutanix & Huawei data centers** are at **full capacity** (memory, storage, computing power).
- Plans for **data center expansion** are underway, but **tender complexities** are being addressed.
- A **disaster recovery infrastructure expansion plan** has been developed.

6. Bangladesh Data Center Company Overhaul

- The **outdated and non-functional data center infrastructure** will be replaced with **large-scale new investments**.

7. Revising Oracle's Costly Software Agreement

- The previous government's **\$18 million Oracle contract**, deemed **against national interest**, is under revision.

8. High-Tech Park Land & Space Database

- A **transparent database** is being developed for **land & space allocation** to new entrepreneurs.

9. High-Tech Park Software Park Revival

- Agreements are underway with **BRAC & As-Sunnah Foundation** to operationalize **software parks**.

10. Startup Bangladesh: Board Restructuring & New Funding

- **Startup Bangladesh's Advisory Board** has been restructured.
- **Three companies** have completed **funding pitches**, and **Startup Summits** are ongoing in **five divisions**.

11. ICT-Based Pre-Seed Startup Funding

- The **IDEA project** has launched **SMC funding & ICT startup grants**.
- A new **policy framework** is being developed for **MOUs, lab access, and funding continuity**.
- A **National Youth Summit** is scheduled for **February 2025** in collaboration with **Startup Bangladesh & High-Tech Parks**.

12. A2i Agency Reform

- **Fast-tracked agency formation** approved by **Adviser Nahid Islam**, submitted to **MoPT**.
- Focus shifted from **non-essential projects** to **key initiatives**:
 - **D-Nothi** (digital governance)
 - **Tothyo Batayon** (government information portal)
 - **Ek-Pay** (digital payment gateway)
 - **MyGov** (government service digitization)
 - **She-STEM** (women in STEM)
- A2i is also responsible for **maintaining cybersecurity for 35,000+ government websites**.

13. National Cybersecurity Agency Reform

- **Institutional capacity-building plans** have been developed.
- A **\$12-15 million proposal** submitted to the **World Bank** for financial assistance.

14. Semiconductor Industry Roadmap

- Collaboration with **academia & industry** to develop a **semiconductor ecosystem**.
- A **\$15 million proposal** submitted to **EDGE Project** for university & industry labs.
- **Intel Corporation** and local **semiconductor startups (UlkaSemi, NeuralSemi, etc.)** are involved in project scoping.

15. Major ICT Projects Redesign

- **EDGE, EDC, HerPower, DEED, BIIT** projects **undergoing full redesign** to align with **current national needs**.

16. BCC & DoICT Restructuring

- Final discussions on **BCC & DoICT reforms** completed.
- A **finalized restructuring plan** will be submitted by **April 2025**.

17. Digital Transformation Taskforce

- **BCC, A2i & CCA** experts formed a **taskforce** to lead **digital transformation initiatives** in various ministries.
- The **first pilot projects** have been initiated with the **Ministry of Environment & Energy**.

18. National Cybersecurity Coordination

- Meetings held with **DGFI, NTMC, and Bangladesh Police** to create a **National Cybersecurity Coordination Committee**.

19. 333 & 999 Emergency Services Upgrade

- **Software & service redesign** underway with **Bangladesh Police & PMO directives**.

20. Anti-Corruption Investigations

- Internal **audit reports** on ICT project corruption **near completion**.
- A **White Paper team** led by **Prof. Niaz Asadullah** is preparing findings for submission to **ACC (Anti-Corruption Commission)**.

21. Cyber Safety Ordinance Reform

- A modernized Cyber Safety Ordinance is under revision to:
 - Remove all repressive clauses
 - Ensure legal adaptability to future tech advancements
 - Place cybersecurity governance under an independent national body

22. Personal Data Protection Act & Independent Data Authority

- The current Data Protection Act (DPA) is investment-unfriendly and places data governance under the ICT Division, conflicting with global best practices.
- Inspired by India, Sri Lanka, and Saudi Arabia, an independent Data & AI Authority is proposed to oversee:
 1. Cyber Safety Ordinance
 2. Personal Data Protection Ordinance
 3. National AI Policy
 4. Bangladesh National Digital Architecture (BNDA)

23. High-Tech Park Act Reform

- The High-Tech Park Act is under revision to align with BIDA & tech industry needs.

24. EU Collaboration for Cybersecurity Training

- A proposal to train 10,000 cybersecurity experts submitted to the EU.

25. BASIS Reform

- A BASIS restructuring proposal is under stakeholder review.

26. UNESCO AI Readiness Assessment

- UNESCO AI RAM-based assessment to be completed by May 2025.
- Domain-specific expert consultations are ongoing.

27. White Paper on ICT Corruption

- A White Paper Team is investigating mismanagement & fraud in ICT projects during the previous administration.

28. Internet Pricing & Sovereignty

- **Multi-stakeholder discussions** on reducing **internet costs** and improving **submarine cable utilization** are in progress.

29. ICT Labs for Universities & Madrasas

- **Five female dormitories at Dhaka University** equipped with **ICT labs**.
- A pilot **ICT lab** launched in a **madrasa** to expand **digital education**.

30. Project Implementation Dashboard

- A **dashboard for tracking ICT project execution & performance** is under development.

31. ICT SILO removal

- Merging iDEA project & Startup Bangladesh
- Merging soft skill development projects of BCC, DoICT & Hi-Tech Park
- Merging BCC National Data Center & Bangladesh Data Center Company (BDCCL).
- Merging BCC's NDC DR to create DR for BDCCL.
- Merging A2I & BCC's similar Software projects
 - GRP/ERP,
 - Job portal,
 - Communication tools
 - All duplicated initiatives.
- Merging all duplicated BCC & DoICT projects
 - Digital academy
 - Fiber connectivity projects
 - Labs & training centers

EGA PORJECT: E-FFECTIVE GOVERNANCE: ACCELARATING - GOVORMANET & DIGITAL PUBLIC SERVICES IN BANGLADESH



E-Governance Inception Plan

Planned activities for the Inception phase

The focus of the six-month inception phase consists in establishing the project in Bangladesh, mapping activities in all three components that feed into the implementation phase, aligning stakeholders' expectations and unpacking assumptions.

Where applicable, the activities in the inception phase will use a 7-step model:

- ✓ Defining the current situation (as-is).
- ✓ Defining the target situation (to-be).
- ✓ Defining the importance and relevance of the envisaged activities and the relevant stakeholders.
- ✓ Listing actions that are needed for achieving the target situation.
- ✓ Listing the responsible parties for actions.
- ✓ Outlining a timeline for actions.
- ✓ Informing budget planning with possible reallocations in line with needs.

The main goals of the inception phase are to:

- ✓ Discuss and agree on the goals of the project with Cabinet Division and ICT Division.
- ✓ Discuss and agree on the Project Steering Committee (PSC) and Project Implementation Committee (PIC) formation and scope with both Cabinet Division and ICT Division.
- ✓ Develop, consult with ministries, revise and submit the Technical Assistance Project Proposal (TAPP) to the Economic Relations Division (ERD) for approval.

- ✓ Formulate a detailed Monitoring, Evaluation and Learning (MEL) strategy and framework.
- ✓ If necessary, update the Description of the Action with shared vision and goals, including log frame, Theory of Change, activity workplan, timeline, stakeholder engagement plan, and budget in consultation with the EU Delegation to Bangladesh.

Component 1 — To improve the digital interaction, coordination and communication between government ministries, agencies and departments (Government to Government G2G) (led by eGA)

Situation and gaps analysis of Bangladesh's governance.

Topics include:

- Coordination and legal regulations
- Organizations-their roles, and responsibilities
- Digital data and registers
- Technical architecture including information security arrangements
- ICT and ITES procurements

Expected deliverables from inception for Component 1:

- ✓ Establish and engage task groups (e-government coordination workgroup, IT architecture and technology workgroup).
- ✓ Overview of organizational and legal set-up in the field of digitalization.
- ✓ Overview of Bangladesh's whole-of-government technical architecture and needs.
- ✓ Overview of national digital registers and data exchange.
- ✓ Overview of current ICT-related procurement mechanisms, organizations and regulations.
- ✓ Revised workplan for Component 1.
- ✓ Overview of past/ongoing/future ICT projects from other donors.

The results will be discussed and validated with the EU Delegation, beneficiaries and stakeholders including key ministries. The results will help define the scope and activities in the implementation phase.

Component 2 — To strengthen the capacities of public sector employees for improved organizational performance and public service delivery (Government to Employees — G2E) (led by eGA)

Situation and gap analysis for capacity-building in the public sector for digital transformation.

The assessment will cover the current capacity needs within the public sector, emphasizing areas such as e-procurement, data management, cyber resilience, digital services, public service delivery, and accessibility. Also, training opportunities for the public sector will be mapped. The assessment will suggest specific training needs for different roles,

groups and levels of employees in the public and HR successions/MoPA for hiring and retaining digitalization-related roles (including ICT).

Expected deliverables of the inception for Component 2:

- Establish and engage task group for capacity-building.
- Capacity-building situation and Training Needs Assessment (TNA).
- Survey for mapping training opportunities.
- Initiatives and motivation schemes for public sector HR departments/MoPA for hiring and retaining digitalization-related roles (including ICT).
- Revised workplan for Component 2. Workplan includes provisions on conducting training, pre- and post-training evaluation of participants before and after the training; integrating the training into the regular curriculum; and certification and accreditation options.

Component 3 — To improve the quality of public services and their delivery for all (Government to Citizen — G2C) (led by British Council)

The inception phase of this component will begin with the identification of a long list of potential pilot e-services (from the existing offline/manual services) drawn from government department and ministry priorities. The process of selecting pilot e-services will involve the ICT Division, Cabinet Division, eGA, British Council, and EUD in the final selection of the pilot e-services and will be based on consultation with respective line Ministries/Agencies that oversee and deliver the services in question. Previous similar initiatives undertaken by the Government and/or development partners will inform the selection process.

In addition, the inception phase will emphasize on:

- Defining citizens' e-service needs and demands, with particular attention to identifying citizens' skills and capacity-building needs, particularly marginalized populations in selected districts (see below for criteria in the selection of districts).
- Mapping ICT resources like Digital Centers and Hubs, ICT device accessibility, outreach, and operational standards in selected districts. To improve customer service, ICT resource professionals will receive capacity-building to deliver a more inclusive service addressing the needs of marginalized groups.
- Conducting field research and gathering citizen feedback to understand their demands and needs, which will inform the selection of pilot e-services in the selected districts.

Selection of pilot e-services for delivery (British Council led with input from eGA). The EUD has emphasized the importance of piloting selected e-services (among the currently existing services) within the programme. The specific number of pilot e-services will be

determined following an analysis conducted during the inception phase, but currently estimated between 3-5 services.

The selection of pilot e-services will follow a structured 3-step process:

- **First**, a comprehensive long list of potential pilot e-services will be compiled, taking into account the priorities of government departments and ministries.
- **Second**, from the long list, a shortlist of pilot e-services will be identified based on predefined criteria. These criteria will include factors such as demand, cost and time, implementation time, scalability, impact on citizens, feasibility, inclusivity, post-project sustainability, and alignment with government priorities (see below).
- **Third**, meetings will be convened with representatives from the EUD, key stakeholders, eGA, and the British Council. During these discussions, the findings of the feasibility analysis will be presented, and discussions will be held to finalize the selection of pilot e-services for project implementation.

Identification of Districts for local governance model. During the early stages of inception, we will select these districts based on the following criteria:

- Selected from the 12 established District Policy Forums (DPFs) through the EU's Platforms for Dialogue (P4D) project.
- In areas where positive working relationships between civil society and the government exist, there is potential to contribute to the proposed governance model and provide e-services to citizens even beyond the project period.
- Where networks already exist for reaching into communities, particularly marginalized groups and who have a good understanding of the socio-economic issues in their area —urban, semi-rural and rural.
- A conducive political and socio-economic environment.

Expected deliverables of the inception for Component 3

- At least three districts selected for e-governance model and as fieldwork locations for inception work analysis.
- A report on citizens/users' demands and relevance on pilot e-services.
- Plan articulated to build the skills and capacity of citizens/users to support the pilot e-services within the e-governance model in three districts.
- ICT resources — hubs and devices — capacity-building plan in support of pilot e-services in e-governance model in the selected districts.
- Comprehensive Political Economy Analysis conducted to inform change management strategies for pilot e-services.
- A report on the social, cultural and economic issues impacting on gender, people with disabilities, indigenous and vulnerable groups in access to government pilot e-services.

UNESCO ARTIFICAL INTELLIGENCE READINESS ASSESSMENT METHODOLOGY

Summary of the synthesis report (February 2, 025)

In November 2021, UNESCO's 194 Member States unanimously approved the Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2022). This global framework aims to ensure AI is developed and used in ways that maximize benefits and minimize risks. The endorsement reflects a worldwide commitment to responsible AI development.

To facilitate the practical application of this Recommendation, UNESCO developed the Readiness Assessment Methodology (RAM). This tool evaluates a country's preparedness to adopt ethical AI practice, identifying areas for improvement in institutional and regulatory frameworks. The RAM in Bangladesh was launched in July 2024 by the Information and Communication Technology (ICT) Division within the Ministry of Posts, Telecommunications and Information Technology and UNESCO in collaboration with a2i and UNDP.

RAM assesses the readiness across five dimensions:

- Legal and Regulatory
- Social and Cultural
- Scientific and Educational
- Economic
- Technical and Infrastructure

The methodology incorporates both qualitative and quantitative research methodologies with 24 indicators spanning across the aforementioned 5 dimensions with over a hundred questions pertinent to AI readiness.

Progress So Far

- Secondary Research: A thorough review and analysis of existing policy documents, academic literature, and relevant research to establish a foundational understanding of the subject matter.
- Multi-Stakeholder Focus Group Discussions: Six focus group discussions were conducted, engaging 48 people from diverse backgrounds to gather insights and perspectives on key issues.
- Key Informant Interviews: Key Informant Interviews were carried out with 10 key stakeholders, including representatives from government bodies, academic institutions, and other relevant organizations, to obtain expert opinions and nuanced understanding. Yet to conduct more before the final product is produced

AI Landscape in Bangladesh: Key Findings

Legal and Regulatory



- Bangladesh has a draft National AI Policy, which is yet to be finalized. The findings of this Bangladesh AI Readiness report will aim to further strengthen the draft National AI Policy with a focus on ensuring the equitable and inclusive development and deployment of AI technologies.
- While there is an extensive Right to Information Act, a National Data Protection Act is still in draft format.
- A Cyber Protection Ordinance is currently going through a stakeholder consultation, which includes some significant provisions regarding AI:
 - Inclusion of AI in the definition of “digital device”, especially the terms “machine learning”, “machine vision” and “large language model”. AI is also mentioned in the definition of “service providers” (those who develop AI systems are now included in the definition of service providers)
 - The ordinance outlines the redress and remedy provisions. Although the draft does not address monitoring, redress and remedy for harms caused by AI systems, chapter 6 outlines penalties for various cyber-crimes including blackmailing, cyber sextortion etc.
- According to the Cybersecurity Index Bangladesh is globally the second least cyber-secure country.

Social and Cultural

- The number of male internet users is significantly higher than the number of female internet users. Also, the number of urban internet users is much higher than the number of rural internet users. There is an urgent need to address these disparities policy wise.
- There is a greater need for training of AI systems in Bengali and other indigenous languages to ensure diversity, representation, and accessibility.
- Bangladesh scores far above the global average in the Online Services Index, which assesses the scope and quality of online services provided by a government, and is ranked very high in trust in government websites and apps.

Scientific and Educational

- Inclusivity of AI in Education System requires attention embedded by policies
 - AI ethics education is needed, while integrating AI in curriculum.
 - A survey of 1253 teachers by the ADB found that most are interested in using AI tools to enhance their teaching practices and improve educational outcomes.
 - In 2021 almost 2000 scholarly publications on AI were published in Bangladesh showing an increasing interest in AI at tertiary level.
- Digital safety, security and ethics are incorporated in the ICT course curriculum: an important step towards a safer and more secure digital space
- Bangladesh is ranked 94th out of 109 countries in data science in the Coursera Global Skills Report, which notes that Bangladesh has “noticeable gaps in tech and data science skills.”

Economic

- Bangladesh has a 0.2 per cent share of high-tech exports according to the WIPO 2023 Global Innovation Index, which ranks 104 out of 132 countries.

Technical and Infrastructural

- While mobile phones are widely spread (111 subscriptions per 100 inhabitants), only 44.50% of the population uses the internet
- Regarding co location datacenters, i.e., facilities that rent space for businesses to store their servers, Bangladesh is ranked 73 out of 76 countries
- No particular standardized protocol in Bangladesh for AI and digital technologies, such as ISO/IEC or IEEE7000, for either the technical or the ethical dimension.

Developing a national multi-stakeholder roadmap: Main AI actors in the country

In Bangladesh the IC T Division of the Ministry of Posts, Telecommunications and Information Technology primarily handles AI governance. Other key ministries such as the Cabinet, Law Ministry, Public Administration and the Home Ministry are also involved as needed. Governance efforts rely on a multi-ministry approach with vetting processes and steering committees that include representatives from various ministries.

An important actor is Aspire to Innovate (a2i) programme, located within the IC T Division and the Cabinet Division, which is a special programme towards the digital transformation of Bangladesh. a2i has successfully streamlined public service delivery for many years in Bangladesh through digital transformation and innovation. It was launched in 2007 and is funded by UNDP, the Gates Foundation and the Government of Bangladesh.

A National Steering Committee was formed, which was co-chaired by the Secretary of the IC T Division and the Head of Office and UNESCO Representative to Bangladesh and convened multiple times. Further, six FGDs and 10 KIIs have been conducted (more KIIs are currently being conducted). Plans for public consultations are underway.

Desk research and these comprehensive stakeholder consultations led to the diagnosis of the AI landscape of Bangladesh; as described above. Further analysis revealed within the AI ecosystem of Bangladesh both challenges and opportunities, highlighting potential solutions to address these challenges, as outlined below.

Challenges in AI Governance in Bangladesh

- Trust-building: Public skepticism towards previous government initiatives may affect the acceptance and implementation of new regulatory measures.
- Need for greater multi-stakeholder engagement: Diverse perspectives and expertise from academia, private sector, CSOs and representatives from local communities are helpful in policy formulation
- Insufficient data protection and cybersecurity measures: The absence of functional data protection and cybersecurity laws hinders effective regulation, transparency and accountability.



- Lack of frameworks for procurement of AI systems: Essential to develop comprehensive AI procurement policies that address both technical and ethical dimensions.
- Absence of an independent data protection and cybersecurity authority: The lack of an authority to oversee data protection and cybersecurity in Bangladesh creates gaps in regulatory enforcement, accountability and public trust.
- Lack of specialized institutions for AI: The absence of dedicated institutions focused on AI, especially on local levels, limits the capacity for localized research, data collection, development and implementation of AI solutions.

Challenges in Creating AI knowledge and competencies

- Limited awareness and understanding: There is a general lack of awareness and understanding of AI technologies, including ethics, risks, data privacy and responsible AI, among Government officials, private sector and the public.
- Digital divide: There is a significant digital divide in Bangladesh, with marginalized communities lacking access to electricity, technology and the internet, which limits their ability to benefit from AI advancements. Gender gap in technology education, particularly in STEM fields, exacerbated by potential harms and lack of safety in digital spaces, poses a significant challenge to capacity building efforts.
- Resource constraints: Many institutions face budgetary limitations that hinder the development and implementation of comprehensive capacity-building initiatives.

The challenges described before lead to the following opportunities:

- Need for comprehensive AI frameworks: Establishing regulatory AI frameworks, which include ethical guidelines and risk assessment, is essential to address the challenges of dual use technologies and innovation, ensuring that AI development aligns with societal values and needs of Bangladesh. RAM can contribute here effectively.
- Awareness and education initiatives: Raising awareness about AI technologies and their benefits as well as risks are essential and can foster public trust.
- Investment in capacity building: Investing in education and training programs will help bridge the skills gap, empowering individuals and organizations to effectively engage with AI technologies.
- Focus on inclusion: Prioritizing the inclusion of women as well as local and marginalized communities in multilingual AI initiatives is crucial for promoting equitable access to technology and enhancing overall well-being.
- Addressing infrastructure gaps: Improving infrastructure, particularly in rural areas, is vital for creating an enabling environment for AI development and investment throughout Bangladesh.
- Encouraging collaboration and innovation: Public-private partnerships, international collaborations and Government incentives and support for startups can stimulate innovation and attract investment in the AI sector, driving economic growth.

- Sustainability considerations: Integrating sustainability into AI development through alignment with the UN SDGs will ensure that technological advancements contribute positively to environmental and social outcomes.

Policy Recommendations Currently being Considered

Recommendations can be specified for a prosperous development of the AI ecosystem in Bangladesh, in line with UNESCO's Recommendation on the Ethics of AI, inferred from the opportunities outlined above and categorized by three dimensions: regulation, institutional framework and capacity building. Point to be noted that these recommendations are currently under consideration internally and will be finalized once the data analysis part of the research is concluded.

Regulation Recommendations

- Finalize and implement an inclusive, enabling, and robust National AI Policy
 - The policy may include components on ethics and human rights, which is aligned with the UNESCO Recommendation on the Ethics of AI
 - The policy should focus on the protection of cultural nuances and the languages of Bangladesh
 - The policy should include provisions for strategic investments and funding in AI research, development and deployment, with a focus on building crucial infrastructure
- Finalize the Data Protection Act and the Cyber Protection Ordinance
 - Should safeguard people's privacy, freedom of speech, and safety
 - Should mandate accountability for harassment and ensure accessible redress mechanisms
- Develop comprehensive AI procurement policies anticipating increased use of AI by government/public agencies
 - Should incorporate criteria for vendor certification, redress and compensation that emphasizes data privacy, security and ethical considerations
- Update the Right to Information Act focusing on certain key areas:
 - Broadening the scope of information and enhancing accessibility
 - Strengthening compliance mechanisms and facilitating public participation
 - Incorporating international best practices

Institutional Framework Recommendations

- Establish specialized institutions dedicated to AI development in Bangladesh, including on community level
 - Institutions could be overseen by a central "Office of AI".
 - Sub-institutions would focus on critical areas such as AI safety, ethics and the preservation of the country's cultural diversity and heritage

- Establish a multi-stakeholder steering committee
 - Will play a crucial role in overseeing AI governance and ensuring that policies reflect a wide range of perspectives and expertise
- Establish an independent Data Protection and Cybersecurity Authority
 - Develop and enforce regulations, investigate and penalize non-compliance, promote public awareness and collaborate with stakeholders
 - Ensure robust data protection, prevent harassment and abuse of women, minorities and marginalized communities in digital spaces, and promote a safer and more secure online environment for all
- Establishing a certification mechanism, factoring in ethical considerations, for AI vendors in public procurement.
 - May be driven by a committee that would help in devising such a program in line with existing procurement policies
- Develop and curate data sets in Bengali and indigenous languages

Capacity Building Recommendations

- Address digital gaps as well as lack of awareness and knowledge of AI
 - Strengthen awareness and understanding of AI technologies, particularly among rural populations, local communities and minority groups for fostering an inclusive and informed society
- Develop pertinent curricula with a special focus on addressing digital divide
 - AI and its ethical use, should be incorporated into curricula of secondary education and to be strengthened within STEM programs in tertiary education
 - Investing in reskilling and upskilling for a future-ready workforce
 - Can reduce the risk of job displacement and create new opportunities
- Alleviate bias and discrimination in AI technologies through educating stakeholders about the ethical implications of AI and the importance of inclusivity.
- Encourage investments in AI research, development and infrastructure
 - involves developing data centers, cloud computing facilities and high-performance computing infrastructure, as much as possible also outside urban areas.

INDEPENDENT DATA & AI AUTHORITY OF BANGLADESH (IDAAB)

Digital Transformation Data Vision: New Data & AI Governance Framework

The data protection laws empower the individual in more than just one way. They get a right to know about their data, its collection, storage and transfer, and also get a right of redressal in case of any violation. They are properly compensated for any data breach. Data Fiduciaries are required to protect the personal data under their control, with respect to any processing undertaken by them or on their behalf by a Data Processor, by taking reasonable security safeguards to prevent any kind of personal data breach. To achieve this an independent data authority is necessary.

ESTABLISHING AN INDEPENDENT DATA & AI AUTHORITY

Justification for a Sovereign Data & AI Authority

Bangladesh has experienced **severe data breaches**, with millions of personal records exposed. Currently, data governance remains fragmented under various ministries, with the ICT Division lacking full autonomy. Inspired by global best practices such as **India's Data Protection Board** and **Saudi Arabia's SDAIA (Saudi Data & AI Authority)**, Bangladesh must establish an **independent constitutional Data & AI Authority**, free from **governmental, administrative, and law enforcement control**, and directly under the **Supreme Court's protection**.

Mandate & Responsibilities

The new authority will oversee:

1. **Cyber Safety Ordinance** – Enforcing cybersecurity standards across all government and private sectors.
2. **Personal Data Protection Ordinance** – Regulating data collection, storage, and exchange to prevent breaches.



3. **National AI Policy** – Governing AI deployment, ensuring ethical AI practices, and mitigating AI-related risks.
4. **Bangladesh National Digital Architecture (BNDA) Bus** – Overseeing national data exchange infrastructure for secure interoperability.

The division of ICT will remain as a facilitator & co-ordinate these activities with all other ministries until a fully functioning data governance e& AI authority emerges.

Bangladesh ICT Act 2006 review as per to be newly drafted-

- a. **cyber safety ordinance,**
- b. **personal data protection ordinance,**
- c. **national AI strategy**
- d. **BNDA standards & strategy.**

Global Best Practices & References

- **India's Data Protection Board** ensures independent oversight of data breaches and privacy enforcement.
- **Saudi Arabia's SDAIA** regulates AI policies, data strategies, and privacy laws to ensure digital sovereignty.
- **European Data Protection Board (EDPB)** oversees GDPR compliance, preventing monopolization of personal data.

Benefits of an Independent Authority

- **Legal Protection & Independence:** Operates free from governmental, administrative, and law enforcement intervention, ensuring unbiased data governance.
- **Public Trust & Privacy:** Protects citizens from unauthorized data usage, ensuring full compliance with privacy laws.
- **AI Governance & Innovation:** Ensures AI policy aligns with national economic goals while mitigating ethical risks.
- **National Security Enhancement:** Prevents **foreign exploitation of Bangladeshi data** by enforcing strict security measures.



Implementation Roadmap (2025-2030)

Phase 1: 2025-2026

- Draft and pass the **Cyber Safety Ordinance** in Cabinet.
- Establish **Bangladesh National Digital Architecture (BNDA) Bus** for secure data exchange.
- Form the **Data & AI Authority Taskforce** to define legal and operational structures.
- Launch a **pilot National AI Governance Program** in collaboration with academia and industry.

Phase 2: 2027-2028

- Pass the **Cyber Safety Act** in Parliament (**Cyber Safety Ordinance converts into Cyber Safety Act when passed in the parliament**). Implement the **Personal Data Protection Act**, mandating compliance for all enterprises.
- Operationalize the **Independent Data & AI Authority** with a fully functional board and compliance mechanisms.
- Integrate the **AI Ethics & Risk Framework** to regulate emerging AI applications in Bangladesh.
- Scale **BNDA Bus connectivity across all government agencies**, ensuring seamless digital interoperability.

Phase 3: 2029-2030

- Strengthen **AI regulatory frameworks**, aligning with global best practices.
- Ensure **full implementation of data protection policies**, establishing Bangladesh as a leader in **data security & digital governance**.
- Establish **global AI research collaborations** to enhance AI-driven economic transformation.
- Achieve **Bangladesh's recognition in the Global AI Index**, positioning the country as a digital leader.

FRESH TRAGETS & TIME LINES

This roadmap provides a **structured timeline from 2025 to 2030** to:

- Establish **interoperable digital infrastructure**
- Strengthen **cybersecurity & data governance**
- Reform the **ICT Division for efficient service delivery**
- **Expand digital services for citizens & businesses**
- Enable a **thriving digital economy & innovation ecosystem**
- **Upskill and expand the ICT workforce to 7-8 million professionals by 2030**
- **Train 20,000 cybersecurity experts by 2027, and 50,000 by 2030**
- **Massively upskill the RMG workforce to sustain employment amid AI & 4IR challenges**

Strategic Vision

Vision: "Transforming Bangladesh into a digitally empowered, innovative, and inclusive society through ICT-driven sustainable growth."

Mission: "Drive digital transformation by strengthening governance, improving service delivery, and fostering economic development through strategic ICT initiatives."

Key Focus Areas

The roadmap focuses on seven core pillars:

1. **Empowering Citizens** – Expanding digital access & enhancing service delivery
2. **Efficient Government** – Strengthening digital governance & workflows
3. **Enabling Businesses** – Boosting the digital economy & startup ecosystem
4. **Interoperable Digital Infrastructure** – Implementing scalable **Digital Public Infrastructure (DPI)**
5. **Connectivity & Physical Infrastructure** – Expanding broadband, cloud computing, and 5G networks
6. **Policy & Governance** – Strengthening **cybersecurity, AI, and data governance** frameworks
7. **Massive AI-driven Upskilling & Workforce Transformation** – Ensuring sustainable employment for traditional industries and expanding the ICT workforce



TIME-BASED DIGITAL TRANSFORMATION ROADMAP (2025-2030)

Phase 1: Immediate Priorities (2025-2026)

Goal: Establish the foundation for digital governance, improve data security, and accelerate public service digitalization.

Q1-Q2 2025

- Launch **Bangladesh National Digital Architecture (BNDA)** for integrated data governance
- Establish a **National Data Exchange (NDX)** for seamless inter-ministerial data sharing
- Finalize & enforce the **Personal Data Protection Act (PDPA)**
- Strengthen **National Cybersecurity Response Team (N-CERT)** & launch cybersecurity training programs
- Initiate **Universal Digital ID (e-KYC, biometric authentication)** pilot
- Introduce **AI-driven automation** for tax filing & customs processing
- Begin nationwide **AI-driven reskilling programs** for RMG workers to sustain employment

Q3-Q4 2025

- Expand **MyGov & D-Nothi** platforms across all ministries
- Develop a **National Digital Payments Framework**, integrating banks, MFS & gov platforms
- Launch **pilot programs for AI & machine learning adoption** in governance
- Begin **5G expansion trials** in Dhaka & Chattogram
- Digital literacy initiative: **Train 50,000 professionals in AI, cloud, & cybersecurity**
- Initiate **AI-driven workforce transformation strategy** to ensure upskilling of RMG workers against 4IR automation risks

2026 Milestones

- Full-scale **interoperable DPI rollout** – Digital ID, secure payments, integrated service platforms
- Digitalize **800+ government services**, ensuring end-to-end digital processes



- Cybersecurity ordinance** finalized, ensuring compliance across ministries
 - Introduce **unified tax & financial compliance systems (e-Tax, e-VAT)**
 - Establish **AI-powered predictive governance** for data-driven decision-making
 - Scale **ICT workforce to 3 million professionals**
-

Phase 2: Scaling & Optimization (2027-2028)

Goal: Expand connectivity, optimize government service delivery, and enhance cybersecurity & AI regulations.

2027 Milestones

- Nationwide **5G rollout completed**, ensuring 95% coverage
- GovCloud** fully operational for **secure cloud-based government services**
- Implement **digital forensic capabilities** across ministries
- Establish **Bangladesh National AI & 4IR Innovation Hub**
- National Digital Taxation System (NDTS)** integrated with banking & payment platforms
- Scale up **data-driven decision-making** with real-time analytics dashboards
- Train **20,000 cybersecurity experts**
- Expand **ICT workforce to 5 million professionals**

2028 Milestones

- AI-powered automation** for land registration, transport, & healthcare
 - 100% paperless government workflow** implemented across ministries
 - Bangladesh ranks in Top 15 on UN E-Government Development Index**
 - 50% increase in startup funding & global ICT partnerships**
 - Massive reskilling programs for RMG & labor-intensive industries**
-

Phase 3: Full Digital Economy & Smart Governance (2029-2030)

Goal: Establish a mature digital ecosystem, ensuring full smart governance, economic growth, and innovation.

2029 Milestones

- All public services fully digitalized**, accessible via a unified citizen portal
 - AI-powered governance systems** deployed for real-time service automation
 - Global AI partnerships** to drive Bangladesh's leadership in 4IR technologies
 - Cyber Resilience Strategy** implemented across all ministries & critical infrastructure
 - Launch **next-gen digital payment & fintech regulations**
 - Bangladesh's ICT sector contributes \$5 billion+ in exports**
 - ICT workforce reaches 7-8 million professionals**
 - Train **50,000 cybersecurity experts**
-

AI-DRIVEN WORKFORCE TRANSFORMATION & UPSKILLING STRATEGY

RMG & Industrial Workforce Transformation

- **Introduce AI-driven automation training** for 500,000 RMG workers annually
- **Develop AI-assisted manufacturing skills programs** to sustain employment
- **Expand government-industry partnerships** for AI-integrated RMG workflows

ICT Workforce Expansion

- **Scale Bangladesh's ICT professionals from 1 million to 7-8 million by 2030**
- **Expand cybersecurity workforce from 5,000 to 50,000 by 2030**
- **Ensure digital literacy & AI training for youth in rural & urban areas**

INITIATIVE LANDSCAPE FOR ICT STRATEGIC ROADMAP

1 INITIATIVE IDENTIFICATION: GLOBAL BENCHMARKS

To identify initiatives required for addressing the focus areas defined by the stakeholders in chapter 3, we analyzed various global exemplars to understand the digital transformation journeys that they have undertaken over the years.

To ensure relevance and effectiveness, countries were selected based on two key parameters:

ICT Maturity: This parameter was assessed using global indices such as:

- ICT Development Index
- Network Readiness Index
- E-Government Development Index
- Business Ready Index

These indices provided insights into the digital maturity and technological advancements of each country.

Similarity to Bangladesh and Overall Country Complexity: Factors such as economic similarity (income levels), population density, and country size were considered. This ensured that the selected countries offered applicable lessons and strategies relevant to Bangladesh's socio-economic and cultural environment.

Based on the above parameters, the following eight countries were identified for benchmarking, offering a balanced mix of ICT maturity and relevance to Bangladesh:

A. End to end digital infrastructure

Singapore: An innovation champion and global leader in ICT maturity. Singapore serves as a north star for efficient governance, digital identity, and smart city initiatives.

Estonia: Another innovation champion, known for its inter-operable data exchanges, digital ID systems and robust e-services ecosystem.

Japan: An innovation champion in ICT maturity makes Japan a valuable benchmark.

B. Digital delivery at scale

Indonesia: An emerging player in ICT maturity. Demographic similarities with Bangladesh, coupled with its similar socio-economic status, make it a valuable benchmark.

India: India offers valuable lessons for scaling foundational digital infrastructures like UPI, Aadhaar, and BharatNet.

C. Comparable countries with inspiring journeys

Malaysia: Malaysia is a rising star in ICT maturity, significantly ahead of Bangladesh. Cultural similarities make it comparable to Bangladesh.

Vietnam: Another emerging player with socio-economic parallels to Bangladesh. Vietnam's achievements in digital transformation provide a roadmap for tackling similar challenges.

Saudi Arabia: Saudi Arabia is an innovation champion in ICT maturity. Cultural similarities make it comparable to Bangladesh.

A detailed benchmarking exercise has been done across the selected peer set to understand the ICT initiatives implemented around the globe. A **comprehensive repository of 500+ initiatives was identified** from global exemplars as a starting point for the roadmap. Below is a non-exhaustive set of benchmarks that have been considered across the 6 different themes of our roadmap.

Empowering Citizen	
Estonia 	e-Estonia Portal is a central platform for citizens to access government e-services
Malaysia 	JobsMalaysia utilizes human resources through an effective and integrated job matching process Touch 'n Go is an electronic purse application used as transit card
India 	Digital India Land Record Modernization Program helps digitize and modernize land records and develop a centralized land record management system m4Agri is a mobile pull and push-based system where agriculture-related information and advisory services can be pulled/ pushed by the farmers using their mobile phones
Singapore 	Skills Future is a national program offering credits to citizens for lifelong learning, supported by a portal providing training resources Health Hub is a one-stop access to their personal medical records, links to healthcare services and institutions and related information and tools



 <p>Japan</p>	<p>Smart City / Villages (Toyota Woven City): Fully connected ecosystem powered by hydrogen fuel cells, solar PV cells on roofs, in-home robotics for daily assistance, AI powered health sensors etc.</p> <p>Kumon Learning Model: Teaching children independent study skills and accelerating pace of learning through an adaptive, tailored curriculum</p>
Enabling Business	
 <p>Vietnam</p>	<p>National Business Registration Portal is a one-stop online platform for business registration and management</p>
 <p>Singapore</p>	<p>CentEx will house capability centers of excellence (CoEs) such as Data Science and AI, ICT Infrastructure, Application Development, Sensors and IoT, Cybersecurity etc.</p>
 <p>India</p>	<p>Startup India has rolled out several programs with the objective of supporting entrepreneurs, building a robust startup ecosystem</p>
 <p>Japan</p>	<p>Startup Development Five-Year Plan announced in 2022 to create an ecosystem for nurturing startups by promoting collaboration among industry, government, and academia, and increasing investment in startups.</p> <p>Focus sector 4IR strategies - METI 'Connected Industries' initiative promotes R&D and venture acceleration in key sectors and 4IR technologies. Launched 'Centre for 4IR Japan' with WEF to design and trial governance policy</p>
Efficient Government	
 <p>Malaysia</p>	<p>E-Perolehan allows public sector agencies to procure goods and services electronically</p>
 <p>Indonesia</p>	<p>LPSE (Layanan Pengadaan Secara Elektronik) enables Procurement of Goods/Services at the Ministry/Institution</p>
 <p>Estonia</p>	<p>e-Project Management Platform is a Platform for managing government projects</p>

	e-Estonia paperless govt. - 99% of state services can be accessed online with the goals of reducing bureaucracy, increasing transparency, and boosting growth
India 	Government e-marketplace – National e-procurement marketplace e-Office enhances the operational efficiency of the govt. by transitioning towards a "Less Paper Office"
Physical Infrastructure	
Malaysia 	Public Sector Data Center in Malaysia hosts over 1,000 servers for 120 agencies, providing centralized IT services and ensuring efficiency in government operations.
India 	Bharat Net is Indian govt. owned broadband provider for mgmt. & operation of the National Optical Fiber Network
Singapore 	Singapore implemented a private government cloud called Central G-Cloud for whole- of-government use
Vietnam 	Universal smartphone program was launched in 2020 aiming to achieve 100% smartphone penetration
Bangladesh DPI	
Singapore 	SingPass is a trusted digital identity that enables residents to access government and business services seamlessly. It is widely used in Singapore for secure and efficient transactions.
India 	Aadhaar - Biometric authentication via a Unique identification number UPI (Unified Payments Interface) is an instant real-time payment system facilitating interbank transactions through mobile phones. It has been instrumental in digital financial inclusion in India. e-Sign is an online digital signature service integrates seamlessly with various service applications to enable secure and paperless operations. Digi Locker allows citizens to access authentic digital documents through a Digital Document Wallet
Estonia 	X-Road Data Exchange Platform is the backbone of Estonian e-governance. X-Road ensures secure data exchange between agencies and systems, reducing infrastructure costs.
Policies and Governance	

Singapore 	Personal Data Protection Act (PDPA) provides baseline standards for protecting personal data and ensuring privacy
Saudi Arabia 	National Strategy for Data and Artificial Intelligence in Saudi Arabia focuses on positioning Saudi Arabia as a global hub for leading data and AI technologies
Estonia 	National cybersecurity strategy and Cyber Emergency Response Team launched in 2008

One of the key insights from benchmarking is the universal emphasis on foundational initiatives, especially the DPI stack. While the timing and prioritization of these initiatives vary, their implementation is a cornerstone for accelerated ICT development. Core components include robust digital identities, secure payment systems, and scalable data exchanges.

Based on benchmarking studies, on-ground feedback, and current work, ICT ecosystem development can be envisioned along three broad archetypes:

	Archetype 1: Early Foundational stack builders	Archetype 2: Balanced development track	Archetype 3: Decentralized development
Key Features	Complete focus on building foundational stack initially. Stakeholder focused use-cases built on top of foundational stack	Parallel development of foundational stack & stakeholder use-cases Most use cases built on top of digital ID later	Siloed development by different ministries Later, transitioned towards a foundation stack integrating various initiatives
Implementing Organization	Single organization responsible for most initiatives	No single organization responsible for all initiatives	No single organization responsible for all initiatives
Country	Estonia	Singapore, India, Malaysia	Vietnam

Many developing countries have found the Balanced Development track (Archetype 2) to be the most effective, making it the best fit for Bangladesh. This approach ensures that critical stakeholder services are delivered in the short term, while also laying the groundwork for a sustainable and scalable ICT ecosystem that can support long-term development.

2 INITIATIVE SHORTLISTING: KEY INITIATIVES FOR ICT STRATEGIC ROADMAP

The initiatives shortlisted for the ICT Strategic Roadmap are **anchored in six key guiding principles** developed through extensive inputs from diverse stakeholders, including government, development partners, and academia. These principles ensure the roadmap addresses stakeholder pain points and aligns with the current ICT maturity of key sectors, creating a cohesive, actionable, and forward-looking strategy. By shortlisting initiatives that reflect these principles, the roadmap aims to drive meaningful progress in the ICT sector over the next 6 years and meet the diverse needs of all stakeholders.

1. Prioritize Inclusivity for Universal Access:

Design ICT initiatives to be inclusive, ensuring widespread access and extending benefits to citizens across all demographics.

2. Build an Interoperable ICT Ecosystem for Seamless Integration:

Enable interoperability across datasets, platforms, and systems within the government and other stakeholders to enable cohesive, efficient, and integrated service delivery.

3. Eliminate Duplication and Embrace Minimalistic Design:

Streamline initiatives by avoiding redundancy across departments, divisions, and ministries, and adopting a minimalistic approach aligned with existing programs for efficient service delivery.

4. Adhere to Standardized Frameworks and Governance:

Ensure all ICT initiatives are guided by established standards and governance frameworks to maintain quality and ensure compliance and consistency.

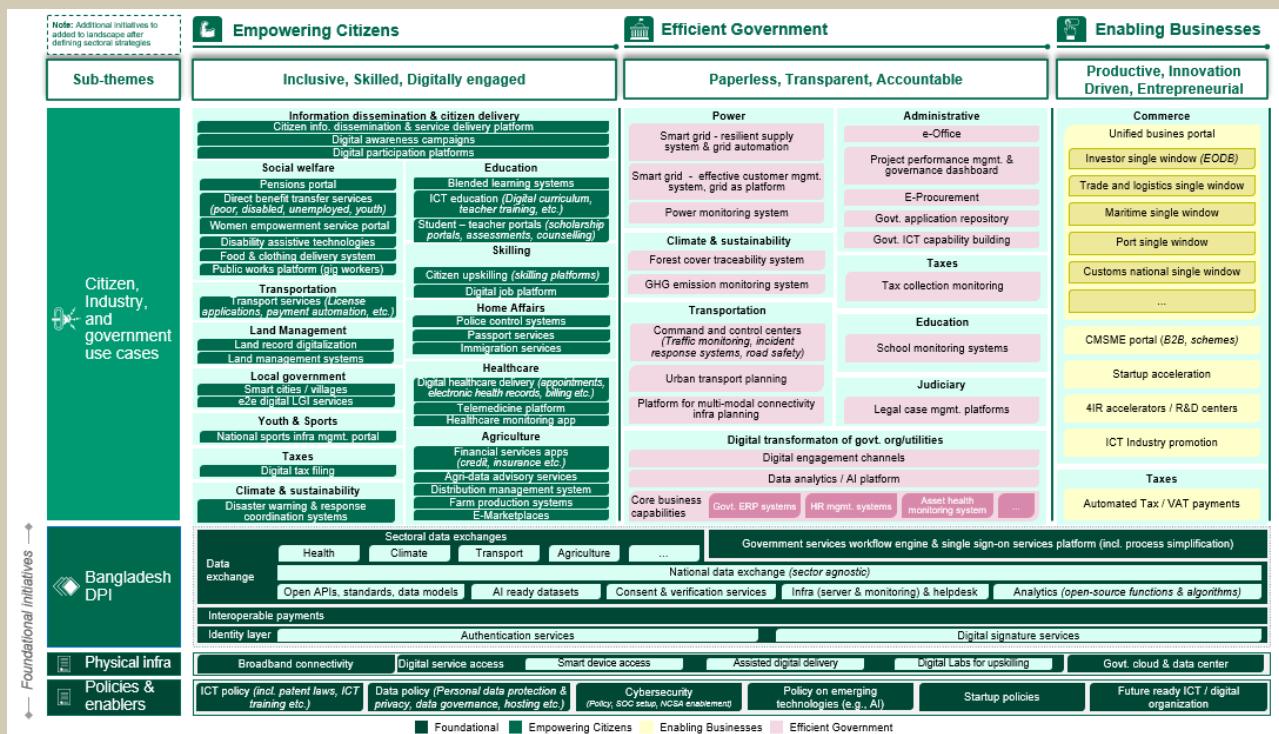
5. Drive Efficiency Through ICT-Enabled Transformation:

Leverage ICT initiatives to enhance efficiency across government operations, businesses, and citizen services by streamlining processes and optimizing resource utilization.

6. Foster Adaptability with an Open-Ended Framework:

Adopt an open-ended framework that allows for the addition of new initiatives based on ongoing stakeholder inputs and shifting priorities, ensuring responsiveness to evolving needs.

Based on the on-ground feedback, the benchmarks and current ambitions & progress, a **comprehensive set of 70+ initiatives have been laid out which constitute the holistic ICT Landscape for 2030.**

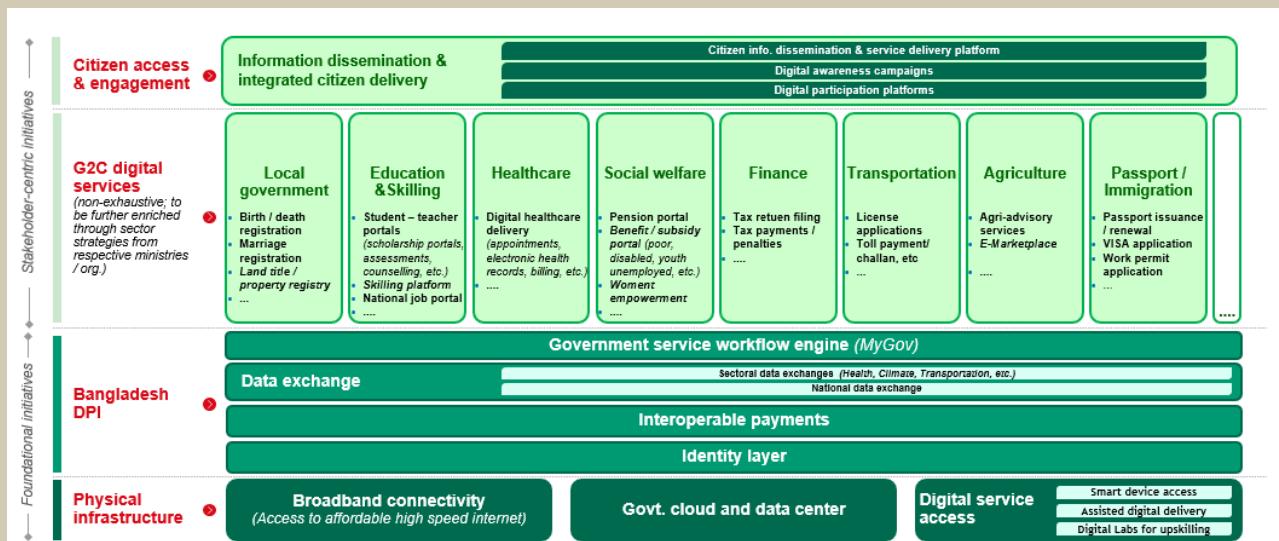


The above **ICT landscape provides a preliminary view of key initiatives**, which will be **further refined and expanded based on emerging priorities of the ICT Division and other government bodies** over the next six years. It is expected that other government ministries / divisions / organizations will prepare respective sector strategies / masterplans with ICT specific initiatives identified. This view will be subsequently enhanced based on the sector strategies / masterplans defined by relevant ministries / divisions / organizations.

The program descriptions of the 70+ initiatives have been provided in the program deep dive and appendix sections. The following section talks about how we intend to empower citizens, drive an efficient government and enable businesses. Different components of the above landscape will be utilized to drive the respective objectives of these 3 themes.

2.1.1 Empowering citizens

The key tenet of empowering citizens is to ensure they have access to e2e digital services for all government services provided. The ICT landscape drives digital inclusion and accessibility through a comprehensive mix of foundational and stakeholder-centric initiatives, ensuring end-to-end (E2E) digital services for all citizens. The citizen focused cross section of the landscape comprises of initiatives across 4 key layers:

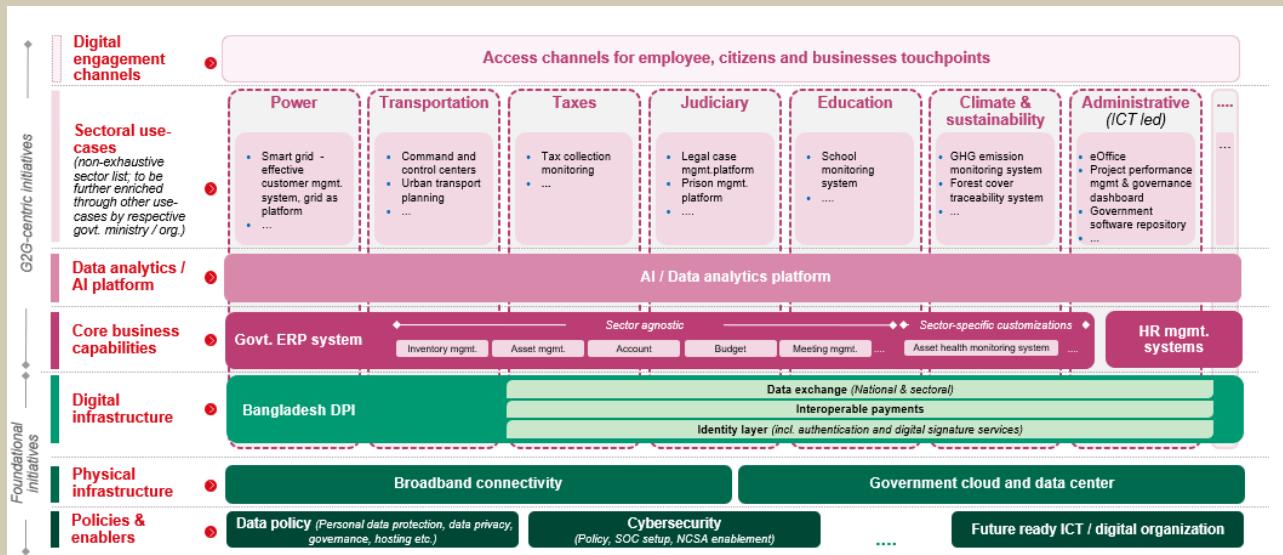


- **Citizen Access & Engagement:** Unified portal for seamless access to services and information integrated with mechanisms to incorporate citizen participation and feedback.
- **G2C Digital Services:** E2E service digitization across sectors to ensure efficient service delivery throughout citizen lifecycle. The above is a preliminary list and will be enhanced based on the sector strategies / masterplans defined by relevant ministries / divisions / organizations.
- **Bangladesh DPI:** Key foundation for interoperable digital services across ministries, enabling secure data exchange, seamless identity authentication, and integrated payment systems to streamline service delivery. Efficient interoperability ensured through a National Data Exchange for cross-ministerial use cases, supported by sectoral stacks to enable respective sector-specific applications, minimizing integration complexity for each stack while maintaining a cohesive digital ecosystem.
- **Physical infrastructure:** Inclusive digital service availability through affordable internet access, smart devices, assisted digital service delivery, digital labs, and a secure government data center to support scalable and efficient digital infrastructure. The assisted digital service centers (such as Union Digital Centers) will continue to be at the heart of ensuring access to digital services are available for marginalized communities and rural population.

2.1.2 Efficient government

The ICT landscape accelerates the digital transformation of government, ensuring efficient, transparent, and data-driven governance. A structured approach leveraging interoperable platforms, re-usable systems and automated workflows

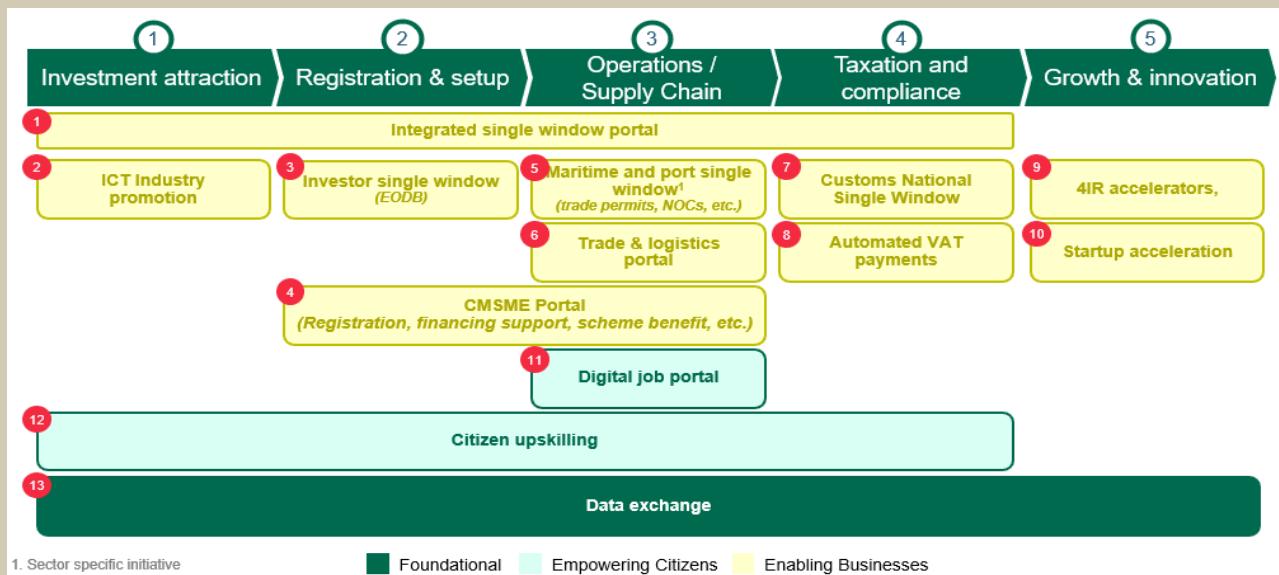
enhances public service delivery, decision-making, and resource optimization. The purpose is to drive efficiency and accountability.



- **Digital engagement channels:** Access channels for government employees, citizens or businesses.
- **Sectoral use-cases:** G2G sectoral / sector agnostic platforms for efficient decision making
- **Data analytics / AI platform:** AI-driven automation, predictive analytics, and real-time data monitoring to optimize service efficiency of core capabilities.
- **Core Business Capabilities:** Standardized critical support functions (sector agnostic capabilities), including government ERP and HR management system.
- **Foundational focus:** Secure, scalable, and interoperable government services enabled through strong foundational focus Digital Public Infrastructure (DPI), high-speed broadband connectivity, cloud and data center infrastructure, data policies, cybersecurity frameworks, and future ready ICT organization.

2.1.3 Enabling businesses

The initiatives identified in the roadmap aim to drive digitalization across the entire business value chain, fostering efficiency, innovation, and economic growth over the next six years.



3 INITIATIVE SEQUENCING

To achieve the goals set under this as explained in the previous section, there are a set of programs which should “launch” immediately in short term (2025-26), while other advanced programs will launch later in mid-to-long term (2026-2030).

This sequence of initiatives to be based on 2 key factors:

Desirability: We gauged the priority of initiatives based on input from various stakeholders in Bangladesh, which are as follows:

- **Government priorities:** Priorities expressed by various government stakeholders:
 - ICT Division / Affiliated bodies
 - Other ministries / government bodies
- **Development partner focus:** Current & future focus areas shared by development partners such as World Bank, UNDP, EU, JICA, KOICA
- **Impact on Global Indices:** Initiatives which will impact/ bring a change in Bangladesh's rank in the global indices, such as, ICT Development Index (UN), Network Readiness Index (Portulans Institute), E Government Development Index (UN), B-READY (WB)

- **Voice of citizens:** Citizen's preferences captured as per BCG's Global Digital Government Survey 2024
- **Voice of industry and academia:** Priorities expressed by business leaders (ICT industry, startups, industry associations) and academia stakeholders in Bangladesh
- **Foundational impact:** Extent to which the initiative is important for setting a strong foundation and enable other initiatives

Feasibility: Initiatives assessed on 2 criteria for ease of implementation namely:

- **Maturity of starting point (systems)/ baseline:** Maturity of existing/ planned initiatives basis List of current / ongoing initiatives shared by ICT division / other ministries and outside-in assessment of existing ICT assets
- **Speed to Implementation & Impact: Implementation period** to execute initiative and impact realization

The 70+ initiatives have been systematically sequenced based on the above desirability and feasibility parameters. To provide clarity on this evaluation process, the following example illustrates how initiatives were prioritized and categorized.

Stakeholder Desirability

Topic Area	List of Initiatives	Desirability score	Govt. inputs	Dev. partner inputs	Global indices	Citizens' Need	Industry's Need
Administrative	e-office	High	✓	✓	✓		
	e-Procurement	High	✓	✓	✓		
	Govt. ICT capability building	High	✓	✓	✓		
	HR management system	High	✓	✓	✓		
	Project Performance mgmt. & governance dashboard	High	✓	✓	✓		
Home affairs	Immigration services	High	✓		✓	✓	
	Passport services	High	✓		✓	✓	
Climate & Sustainability	Disaster warning & response coordination systems	High	✓	✓		✓	
Commerce	Single window clearances (EODB)	High	✓	✓			
	Startup acceleration	High	✓	✓			✓
	Citizen Upskilling (<i>skilling platforms, knowledge sharing platforms, digital curriculum for education in schools/colleges</i>)	High	✓	✓	✓		
Education & Skilling	Digital job platform	High	✓	✓	✓	✓	
	Fair election systems	High	✓		✓	✓	
	Citizen information dissemination & service delivery platform	High	✓	✓	✓	✓	
Electoral		High	✓		✓	✓	
Information Dissemination & Citizen Delivery		High	✓		✓	✓	
Land Management	Land record digitization	High	✓		✓	✓	
Law	Legal Case Management Platform	High	✓		✓	✓	
Power	Smart Grid (<i>Resilient supply system & grid automation</i>)	High	✓	✓	✓		
Social Welfare	Women empowerment service portal (<i>benefit delivery, grievance redressal</i>)	High	✓	✓	✓		
Taxes	Digital tax filing	High	✓	✓	✓	✓	
Transportation	Transport services (License management, payment automation, etc.)	High	✓	✓	✓	✓	✓

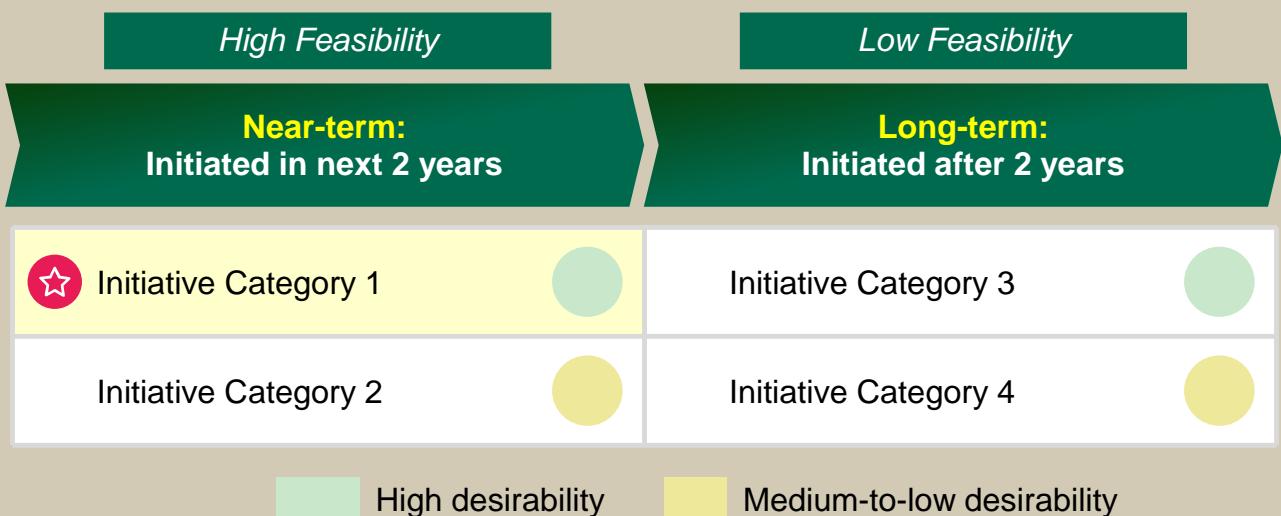
✓ Interest expressed by various stakeholders

Implementation Feasibility

Topic Area	List of Initiatives	Feasibility score	Maturity of starting point / baseline ¹	Speed to implementation & impact ²
Administrative	e-office	High	Nothi	
	e-Procurement	High	e-GP	
	Govt. ICT capability building	High	BPATC (Bangladesh Public Administration training centre)	
	HR management system	High	Govt. Employee Mgmt. System (GEMS)	
Home Affairs	Performance mgmt. & governance dashboard	High	National Dashboard Initiative	
	Passport services	High	E-Passport	
Climate & Sustainability	Disaster warning & response coordination systems	High	Climate prosperity plan 2030	
Commerce	Single window clearances (EODB)	High	Different OSS for each IPA	
	Startup acceleration	High	Startup Bangladesh; IDEA project	
Education & Skilling	Citizen Upskilling (<i>skilling platforms, knowledge sharing platforms, digital curriculum for education in schools / colleges</i>)	High	NISE, Smart Leadership Academy, and ICTD Digital Lab etc.	
	Digital job platform	High	NISE, LIMS	
Information Dissemination & Citizen Delivery	Citizen information dissemination & service delivery platform	High	MyGov	
Land Management	Land record digitization	High	E-Porcha	
Law	Legal Case Management Platform	High	E-Cause List, Amar Adaalat, Digital Court Mgmt. Info system	
Social Welfare	Women empowerment service portal (<i>benefit delivery, grievance redressal</i>)	High	HerPower, Tollfree hotline 109	
Taxes	Digital tax filing	High	E-Return, e-TDS, VAT Online	
Transportation	Transport services (Licences, applications, payment automations, etc.)	High	BRTA service portal, e-ticketing portal, etc.	

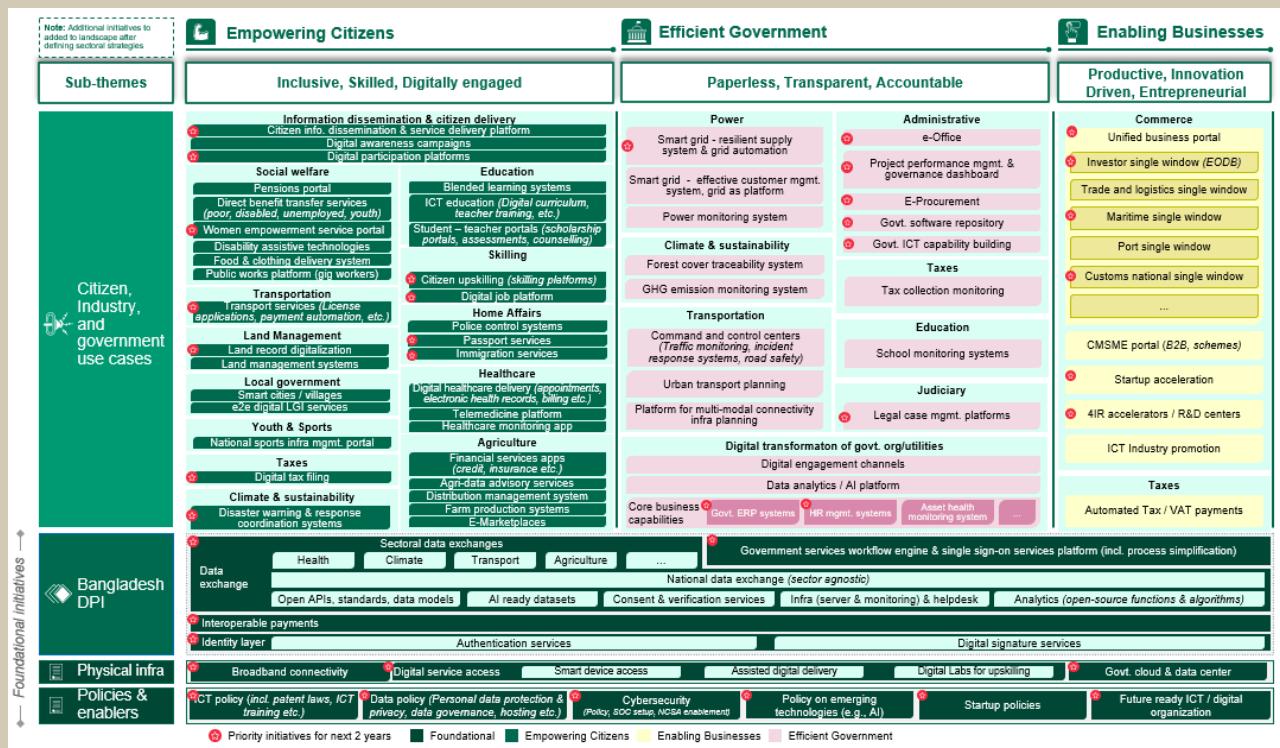
Note 1. If assets exist and don't require significant enhancements and adoption, maturity is high (green), if assets exist but require enhancements / adoption push ; medium maturity (yellow), if asset doesn't exist / in plans; maturity is low (red) 2. Time to implement / pilot for specific initiatives based on complexity, number of stakeholders involved etc.

Initiatives have been sequenced basis a combination of their categorization across desirability and feasibility parameters:



★Program deep dives developed for initiatives in the high desirability and high desirability category

Based on the above sequencing methodology, **39 initiatives have been prioritized for the next 2 years** (Category 1). The prioritized initiatives have been marked with a red star in the below diagram. The rest of the initiatives will be implemented in the medium-to-long-term starting from 2026.



List of sequenced initiatives

The detailed sequencing of all initiatives in the Strategic ICT Roadmap is as follows:

Ministry Name / Affiliate body	Topic Area	Initiated over next 2 years	Initiated after 2 years
Foundational initiatives			
ICT Division	Policies & enablers	Personal data protection act	
		Cybersecurity Policy	
		Policy on Emerging Technologies (e.g., AI)	
		ICT Policy	
		Startup Policies	
		Future-ready ICT/digital organization	
ICT Division	Physical infrastructure	Digital service access	
		Government Cloud & Data Center	
		Broadband Connectivity	

Ministry Name / Affiliate body	Topic Area	Initiated over next 2 years	Initiated after 2 years
Post & Telecom Division		Broadband Connectivity	
ICT Division	Bangladesh DPI	Identity (incl. Authentication, Digital Signature)	
		Data Exchange (incl. Open APIs, standards, data models, consent, infrastructure, analytics)	
		Government services workflow engine	
		Interoperable Payments	
Empowering citizens			
ICT Division	Skilling & employment	Digital job platform	
	Information dissemination & delivery	Citizen information dissemination and service delivery Digital participation platforms	Digital awareness campaigns
Education	Education & skilling	Citizen upskilling (skilling platforms, knowledge sharing platforms, digital curriculum for education)	Digitalized libraries
			Student teacher portal (Scholarships, counselling, assessments, teacher's portal etc.)
Ministry of Road Transport and Bridges	Transportation	Transport services (License mgmt. Portal, payment automation service for challan, tolls, etc.)	
Ministry of Health and Family Welfare	Healthcare	Digital healthcare delivery (appointments, electronic health records, hospital operations, billing etc.)	Healthcare monitoring systems
		Telemedicine platform	

Ministry Name / Affiliate body	Topic Area	Initiated over next 2 years	Initiated after 2 years
Ministry of Agriculture	Agriculture	Agri data advisory services	Financial service applications (credit, insurance etc.)
		E-Marketplaces (Accepting the purchase applications of crops, receiving exchange price and providing confirmation online)	
			Distribution monitoring systems
			Farm production systems
Ministry of Finance	Taxes	Digital Tax Filing	
	Social welfare	Pension portal	
Ministry of Home Affairs	Home affairs	Passport services	Police control systems
		Immigration services	
Ministry of Disaster Mgmt.	Climate & sustainability	Disaster warning & response coordination systems	
Ministry of Land	Land	Land record digitization	Land management systems
Ministry of Local Govt., Rural Dev., & Cooperatives	Local governance	E2e digital LGI services	Smart cities/villages
Ministry of Women and Children Affairs	Social welfare	Women empowerment service portal (benefit delivery, grievance redressal)	
Ministry of Labour and Employment	Social welfare	Public work platform (gig workers)	

Ministry Name / Affiliate body	Topic Area	Initiated over next 2 years	Initiated after 2 years
Ministry of Youth and Sports	Sports	National Sports Infra Management Portal	
Ministry of Social Welfare	Social welfare	Direct benefit transfer services (poor/unemployed/disabled/youth)	Disability assistive technologies
			Food and clothing delivery systems
Efficient government			
ICT Division	Digital transformation of govt. org. / utilities	Govt. ERP systems	
	Administrative	E-office	
		Government software repository	
		Performance mgmt. and governance dashboard	
Ministry of Public Admin	Administrative	Govt. ICT capability dev.	
	Digital transformation of govt. org. / utilities	HR mgmt. systems	
Ministry of Planning	Administrative	E-procurement	
Ministry of Road Transport and Bridges	Transportation	Platform for multi-modal connectivity infra planning	Command and control centers (Traffic monitoring, incident response systems, road safety, surveillance etc.)

Ministry Name / Affiliate body	Topic Area	Initiated over next 2 years	Initiated after 2 years
			Urban transport planning
Ministry of Finance	Taxes		Tax collection monitoring
Ministry of Law, Justice and Parliamentary Affairs	Law	Legal case management platforms	
Ministry of Power & Energy	Power	Smart Grid (Resilient supply system & grid automation)	Smart Grid (Effective Customer Management System, Integrated Renewable Energy, Grid as Platform)
		Power monitoring portal	
Ministry of Environment, Forest & Climate Change	Climate & Sustainability		GHG emission monitoring system
			Forest cover traceability system
Ministry of Education	Education & Skilling		School monitoring system
Respective ministry	Digital transformation of govt. org. / utilities	Govt. ERP systems	Digital engagement channels
			Data analytics / AI platform
			Asset health monitoring system

Ministry Name / Affiliate body	Topic Area	Initiated over next 2 years	Initiated after 2 years
Enabling businesses			
ICT Division	Commerce	4IR industry accelerators / R&D centers ICT Industry promotion (Upgrade the infrastructure of Hi-Tech Parks with high-speed internet access, uninterrupted power supply, etc.)	ICT Industry promotion (Domestic ICT spend acceleration, FDI attraction, Export promotion)
		Unified business portal (connect individual single window through data exchange for businesses to avail requisite services)	
			CMSME portals (B2B portals, schemes etc.)
		Investor single window system (EODB)	
Startup Bangladesh		Startup acceleration (FoF)	
Ministry of Finance	Taxes	Customs national single window	Automated VAT payments
Ministry of Commerce	Logistics		Trade and logistics single window
Ministry of Shipping	Transportation	Maritime single window	Port single window

PROGRAM DEEP-DIVES

This section provides a detailed deep dive of the key initiatives prioritized in the ICT Strategic Roadmap 2030.

Each priority initiative in the ICT Strategic Roadmap has also been mapped to relevant SDG goals, highlighting its contribution to sustainable development. This alignment ensures that the roadmap supports national and global objectives, addressing areas such as economic growth, industry innovation, reduced inequalities, and climate action. By linking initiatives to SDG goals, the roadmap reinforces its commitment to driving impactful and inclusive progress.

4 BUILD STRONG FOUNDATION

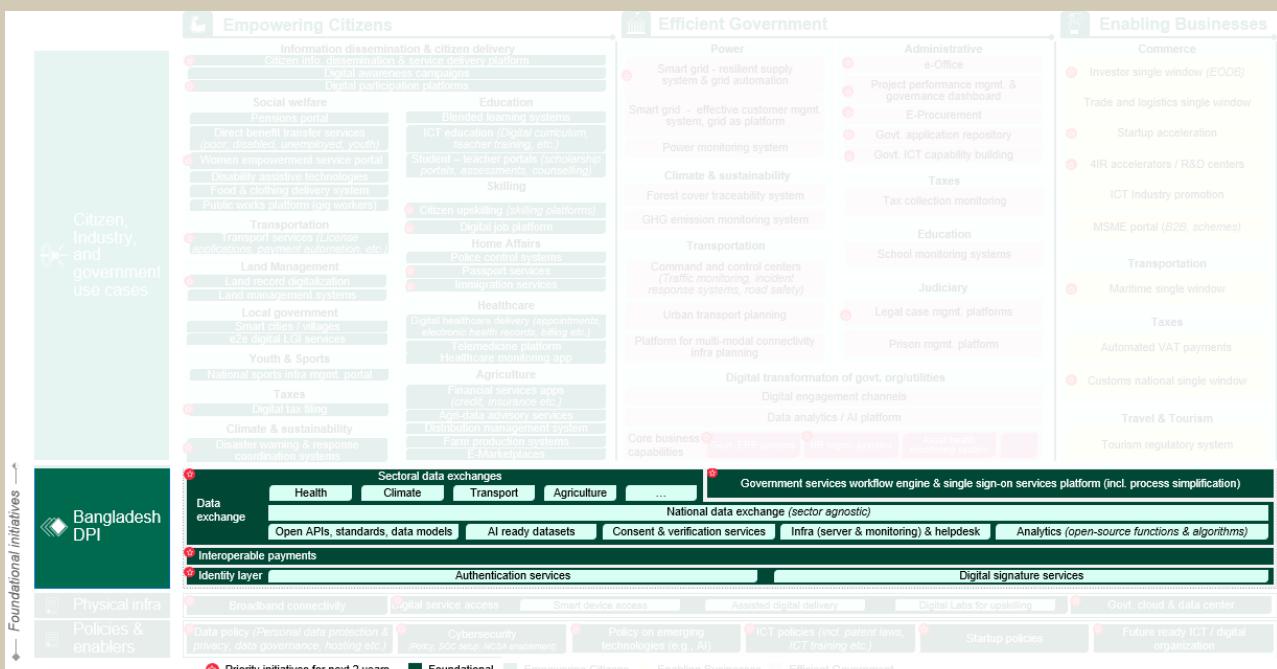
Based on extensive consultations with multiple stakeholders, **there is a clear consensus on the priority of foundational initiatives for Bangladesh's ICT ecosystem**. Given the strategic importance of these initiatives, this section will further outline the status, challenges, global benchmark examples, strategic choices and target activities for these foundational initiatives to drive digital transformation across the country.

Foundational initiatives like DPIs, physical infra & policies emerge as definite near-term priority areas basis stakeholder discussions

Topic Area	Initiative name	ICT Division inputs	Dev. partner inputs	Global indices	Citizens' Need	Industry's Need
Bangladesh DPI	Identity Layer (incl. authentication, e-sign etc.)	✓	✓		✓	
	Inter-operable payments	✓	✓	✓	✓	
	Data exchange (open API, consent services, AI ready datasets etc.)	✓	✓			
Physical infra	Government services workflow engine and single sign-on services platform	✓	✓	✓		
	Broadband connectivity	✓	✓	✓	✓	✓
	Cloud and data centers	✓	✓	✓		
Policies and enablers	Device access	✓		✓	✓	
	Personal data protection policy (incl. data exchange governance, cloud hosting etc.)	✓	✓	✓		✓
	Cybersecurity policy	✓	✓	✓		✓
Policy on Emerging technologies (AI, etc.)	Policy on Emerging technologies (AI, etc.)	✓	✓	✓		✓
	ICT policies (roadmap for ICT transformation)	✓	✓	✓		✓
	Startup policies	✓	✓			✓
	Future ready ICT / digital organization	✓	✓			

4.1.1 Bangladesh DPI

The Bangladesh Digital Public Infrastructure (DPI) forms the backbone of secure, interoperable, and accessible digital services. It consists of four core initiatives: **Identity Layer, Interoperable Payments, Data Exchange, and Government Service Digitization Engine.**



4.1.1.1 Identity layer

Context: A universal digital ID will enable powerful use-cases across multiple aspects of a Bangladeshi's life. As per benchmarks, Bangladesh can aspire to target economic value impact of up to 6% of GDP by 2030 through implementation of a universal digital ID. Implementation of a digital ID can enable benefits across multiple stakeholders shown as follows: -

 Consumer	 Citizen	 Government	 Business Owner	 Employees
<ul style="list-style-type: none">• Superior UX during registration and authentication → eKYC enables a plethora of services to go completely digital (e.g., bank services)• Enhanced privacy by reducing data oversharing• Reduced identity theft and thus less susceptible to fraud• Reduced time spent preparing necessary data for authentication	<ul style="list-style-type: none">• Streamlined access to govt services (e.g., tax filing, registrations, permit application, access medical records etc.)• Direct disbursement of government benefits with enhanced punctuality• Easier to fulfil civic duties, such as through digital voting• Greater access to govt. services, especially for those in rural areas	<ul style="list-style-type: none">• Facilitates eKYC which will be an enabling foundation to accelerate government's digital agenda• Improved productivity & reduced cost in govt. service delivery through online services• Reduced budget leakage through more surgical disbursement of welfare benefits• Improved government revenues through better tax collection	<ul style="list-style-type: none">• Increased revenues (better understand customer preferences, etc.)• Improved productivity & reduce cost by automating transactional activities like background checks• More business opportunities through digital and app economy boost• High assurance contracting and transacting	<ul style="list-style-type: none">• Automated background verification• Efficient payroll system• Facilitated talent mapping

Current State: The National Identity card (NID) is a mandatory, biometric, microchip-embedded smart identity card issued to every Bangladeshi citizen above 18 years old. It is required for access to most essential public and private services, including voting, issuance of passport, driving license, SIM card registration, opening a bank account, filing taxes, etc. Over 70% citizens above the age of 18 have been issued an NID. A digital identity can be used for 2 important use-cases – e-authentication and digital signatures. Currently, NID can facilitate e-KYC services and for digital signatures.

e-KYC authentication services in Bangladesh are facilitated through a 3rd party which is the offering identity verification APIs. Currently these services are widely used by the govt., banks, NBFI, MFS/PSP, brokerage houses, etc.

NID is used in the registration and identity verification process for digital signatures. Users authenticate their ID via NID, followed by cryptographic signing through certified ESPs, which issue unique digital certificates to ensure document authenticity and integrity

Challenges: Key challenges faced by the NID system currently include:

1. **Cybersecurity challenges:** 5 Cr+ citizens' personal information, including their full names, phone numbers, email addresses and National Identification (NID) numbers were exposed from the NID website in 2023
2. **Limited adoption:** Due to the lack of a nationwide mandate on NID registration, and need for physical registration, marginalized communities fail to register for an NID, restricting access to essential services.

3. **Gaps in universal coverage:** Since NID was designed for voters, it does not cover population below the age of 16, limiting its ability to function as a universal digital ID for all citizens
4. **Limited integration with other existing digital IDs:** NID lacks integration with other IDs in Bangladesh such as CRVS to function as a universal digital ID for citizen identification and access to services. There is also limited integration between different NID conventions (10 digit, 13 digit, 17 digit) across service offerings.
5. **Gaps in service integrations:** Gaps exist in the linkage of NIDs as a universal digital ID for comprehensive access to services. For instance, the absence of parent-child linkage in NID data creates challenges in the disbursement of social safety net benefits
6. **Need for Access Control:** There is a need to develop a consent mechanism for citizens to control access (limit/revoke) to their NID data for availing services
7. **Incorrect details:** Incorrect details in issued NIDs, mismatches between other documents such as passport, educational certificates, etc. and significant number of pending correction applications create challenges for citizens to access services through NID

Learnings from benchmarks: Bangladesh can draw learnings from digital identity systems of Estonia, Singapore, and India

Program	What is it ?
 Estonia eID	<ul style="list-style-type: none"> Digital ID streamlines access to e-commerce, banking, govt services etc. Based on single repository of citizens' data that public and private organizations can access Underlying data controlled by individual citizen Public and private organization access to centralized data through secure data sharing network ("X-road")
 Singapore NDI (Singpass/MyInfo)	<ul style="list-style-type: none"> Residents and businesses use NDI to transact digitally with the government and private sector NDI builds on two existing digital ID programs: <ul style="list-style-type: none"> - SingPass: Authentication system allows citizens to use single ID to access government services - MyInfo: Service allows SingPass users to auto-fill selected attributes onto forms online
 Aadhaar, India	<ul style="list-style-type: none"> Largest biometric identity program in the world (~1.2B Indian citizens and residents) Authentication process includes 12-digit ID number, photo, biometric data (i.e., fingerprints and iris scans) Designed to mitigate fraud, waste, and abuse in social programs Encompasses 3.5K+ government/non-gov't services

Recommendations for Bangladesh: Bangladesh needs to follow a 3-step process to establish a universal digital ID for all citizens: -

- Establish universal digital ID:** Develop a foundational digital ID from scratch or expand NID for all citizens to be used as a single source of truth for identification and for access to services
- Establish interoperability between all functional IDs:** The universal digital ID must be integrated with the help of the National E-service bus with all functional IDs in Bangladesh such as birth, NID, health ID, education ID, etc.
- Expand coverage:** Expand the coverage of the digital ID to 100% of citizens ensuring the registration of marginalized communities.

Program Components

Bangladesh must launch a program including several components:

Program objectives	
To create a single source of truth for all citizens through a unified foundational digital identity	
Program targets	
2026	2030
<ul style="list-style-type: none"> Launch Universal Digital ID for all citizens >25% Digital ID adoption 	<ul style="list-style-type: none"> Digital ID integrated with all existing citizen IDs >60% universal digital ID adoption 6-8% GDP savings enabled
SDGs impacted	
<ul style="list-style-type: none"> SDG 8: Decent Work & Economic Growth SDG 10: Reduced Inequalities SDG 12: Responsible consumption & production SDG 16: Peace, Justice, and Strong Institutions 	
Program execution & ownership	
Lead Agency	Election Commission,/ Cabinet Division
Implementing Body	ICT Division (Bangladesh Computer Council)
Funding Partner	World Bank

Implementation Tracks	
Components	Activities
Program design and governance	<ul style="list-style-type: none"> ▪ Drive interoperability between existing IDs through the National e-Service Bus ▪ Set up Digital ID governing body and operating model to drive ongoing enrolments and adoption ▪ Finalize target design and strategy of universal digital ID program ensuring complete linkages with existing IDs and services ▪ Engage with private sector, academia and civil society to co-create solution ▪ Conceptualize and develop digital ID enabled authentication and trust services – eSign, e-KYC, eAuth, verifiable credentials, etc. ▪ Ensure proper regulation of digital identity network with respect to security, adherence to norms, personal data protection, usage of digital signature etc.
Enrollment track	<ul style="list-style-type: none"> ▪ Develop / scale Digital ID infrastructure (<i>biometric matching system, APIs and integrations, data hosting etc.</i>) ▪ Ensure certification of digital ID systems, processes, and personnel to maintain security and reliability ▪ Mandate nationwide digital ID enrollment, launch awareness campaigns, and deploy mobile units for inclusive registration from underserved population
Data and platforms track	<ul style="list-style-type: none"> ▪ Create underlying platform to enable interoperability in registrations and enrolment, efficient capture & storage of data as well as harmonization with existing ID conventions (<i>in case of scaling NID</i>) ▪ Link all citizen centric datasets (whole-of-government and select private sector data) to Digital ID
Service Provider track	<ul style="list-style-type: none"> ▪ Formulate service provider strategy for Digital ID system ▪ Run competitive process for service provider selection, e.g., through pilots, PoCs and RFP processes ▪ Onboard service provider, establish SLAs and enable infrastructure for smooth operations, e.g., nationwide enrolments, system support, etc.

4.1.1.2 Interoperable Payments

Context: A strong digital payments infrastructure is essential for financial inclusion, economic efficiency, and digital transformation. A comprehensive interoperable payment system will enable seamless transactions across banks, mobile financial



services (MFS), and merchants, fostering a more inclusive and digitally enabled economy.

Current State: Bangladesh has made notable strides in digital payments and financial interoperability. Two notable platforms that have contributed to this development include BD-RTGS, facilitating high-value transactions, and NPSB, ensuring inter-bank connectivity across ATM, POS internet banking. Various new initiatives have also been launched in recent years such as Takapay, a national interoperable card scheme aiming to onboard 40+ banks by 2025, and BanglaQR, a unified QR-based merchant payment system, introduced to streamline digital merchant payments with 50% adoption across banks in the country. Further, the Integrated Digital Transaction Platform (IDTP) was launched in 2022 to enhance interoperability and fund transfer across MFS providers, PSPs, and banks. As of June 2024, the platform has onboarded 12 banks and 3 MFS providers and 1 PSP as of July 2024.

Challenges: Despite initial rollout, these platforms face challenges that hinder wider adoption and growth:

1. **Low Financial and Digital Literacy:** Limited understanding of digital financial services among the underbanked population
2. **Infrastructure Limitations:** Low smartphone penetration and high data costs hinder adoption, particularly in rural areas.
3. **Awareness and Marketing Gaps:** Insufficient marketing efforts to drive awareness and usage among underserved communities
4. **Limited Merchant Adoption of Bangla QR & IDTP:** High transaction costs discourage small businesses from adopting digital payments.
5. **Regulatory & Policy Barriers:** Need for policy resolutions for effective rollout of IDTP
6. **Lack of Incentives for Digital Transactions:** Merchants and consumers require discounts, tax benefits, or cashback incentives to encourage cashless payments.
7. **Limited Integration Across Payment Ecosystem:** Banks, mobile wallets, and financial institutions are not fully interoperable, reducing seamless transaction capabilities

Learnings from benchmarks: UK and India took different approaches to payment interoperability; Bangladesh can draw significant learnings from both countries.

	What did they do ?	What are the learnings ?
India	<p>Shifted from national ownership model (RBI) to mutual ownership of payments regulator and operator (NPCI)</p> <p>Built unified payments infrastructure (UPI) over the digital identity layer to boost P2P/P2M payments</p> <p>Allowed FinTechs to access UPI infrastructure w/o bank ownership, leading to TPAPs driving UPI transaction volumes</p> <p>Developed UPI 2.0 with additional features such as linkage with overdraft accounts, pre-authorized payments, invoice verification, merchant QR authentication, etc</p>	<p>P2P/P2M interoperability through unified payments infrastructure integrating all banks uplifts digital transactions more than other use-cases (e.g., G2P, G2G, etc.)</p> <p>Mutual ownership of payments operator ensured good buy-in from banking players for UPI</p> <p>Allowing TPAPs without bank ownership to access interoperable payments infrastructure is critical to drive volumes of interoperable payments</p>
United Kingdom	<p>Evolved from mutual bank ownership to commercial / private ownership of payments infrastructure (e.g., payments operator Vocalink owned by Mastercard)</p> <p>Infrastructure ownership commercialized to increase competition and lower transaction costs</p> <p>Consolidated all interoperable payment schemes (P2M, P2P, A2M, G2B, B2B, etc.) into single operator – Pay.UK</p>	<p>Strategic focus of payments ecosystem on innovation and new product development translates to high value for consumers</p> <p>International expertise of payments infrastructure owner enables high interoperability and system stability</p>

Program Components

Bangladesh must launch a program including several components: -

Program objectives	
Develop a fully integrated, interoperable digital payment ecosystem to ensure seamless financial transactions, enhance financial inclusion, and drive cashless payments across Bangladesh.	
2026	2030
<ul style="list-style-type: none"> ▪ Onboard 60+ banks on the Takapay platform ▪ Launch revised IDTP solution 	<ul style="list-style-type: none"> ▪ 50% of all digital transactions facilitated through IDTP ▪ 200 Mn average monthly transactions on IDTP
SDGs impacted	
<ul style="list-style-type: none"> ▪ SDG 8: Decent Work & Economic Growth ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 10: Reduced Inequalities ▪ SDG 12: Responsible consumption & production 	

Program execution & ownership	
Lead Agency	Bangladesh Bank
Implementing Body	To be decided
Funding Partner	To be decided
Implementation Tracks	
Components	Activities
Governance	<ul style="list-style-type: none"> ▪ Set up governing body, formed as a consortium of various financial institutions (Bangladesh Bank, other banks, MFSs, regulators, etc.) to manage and regulate digital payments ecosystem in Bangladesh ▪ Resolve policy / regulation challenges with IDTP prior to large scale rollout
Technology enhancements	<ul style="list-style-type: none"> ▪ Scale existing IDTP technology infrastructure, enhancing system interoperability and security ▪ Develop additional in-demand features such as overdraft account linkages, pre-authorized transactions, merchant QR authentication, etc.
Adoption Incentives	<ul style="list-style-type: none"> ▪ Scale adoption through pricing rationalization, merchant subsidies and targeted onboarding of financial institutions ▪ Allocate budget for nation-wide promotional activities and awareness campaigns to drive end-user adoption ▪ Incentivize digital transaction adoption through initiatives such as cashback programs, tax benefits, etc. to shift consumer behavior away from cash-based payments.

4.1.1.3 Data exchange

Context: A data exchange allows data sharing between previously unconnected institutions enabling interoperability and delivery of citizen services digitally fostering innovation and inclusive socio-economic development. Specifically in the govt. services sector, data exchanges have played a key role in digitizing public service delivery resulting in significant GDP and time savings while enabling innovative citizen-centric use cases.



Government services		Agriculture	Healthcare	Water Management	
National e-Service Bus	X-Road	APEX	KAOP	My Health Record	Water Point Data Exchange
<ul style="list-style-type: none"> Enabled the digital verification of 120 Mn citizens for the delivery of Surokha vaccine in COVID-19 	<ul style="list-style-type: none"> Facilitated the digitization of 99% (3000+) govt. services in Estonia saving 1000+ working hours annually 	<ul style="list-style-type: none"> Facilitated interoperability across 45+ govt. ministries enabling digital delivery of 220+ govt. services 	<ul style="list-style-type: none"> Provided agriculture data-advisory services to 250,000+ farmers in digitally underserved areas in Kenya 	<ul style="list-style-type: none"> Enabled the creation of 24+ Mn digital health records adopted by ~100% of health institutions in Australia 	<ul style="list-style-type: none"> Enabled a 25% increase in water accessibility in Sierra Leone through water point data use-cases

Current State: The National e-service bus is a centralized middleware platform, launched in 2017 by Bangladesh National Digital Architecture (BNDA) under the Bangladesh Computer Council (BCC) to promote data sharing among government ministries. Currently, it has 3 major service providers onboarded, National ID, Birth Registration and Bangladesh Telecommunication Regulatory Commission (BTRC), as well as 25+ service consumers using the platform such as MyGov, D-Nothi, e-Mutation system, etc. facilitating various G2G, G2B & G2C services. e-Service Bus played a key role during COVID-19 by verifying NID data of 120 Mn citizens for the delivery of Surokha vaccine facilitating up to a peak of 4 Mn transactions in a day.

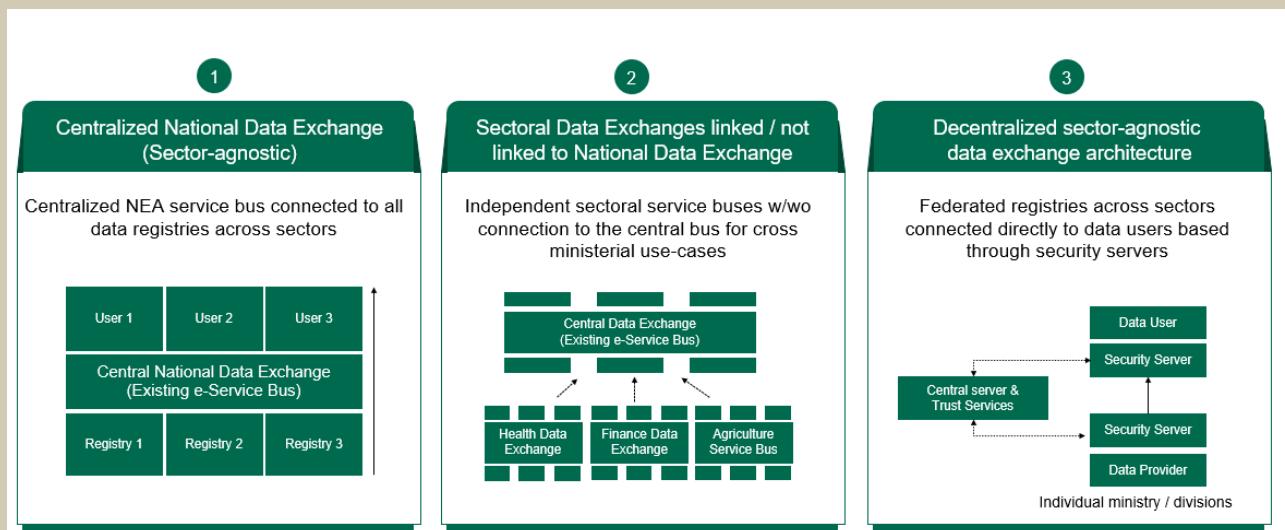
Challenges: Key challenges faced by Bangladesh's e-Service Bus currently include:

1. **System Disruptions:** Centralized architecture possesses the inherent risk of a single point of failure resulting in 2-3 system shutdowns for e-service bus in a year
2. **Data Security risk:** System has higher cybersecurity risk due to the presence of a single centralized point of breach
3. **Data Privacy risk:** Absence of a consent mechanism prevents users from having the right to control access to their data
4. **Limited adoption:** Absence of an active data protection policy, a centralized usage mandate or an incentivization mechanism limits adoption from govt. ministries

Learnings from benchmarks: Bangladesh can draw significant learnings from data exchange systems of Estonia, Singapore, India and Malaysia

Parameters	Learning from benchmarks	My GDX	APEX Singapore	X-Road	Account Aggregator
Sectoral Focus	• Sector-agnostic/Sectoral	• Sectoral (govt. services)	• Sectoral (govt. services)	• Sector-agnostic	• Sectoral (financial services)
Technology	• Centralized systems have higher failure risks, are more expensive to scale, but more affordable to set up and maintain	• Decentralized	• Centralized	• Decentralized	• Decentralized
	• Integrate a consent mechanism for access control	✓	✓	✓	✓
	• Use secure data sharing protocols	✓	✓	✓	✓
	• Encrypt data during transit				
	• Authenticate transactions				
	• Maintain audit logs				
Apex Body	• Independent body under ministerial/cabinet oversight	• MAMPU ¹ under the oversight of PM Department	• GovTech, under the oversight of PM Office	• NIIS ² under the oversight of the MEAC	• Sahamati, an institutionalized body of FIPs ³ FIUs, regulators, etc.
Regulatory Policy	• Governed in accordance with the National Personal Data Protection Act (PDPA)	✓	✓	✓	✓
Adoption	• Significant number of organizations (public and private) onboarded	• 172 agencies / consumers	• 45+ govt. agencies	• 450+ public & private orgs.	• 400+ FIUs & 100+ FIPs ³

Design choices for Bangladesh: There exists **three architectural design choices** for scaling data exchange platform:



Developing sectoral data exchange (health, agriculture, climate, etc.) linked to the national sector-agnostic data exchange is the most feasible option for Bangladesh. This design choice mitigates the inherent risks associated with a single point of failure for a fully centralized system while also being economically more feasible than a fully decentralized solution requiring set up of security server for each participant.

Program Components

Bangladesh must launch a program including several components:-

Program objectives	
Design a scalable data exchange network for enabling interoperability between all govt. ministries and power individual sectoral use-cases at a national scale	
Program targets	
2026	2030
<ul style="list-style-type: none"> ▪ 2 sectoral data exchanges integrated ▪ 25+ use-cases enabled ▪ 100+ Mn average monthly transactions 	<ul style="list-style-type: none"> ▪ 5 sectoral data exchanges integrated ▪ 100+ use-cases enabled ▪ 500+ Mn average monthly transactions
SDGs impacted	
<ul style="list-style-type: none"> ▪ SDG 8: Decent Work & Economic Growth ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 16: Peace, Justice, and Strong Institutions ▪ SDG 17: Partnerships for the Goals 	
Program execution & ownership	
Lead Agency	<p>National data exchange: ICT Division</p> <p>Sectoral data exchanges: Respective ministries / Cabinet division</p>
Implementing Body	<p>National data exchange: Bangladesh Computer Council</p> <p>Sectoral data exchanges: To be decided</p>
Funding Partner	JICA, EU

Implementation Tracks	
Components	Activities
Governance	<ul style="list-style-type: none"> ▪ Institutionalize apex body to manage & regulate the network ▪ Define operating model, organization structure and a sustainable business model ▪ Develop data exchange governance policy and institutionalize governance mechanism in accordance to it and the Personal Data Protection Act ▪ Introduce consent mechanism to provide data owners explicit control over their personal data usage ▪ Develop data governance model ensuring data providers deliver consistent, well documented, quality usable data to enable advanced use-cases, including AI ▪ Develop governance mechanisms enabling and regulating cross-border data flow in line with DFFT principles
Technology	<ul style="list-style-type: none"> ▪ Finalize architectural design choice for national data exchange and sectoral stacks ▪ Define open standards for enabling interoperability and seamless API integrations ▪ Adopt Privacy-by-Design principles and data security mechanisms for enhancing data protection ▪ Develop required IT and data hosting infrastructure for scalability (Cloud/Server). Provide helpdesk support for ecosystem concerns & grievances ▪ Develop data analytics, predictive AI analytics, proprietary tools support, etc. on existing data to enhance usability of data for innovator ecosystem
Adoption	<ul style="list-style-type: none"> ▪ Issue institutional mandate and incentivization to govt. ministries for usage for all data sharing purposes ▪ Invite private sector participation to develop innovative citizen-facing use-cases ▪ Conduct awareness campaigns and provide targeted nudges to boost citizen use-case adoption ▪ Enable adoption through development of demand driven ICT use-cases such as Digital identification and document storage

	(Bangladesh Vault), Government code repository, etc. over data exchange platform
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4.1.1.4 Government services workflow engine

Context:

The increasing frequency of usage of digital government services in Bangladesh reflects a growing reliance on these platforms, with a significant portion of the population (82%) using digital services at least once a week. However, despite the rise in usage, citizen satisfaction has dropped for major e-services between 2022 and 2024, as highlighted in the citizen survey.

This suggests that while the adoption of digital services is increasing, many services still lack full end-to-end (E2E) digitization, leaving citizens dissatisfied with incomplete or fragmented service delivery.

Current State:

The Service digitization journey in Bangladesh has been evolving over the past decade, aiming to streamline government service delivery through digital transformation. The journey began with the Forms Portal in 2012, which provided a centralized repository for government forms. In 2017, the EkSheba portal was launched to facilitate online form submission, although it still involved manual processes. In 2019, the MyGov platform was introduced, offering partial service digitization, with services redirected through Nothi. By 2023, a more comprehensive Process Digitization Engine was implemented, focusing on end-to-end (E2E) service delivery of basic services, with a Cabinet mandate to ensure full adoption across departments. Currently, three process engines currently developed under MyGov platform for service digitization:

- **E-filing:** Over 20+ modules for digitizing simple service workflows (e.g., form correction, payment, routing to concerned officer, and push to D-Nothi for approval).
- **File Tracker (Service Tracking):** Unique tracking for manual document workflows for select services (e.g., Trade Registration).
- **E-Apostille:** Online document/ certificate verification for students traveling abroad, integrated with Education Ministry, Police, Universities, etc.
- **E-Ticketing:** Enable online ticket booking for archeological sites (To be developed by June 2025)

The goal set for MyGov is to digitize 700+ services by June 2025 and 1500+ services by 2026, making the platform a central hub for government services, and driving forward the vision for paperless, efficient, and citizen-centric service delivery.

Challenges:

Key challenges currently faced by service digitization platform include:

- Incomplete Digital Journeys:** Many services on the platform only have file tracking features, while the full digital journey (e.g., approvals) is still manual.
- Limited Service Integration:** Several standalone digitized services are not fully integrated with the MyGov platform
- Scalability Concerns:** Potential and cost implications need to be evaluated for scaling service integrations.
- Limited Interoperability:** The MyGov portal currently uses e-Service Bus (data exchange) only for NID validation during registration.

Program Components

Bangladesh must launch a program including several components:

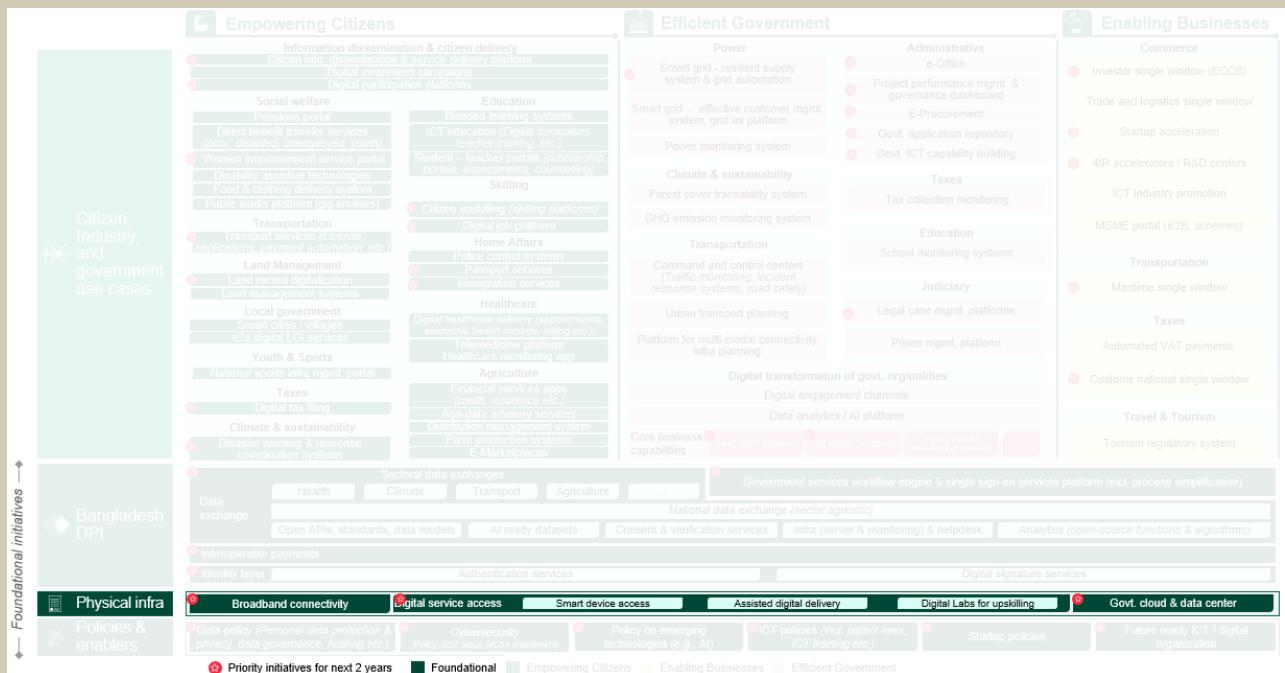
Program objectives	
Enable seamless, efficient, and transparent government services through end-to-end (E2E) digitalization, ensuring interoperability across platforms, streamlined workflows, and enhanced accessibility for all citizens.	
Program targets	
2026	2030
<ul style="list-style-type: none"> Integration of 1500+ (out of ~3000) services through integrated platform with single sign-on Top 15 among Asian countries in UN eGDI index 	<ul style="list-style-type: none"> 80% services digitized being delivered through integrated platform Top 10 among Asian countries in UN eGDI index
SDGs impacted	
<ul style="list-style-type: none"> SDG 9: Industry, Innovation, and Infrastructure SDG 10: Reduced Inequalities SDG 16: Peace, Justice, and Strong Institutions 	
Program execution & ownership	
Lead Agency	ICT Division
Implementing Body	A2I

Funding Partner	UNDP, EU
Implementation Tracks	
Components	Activities
End-to-End (E2E) Service Digitalization	<ul style="list-style-type: none"> ▪ Shift to end-to-end digital workflows across government services, eliminating manual processes and physical touchpoints to improve efficiency and service delivery. ▪ Partially digitized services such as those under the File Tracker engine to be pushed for end-to-end digitization using MyGov or other platforms. ▪ Position MyGov as the unified portal for all citizen e-services. Enable user to access other major e-services (Passport, Birth Registration, etc.) through the MyGov portal
Integration Across Government Platforms	<ul style="list-style-type: none"> ▪ Integrate MyGov with D-Nothi, Doctor and other government platforms through the National Data Exchange to enable seamless data sharing and improve interoperability across services. Ensure that citizens do not need to re-submit data for each service request ▪ Implement Single Sign-On (SSO) for both citizens and government officials to provide secure, seamless access across linked government platforms ▪ Integrate payment services into all necessary government services ▪ Leverage common applications like Document Storage to enable easy document sharing across various services
AI based services	<ul style="list-style-type: none"> ▪ Leverage AI to offer personalized services and introduce AI-powered chatbots to provide real-time Q&A and personalized suggestions, enhancing user engagement and satisfaction
Application Tracking	<ul style="list-style-type: none"> ▪ Implement real-time tracking for all applications and service requests, allowing citizens to monitor the status of their submissions. ▪ Provide automated notifications at every stage of the process.

Omnichannel Accessibility	<ul style="list-style-type: none"> ▪ Provide omnichannel service experiences, ensuring citizens can access services through a variety of platforms (web, mobile, physical centers).
Scalable Infrastructure	<ul style="list-style-type: none"> ▪ Transition to government cloud to ensure scalability and flexibility in service delivery, accommodating future growth in the number of services and users.
Citizen Engagement and Feedback	<ul style="list-style-type: none"> ▪ Integrate citizen feedback mechanisms directly into the service delivery platforms, allowing citizens to rate services and provide suggestions. Use this data to improve services, enhance engagement, and align digital initiatives with citizen needs.
Strengthening Data Protection and Cybersecurity	<ul style="list-style-type: none"> ▪ Prioritize integration of all services with digital identity system ▪ Implement cybersecurity and personal data protections practices in line with revamped regulations
Performance Monitoring	<ul style="list-style-type: none"> ▪ Establish centralized dashboards (leveraging the ongoing National Dashboards being developed) to monitor the performance of services across government platforms. ▪ Use real-time analytics to assess service efficiency, identify bottlenecks, and enable timely interventions to improve service delivery.
Regulatory Support	<ul style="list-style-type: none"> ▪ Implement clear regulations / mandate for ensuring E2E digital service delivery and governance across all ministries. ▪ Monitor the adoption of digital platforms and ensure standards compliance for all digital services (ICT Division / Cabinet Division)

4.1.2 Physical infrastructure

A robust physical infrastructure is essential to support the seamless delivery of digital services, connectivity, and secure data management across Bangladesh. This section highlights three key initiatives driving digital enablement: Broadband connectivity, Digital service access and Government cloud & data center.



4.1.2.1 Broadband Connectivity

Context: The demand for national broadband connectivity in Bangladesh is growing rapidly, driven by increasing digital transformation, rising smart device penetration, rural-urban connectivity requirements, and the digitization of public services. This can help bridge the digital divide, empower underserved communities, and ensure seamless access to high-quality internet across the country.

Current State:

The Bangladesh govt. has recently undertaken several policy initiatives to enhance broadband connectivity across the country. These initiatives have helped further internet penetration and have ensured ~100% 4G network coverage across the country.

Infrastructural development		Policy reforms		
Info-Sarker Phase 3 (BCC, 2018)	Connected Bangladesh (BCC, 2020)	One Country One Rate Policy (BTRC, 2021)	Amended Guidelines for Telecom Infrastructure Sharing (BTRC , 2024)	National Broadband Policy (BTRC, 2024)
<ul style="list-style-type: none"> ➤ Established broadband connectivity in 109,000 rural government institutions ➤ Laid high-speed optical fiber connections across 2600 unions 	<ul style="list-style-type: none"> ➤ Provided internet access to 617 remote unions in the country by laying 8,000+ km. of optical fiber cable ➤ Aims to connect every village in the country through high-speed optical fiber by 2025 	<ul style="list-style-type: none"> ➤ Introduced uniform and affordable broadband pricing across the country with a minimum speed of 10 Mbps. 	<ul style="list-style-type: none"> ➤ Provided a comprehensive framework for the optimal use of telecommunication resources, minimize costs, and promote equitable sharing of infrastructure among operators 	<ul style="list-style-type: none"> ➤ Aims to provide affordable universal access to high-speed broadband connectivity ➤ Identified 11 priority areas, required policy interventions, action plan and targeted outcomes

... which has led to 5% annual growth of internet penetration to 44.5% in 2024

Challenges: While progress has been promising, Bangladesh still lags peer nations and benchmarks in aspects of overall internet affordability, speed and infrastructure (5G & fiber)

1. **Affordability:** While the average cost of data is among the 15 cheapest countries globally, the cost of high-speed data is significantly higher. As a result, Bangladesh ranks 46th out of 72 Low- and Middle-Income Countries (LMICs) in the A4AI Internet Affordability Index (ADI)
2. **Speed:** Median internet speed is significantly slower than peer nations. Bangladesh ranks 88th and 99th globally in median mobile download and fixed broadband download speed respectively.
3. **Infrastructure development:** While ~100% population come under 4G network coverage, 5G infrastructure is at an extremely nascent stage with <2% coverage nationally. Additionally, fiber-to-home penetration and fiber density also remain low, signaling considerable untapped potential



Category	Metric	Bangladesh	Peers	Developed Nations
 Accessibility	Individual internet access	45%	73%	91%
	Households with internet access	38%	80%	92%
 Affordability	A4AI Affordability Drivers Index Score	50	76	-
	Mobile broadband subscriptions (<i>per 100 inhabitants</i>)	55	105	142
 Internet Speed	Median Mobile Download Speed (Mbps)	28	74	88
	Median Fixed Broadband download Speed (Mbps)	49	121	211
 Infrastructure	3G Network population coverage	98%	98%	100%
	4G Network population coverage	98%	98%	99%
	5G Network population coverage	2%	22%	42%
	Optical Fiber Development Index	25	50	60

Initiatives to be undertaken by Bangladesh:

Enhancing Affordability

- Reduction of sector specific taxes:** Bangladesh levies the highest mobile taxes (33.25%) among peer nations, comparable to the tax slab on tobacco products. Reduction in components (SIM tax, VAT, supplementary duty) would significantly enhance data affordability
- Ensure spectrum affordability:** With current spectrum licenses expiring in 2026, ensuring affordable spectrum pricing for operators would enable operators to have financial buffers to invest in infrastructure
- Allow network sharing among operators:** Enabling network sharing would reduce significant expenditure, redundant infrastructure and is projected to benefit the govt. by providing \$300 Bn income annually

5G Infrastructure Investments

- Comprehensive 5G Rollout Strategy:** Implement a nationwide 5G strategy focusing on infrastructure, regulation, spectrum allocation, and telecom collaboration to ensure high-speed connectivity across Bangladesh
- Stimulate infrastructure investments:** Operators need to spend \$8-11B on infrastructure for enabling next generation connectivity (~5x expenditure committed in last 4 years). This can be stimulated through fiscal incentives, e.g. infrastructure bonds, PPPs, tax breaks, etc.

High speed optical fiber deployment

- **Fiberization of all Base Transceiver Stations (BTS):** Accelerate the deployment of optical fiber connectivity to all BTS across the country to ensure robust, high-capacity, and low-latency communication networks.
- **'Fiber to all' initiative:** Ensure universal access to high-speed internet by ensuring fiber-optic connections to entire population by 2030

Program Components

Bangladesh must launch a program including several components: -

Program objectives	
An integrated broadband connectivity enhancement program to improve affordability, ensure nationwide rollout of 5G connectivity and provide universal access to high-speed internet	
Program targets	
2026	2030
<ul style="list-style-type: none"> ▪ >55% internet penetration ▪ 5% improvement in ICT Development Index score 	<ul style="list-style-type: none"> ▪ 70% internet penetration ▪ Top 60 in global internet download speed ranking ▪ 70% population under 5G network coverage ▪ 25% improvement in ICT Development Index score
SDGs impacted	
<ul style="list-style-type: none"> ▪ SDG 8: Decent Work and Economic Growth ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 10: Reduced Inequalities 	
Program execution & ownership	
Lead Agency	ICT Division, Posts and Telecom Division
Implementing Body	BCC, BTRC, Bangladesh Submarine Cable Company Limited

Funding Partner	World Bank
Implementation Tracks	
Components	Activities
Reduce sector-specific taxes	<ul style="list-style-type: none"> ▪ Reduce taxes (SIM tax / VAT / supplementary duties, etc.) to enhance data affordability for end consumers
Enhance spectrum affordability	<ul style="list-style-type: none"> ▪ Set affordable spectrum pricing to enable operators to invest financial buffer for infrastructure development
Enable network sharing among operators	<ul style="list-style-type: none"> ▪ Facilitate network sharing among operators to reduce operational cost, redundant infrastructure and enhance fiscal budget
Nationwide 5G rollout strategy	<ul style="list-style-type: none"> ▪ Launch a nationwide 5G rollout strategy covering spectrum, infrastructure, regulations, and operator partnerships.
Support infrastructural investments	<ul style="list-style-type: none"> ▪ Offer incentives like infrastructural bonds, PPPs, tax breaks, etc. to encourage necessary investments in infrastructure
Fiberize BTS (Base Transceiver Stations)	<ul style="list-style-type: none"> ▪ Connect all BTS with optical fiber for high-speed, low-latency communication
'Fiber to All' initiative	<ul style="list-style-type: none"> ▪ Expand optical fiber connectivity nationwide to ensure universal access to high-speed internet by 2030.

4.1.2.2 Digital Service Access

Context: While smartphone penetration is increasing, access to laptops, tablets, and digital learning devices remains low, limiting participation in digital services. Additionally, rural and underserved communities face challenges in accessing essential government and financial services due to infrastructure and literacy gaps. To address these challenges, Bangladesh must enhance access to smart devices, strengthen assisted digital service delivery through Union Digital Centers (UDCs), and scale ICT-focused digital labs for skill development.

Current State: As of today, more than half of the population owns a smartphone, however the probability of owning one is significantly higher for the urban population (72%) than the rural population (46%). The Bangladesh govt. has taken multiple policy

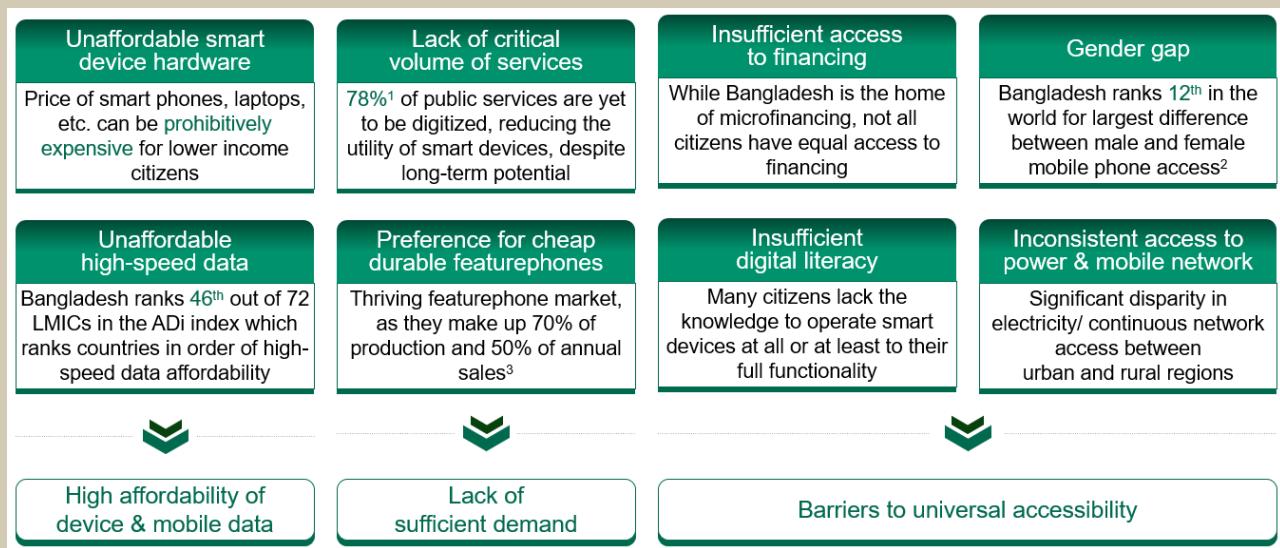
action to boost local manufacturing, penetration and enhance affordability of smart devices: -

1. **Reduced import duties on raw materials:** Manufacturers pay a duty of 1-15% on raw material imports, compared to 57% for importing finished mobile phone sets
2. **VAT exemptions for local manufacturers:** Device manufacturing or assembly plants in hi-tech parks and economic zones were rewarded with VAT exemption benefits
3. **Implementation of the National Equipment Identity Register (NEIR):** NEIR system registers the IMEI numbers of devices to ensure only legally imported devices operate on the national network
4. **Ban on 3G Devices:** Effective January 2023, BTRC prohibited the import and manufacture of 3G-only devices to accelerate transition to 4G devices

Additionally, to support citizens who may lack the necessary digital skillset or access to smart devices to make most of the digital service offerings, Bangladesh has established a network of 8,200+ Union Digital Centers (UDCs) providing assisted digital services at the grassroots level. These centers offer support for government applications, financial transactions, legal services, and social welfare schemes, helping bridge the accessibility gap for marginalized communities. Additionally, the 333 national helpline has been introduced as a single-point contact for government services, grievance redressal, and emergency support, making it easier for citizens to navigate public services.

Bangladesh has established 4,000+ digital labs to provide citizens with digital upskilling opportunities, equipping them with essential ICT and emerging technology skills. These labs, along with the upcoming Digital Services and Employment Training (DSET) Centers at each upazila/zila, aim to develop a digitally skilled workforce by offering hands-on training in basic ICT, coding, AI, and other 4IR technologies. Additionally, multiple private sector collaborations have been initiated to train citizens in upcoming digital skills, ensuring alignment with industry demands.

Challenges: There are a range of barriers to achieving 100% smart device access in Bangladesh which can be broadly categorized into affordability, lack of demand and barriers to universal accessibility



Additionally, the following challenges exist which further increase the digital divide: -

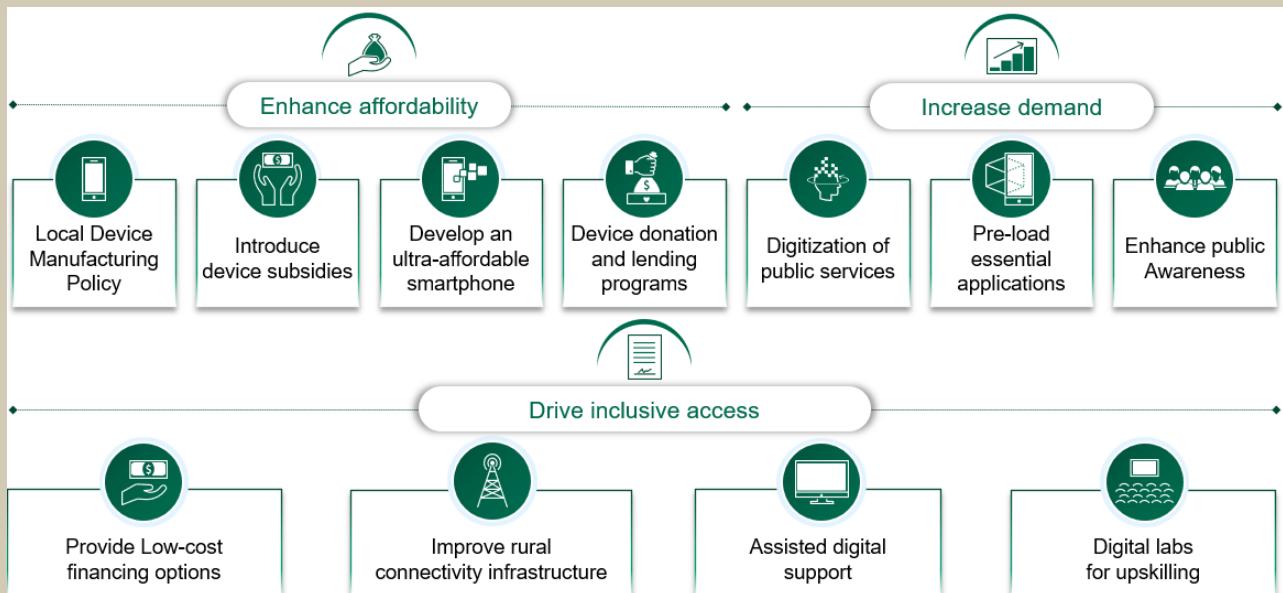
- **Low Digital Literacy:** Many citizens, particularly in rural and underserved areas, lack basic digital skills, making them dependent on manual support for accessing digital services.
- **Limited Access to Digital Services in Rural Areas:** Many citizens lack awareness or face accessibility issues to fully utilize these services.
- **Limited service integration:** UDCs have limited integration of digital service offerings currently. Many government services still require multiple in-person visits across different officers, reducing the effectiveness of assisted digital service delivery.
- **Underutilization of Digital Labs:** Many digital labs and training centers remain underused due to lack of awareness, limited outreach, and insufficient engagement strategies.
- **Shortage of Trained Instructors:** The absence of qualified trainers and structured teaching methodologies restricts the effective use of digital labs.
- **Fragmented skilling initiatives:** While digital labs exist, they are not fully integrated into a nationwide skill-building program, limiting their impact.

Learnings from benchmarks: Vietnam, Côte d'Ivoire, and Rwanda have run nationwide programs to enhance affordability and promote universal access of smart devices

<p>Universal Smartphone Program (2020)</p>  <p>Objective</p> <ul style="list-style-type: none"> Aim to achieve 100% smartphone adoption by 2025 Penetration rose from 62% in 2020 to 84% in early 2024 <p>Key initiatives</p> <ul style="list-style-type: none"> Provided tax incentives to domestic manufacturers to create affordable smartphones Partnered with operators and developers to subsidize user costs. Pre-installed essential applications for access to digital public services Extensive 4G/5G network coverage expansion initiatives Conducted digital literacy campaigns to promote universal access 	<p>One Citizen, One Computer, One Connection (2015)</p>  <p>Objective</p> <ul style="list-style-type: none"> Enhance affordability & promote universal access to computers Aimed to distribute 500k subsidised computers to citizens in 5 years <p>Key initiatives</p> <ul style="list-style-type: none"> Subsidized computers through public-private partnerships reducing prices to \$100 from \$300-400 Provided low-cost device financing loans digitally to enhance affordability & inclusivity Established cyber access centres in villages with 500+ inhabitants to enhance rural device accessibility 	<p>Connect Rwanda (2019)</p>  <p>Objective</p> <ul style="list-style-type: none"> Aimed to achieve 80% individual smartphone ownership, 90% household penetration & promote universal access <p>Key initiatives</p> <ul style="list-style-type: none"> Distributed 30k+ smartphones free-of-cost to identified marginalized households Introduced the IKOSORA+, ultra-affordable smartphone priced at \$16 Pre-installed apps relevant to specific target groups to simplify access and promote use Conducted digital literacy campaigns to promote universal access
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Initiatives to be undertaken by Bangladesh:

Bangladesh must undertake 11 key initiatives to enhance affordability, increase demand and drive inclusive access to smart devices.



Alongside increasing the penetration of smart devices by enhancing affordability and increasing demand, it is of paramount importance to drive inclusive access and digital literacy, bridging the digital divide. In this endeavor, it is important to prioritize the following initiatives

Assisted digital delivery:

- Establish Union Digital Centers (UDCs) at every Upazila** to enable access to digital services
- Expand service offering** ensuring all major public services are accessible through UDCs and helplines.

- **Upgrade Union Digital Centers (UDCs) with better infrastructure and skilled personnel** to improve service delivery.
- **Launch localized digital awareness campaigns** to improve self-service adoption and reduce dependency on manual support.
- **Improve service provision through National Helpline (333)** to allow for end-to-end service delivery of low complexity services . **Introduce AI-powered chatbots with multilingual assistance** to handle a wider range of queries efficiently.

Digital labs for upskilling:

- **Develop DSET centers across each Zila / Upazila** to enable citizen / government ICT skilling programs
- **Integrate DSET centers, school labs, and vocational training centers into a centralized digital skilling initiative** to maximize utilization and impact
- **Establish train-the-trainer programs to ensure qualified ICT educators** are available across all labs and training centers
- **Develop mobile digital labs and community learning hubs to improve access** to rural and underserved populations
- **Collaborate with private sector, universities, and startups** to lab infrastructure, timely upgrade the skilling curriculum and enable employment / internship opportunities.

Program Components

Bangladesh must launch a program including several components: -

Program objectives	
An integrated service access program to enhance affordability, increase demand of smart devices and drive inclusive access to digital services across the country	
Program targets	
2026	2030
<ul style="list-style-type: none"> ▪ 100% initiatives designed and launched ▪ 50% smartphone penetration ▪ 60% students with digital device access ▪ 120,000+ citizens accessing services per UDC per month 	<ul style="list-style-type: none"> ▪ 70% smartphone penetration ▪ 90% students with digital device access ▪ 180,000+ citizens accessing services per UDC per month



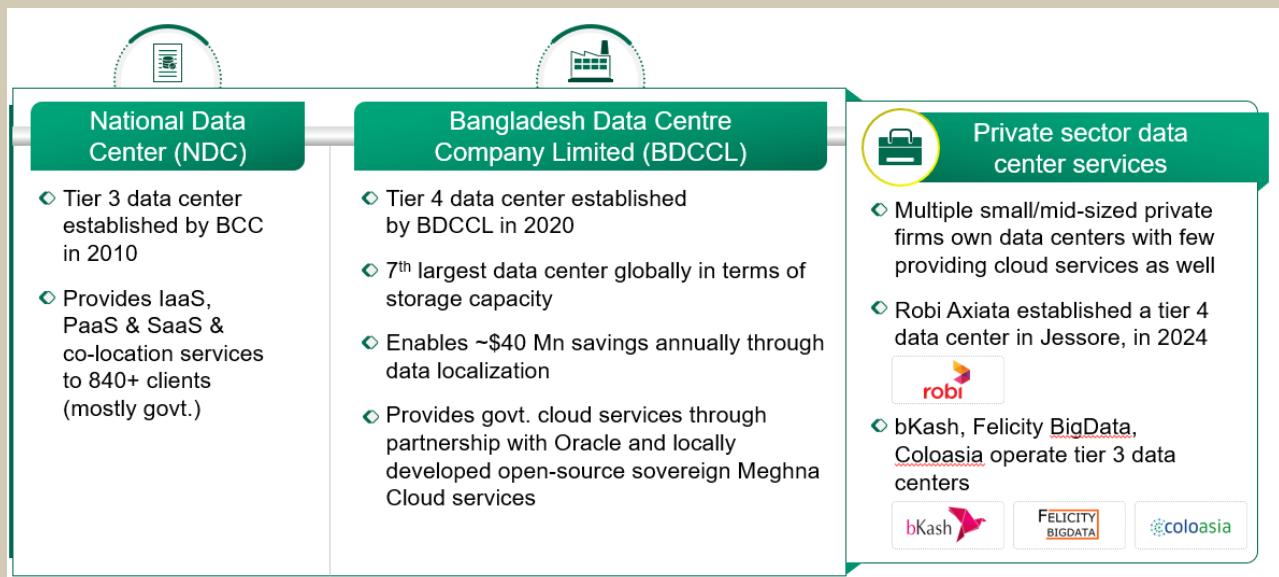
SDGs impacted	
<ul style="list-style-type: none"> ▪ SDG 4: Quality Education ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 10: Reduced Inequalities 	
Program execution & ownership	
Lead Agency	ICT Division
Implementing Body	DolCT
Funding Partner	To be identified
Implementation Tracks	
Components	Activities
Smart device access	<ul style="list-style-type: none"> ▪ Launch Device Manufacturing Policy to promote the local manufacturing of smart devices ▪ Subsidize device cost through PPPs with operators, app developers, etc. ▪ Partner with private sector to launch an ultra-affordable smartphone for the masses ▪ Design a device donation program and a library for short-term device borrowing ▪ Push for digitization of essential public services to boost adoption ▪ Pre-load essential applications to smart devices for specific target groups to boost usage ▪ Conduct digital literacy and awareness campaigns to educate on affordability, benefits & use-cases ▪ Partner with banks to enhance accessibility to low-cost financing loans digitally ▪ Ensure uninterrupted network connectivity & electricity in rural areas
Assisted digital delivery	<ul style="list-style-type: none"> ▪ Establish Union Digital Centers (UDCs) at every Upazila to enable access to digital services

	<ul style="list-style-type: none"> ▪ Expand service offering ensuring all major public services are accessible through UDCs and helplines. ▪ Upgrade Union Digital Centers (UDCs) with better infrastructure and skilled personnel to improve service delivery. ▪ Launch localized digital awareness campaigns to improve self-service adoption and reduce dependency on manual support. ▪ Improve service provision through National Helpline (333) to allow for end-to-end service delivery of low complexity services ▪ Introduce AI-powered chatbots with multilingual assistance to handle a wider range of queries efficiently.
Digital labs for upskilling	<ul style="list-style-type: none"> ▪ Develop DSET centers across each Zila / Upazila to enable citizen / government ICT skilling programs ▪ Integrate existing labs and training facilities into a centralized digital skilling initiative to maximize utilization and impact ▪ Establish train-the-trainer programs to ensure qualified ICT educators are available across all labs and training centers ▪ Develop mobile digital labs and community learning hubs to improve access to rural and underserved populations ▪ Collaborate with private sector, universities, and startups to maintain lab infrastructure, timely upgrade the skilling curriculum and enable employment / internship opportunities.

4.1.2.3 Government Cloud and Data Center

Context: The demand for data centers in Bangladesh is rapidly increasing, driven by a growing focus on digital transformation across industries, the expansion of the IT sector, and a surge in internet usage. Additionally, concerns over data sovereignty and the security risks of storing data on foreign servers led to a shift towards storing data on government cloud.

Current State: Bangladesh currently has 2 established public data centers, National Data Center (NDC) and Bangladesh Data Center Company Limited (BDCCL). Private players have also recently entered the market. Many ministries and government bodies have opted to host data internally by establishing dedicated infrastructure to cater to their respective operational needs.



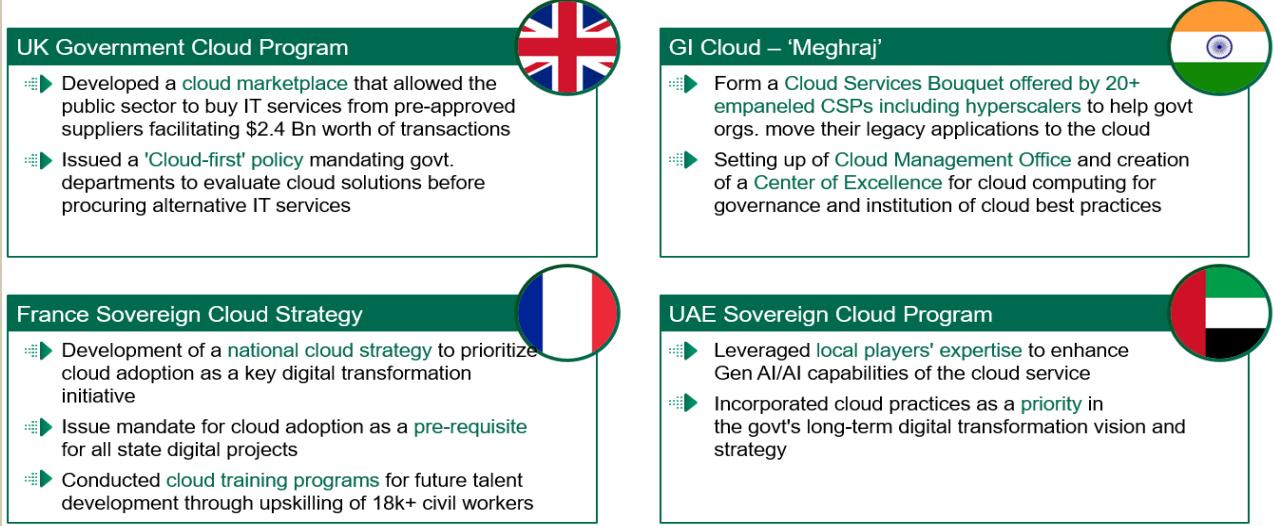
Recently, BDCCL collaborated with Oracle to launch Bangladesh's first government cloud with ongoing efforts to shift all govt. data from foreign servers. Since being operationalized in May 2024, it currently runs mission-critical systems across 30+ govt. agencies, such as national security, e-governance, e-filing, health and social services. Additionally, BDCCL has also developed its own cloud offering named Meghna Cloud in partnership with GenNext Technologies built on open-source technology.

Challenges: Key challenges faced by Bangladesh's data center & government cloud market currently include:

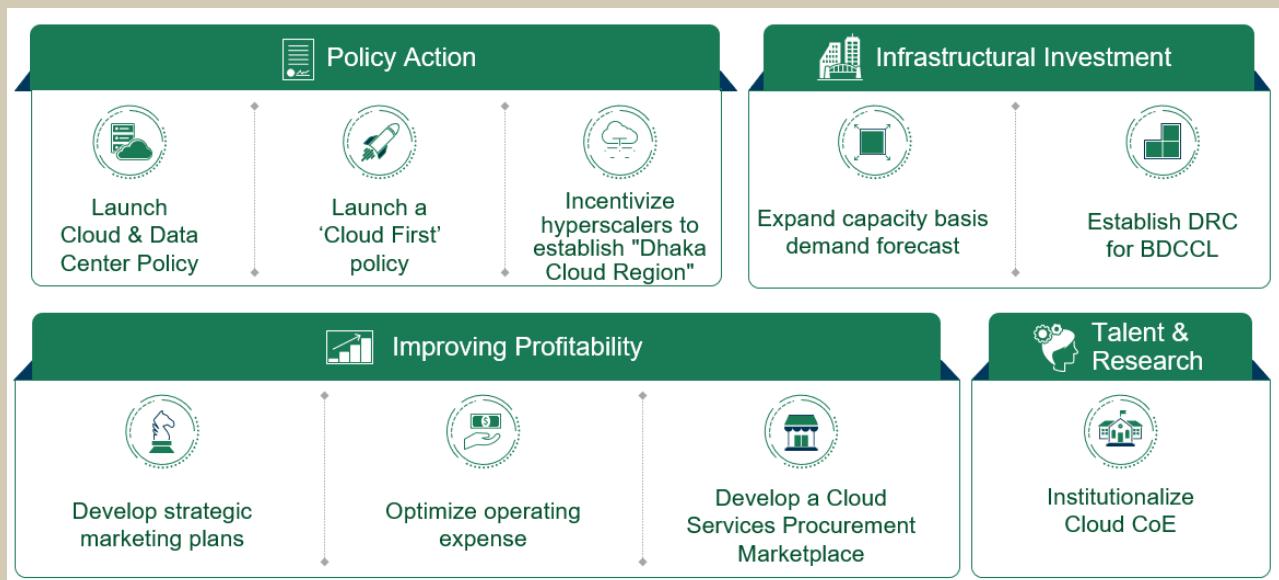
1. **Lack of Regulatory Support:** Bangladesh currently lacks a Cloud and Data Center Policy and a Personal Data Protection Policy which deters commercial clients and investors who have privacy and governance concerns
2. **Capacity utilization challenges:** While NDC is currently at 100% capacity utilization, and is in need for expansion, BDCCL still operates at 30-40% overall utilization. There is a lack of coordination between entities regarding resource utilization.
3. **Lack of a Disaster Recovery Center:** BDCCL lacks a dedicated disaster recovery center (DRC) increasing the risk of data loss and major system downtime
4. **Profitability challenges:** BDCCL is currently running at high operational expense, which needs to be optimized further

Learnings from benchmarks:

Benchmarks | Bangladesh can draw inspiration and learnings from international peers who have successfully pioneered government clouds



Initiatives to be undertaken by Bangladesh:



Program Components

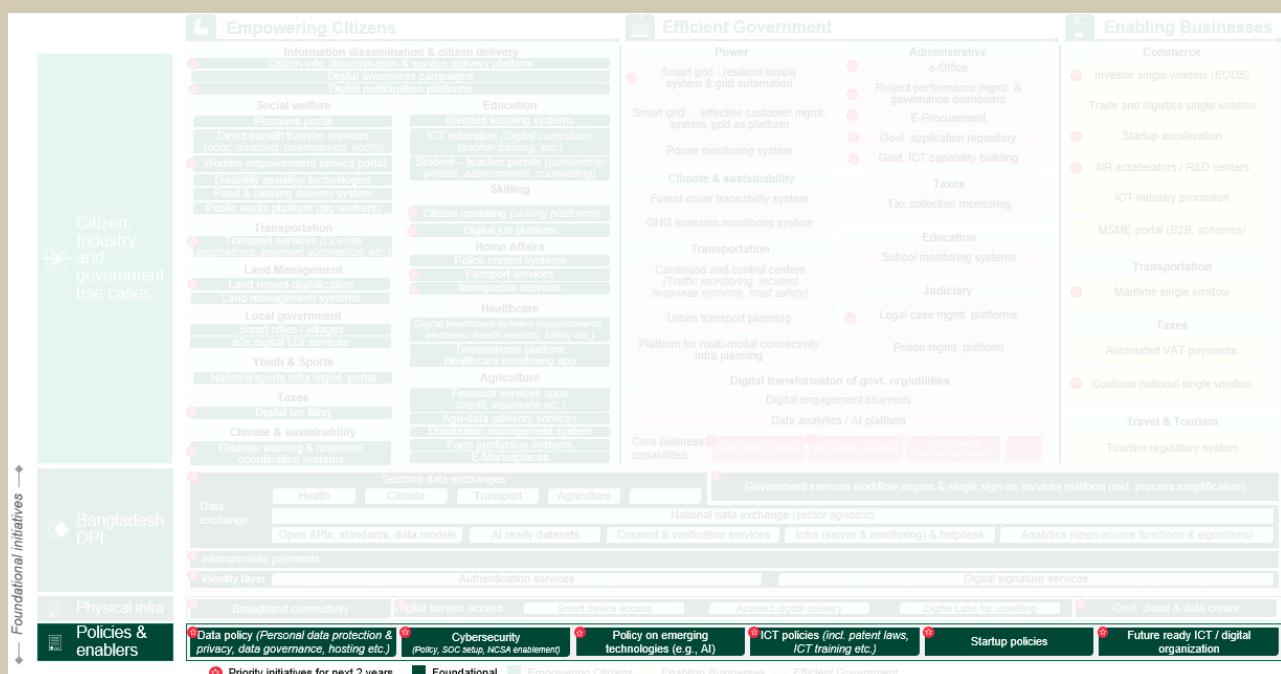
Bangladesh must launch a program including several components: -

Program objectives	
Drive adoption of govt. cloud through policy action, infrastructural investments, enhancing profitability and investment in talent & research	
Program targets	
2026	2030
<ul style="list-style-type: none"> ▪ Launch of a Cloud Policy ▪ Establish shared/new DRC for BDCCL ▪ Institutionalize BDCCL Centre of Excellence 	<ul style="list-style-type: none"> ▪ Migrate 80% of govt. services to govt. cloud ▪ Achieve >60% overall capacity utilization ▪ Invite hyperscalers / CSPs to establish a Dhaka Cloud Region
SDGs impacted	
<ul style="list-style-type: none"> ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 16: Peace, Justice, and Strong Institutions 	
Program execution & ownership	
Lead Agency	ICT Division
Implementing Body	BDCCL & BCC
Funding Partner	To be identified
Implementation Tracks	
Components	Activities
Launch Cloud & Data Center Policy	<ul style="list-style-type: none"> ▪ Develop a cloud & data center policy / National Cloud Strategy to streamline adoption and drive efficiency.

	<ul style="list-style-type: none"> Establish a regulatory framework and governance structure to license new government data centers, ensuring optimal utilization of existing capacity, while setting comprehensive standards and guidelines for the operation of all government and private data centers in the country
Launch a 'Cloud First' policy	<ul style="list-style-type: none"> Mandate govt. departments to evaluate cloud solutions before procuring alternative IT services
Incentivize hyperscalers to establish "Dhaka Cloud Region"	<ul style="list-style-type: none"> Incentivize hyperscalers (such as AWS, Azure, etc.) through policy advocacy, including tax incentives, data localization mandates, public commitments, etc. to establish and run local data centers and develop a "Dhaka Cloud Region"
Capacity expansion planning	<ul style="list-style-type: none"> Invest in NDC infrastructural expansion to accommodate additional demand Implement annual demand forecasting and capacity planning to accurately assess resource utilization and determine investment needs for expansion. Evaluate collaboration potential between NDC and BDCCL to optimize capacity utilization
Establish DRC for BDCCL	<ul style="list-style-type: none"> Establish a dedicated DRC for BDCCL or utilize shared DRC capacity to protect against data loss and system disruption risks
Develop strategic marketing plans	<ul style="list-style-type: none"> Develop marketing plans targeted towards private sector clients, and for funding from investors and development partners
Optimize operating expense	<ul style="list-style-type: none"> Ensure uninterrupted power supply, adopt airflow mgmt. strategies, explore renewable sources of energy, demand planning of capacity etc. to optimize operational expenses
Develop a Cloud Services Procurement Marketplace	<ul style="list-style-type: none"> Develop a digital cloud services marketplace for govt. agencies to procure advanced cloud supported services.
Institutionalize a Cloud CoE	<ul style="list-style-type: none"> Establish a Cloud Center of Excellence to foster industry-academia collaboration to innovate on cloud strategy, cost optimization levers, privacy & security, etc.

4.1.3 Policy and enablers

A strong enabling framework is critical to ensuring secure, inclusive, and future-ready digital transformation. This section highlights key policies and enablers driving Bangladesh's ICT landscape, including Data Protection & Governance policy / regulations, Cybersecurity enablement to strengthen digital security, as well as ICT, AI and startup policies to drive innovation and ethical adoption of emerging technologies. Additionally, a future-ready ICT organization is needed to foster a skilled workforce, efficient governance structures, and sustainable digital growth.



4.1.3.1 ICT Policy

Context: The 2018 ICT Policy of Bangladesh provides a roadmap for leveraging ICT in governance, education, inclusion, and innovation. It focuses on broadband expansion, e-governance, digital literacy, and entrepreneurship to position Bangladesh as a regional ICT leader by 2041. However, enhancing ICT training and patent laws will be critical to developing a globally competitive workforce and fostering innovation. ICT training programs exist in schools and vocational institutes, but rural access remains low, and advanced training in AI, blockchain, and cybersecurity is limited. Additionally, the patent system lacks efficiency, discouraging local innovation and tech-based entrepreneurship.

Proposed enhancements to the ICT policy based on ICT Ministry Goals

Opportunity	Suggested changes
Enhance provisions on nationwide broadband connectivity	<ul style="list-style-type: none"> ▪ Develop a comprehensive nationwide 5G rollout strategy ▪ Outline a roadmap for nationwide fiber network expansion ▪ Develop affordable smart device and data packages in collaboration with operators for the underserved communities
Embed ICT literacy and training at grassroots level	<ul style="list-style-type: none"> ▪ Mandate ICT education in primary & secondary schools ▪ Institute community ICT training Centers for professionals in rural areas ▪ Develop specialized ICT teacher training programs for enhanced digital education delivery
Promote the development of a globally competitive ICT workforce	<ul style="list-style-type: none"> ▪ Partner with global technology companies to offer certifications, workshops, internships, etc. in emerging fields such as AI, blockchain, cybersecurity, etc. ▪ Foster industry-academia collaborations to drive R&D in emerging topics ▪ Provide tax incentives, grants to companies/researchers investing in R&D ▪ Set up Patent Facilitation Centers to streamline the patent filing process, targeting 500 filings annually
Support establishment of e-government	<ul style="list-style-type: none"> ▪ Develop a roadmap to digitize government services by establishing interoperability between govt. Ministries through the National Data Exchange ▪ Train government officers to support digital service delivery and establish e-government standards

4.1.3.2 Data policies

Context: Comprehensive data policies are essential to protect privacy, ensure secure data exchange, and drive innovation. The Personal Data Protection Act (PDPA) aims to regulate the collection, use, and disclosure of personal data, preventing misuse and strengthening public trust in digital services. The PDPA is currently being reviewed and modified prior to approval for formal launch.

Opportunities to enhance the PDPA based on learnings from peer nations:

Personal Data Protection Acts of peer nations such as Indonesia, Malaysia & India outline certain opportunities for Bangladesh to consider enhancing it further: -

Opportunity	Description	Learning from peers	
1. Enhance provisions on cross-border data transfer	Increase flexibility on cross-border data transfer regulations moving out of strict data localization	<ul style="list-style-type: none"> Adopt flexible control frameworks, allowing transfers to countries with appropriate data safeguard regulations 	  
2. Increase penalties for violations	Penalties capped at modest amounts; significantly lower than peer nations	<ul style="list-style-type: none"> Increase penalties (financial and criminal) scaled on the severity of violations 	  
3. Increase emphasis on protection of high-risk personal data	Mentions consent frameworks; can emphasize on additional protection for high-risk data (e.g. health)	<ul style="list-style-type: none"> Mandate the use of additional protection mechanism for high-risk data through encryption, impact assessment 	  
4. Mandate notifying individuals in case of breaches	Notify affected individuals within timelines in addition to Data Protection Agency in case of personal data breaches	<ul style="list-style-type: none"> Mandate individual notifications for affected data subjects Specify a clear timeline (e.g. 72 hours) for reporting Clearly define a framework, involving nature of breach, data impacted and mitigation steps 	  

Data Policy

A comprehensive Data Policy is essential to establish a structured framework for data capture, generation, storage, classification, access, interoperability, exchange, governance, and analytics. This policy will drive data-driven decision-making, economic growth, and enhanced public service delivery, ensuring that data is secure, accessible, and strategically utilized across sectors. Key attributes of the data policy include:

- Operational guidelines:** Establish clear guidelines on system architecture, consent management, and security protocols for the National Data Exchange and sectoral data platforms to ensure secure and seamless interoperability.
- Data classification & tiered access:** Implement a structured access control framework to govern data-sharing across individuals, government agencies, and businesses, ensuring compliance with the Personal Data Protection Act (PDPA).

- **Data validation:** Ensure cross-domain data integrity while protecting Personally Identifiable Information (PII) from unauthorized access and misuse.
- **Use case development:** Facilitate the utilization of anonymized non-PII crowd data to drive research, innovation, and industry-driven use cases for economic growth, public service optimization, and digital transformation.
- **Governance framework:** Establish a dedicated governing body to oversee policy enforcement, compliance, and interoperability standards.

To ensure long-term adaptability, a Bangladesh Data Vision is needed to serve as a strategic guideline for future policies. This vision will define overarching principles for ethical and secure data use, fostering a digitally empowered society where data is leveraged as a national asset to drive innovation, governance efficiency, and inclusive development.

4.1.3.3 Cybersecurity

Context: The Cyber Security Act, 2023 (CSA) replaces the Digital Security Act, 2018 (DSA) to enhance cyber resilience, safeguard digital infrastructure, and address cybersecurity threats while balancing freedom of expression and human rights. The law establishes the National Cyber Security Agency (NCSA) and the National Cyber Security Council, defining their roles in monitoring, preventing, and responding to cyber incidents. Additionally, it includes provisions for securing Critical Information Infrastructure (CII). Further, for effective nationwide cybersecurity enforcement, Bangladesh must strengthen its capacity of cybersecurity professionals across ministries, and establish a dedicated Security Operations Center (SOC) to enable real-time threat detection, incident response, and risk assessment across government systems.

Opportunities to enhance the Cybersecurity Ordinance based on learnings from peer nations and benchmarks:

Cybersecurity Policy of peer nations such as Malaysia & Vietnam and benchmarks such as Estonia outline certain opportunities for Bangladesh to consider enhancing it further: -

Opportunity	Description	Learning from benchmarks
1. Mandate periodic risk assessment for Critical Information Architecture (CII)	Conduct periodic risk audits to enhance cybersecurity	 <ul style="list-style-type: none"> • Conduct periodic risk audits for all CII operators ensuring reporting to the National Cyber Security Agency • Create detailed SOPs for conducting assessments

Opportunity	Description	Learning from benchmarks
2. Improve provisions for cyber incident reporting	Develop an incident reporting framework for cyber incidents	<ul style="list-style-type: none"> Mandate incident reporting timelines (e.g. 24 hours) Define an incident reporting framework and link it to actionable recovery and measures 
3. Standardized regulation of Service Providers	Establish a code of standards and certification for Service Providers	<ul style="list-style-type: none"> Develop a code of standards based on international cybersecurity frameworks Establish a certification authority for licensing, and international standards 
4. Introduce provisions for public awareness	Educate citizens on common cybersecurity threats to reduce the risk of attacks	<ul style="list-style-type: none"> Mandate the conduction of periodic public awareness programs 
5. Enhance focus on data sovereignty	Introduce provisions regulating cross border data transfer	<ul style="list-style-type: none"> Mandate foreign companies handling national data to establish a local presence and ensure compliance with national cybersecurity laws 

The Cybersecurity Ordinance / Policy should further incorporate details on the following key enablers:

- Institutionalizing a National-CERT:** The establishment of a National Computer Emergency Response Team (National-CERT) is critical to safeguarding Bangladesh's digital ecosystem against cybersecurity threats. This initiative should focus on empowering the National Cybersecurity Agency (NCSA) through capacity building to ensure robust monitoring, incident response, and threat intelligence capabilities. Potential integration with BGD eGov CIRT to be considered to streamline efforts and promote a unified approach to national cybersecurity. Additionally, dedicated cybersecurity teams to be set up across ministries for pro-active risk assessment and incident reporting .

- **Setting Up a Dedicated Government Security Operations Center (SOC):**
To further bolster cybersecurity across government entities, a dedicated Government Security Operations Center (SOC) must be established and deployed. The SOC will provide real-time monitoring, threat detection, and incident response for key government systems and Critical Information Infrastructure (CII), ensuring data integrity and operational continuity. By centralizing security operations, the SOC will enable government agencies to identify vulnerabilities proactively, mitigate risks, and respond swiftly to potential breaches, fostering a secure digital environment for public services and sensitive information.

4.1.3.4 National AI Policy

Context: ICT Division published the National Artificial Intelligence Policy 2024, which outlines objectives, principles, implementation approaches, and key sectors for AI development.

It emphasizes principles such as social equity, transparency, and human-centered AI. The policy proposes the creation of an independent National Artificial Intelligence Center of Excellence and updates to the National Strategy for AI, including AI ethics, data governance, and intellectual property frameworks. It also addresses challenges and privacy concerns, advocating for minimal sensitive data use, consent for personal data usage, and robust privacy measures.

Opportunities to enhance the National AI Policy based on learnings from peer nations and benchmarks:

National AI Policy/Strategy of peer nations such as Sri Lanka & India and benchmarks such as the United Kingdom and Japan outline certain opportunities for Bangladesh to consider enhancing it further: -

Opportunity	Description	Learning from benchmarks
1. Enhance actionability of governance frameworks	Introduce frameworks actioning AI-ready datasets, ethics & policy impact monitoring	 <ul style="list-style-type: none"> • Integrate FAIR¹ principles into data governance policies • Establish an ethics council, specify frameworks on initiating sandboxes, algorithmic transparency and ethical use 

¹ 1. Findable, Accessible, Interoperable, and Reusable

Opportunity	Description	Learning from benchmarks
		<ul style="list-style-type: none"> Institute an AI task force to track progress and publish periodic reports
2. Improve focus on AI literacy at grassroot level	Introduce AI literacy initiatives with a focus on inclusive development	<ul style="list-style-type: none"> Include provisions introducing grassroot-level AI literacy initiatives and integrate AI into secondary and higher education curricula in local language
3. Develop actionable mechanisms to provide support to AI startups	Create an operationalization plan to support AI startups & talent	<ul style="list-style-type: none"> Develop a structured program to provide AI startups/talent with funding, research and mentorship support Include provisions to provide tax incentives, conduct competitions, provide lab access, etc. to support founders & researchers
4. Detail sectoral implementation frameworks	Develop detailed implementation plans for priority sectors	<ul style="list-style-type: none"> Define priority use cases, design pilot programs, identify key public/private partners, and establish an implementation roadmap with clear KPIs to track success
5. Enhance provisions for international collaboration	Include provisions for partnerships with global AI research and policy networks	<ul style="list-style-type: none"> Include provisions to adopt global AI standards such as the Hiroshima AI process, engage in global AI partnerships & facilitate joint

4.1.3.5 Startup Policy

Context: The draft National Startup Policy 2024 seeks to build a thriving startup ecosystem by promoting innovation, simplifying regulations, and supporting entrepreneurs. It tackles challenges in funding, knowledge, and infrastructure, emphasizing inclusivity and sustainability, to position Bangladesh as a global hub for entrepreneurship and technology.

Current State: Bangladesh's startup ecosystem has seen rapid growth, with over 1,200 startups creating 1.5 million jobs and attracting nearly \$1 billion in investment. However, the policy and regulatory environment remains a significant barrier, with complex tax structures, fund repatriation hurdles, share-swapping restrictions, and IPO regulations limiting investment and growth. Establishing a clear, startup-friendly policy framework will help reduce regulatory friction, improve investor confidence, and support long-term ecosystem sustainability.

Challenges: Bangladesh startup ecosystem faces significant regulatory hurdles which deter potential investors and require policy action-

Priority Area	Policy	Example
1 Profit Repatriation	Bangladesh permits profit repatriation by foreign investors, however, some bureaucratic hurdles exist	One global VC had to wait for 9 months and Partners needed to visit in person to facilitate an exit
2 Valuation Control	Bangladesh Bank verifies valuation for startups using 3 approved methods; has not adopted IPEV guidelines ¹	In 2017, a local acquisition faced a 50% reduction in repatriation due to valuation challenges by Bangladesh Bank
3 Recognition of SAFE Notes	Bangladesh lacks legal recognition for SAFE Notes, complicating equity investments for pre-seed startups	A logistics startup had to use redeemable preference shares instead of SAFE due to local legal limitations
4 Public Listing of Non-profitable Companies	Bangladesh restricts startups from public listing due to lack of a stringent profit requirements; no Startup IPOs to date	A consumer-tech startup was denied listing despite meeting capital requirements due to negative profits
5 Validity of ESOPs	No legal framework in Bangladesh exists for ESOPs, limiting their adoption among startups with local holdings	Pathao and ShopUp issued ESOPs through foreign holding companies
6 Overseas Investment by Local Investors	Bangladesh restricts outward investments by local investors, limiting their ability to invest in foreign holding companies	A local VC fund had to invest in an options contract on a foreign Holdco of a startup, leading to increased lag time
7 Availability of Bank Loans	Banks can provide collateral-free loans to startups, but approval rates remain low, particularly for asset-light models	Sharetrip secured a 10 Mn BDT loan, but another leading Agritech startup's loan application was rejected
8 Accessibility to Venture Debt Funding	Only banks and FIs can issue loans in Bangladesh, restricting startups' access to venture debt funding	Startups with Bangladesh Holdco are yet to raise venture debt; ShopUp raised 30 Mn through a foreign Holdco
9 BSEC AIF ² registration guidelines	Restrictive guidelines – Funds registered as VC allowed to invest only in non-listed entities with <3 yrs operations; management fee applicable only on disbursed capital	Out of 29 AIFs registered with BSEC, only 9 have raised Funds

Proposed enhancements to the draft Startup Policy solving current challenges

The Bangladesh Startup Policy can incorporate the following recommendations for targeted policy actions to address the above challenges, in addition to the provisions already included in the current draft:

- **Unified Startup Definition:** Establish a standardized definition across all agencies to ensure clarity in eligibility and incentives.
- **Foreign Investment & Capital Repatriation:** Enable startups to establish overseas holding companies and simplify capital repatriation rules.
- **Alternative Investment & IPO Reforms:** Ease IPO listing requirements and update BSEC regulations to attract venture capital and angel investments.

- **Regulatory Sandboxes:** Create controlled environments for startups to test innovative business models with temporary regulatory relaxations.
- **Tax Incentives & ESOP Reforms:** Shift taxation from GMV to revenue, provide tax exemptions for startups, and introduce a flexible ESOP framework.
- **Launch a Fund of Funds:** Launch a government-backed co-investment fund to attract global venture capital and institutional investors

Program Components

Bangladesh must launch a program including several components:

Program objectives	
Program targets	
2026	2030
<ul style="list-style-type: none"> ▪ Launch policy/regulations on ICT policy, data protection & governance, AI, startup ▪ Ensure 100% compliance with ICT related policies among all govt. ministries 	<ul style="list-style-type: none"> ▪ Ensure revision of all policies every 5 years ▪ Ensure 100% compliance with ICT related policies among all govt. ministries
SDGs Impacted	
<ul style="list-style-type: none"> ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 16: Peace, Justice, and Strong Institutions 	
Program execution & ownership	
Lead Agency	ICT Division

Implementing Body	Policy Wing, NCSA (for Cybersecurity Ordinance), Startup Bangladesh (Startup Policy)
Program contributors	World Bank, EU

Implementation Tracks	
Components	Activities
ICT Policy	<ul style="list-style-type: none"> ▪ Enhance provisions on nationwide broadband connectivity ▪ Embed ICT literacy in the national education system ▪ Promote the development of a globally competitive ICT workforce ▪ Define roadmap to digitize government services across ministries through the National Data Exchange ▪ Develop actionable frameworks for supporting ICT Startups
Data policies	<ul style="list-style-type: none"> ▪ Update and launch the Personal Data Protection Act (PDPA) with stronger cross-border data transfer regulations, higher penalties for violations, enhanced protection for high-risk personal data, and mandatory breach notification for individuals ▪ Develop a comprehensive Data Policy to address data lifecycle management (generation, classification, storage, sharing and archival, etc.) with defined operational guidelines and governance framework for data exchange. ▪ Formulate data safety guidelines and execute data safety strengthening program for all government organizations ▪ Formulate data ethics guidelines for education, research, civil services, national security and commercial sectors.

Cybersecurity	<p>Launch revamped Cybersecurity Ordinance to strengthen national cyber resilience and ensure proactive risk management through the following measures:</p> <ul style="list-style-type: none"> ▪ Mandate periodic risk assessment for Critical Information Infrastructure (CII) to enhance cybersecurity preparedness. ▪ Improve provisions for cyber incident reporting ▪ Standardize regulations for service providers ▪ Introduce provisions for public awareness to promote cybersecurity best practices among citizens and organizations. ▪ Enhance focus on data sovereignty ▪ Empower NCSA through capacity building to strengthen monitoring, incident response, and threat intelligence capabilities. ▪ Establish a dedicated Security Operations Center (SOC) for real-time monitoring, threat detection, and incident response for key government systems and Critical Information Infrastructure (CII).
National AI Policy	<ul style="list-style-type: none"> ▪ Enhance actionability of governance frameworks ▪ Improve focus on AI literacy at grassroot level ▪ Develop actionable mechanisms to provide support to AI startups ▪ Detail sectoral implementation frameworks ▪ Enhance provisions for international collaboration ▪ Mandating ethical guidelines for AI development and implement regulatory frameworks to ensure accountability and transparency in AI systems ▪ Promote use of localized training data for AI models and applications
National Startup Policy	<ul style="list-style-type: none"> ▪ Establish a standardized definition across all agencies to ensure clarity in eligibility and incentives. ▪ Enable startups to establish overseas holding companies and simplify capital repatriation rules. ▪ Ease IPO listing requirements and update BSEC regulations to attract venture capital and angel investments.

	<ul style="list-style-type: none"> ▪ Create controlled environments for startups to test innovative business models with temporary regulatory relaxations. ▪ Introduce flexible taxation policies for startups - shift taxation from GMV to revenue, provide tax exemptions for startups, introduce a flexible ESOP framework. ▪ Launch a government-backed fund-of-fund to attract global venture capital and institutional investors.
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4.1.3.6 Future ready ICT/Digital Organization

Context: A strong ICT workforce is the backbone for Bangladesh's digital transformation. Future ready ICT / Digital Organizations can help reimagine citizen service delivery and government operations by combining the best of in-person human, and technology capabilities. To transition to this new reality, the ICT workforce will need to be resilient, adopting structural changes and embrace new ways of working.

Current state & challenges:

The current ICT workforce is constrained by a multitude of challenges hindering Bangladesh's digital transformation. Some of the key challenges faced are as follows:

- **Limited career advancement:** ICT professionals across ministries lack a structured career path, restricting cross-functional mobility and long-term growth. The absence of standardized senior ICT designations discourages professionals from actively contributing to the country's digital transformation goals.
- **Redundant development:** Limited ICT leadership at senior levels also result in fragmented digital initiatives with no clear strategic alignment across ministries. This leads to redundancies in ICT initiatives such as infrastructure investments (e.g., digital labs), training programs, and ERP system development. Additionally, poor coordination in project funding with donor partners across ministries further contributes to overlapping initiatives without maximizing impact.
- **Limited visibility of ICT talent pool:** The absence of a centralized repository to track ICT professionals' skills, qualifications, and experience results in inefficient workforce deployment, suboptimal project staffing, and missed opportunities for targeted upskilling programs.
- **Underutilization of ICT workforce:** ICT personnel at Zila/Upazila levels are deployed without a structured framework / policy guideline, limiting their ability to support government digital platforms, train officials in digital government services (such as D-Nothi) and drive local digital adoption.
- **Limited involvement in project development:** Scattered ICT resources prevent ministries from contributing technical expertise during project early stages such

as design and implementation review. This increases reliance on external vendors, reducing long-term sustainability and in-house system ownership.

- **Limited capacity in emerging technologies:** Ministries lack specialized ICT professionals in key areas such as AI, cybersecurity, and cloud computing, preventing them from leveraging emerging technologies to drive innovation, strengthen digital security, and enhance service delivery.

Learning from benchmarks: United Kingdom

The Government Digital Service is a unit of the Government of the United Kingdom's Department for Science, Innovation and Technology tasked with transforming the provision of online public services and acts as the CDO. Moreover, a digital leader is appointed for each authority.

UK promotes rapid recruitment of external and even internal experts—because oftentimes motivated and capable people are found within your own ranks—the cultivation of a start-up culture, the requisite willingness to take risks, and the ability of superiors to delegate responsibility, as well as dedicated training for all employees to hone their digitalization skill.

Initiatives to be undertaken by Bangladesh:

A growth-oriented career path, capacity building, and policy enhancements will enable sustainable growth, foster innovation, and improve service delivery across ministries. To achieve this, Bangladesh must establish clear career trajectories, integrate ICT roles across government, create a centralized ICT workforce, and expand emerging technology expertise.

Structured ICT career track and leadership roles

- **Define a clear career trajectory for ICT professionals across ministries,** ensuring structured promotions, competency-based advancements, and specialized training to enhance expertise, retention, and long-term capacity building.
- **Categorize the ICT talent pool into three distinct groups** for optimized training and workforce deployment:
 - a. **ICT Specialists** (*Specialized qualifications*): Experts in AI, Cybersecurity, Cloud Computing, and other required fields.
 - b. **ICT Officers** (*Engineers and above*): Professionals responsible for managing and implementing ICT projects across ministries.
 - c. **ICT Assistants/Staff** (*Diploma Level*): Entry-level ICT personnel providing technical support and maintenance.



- **Manage ICT Specialists under a centralized framework under the ICT Division**, allowing them to be rotated across ministries and departments based on national priorities and evolving ICT needs. Establish a 10% training/leave reserve strength for ICT specialist roles, ensuring continuous availability of skilled professionals for critical ICT roles.
- **Each ministry/division should establish a structured ICT career path leading up to the role of System Manager** (Grade 5 or higher) as a senior ICT leadership position, formally appointed through a gazette notification. This role will drive strategic ICT alignment, reduce duplication of efforts, and institutionalize digital transformation initiatives across government entities.
- **System Managers to serve as the Chief Technology Officer (CTO)** for their respective government organizations, **leading the execution of the ministerial ICT roadmap** and driving digital transformation initiatives.

Recruitment strategy

- **Develop a competitive ICT recruitment strategy to attract top graduates** from BUET, SUST, DU, and other leading institutions, ensuring that highly skilled professionals enter the public sector.
- **Introduce a structured entry-level ICT recruitment plan** to attract fresh ICT graduates into government jobs, providing them with clear career growth pathways and specialized training opportunities at specific intervals
- **Refine recruitment policies to establish clear qualification benchmarks for different ICT grades**

DolICT role expansion

- **Expand and formalize the role of DolICT officers through defined mandate to position them as shared resources across government ICT projects**, enabling centralized coordination for capacity utilization and resource allocation.
- **DolICT officers at Zila/Upazila levels to also support local government offices** with periodic training on government applications (e.g., ICT toolkit, digital governance tools), manage local platforms (e.g., National Portal), and coordinate ICT efforts with local government offices to enhance digital service delivery.
- **Appoint dedicated ICT officers in every Zila/Upazila local government office** under DolICT, ensuring **structured oversight by a designated Zila/Upazila ICT officer** to enhance service delivery and digital adoption.
- **Develop a streamlined staffing method for deploying DolICT officials** to different projects / government offices, ensuring efficient allocation of technical expertise across ministries and agencies.

Centralized ICT workforce repository

- **Establish a national ICT workforce repository** to systematically map professionals' skills, qualifications, and experience across ministries for better workforce planning and deployment.
- **Leverage repository for strategic workforce allocation**, ensuring ICT professionals are actively involved in project development, including solution design review, testing, and post-implementation support to enhance project sustainability.
- **Create a robust auditing process to monitor and review all ICT projects** and donor funding across ministries

Expanded ICT Capacity

- **Recruit dedicated ICT teams within each ministry/division** to manage, support, and scale existing digital services while focusing on emerging technologies such as AI, cybersecurity, etc. to safeguard digital assets and foster innovation.
- **Build capacity within ICT Division** across projects (such as SQTC, BNDA, NCSA etc.) to provide support and feedback to the ministerial ICT teams across key areas such as architecture review, software / hardware testing, VAPT, etc.
- **Establish a dedicated National ICT Training Academy** to enhance the technical capabilities of ICT professionals, ensuring continuous skill development and specialization in critical areas such as cybersecurity, AI, cloud computing, and digital infrastructure management.
- **Implement structured, technology-focused training programs** to equip government ICT professionals with hands-on expertise in next-generation digital tools, cybersecurity protocols, and best practices for digital governance.
-

Program Components

Bangladesh must launch a program including several components:

Program objectives

The program aims to **establish a future-ready ICT workforce** across ministries by defining clear career trajectories, expanding grassroots ICT roles, centralizing workforce management, and enhancing capacity in emerging technologies to drive sustainable digital transformation.

Program targets

2026	2030
<ul style="list-style-type: none"> • Creation of centralized ICT repository • Updation of policy / guidelines to empower ICT workforce roles and responsibilities grassroot level 	<ul style="list-style-type: none"> • Dedicated ministerial ICT teams for project maintenance, cybersecurity and digital transformation

SDGs impacted

- **SDG 8:** Decent Work and Economic Growth
- **SDG 9:** Industry, Innovation, and Infrastructure
- **SDG 16:** Peace, Justice, and Strong Institutions

Program execution & ownership

Lead Agency	ICT Division
Implementing Body	DolCT
Funding Partner	To be identified

Implementation Tracks

Components	Activities
Structured ICT career track	<ul style="list-style-type: none"> ▪ Define a clear career trajectory for ICT professionals across ministries with structured promotions, competency-based advancements, and cross-ministerial mobility to enhance expertise and retention.

- **Appoint senior ICT leadership roles** (at Deputy Secretary equivalent or higher levels) across all ministries to drive strategic alignment, reduce duplication of efforts, and institutionalize digital transformation initiatives.
- **Define a clear career trajectory for ICT professionals across ministries**, ensuring structured promotions, competency-based advancements, and specialized training to enhance expertise, retention, and long-term capacity building.
- **Categorize the ICT talent pool into three distinct groups** for optimized training and workforce deployment:
 - a. **ICT Specialists** (Specialized qualifications): Experts in AI, Cybersecurity, Cloud Computing, and other required fields.
 - b. **ICT Officers** (Engineers and above): Professionals responsible for managing and implementing ICT projects across ministries.
 - c. **ICT Assistants/Staff** (Diploma Level): Entry-level ICT personnel providing technical support and maintenance.
- **Manage ICT Specialists under a centralized framework under the ICT Division**, allowing them to be rotated across ministries and departments based on national priorities and evolving ICT needs. Establish a 10% training/leave reserve strength for ICT specialist roles, ensuring continuous availability of skilled professionals for critical ICT roles.
- **Each ministry/division should establish a structured ICT career path leading up to the role of System Manager (Grade 5 or higher)** as a senior ICT leadership position, formally appointed through a gazette notification. This role will drive strategic ICT alignment, reduce duplication of efforts, and institutionalize digital transformation initiatives across government entities.
- **System Managers will serve as the Chief Technology Officer (CTO)** for their respective government organizations, **leading the execution of the ministerial ICT roadmap** and driving digital transformation initiatives.

DolICT role expansion	<ul style="list-style-type: none"> ▪ Expand and formalize the role of DolICT officers through defined mandate to position them as shared resources across government ICT projects, enabling centralized coordination for capacity utilization and resource allocation. ▪ DolICT officers at Zila/Upazila levels to also support local government offices with periodic training on government applications (e.g., ICT toolkit, digital governance tools), manage local platforms (e.g., National Portal), and coordinate ICT efforts with local government offices to enhance digital service delivery. ▪ Appoint dedicated ICT officers in every Zila/Upazila local government office under DolICT, ensuring structured oversight by a designated Zila/Upazila ICT officer to enhance service delivery and digital adoption. ▪ Develop a streamlined staffing method for deploying DolICT officials to different projects / government offices, ensuring efficient allocation of technical expertise across ministries and agencies.
Centralized ICT workforce repository	<ul style="list-style-type: none"> ▪ Establish a national ICT workforce repository to systematically map professionals' skills, qualifications, and experience across ministries for better workforce planning and deployment. ▪ Leverage repository for strategic workforce allocation, ensuring ICT professionals are actively involved in project development, including solution design review, testing, and post-implementation support to enhance project sustainability. ▪ Create a robust auditing process to monitor and review all ICT projects and donor funding across ministries
Expanded ICT Capacity	<ul style="list-style-type: none"> ▪ Recruit dedicated ICT teams within each ministry/division to manage, support, and scale existing digital services while focusing on emerging technologies such as AI, cybersecurity, etc. to safeguard digital assets and foster innovation. ▪ Build capacity within ICT Division across projects (such as SQTC, BNDA, NCSA etc.) to provide support and feedback to the ministerial ICT teams across key

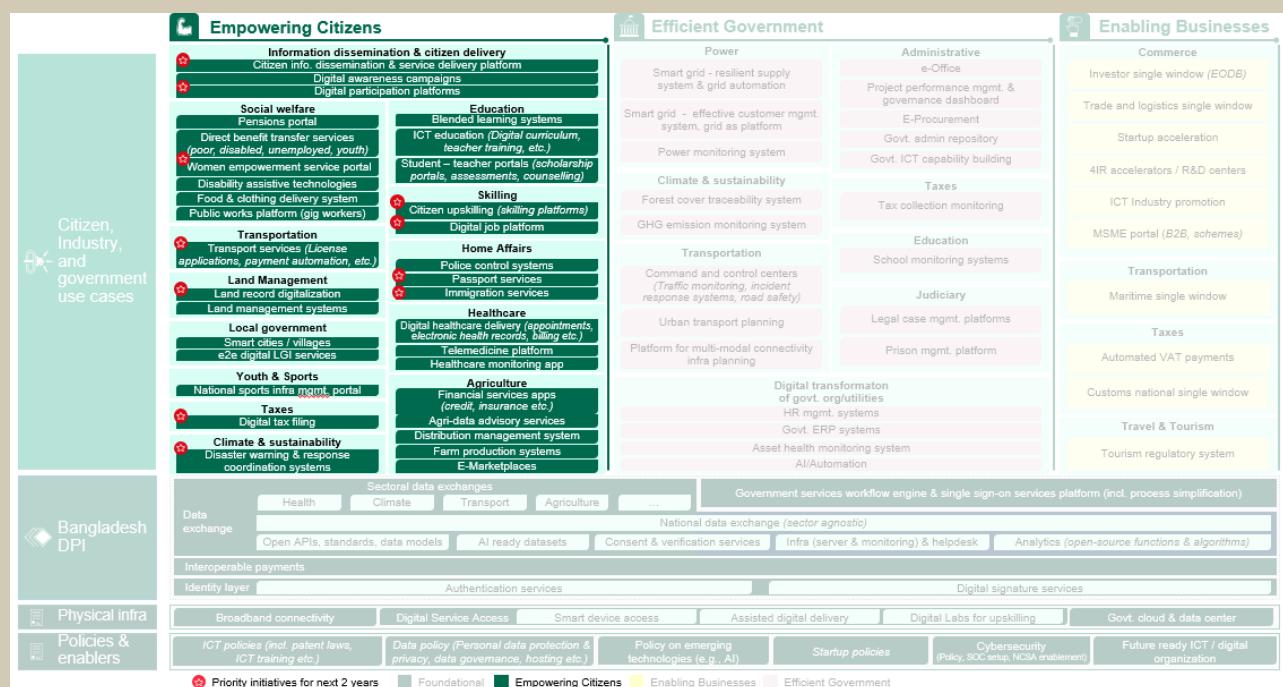
- areas such as architecture review, software / hardware testing, VAPT, etc.
- **Establish a dedicated National ICT Training Academy** to enhance the technical capabilities of ICT professionals, ensuring continuous skill development and specialization in critical areas such as cybersecurity, AI, cloud computing, and digital infrastructure management.
 - **Implement structured, technology-focused training programs** to equip government ICT professionals with hands-on expertise in next-generation digital tools, cybersecurity protocols, and best practices for digital governance.

5 EMPOWER STAKEHOLDERS

The below section provides key features to be developed for prioritized sector-specific prioritized initiatives along with the respective lead ministry responsible for running the initiative:

5.1.1 Empowering Citizens

This section highlights citizen-focused initiatives across various sectors. The identified 11 priority citizen focused initiatives leverage digital transformation to enhance accessibility, reduce inefficiencies, and foster greater engagement.



5.1.1.1 Citizen Information dissemination & Service Delivery Platform

Context: Ensuring seamless access to government services is crucial for effective public service delivery. Bangladesh's MyGov platform digitizes various services, enabling online applications, tracking, and information access. Expanding these efforts into a unified digital platform will provide citizens with a single, reliable access point for government schemes, essential services, and public information.

Current state: MyGov platform is Bangladesh's current centralized digital service delivery system, designed to streamline access to government services. 700+ services are digitized through MyGov, with varying levels of digitization from E2E digital service delivery to online form tracking.

Challenges: Few challenges faced by the MyGov platform in Bangladesh are: -

1. Limited interoperability across various services on the platform
2. Lack of integration with the BNDA e-Service Bus limiting ability to digitize public services
3. High operating costs incurred for managing the volume of requests.

Program Components

Bangladesh must launch a program including several components: -

Program objectives		
Ensuring service delivery of all govt. services through an integrated citizen information dissemination and service delivery platform		
Program targets	2026	2030
<ul style="list-style-type: none">▪ % of govt. services provided through the platform▪ % of population using platform for service delivery▪ % of population from underserved regions using the platform	> 25%	> 80%
SDGs impacted		
<ul style="list-style-type: none">• SDG 1: No Poverty• SDG 2: Zero Hunger• SDG 3: Good Health & Well-being• SDG 8: Decent work & economic growth• SDG 16: Peace, Justice & Strong Institutions		
Program execution & ownership		

Lead Agency	ICT Division
Implementing Body	A2I
Funding Partner	TO BE UPDATED
Implementation Tracks	
Components	Activities
Integrated service delivery platform	<ul style="list-style-type: none"> Develop an E2E integrated one-stop online platform integrating all government services, payment systems, etc. allowing citizens to apply, track, and receive services digitally Implement AI-driven automation for service approvals, document verification, and case processing to reduce delays and improve efficiency. Enable real-time status tracking and notifications for all applications
Drive adoption of services	<ul style="list-style-type: none"> Conduct nationwide awareness programs and introduce incentivization mechanisms to educate citizens and enhance adoption of digital services.
Promote inclusive access	<ul style="list-style-type: none"> Establish call centers, chatbots, service through UDCs and SMS-based services for citizens without internet access.
Complete digitization and integration across whole of govt.	<ul style="list-style-type: none"> Ensure integration with National e-Service Bus and achieve full interoperability between services Reduce citizen manual touchpoints for key digital services (e.g., birth registration). Provide access to the information, schemes, services of the Government at all levels from Central Government to State Government to District Administration
Feedback and grievance redressal mechanism	<ul style="list-style-type: none"> Integrate a structured feedback and grievance redressal system for citizens to rate services and report issues.

5.1.1.2 Digital Participation Platform

Context: While Bangladesh has introduced e-governance initiatives to improve service delivery, opportunities for direct public engagement in policymaking remain limited. A Digital Participation Platform will create a structured channel for citizens to voice concerns, provide feedback, and contribute to policy discussions, ensuring a more responsive and accountable government.

Current State: Bangladesh has taken steps to digitize government-citizen interactions, including the Central e-Participation Portal and grievance redressal mechanisms. The government has also introduced platforms for feedback on policies and service delivery. Efforts are underway to expand collaborative policymaking tools and online civic engagement initiatives.

Challenges:

- **Limited Citizen Engagement Channels:** No dedicated, real-time platform for direct citizen participation in policy discussions. Existing portals lack integration and accessibility, reducing overall effectiveness.
- **Low Public Awareness & Adoption:** Limited efforts for citizen awareness limits participation
- **Lack of Transparent Follow-Ups:** Citizens do not receive clear updates on how their inputs influence government actions.

Program Charter

Bangladesh must implement a program with the following components

Program objectives

Develop an interactive digital platform to enhance citizen engagement, encourage public participation in policymaking, and foster transparent governance.

Program KPIs

<ul style="list-style-type: none"> ▪ Monthly Active Users ▪ Total Contributions Submitted ▪ %Grievances resolved 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 10: Reduced Inequalities • SDG 11: Sustainable Cities and Communities • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	A2I	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Unified digital participation platform	<ul style="list-style-type: none"> • Develop a centralized online portal integrating policy discussions, public consultations, and feedback submission. 	
Real-time engagement tools	<ul style="list-style-type: none"> • Implement interactive town halls, live Q&A sessions, and virtual consultations with government officials. Reduce citizen manual touchpoints for key digital services (e.g., birth registration). • Use AI-driven analytics to assess citizen concerns, policy preferences, and emerging trends 	
Integrated Grievance Redressal System	<ul style="list-style-type: none"> • Link the platform with existing complaint and grievance mechanisms to ensure timely resolution. 	
Awareness & Outreach Campaigns	<ul style="list-style-type: none"> • Conduct digital literacy initiatives to educate citizens on how to engage with government decisions. 	

5.1.1.3 Citizen Upskilling

Context: With rapid advancements in technology, there is a growing need for digital skills across industries. While government-led training programs exist, many citizens lack access to advanced training, industry-aligned courses, and career-focused digital education. Expanding structured and inclusive upskilling initiatives will help bridge these gaps and prepare the workforce for future job opportunities.

Current State: Bangladesh has launched multiple initiatives, including NiSE, Leadership Academy, and ICTD Digital Lab, to enhance digital literacy and employment. The Labor Information Management System (LIMS) has digitized labor and employer databases. However, digital skill development remains concentrated in urban areas, training programs are not fully aligned with industry needs, and many citizens remain unaware of available opportunities.

Challenges:

1. **Unequal Access to Upskilling Programs:** Digital training programs are generally accessed by those in urban areas, whereas citizens in rural regions are unaware or unable to access opportunities
2. **Limited employment outcomes:** Digital skilling programs do not directly lead to employment outcomes and often, there exists a skill gap even after completion of the program
3. **Limited Public-Private Collaboration:** Few structured partnerships exist between the government, industry, and academia for skill-building.

Program Charter

Bangladesh must implement a program with the following components

Program objectives

Build a digitally skilled workforce by providing accessible, future-ready training programs to enhance employability and economic growth.

Program targets

Implementation timeline

SDGs impacted

- xx

Program execution & ownership

Lead Agency	ICT Division
Implementing Body	Bangladesh Computer Council (BCC)
Funding Partner	To be identified

Implementation Tracks

Components	Activities
Employability focused industry-led training programs	<ul style="list-style-type: none"> • Launch a portfolio of diploma courses, certification programs, and industry-led training, in collaboration with recruiters to teach relevant upcoming skills and enhance the employability value of certification.
Inclusive digital access	<ul style="list-style-type: none"> • Offer hybrid (online + offline) training, community-based programs, access through Union Digital Centers and digital platforms to reach all citizens, especially those in rural areas

Government-Academia-Industry Collaboration	<ul style="list-style-type: none"> Establish a structured Public-Private Partnership (PPP) framework to co-develop and deliver digital skilling programs.
Digital awareness & adoption campaigns	<ul style="list-style-type: none"> Drive awareness through media campaigns, digital literacy workshops, and incentives for participation.

5.1.1.4 National Job Platform

Context: Bangladesh needs to conceptualize a platform of platforms that integrates existing private & national portals of Bangladesh (e.g., LIMS, NiSE, etc.) and other relevant systems, creating a unified access point for job seekers, employers, and training providers.

Current State: Bangladesh has laid a strong foundation for a digital job platform through initiatives like the NiSE (National Intelligence for Skills, Education, Employment, and Entrepreneurship), Smart Leadership Academy and ICTD Digital Lab platforms. The Labor Information Management System (LIMS) has been launched for the digitalization and integration of labor and employer databases, including Labor Identity Number (LIN) and Worker Service Book. Additionally, a few freelancing initiatives such as the Bangladesh Freelancers Development Society, The Freelancing Development Ecosystem, etc. have been developed to support the gig economy.

Challenges: Despite a strong starting point, the following challenges are faced by digital job platforms in Bangladesh

- Limited digital literacy:** A significant portion of the population especially in rural areas face multiple barriers to accessing these platforms such as technical literacy, access to smart devices, lack of support in Bengali
- Variety of job opportunities:** NiSE platform majorly comprises of jobs for youth and migrant workers, with a lower focus on gig workers, govt. jobs and especially jobs for women, and physically challenged individuals.
- Lack of regulations in the sector:** While opportunities have grown, regulations are yet to catch up. Concerns regarding long hours, low pay and lack of job

stability are growing. Additionally, 89% of platform workers in Bangladesh expressed concerns about their safety and security while on the job

Program Components

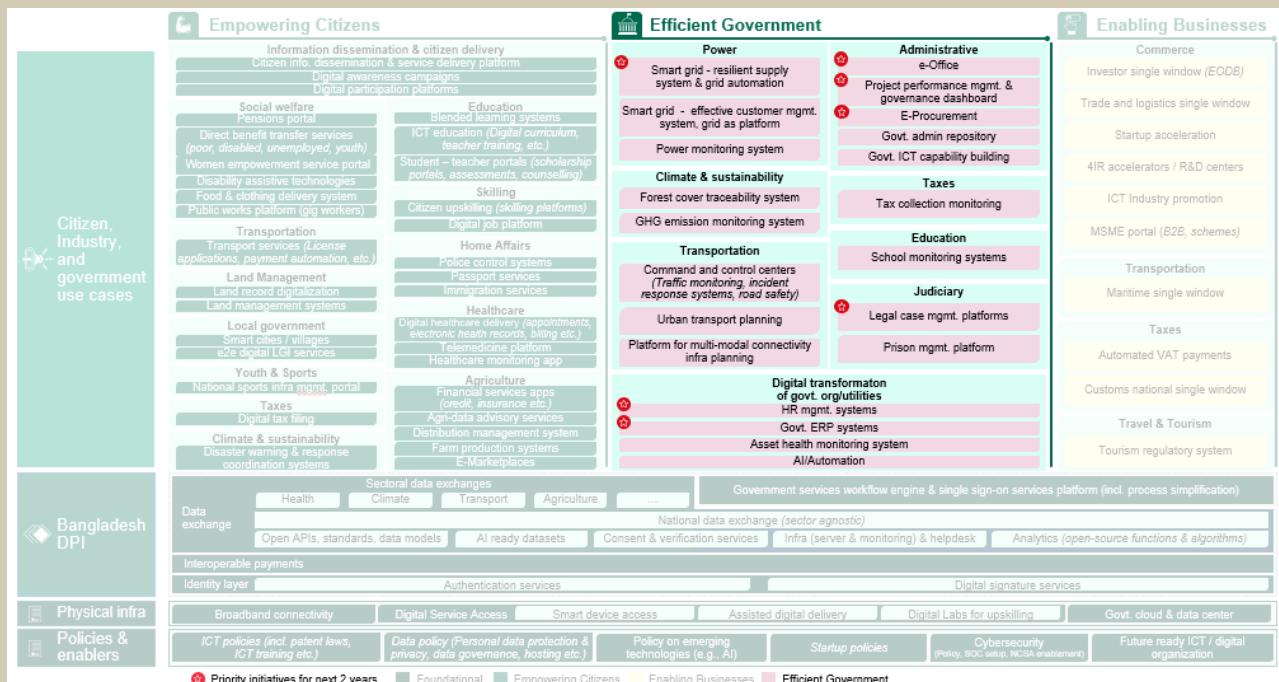
Bangladesh must launch a program including several components: -

Program objectives		
Program targets		
	2026	2030
<ul style="list-style-type: none">▪ Monthly active users▪ # of live opportunities on the platform (public/private/freelancing, etc.)▪ # of job opportunities facilitated▪ Average time to complete hiring		
Implementation timeline		
<p>Launch: 12-18 months</p> <p>Stabilize: 3-4 years</p> <p>Scale: 4-5 years</p>		
SDGs impacted		
<ul style="list-style-type: none">• SDG 8: Decent work & economic growth• SDG 10: Reduced inequalities		
Program execution & ownership		
Lead Agency	ICT Division	

Implementing Body	Bangladesh Computer Council
Funding Partner	To be identified
Implementation Tracks	
Components	Activities
Design an integrated digital platform	<ul style="list-style-type: none"> ▪ Develop a one-stop job platform integrating key functionalities into the platform such as job search, training access, skills credentialing, work experience verification, skills financing, and access to government accreditation and welfare schemes
Define governance model	<ul style="list-style-type: none"> • Design a flexible governance model with clear entity structure, talent hiring plan, independence, and operational flexibility to ensure smooth coordination across various stakeholders and government ministries.
Develop self-sustaining business model	<ul style="list-style-type: none"> ▪ Define a financial model for the platform to ensure its self-sustainability, incorporating both public funding and private sector participation.
Drive Adoption across job providers and job seekers	<ul style="list-style-type: none"> ▪ Mandate ministries to adopt a single digital job platform to prevent redundant development of multiple, disconnected systems and ensure data consistency across government services. ▪ Develop a detailed GTM strategy to attract job seekers

5.1.2 Efficient Government

This section highlights government-focused initiatives aimed at enhancing efficiency, transparency, and digital service delivery across ministries. The identified priority initiatives leverage digital transformation to streamline and digitize processes, reduce development and operational inefficiencies, and enable seamless, data-driven governance for improved public administration.



5.1.2.1 e-Office

Current state: Bangladesh has made progress towards digitization of government services. Current solutions launched include the D-Nothi (electronic document management system), the e-Form portal, and Unified Communication Tool platform. However, to fully realize the ambition of a paperless administration, further development is needed.

Challenges: Bangladesh has ambitious goals for efficient, accountable, user-centric government, but several challenges are present in current processes, which can be solved through e-office implementation

- Reliance on manual and paper-based processes:** The persistence of manual workflows creates inefficiencies, errors, and a lack of transparency in administrative operation
- Disconnected and siloed systems:** The absence of integrated, end-to-end systems leads to duplication of efforts and inefficiencies across departments. Limited mechanisms for public data sharing and traceability hinder accountability and service optimization.
- Limited digitization of services:** A significant number of government services lack online options, leaving users to navigate complex, in-person bureaucratic processes. Many digital initiatives are not fully realized, resulting in gaps in user experience and system performance.
- Cost and accessibility issues:** In-person services are often costly to access, particularly for marginalized or rural populations, leading to inequities in service delivery.

5. **Service inconsistency:** There are significant disparities in the quality of services offered across regions, causing uneven user experiences.

Learnings from benchmarks: Bangladesh can learn from paperless government implementations in benchmark nations such as UAE, Denmark & Estonia

UAE	Denmark	Estonia
<p>Dubai Paperless Strategy</p> <p>Overview</p> <ul style="list-style-type: none"> World's first 100% paperless government 1,800+ digital services and 10,500+ key transactions managed from government services platform \$350m and 14m man hours saved <p>Key learnings</p> <ul style="list-style-type: none"> Scope to drive material cost reduction and efficiency gains from digitization of administration Full digitization implemented across different bodies and divisions via a phased approach 	<p>Paperless government adoption Programs</p> <p>Overview</p> <ul style="list-style-type: none"> Danish legislation mandates government-citizen online interactions and online service delivery Alternatives to digital are shut down/ curtailed and citizens/ businesses are forced to go digital <p>Key learnings</p> <ul style="list-style-type: none"> Forced adoption is an option to drive rapid uptake Important to have both strong political and bureaucratic support for the digital agenda 	<p>e-Estonia paperless government</p> <p>Overview</p> <ul style="list-style-type: none"> 99% of state services can be accessed online with the goals of reducing bureaucracy, increasing transparency and boosting growth Coordinated by government and implemented by private sector <p>Key learnings</p> <ul style="list-style-type: none"> Data security and accountability built into system, with citizens able to monitor how their data is accessed and used Government can play a coordinator role, with tech designed and provided by private sector partners

Program Components

Bangladesh must launch a program including several components: -

Program objectives

Drive paperless administrative e-office services across whole of government

Program targets

- % of govt. ministries adopting paperless office
- % of paperless office processes
- % of reduction in time required for admin. Processes

SDGs impacted

- SDG 16: Peace, Justice, and Strong Institutions

Program execution & ownership

Lead Agency	ICT Division
Implementing Body	a2i, DoICT
Funding Partner	To be identified

Implementation Tracks

Components	Activities
Drive adoption across ministries	<ul style="list-style-type: none"> Drive adoption of D-Nothi across ministries, starting with the ICT Division over the next 2 years, and subsequently onboard all ministries within the next 6 years, enhancing digital document management.
Integrate with existing govt. platforms	<ul style="list-style-type: none"> Integrate D-Nothi with other government platforms like GRP, e-GP, DoITor, and MyGov through Single Sign-On (SSO), ensuring seamless access across services. Integrate D-Nothi with the National Service Bus to enable efficient data sharing between ministries, improving service delivery and reducing redundancies. Common applications such as bangla.gov.bd to be leveraged within D-Nothi through the data exchange
Incorporate real-time performance monitoring and	<ul style="list-style-type: none"> Incorporate real-time performance monitoring and analytics to track processing times, identify bottlenecks, and optimize workflows for faster decision-making.
Promote digital hardware to access e-office services	<ul style="list-style-type: none"> Ensure access to digital hardware at all levels of government, including laptops, conferencing systems, and other devices, to support remote work, online collaboration, and efficient digital governance
Set up communication systems between platforms	<ul style="list-style-type: none"> Set up fully integrated internal communication across these platforms, including instant messaging to enhance real-time communication between government officials and improve coordination across ministries

5.1.2.2 Performance Management & Governance Dashboard

Context: A Performance Management & Governance Dashboard will provide real-time insights, key performance indicators (KPIs), and automated reporting to improve policy execution, enhance service delivery, and enable proactive governance.

Current State: Bangladesh has implemented various data-driven initiatives, including the National Dashboard developed by a2i, which offers insights into public service performance. Ministries and agencies have started using digital reporting tools, but data consolidation remains inconsistent, and there is no integrated, real-time monitoring system for cross-sectoral governance. While dashboards exist for specific ministries, they are not standardized or interconnected, limiting the government's ability to track national progress holistically.

Challenges:

1. **Inconsistent KPI Measurement:** No standardized framework or dashboard for performance tracking, making comparisons across agencies difficult.
2. **Limited Citizen Feedback Mechanism:** Public grievances and satisfaction levels are not systematically captured for governance improvements.

Program Charter

Bangladesh must implement a program with the following components

Program objectives

Develop a centralized digital dashboard to monitor government performance, enhance decision-making, and improve transparency across ministries and agencies.

Program targets

- % ministries tracked through the dashboard
- %accuracy of data reported on the platform
- # of compliance checks automated through the platform

SDGs impacted

- **SDG 16:** Peace, Justice, and Strong Institutions

Program execution & ownership

Lead Agency	ICT Division
Implementing Body	a2i, DoICT
Funding Partner	To be identified

Implementation Tracks

Components	Activities
Unified Performance Dashboard	<ul style="list-style-type: none"> • Develop a centralized, real-time digital platform integrating data from all ministries and agencies. • Enable real-time updates, AI-driven analytics, and automated alerts for governance insights. • Define key performance indicators (KPIs) for service delivery, budget utilization, and national priorities, etc.
Citizen feedback integration	<ul style="list-style-type: none"> • Incorporate public grievances, surveys, and digital complaints into governance tracking.

Adoption & Governance	<ul style="list-style-type: none"> Launch an adoption mandate across ministries and ensure regular data updates and data accuracy. Schedule quarterly review meetings to discuss performance across KPIs
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5.1.2.3 Government ERP Systems

Context: Efficient governance requires real-time data management, process automation, and financial accountability across ministries and agencies. A unified Government ERP system will ensure seamless inter-agency coordination, reduce manual inefficiencies, and enhance transparency in public administration.

Current state: The Government's ERP system developed by the BCC is integrated with the National e-Service Bus enabling various govt. departments to use it interoperably. Built on a modular approach, it extends beyond integration of existing systems to extend 9 service categories for digital public digital administration spanning Meeting Management, Inventory Management, Asset Management, Human Resource Management, Procurement Management, Budget Management, Accounts Management, Audit Management, and Project Monitoring

Challenges:

- Manual Processing & Inefficiencies:** Many administrative processes, such as procurement approvals and financial reconciliation, still require manual intervention.
- Fragmented & siloed systems:** No single platform links budgeting, HR, procurement, and resource management across departments.
- Lack of Real-Time Data Visibility:** Decision-makers lack consolidated analytics and reporting tools for financial and operational planning.

Program Components

Bangladesh must launch a program including several components: -

Program objectives		
Develop a centralized, integrated Government ERP system to streamline administrative operations, enhance resource management, and improve decision-making across government agencies.		
Program targets		

<ul style="list-style-type: none"> % of existing data migrated to ERP from legacy systems % of govt. ministries fully transitioned to ERP systems % of decrease in admin cost due to ERP implementation 	
Implementation timeline	
Launch: 6 months Stabilize: 18 months Scale: 3-4 years	
SDGs impacted	
<ul style="list-style-type: none"> SDG 16: Peace, Justice & Strong Institutions 	
Program execution & ownership	
Lead Agency	ICT Division
Implementing Body	ICT Division
Funding Partner	TO BE UPDATED
Implementation Tracks	
Components	Activities
Fully integrated GRP platform	<ul style="list-style-type: none"> Develop a centralized system integrating budgeting, procurement, HR, and financial management across all ministries. Deploy AI-driven dashboards to provide real-time financial insights, workforce analytics, and predictive forecasting.
Drive adoption across ministries	<ul style="list-style-type: none"> Increase GRP adoption by mandating usage across all ministries to streamline office activities including procurement, budgeting, inventory and asset management, and meeting management.

	<ul style="list-style-type: none"> • Integrate GRP with e-GP, GEMS (HRMS), D-Nothi and other government platforms for seamless data sharing and improved efficiency. • Provide training and support to respective ministry teams to ensure smooth adoption and transition to digital operations.
Integrate ministry-specific customizations	<ul style="list-style-type: none"> • Enable build of customized modules (workflow management, supply chain management, production / distribution systems, etc.) to be led by respective ministry. • GRP team to support respective ministry / division , review module development to ensure successful module integration to existing GRP solution ministry
Develop a sustainable business model	<ul style="list-style-type: none"> • Develop a transparent sustainable business model for the GRP system ensuring fair pricing that does not hinder adoption. The pricing model for government users should be transparent, appropriately charged to cover infrastructure and development costs, while being competitively priced (comparable against Development and Annual Maintenance Charges of other ERPs)

5.1.2.4 Government Code Repository

Context: Government digital transformation projects often operate in silos, leading to duplicate efforts, inefficiencies, and lack of interoperability. A national government code repository will serve as a GIT-based collaborative platform where agencies can store, share, and reuse open-source code, ensuring standardization, transparency, and cost-effective digital solutions.

Current state: Currently, Bangladesh lacks a centralized code repository for government projects, leading to fragmented development efforts across ministries and agencies. Some government IT initiatives use proprietary repositories or department-specific platforms, limiting inter-agency collaboration. Countries like India (OpenForge) and the USA (Code.gov) have successfully implemented government-wide open-source platforms to streamline digital service development.

Bangladesh has initiated policy discussions on digital governance, but a structured framework for code sharing, security, and reusability is yet to be implemented

Challenges:

- Duplication of effort: Ministries and agencies operate independently, leading to duplicate software development efforts.
- Limited interoperability: Lack of collaboration across ministries results in difficulty in integrating existing government systems due to lack of defined common standards
- Security & Compliance Risks: Absence of common defined security protocols for government software code can lead to cybersecurity issues

Program Components

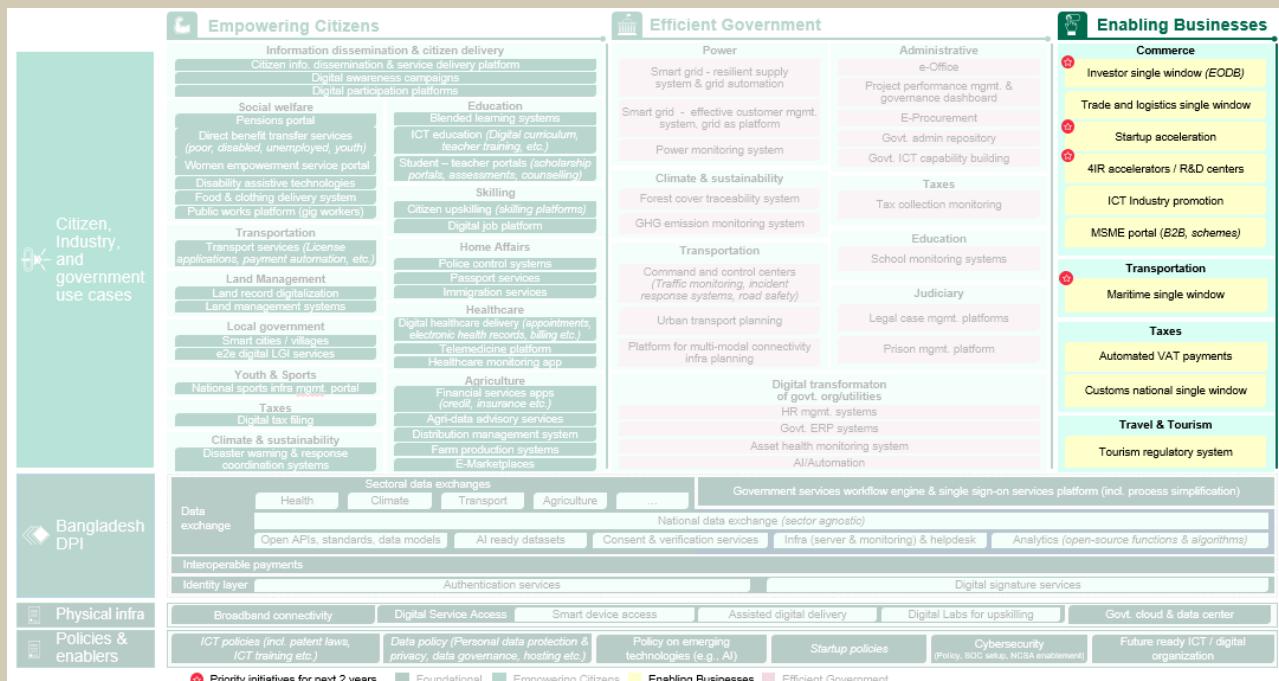
Bangladesh must launch a program including several components:

Program objectives		
Develop a centralized, open-source government code repository to enable collaborative software development, improve code reusability, and enhance digital governance efficiency.		
Program targets		
▪ # of ministries/public sector orgs. onboarded ▪ % of projects leveraging existing modules/components ▪ % of repositories compliant with security standards ▪ # of developers participating in government open-source projects		
SDGs impacted		
• SDG 9: Industry, Innovation, and Infrastructure • SDG 16: Peace, Justice & Strong Institutions		

Program execution & ownership	
Components	Activities
Lead Agency	ICT Division
Implementing Body	ICT Division
Funding Partner	TO BE UPDATED
Implementation Tracks	
National Government Code Repository	<ul style="list-style-type: none"> Establish a secure, centralized Git-based code repository for government agencies to store and manage software projects.
Code Reusability & Standardization Framework	<ul style="list-style-type: none"> Develop common standards, guidelines and best practices to ensure software interoperability across agencies and compatibility with existing platforms and frameworks e.g. BNDA. Provide APIs and SDKs for seamless integration across government applications. Implement modular, reusable components for common services e.g. e-authentication, digital payments, etc.
Open-Source Policy & Secure Collaboration	<ul style="list-style-type: none"> Define an open-source contribution policy for government projects, allowing secure code sharing with public and private developers. Set up a security audit mechanism to review government-developed code for vulnerabilities.
Capacity Building & Developer Community Engagement	<ul style="list-style-type: none"> Train government IT teams and software developers on using, managing, and contributing to the repository. Launch hackathons, developer challenges, and incentives to encourage innovation using the platform.

5.1.3 Enabling Businesses

This section highlights business-focused initiatives designed to foster an entrepreneurial, innovation-driven environment. The identified priority initiatives leverage digital transformation to simplify processes and create a seamless, technology-enabled ecosystem for entrepreneurs and enterprises to thrive.



Efficient Government

Power	Administrative
Smart grid - resilient supply system & grid automation	e-Office
Smart grid - effective customer mgmt. system, grid as platform	Project performance mgmt. & governance dashboard
Power monitoring system	E-Procurement
Climate & sustainability	Govt. admin repository
Forest cover traceability system	Govt. ICT capability building
GHG emission monitoring system	Taxes
Transportation	Tax collection monitoring
Command and control centers (Traffic monitoring, incident response systems, road safety)	Education
Urban transport planning	School monitoring systems
Platform for multi-modal connectivity infra planning	Judiciary
Digital transformation of govt. org/utilities	Legal case mgmt. platforms
HR mgmt. systems	Prison mgmt. platform
Govt. ERP systems	Asset health monitoring system
AI/Automation	AI/Automation

Enabling Businesses

Commerce
Investor single window (EODB)
Trade and logistics single window
Startup acceleration
4IR accelerators / R&D centers
ICT Industry promotion
MSME portal (B2B, schemes)
Transportation
Maritime single window
Taxes
Automated VAT payments
Customs national single window
Travel & Tourism
Tourism regulatory system

Government services workflow engine & single sign-on services platform (incl. process simplification)
National data exchange (sector agnostic)
Data exchange <ul style="list-style-type: none"> Open APIs, standards, data models AI ready datasets
Interoperable payments <ul style="list-style-type: none"> Consent & verification services Infra (server & monitoring) & helpdesk Analytics (open-source functions & algorithms)
Identity layer <ul style="list-style-type: none"> Health Climate Transport Agriculture ...
Digital signature services
Broadband connectivity
Digital Service Access
Smart device access
Assisted digital delivery
Digital Labs for upskilling
Govt. cloud & data center
ICT policies (incl. patent laws, ICT training etc.)
Data policy (Personal data protection & privacy, data governance, hosting etc.)
Policy on emerging technologies (e.g., AI)
Startup policies
Cybersecurity (Policy, SOC setup, Risk management)
Future ready ICT / digital organization

Priority initiatives for next 2 years

Foundational Empowering Citizens Enabling Businesses Efficient Government

5.1.3.1 Startup Acceleration

Current State: Bangladesh's startup ecosystem holds strong long-term potential despite a 2023 decline in investments due to global economic challenges. By mid-2024, the number of active startups reached 2,100, with an annual addition of 100 since 2018. The ecosystem has grown significantly, with over 400 deals totaling \$1 billion in funding, 90% from global investors, and generating 1.5 million jobs. To sustain this growth, and solve multiple challenges, there is a need for a structured framework to drive favorable policy action.

Additionally, the draft National Startup Policy 2024 is being launched to build a thriving startup ecosystem by promoting innovation, simplifying regulations, and supporting entrepreneurs. It tackles challenges in funding, knowledge, and infrastructure, emphasizing inclusivity and sustainability, to position Bangladesh as a global hub for entrepreneurship and technology.

Challenges: Bangladesh's startup ecosystem currently faces multiple challenges: -

- **Limited number of investors:** Limited number of local and global investors leading to only 5 active local VCs in Bangladesh
- **Limited growth stage capital flow:** While there have been 180+ pre-seed/seed deals, only 7 startups have raised Series B.
- **Dearth of awareness and mentorship support for founders:** Investors lack awareness about the opportunities in Bangladesh resulting in a disconnect with founders, who have limited access to quality mentorship
- **Regulatory challenges:** The Bangladesh startup ecosystem faces significant regulatory hurdles which deter potential investors and require policy action

Program Components

Bangladesh must launch a program including several components: -

Program objectives		
Program targets		
SDGs impacted		
<ul style="list-style-type: none"> ▪ # of startups receiving Series A funding & above ▪ Increase in total capital mobilized ▪ Global startup ecosystem ranking ▪ Direct/indirect jobs created as a result of startup capital deployment 		
<ul style="list-style-type: none"> ▪ SDG 8: Decent Work and Economic Growth ▪ SDG 9: Industry, Innovation, and Infrastructure ▪ SDG 10: Reduced Inequalities 		

Program execution & ownership	
Lead Agency	ICT Division
Implementing Body	Startup Bangladesh
Funding Partner	JICA
Implementation Tracks	
Set up fund-of-funds	<ul style="list-style-type: none"> ▪ Setup a fund of fund to inject capital and stimulate global and local VCs to form partnership funds and support the startup ecosystem
Launch National Startup Policy	<ul style="list-style-type: none"> ▪ Improve understanding of regulations relating to startups and liaise with regulators to help create favorable and coordinated policies across different stakeholders for ecosystem development
Institutionalize ecosystem enablers	<ul style="list-style-type: none"> ▪ Launch startup accelerators to mentor, fund, and fast-track startups. ▪ Host competitions for startups to pitch ideas and win funding/support. ▪ Engage local LPs to drive investments in VCs over traditional assets from corporations, institutions, and HNIs. ▪ Build investor capacity and capability in portfolio management, fundraising, and founder support. ▪ Promote the nation as a top destination for startups and innovation. ▪ Organize summits to showcase startups, attract investors, and inspire entrepreneurship.

5.1.3.2 4IR Accelerators

Context: The Fourth Industrial Revolution (4IR) is reshaping global production through automation, AI, and IoT, offering Bangladesh a critical opportunity to enhance industrial productivity, drive innovation, and solidify its position in global value chains.

To remain competitive, the country must integrate 4IR technologies into key industry sectors such as RMG & Textiles, Light Engineering, Pharma, Logistics, and Agriculture. This will enable digitized manufacturing, data-driven decision-making, and industry-specific technology solutions that drive exports and economic growth.

Current State: Bangladesh has initiated programs to support industrial growth and workforce upskilling in response to 4IR advancements. BHTPA has launched training programs under the DEIEDP project to equip professionals with globally recognized 4IR skills. Sector-specific incentives from BIDA are promoting investment in key industries. However, widespread adoption of 4IR technologies remains limited, with most industries still relying on conventional production methods and lacking structured frameworks for large-scale digital transformation.

Challenges:

1. Limited awareness and expertise – Many industries lack knowledge of 4IR applications and their impact on efficiency and competitiveness.
2. Slow adoption and investment – Businesses are hesitant to invest in automation and digital transformation due to high upfront costs and uncertain returns.
3. Workforce readiness gap – A shortage of skilled professionals in AI, IoT, robotics, and data analytics hinders the scaling of 4IR technologies.
4. Weak innovation ecosystem – Limited collaboration between industry, academia, and startups slows the commercialization of advanced technology solutions.
5. Infrastructure and policy constraints – Insufficient digital infrastructure and the absence of clear policies on data governance and AI adoption create barriers to implementation.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Establish a unified digital platform to streamline maritime trade operations, enhance port efficiency, and improve regulatory compliance		
Program targets		
• Global ranking in 4IR technology adoption • # of jobs created in 4IR sectors • % players in key sectors having run 4IR trials and rolling out at scale		
SDGs impacted		
• SDG 8: Decent Work and Economic Growth • SDG 9: Industry, Innovation, and Infrastructure		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Ecosystem Development	<ul style="list-style-type: none"> Increase knowledge-sharing and collaboration through industry-academia partnerships, conferences, and sector-specific events. 	
Innovation Incubators	<ul style="list-style-type: none"> Foster new technical innovations and startups through targeted funding, mentorship, and commercialization support. 	

Growth Accelerators	<ul style="list-style-type: none"> Provide financial and advisory support for scaling domestic 4IR-focused businesses.
Export Facilitation	<ul style="list-style-type: none"> Enable the global expansion of Bangladesh's 4IR tech industry by supporting market entry, pitching, and export strategies.
Standards & Regulation	<ul style="list-style-type: none"> Develop policies and guidelines to promote 4IR adoption and create a structured regulatory framework.
Industry Incentivization	<ul style="list-style-type: none"> Offer tax benefits and subsidies for early adopters of 4IR technologies to accelerate transformation.
Skillset Development	<ul style="list-style-type: none"> Establish advanced training programs in AI, robotics, and digital manufacturing to build a high-skilled workforce.

Directional guidelines have been prepared to shape the remaining priority initiatives from various ministries and government bodies (Appendix B). **These guidelines will be further refined and detailed within the ICT plans of the respective ministries and agencies**, ensuring alignment with national digital transformation goals.

PROGRAM GOVERNANCE

The governance structure for implementing the ICT Strategic Roadmap in Bangladesh will involve a coordinated effort among various stakeholders, ensuring smooth execution and alignment with the national vision.

The following key imperatives must be addressed to ensure timely implementation and avoid delays:

- Adoption:** Drive adoption for cross-ministerial initiatives (e.g., citizen service digitalization, e-office) to ensure effective digital transformation across ministries without delays
- Collaboration:** Effective cross-ministerial collaboration is crucial for developing interoperable foundational systems

- **Adherence to Standards:** Ensure compliance with standardized processes in technology, architecture, data hosting, policy guidelines as well as quality assurance
- **Monitoring and Evaluation:** Implement robust monitoring and evaluation to ensure timely delivery and risk mitigation
- **Initiative Overlap:** Review ministerial agendas to identify collaboration opportunities and avoid redundant development
- **Sustainability:** Ensure sufficient resource allocation and funding for both implementation and long-term sustainability of the program

Peer nations like Japan, Singapore and India have successfully utilized centralized governance structures to enable two core functions:

- **Oversight and Coordination:** Ensuring the alignment of detailed project proposals (DPPs), managing funding sources, tracking milestones/KPIs, and monitoring progress to address bottlenecks and prevent redundant development across ministries.
- **Technical Enablement:** Providing guidance and support on architecture review, procurement, ensuring compliance with national standards, policy guidelines, and best practices, while maintaining quality assurance and consistent stakeholder experience.

Given Bangladesh's need for both **efficiency** and **cross-sector collaboration**, such a model would be the best fit from roadmap implementation. This approach allows **ministries** to lead their initiatives while benefiting from the **centralized oversight** and **guidance** provided. The **ICT Division** would play the **technical enablement** role by providing **technical guidance** and developing **standards / compliance** for other ministries to follow, while the **Reforms Wing of the Cabinet Division / Chief Advisor's Office** would handle **oversight** and **coordination** to ensure alignment with national goals, timely execution, and adoption.

The roadmap has identified two broad archetypes of initiatives:

1. **Collaborative Initiatives** are led by the **ICT Division** with **cross-ministerial coordination** like **National Data Exchange and e-Office**.
2. **Supportive Initiatives** are **ministry-led** with **guidance and support** from **the ICT Division**, focusing on **sector-specific initiatives** such as the **Single Window System and Digital Tax Filing**.

The role of each body - **Lead agency, Oversight and Coordination, and Technical enablement** have defined for each initiative archetype:

		Collaborative initiatives	Supportive initiatives
Description		Direct purview of ICT Division with cross-ministerial coordination for inputs / implementation / adoption	Direct purview of other ministries / division with support / guidance from ICT Division
Initiative examples (non-exhaustive)		Foundational initiatives <ul style="list-style-type: none"> - National Data Exchange - Service Workflow Digitization Stakeholder-centric initiatives <ul style="list-style-type: none"> - E-Office - HR Management System 	Stakeholder centric initiatives <ul style="list-style-type: none"> - Single Window System (EODB) - Digital tax filing - Land digitalization - Agri advisory portal
Key responsibilities		Lead agency (Initiative owner)	
		ICT Division	Lead ministry / division
①	Oversight and Coordination: Cabinet Division / CAO	<ul style="list-style-type: none"> • Planning: Align DPP, funding and target KPIs • Monitoring: Review project KPIs and ensure adherence to standards (<i>ICT Division to be involved where required</i>) • Adoption: (<i>key focus area for ICT Division led collaborative initiatives</i>) <ul style="list-style-type: none"> - Create clear mandate for adoption - Monitor integration of digital services within ministry / division 	
	Technical Enablement: ICT Division (internally supported in case of ICT led initiatives)	<ul style="list-style-type: none"> • Technical guidance / support (<i>architecture review, procurement support, etc.</i>) • Develop standards for software / system development, cybersecurity, personal data protection, interoperability, hosting in government cloud, etc. • Quality assurance 	

Roles and responsibilities

1. ICT Division

The ICT Division would support across different stages of the project from conceptualization to post-implementation support. The following table outlines the specific roles and responsibilities of each affiliate body within the ICT Division across the project lifecycle:

Affiliate body	Roles and responsibilities
A2I <i>(Design / Development support)</i>	<ul style="list-style-type: none"> • Lead design and development for select initiatives • Provide technical guidance where necessary to ensure scalability, interoperability, and sustainability of ICT solutions.
BCC	<p>NDC / BDCCL (<i>Data storage plan review</i>)</p> <ul style="list-style-type: none"> • Ensure compliance with government data center/cloud policies • Provide government cloud / data center offerings to ministries – colocation, infrastructure, cloud services, etc. <p>BNDA (<i>Architecture review</i>)</p> <ul style="list-style-type: none"> • Validate solution architecture to ensure alignment with defined standards at the DPP stage. • Provide Go/No-Go approvals based on compliance with interoperability and security requirements.

	<p>SQTC (<i>Software / Hardware review</i>)</p> <ul style="list-style-type: none"> • Assess and qualify vendors based on technical expertise, security compliance, and past performance. Share list of qualified vendors with lead ministry to ensure quality adherence for development • Conduct functional, security and performance testing of ICT solution post development • Validate compliance with defined BNDA standards prior to deployment. • Enforce security and data sovereignty policies, such as ensuring development and maintenance on government servers (instead of vendor-controlled 3rd party servers), management of production environment by ICT personnel, etc.
NCSA <i>(Security assessment)</i>	<ul style="list-style-type: none"> • Conduct periodic cybersecurity maturity assessment for ministries / CIs • Perform hardware / software VAPT to identify and mitigate cybersecurity risks.
DoICT <i>(Project sustainability and adoption support)</i>	<ul style="list-style-type: none"> • Participate in solution design reviews and testing during the development stage • Provide go-live signoff after handover and documentation review for effective post-implementation support • Support platform and solution management, ensuring efficient maintenance, security, and system upgrades • Conduct training and adoption programs for collaborative initiatives to upskill officials across ministries and ensure effective utilization of ICT solutions.
CCA <i>(PKI implementation review)</i>	<ul style="list-style-type: none"> • Monitor implementation of Public Key Infrastructure (PKI) in line with defined policy / guidelines
Policy wing <i>(Roadmap implementation)</i>	<ul style="list-style-type: none"> • Monitor ministerial and ICT Division progress in executing the roadmap, ensuring adherence to strategic goals and timelines.

2. Development partners

Effective Development Partner (DP) coordination is critical to ensuring that ICT initiatives align with national standards, prevent redundancies, and follow the defined architecture and guidelines. As part of program governance, DPs must validate projects against BNDA guidelines, interoperability standards, and strategic priorities set by the ICT Division before approving funding. This structured approach will prevent overlaps, optimize resource utilization, and enhance cross-ministerial collaboration. The key roles & responsibilities of DPs as part of program governance structure of the ICT roadmap include:

- **Align project funding with ministerial and national priorities** to ensure strategic coherence.
- **Mandate BNDA architecture guidelines and interoperability standards** before funding approvals
- **Prevent ministries from developing isolated software and data centers** to avoid redundancy.
- **Facilitate cross-ministerial collaboration** to ensure integrated, scalable solutions.
- **Enforce development of post implementation support plan** to ensure sustainability.
- **Conduct periodic DP coordination meetings** to align **current and upcoming focus areas**, ensuring synchronization of efforts and preventing project overlaps.

Operational cost support:

Each ministry will earmark its budget to cover operational costs for its respective ICT infrastructure, such as license renewals and AMCs, ensuring continuity of digital services. The **Ministry of Finance will play a key role in facilitating fund availability for these operational expenses**, ensuring that the necessary resources are allocated to maintain and scale the digital infrastructure. Each ministry shall oversee and monitor projects to ensure that license-free software, which may pose security risks, are not used for key digital services and Critical Information Infrastructures (CIIs) as part of its reviews. This will help safeguard the integrity and security of digital platforms used by the government.

Each Ministry/Division has to prepare own roadmap for detailing of the initiatives mentioned in the ICT Strategic Roadmap according to the Allocation of Business of concern Ministry/Division.



ECOSYSTEM COLLABORATION

A robust ecosystem is vital to realizing the vision of the Bangladesh ICT Strategic Roadmap. By fostering synergy among industry, academia, and the government, the roadmap sets a clear path to drive innovation, skill development, and technology adoption. This collaboration enables the creation of cutting-edge solutions while fostering an environment conducive to economic growth and citizen empowerment.

Industry

The private sector is positioned to play three crucial roles as part of the ICT Strategic Roadmap, contributing as **Enablers**, **Facilitators**, and **Participants**.



Academia

Universities and academic institutions are critical partners in the ICT Strategic Roadmap, driving collaboration with the government and industry to foster innovation, shape policies, and build a skilled workforce. Academia plays a key role in aligning education and research efforts with national priorities, ensuring that Bangladesh's ICT ecosystem is equipped to tackle emerging challenges and seize new opportunities.

Below are some of the key areas of collaboration with academia outlined in the roadmap:

Initiative	Engagement activities
Policy formulation	<ul style="list-style-type: none">Collaborate with government agencies to draft evidence-based regulatory guidelines for digital transformationConduct targeted research to provide data-driven insights that shape ICT policiesDevelop policy briefs on emerging technologies to guide government decision-making

Skill Development	<ul style="list-style-type: none"> • Offer specialized training modules for government officials on emerging technologies like AI, cybersecurity, and e-governance tools • Update curriculum to include or modify courses like eGovernance systems, cybersecurity, and emerging ICT technologies to align with student skillset with modern industry and governmental requirements • Partner with industries to co-create skill development programs aligned with market requirement in emerging ICT domains • Establish university-accredited ICT training programs that incorporate industry partnerships to ensure globally recognized and employable skills • Engage students in government projects through internships to foster practical skills and direct involvement in national initiatives
Research & Innovation	<ul style="list-style-type: none"> • Expand Research and Innovation (R&I) centers across universities to focus on ICT advancements, fostering collaboration among academia, industry, and government • Establish AI hubs within universities to advance research, focusing on local challenges and solutions, while encouraging innovation in machine learning, NLP, and data analytics • Collaborate with industry and startups to prototype and pilot ICT solutions addressing specific national challenges • Publish actionable research findings and recommendations to guide ICT project prioritization and investment decisions

Partnership between government, industry, and academia is imperative for Bangladesh to leapfrog technologically, driving innovation, building skills, and securing a leading role in the global digital economy.

APPENDIX

6 APPENDIX A: GOVERNMENT STAKEHOLDER CONSULTATION SESSIONS

Session	Participants
ICT Division Meetings (One-on-one)	
Affiliated Bodies	<ul style="list-style-type: none"> • Bangladesh Computer Council (BCC) • Aspire 2 Innovate (A2I) • National Cybersecurity Agency (NCSA) • Controller Of Certifying Authorities (CCA) • Startup Bangladesh • Bangladesh Hi-Tech Park Authority (BHTPA) • Department of ICT (DoICT) • Bangladesh Data Center Council Limited (BDCCL)
Project teams	<ul style="list-style-type: none"> • Enhancing Digital Government and Economy (EDGE) • BGD eGov CIRT • Bangladesh National Digital Architecture (BNDA) • MyGov • Government Resource Planning (GRP) • Enhanced Digital Connectivity (EDC)
Other key stakeholders	<ul style="list-style-type: none"> • Policy Adviser (ICT Coordination & Reform) • Planning and Development Wing
Interministerial workshops	
Interministerial workshop 1	<ul style="list-style-type: none"> • National Board of Revenue (NBR) • Bangladesh Telecommunication Regulatory Commission (BTRC) • Post and Telecommunication Division • Ministry of Women and Child Affairs • Bangladesh Investment Development Authority • Bangladesh Bureau of Educational Information and Statistics (BANBEIS) • Implementation Monitoring and Evaluation Division • Ministry of Youth and Sports • Ministry of Commerce

Session	Participants
	<ul style="list-style-type: none"> • Ministry of Agriculture • Local Government Engineering Department • Ministry of Civil Aviation and Tourism • Department of Shipping • Power Division • Office of the Registrar General, Birth and Death Registration • Bangladesh Police • Ministry of Environment, Forest and Climate Change • Ministry of Expatriates Welfare and Overseas Employment • Bangladesh Bureau of Statistics (BBS)
<p>Interministerial workshop 2 <i>(including academia and industry associations)</i></p>	<ul style="list-style-type: none"> • Ministry of Social Welfare • Bangladesh Investment Development Authority (BIDA) • Ministry of Industries • Bangladesh Road Transport Authority (BRTA) • Post & Telecommunication Division • Bangladesh Bank • Chittagong Port Authority • Bangladesh Land Port Authority • Department of Immigration & Passport • Directorate of Land Record and Surveys • Board of Intermediate and Secondary Education, Dhaka • Office of the Registrar General, Birth and Death Registration • Ministry of Primary & Mass Education • Finance Division • Bangladesh Telecommunication Regulatory Commission (BTRC) • Ministry of Law, Justice and Parliamentary Affairs • Bangladesh Election Commission • Palli Daridro Bimochon Foundation (PDBF)

Session	Participants
	<ul style="list-style-type: none"> • Department of Shipping • Ministry of Commerce • Ministry of Youth and Sports • Ministry of Expatriates Welfare and Overseas Employment • Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) • e-Commerce Association of Bangladesh (e-CAB) • Dhaka Chamber of Commerce and Industry (DCCI) • Metropolitan Chamber of Commerce and Industry (MCCI) • Daffodil International University (Department of Software Engineering) • Bangladesh University of Business and Technology (BUBT)

7 APPENDIX B: EMPOWER STAKEHOLDERS – OTHER PRIORITY INITIATIVES

7.1.1 Empowering Citizens

7.1.1.1 Women Empowerment

Context: Empowering women through economic opportunities, legal protection, and social support is essential for achieving inclusive development. A Women Empowerment Service Portal will serve as a one-stop digital platform to provide financial assistance, helpline support, legal aid, and career resources, ensuring greater inclusivity and protection for women across the country.

Current State: Bangladesh has implemented several government initiatives to support women, including Her Power Project for skill development and the Toll-Free Hotline 109 for women in distress. Various social security schemes, microfinance programs, and legal aid services are available, but lack a unified platform for

access and coordination. Existing digital services are not fully integrated with law enforcement, healthcare, and financial aid systems, making it difficult for women to access the support they need in one streamlined interface.

Challenges:

- **Fragmented Access to Services:** Women must navigate multiple platforms to access government schemes, financial aid, and legal support.
- **Limited Awareness & Digital Literacy:** Many women, especially in rural areas, are unaware of available digital services and their rights.
- **Lack of Integrated Emergency Response:** No centralized mechanism links police, legal aid, and healthcare services for women in crisis.
- **Financial & Employment Barriers:** Women lack easy access to loans, entrepreneurship support, and career counseling.
- **Low Reporting & Grievance Redressal Efficiency:** Lack of trust in reporting mechanisms due to delayed response times and unclear resolution processes.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop a dedicated digital platform to provide women with access to government benefits, financial assistance, legal support, and grievance redressal services.		
Program targets		
<ul style="list-style-type: none">▪ Monthly Active Users▪ # of resolved requests/grievances per month		

▪ % women from underserved areas using the platform		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 5: Gender Equality • SDG 8: Decent Work and Economic Growth • SDG 10: Reduced Inequality • SDG 16: Peace, Justice & Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Integrated digital service portal	<ul style="list-style-type: none"> • Develop a one-stop platform that provides access to financial aid, legal assistance, skill training, and grievance redressal. 	
Emergency support & helpline integration	<ul style="list-style-type: none"> • Connect helplines, police, hospitals, and legal services for real-time support and intervention. Use AI-driven analytics to assess citizen concerns, policy preferences, and emerging trends 	
Integrated Grievance Redressal System	<ul style="list-style-type: none"> • Implement smart case tracking, automated follow-ups, and transparent reporting for women's complaints. 	
Awareness & Digital inclusion programs	<ul style="list-style-type: none"> • Conduct digital literacy campaigns, legal rights education, financial training and awareness programs for women across urban and rural areas. 	

7.1.1.2 Transport Services

Context: A well-regulated transport system is essential for safe, efficient, and accessible mobility. A unified digital transport services platform will enable seamless

application processing, real-time tracking, and automated payments, reducing administrative bottlenecks and improving user experience.

Current State: Bangladesh has introduced online vehicle registration, driving license applications, and digital challan payments through the Bangladesh Road Transport Authority (BRTA) portal. RFID-based automated toll collection and smartcard-based public transport ticketing are in limited use. However, citizens still require physical visits for biometric verification, application processing, and document submission. Traffic fine payments and permit renewals remain partially digital, with inconsistent enforcement of online systems.

Challenges:

- Fragmented Digital Systems: No single integrated platform connects vehicle registration, licensing, permits, and payments.
- Cumbersome Application, Renewal and Tracking Process: License and vehicle registration still require physical visits, delaying approvals. Citizens cannot track applications and approvals online, requiring in-person follow-ups.
- Limited Automation in Tax & Fine Payments: Manual processing of road taxes, traffic fines, and toll payments leads to inefficiencies.
- Limited Awareness & Adoption: Many users are unaware of online services, resulting in low adoption rates.

Program objectives		
Develop a fully digital transport management system to streamline license applications, vehicle registration, tax payments, and fine collection for improved efficiency and accessibility.		
Program targets		
▪ Monthly Active Users		

<ul style="list-style-type: none"> Average application processing time User Satisfaction Score 		
SDGs impacted		
<ul style="list-style-type: none"> SDG 11: Sustainable Cities and Communities SDG 9: Industry, Innovation, and Infrastructure SDG 13: Climate Action 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Integrated transport services portal	<ul style="list-style-type: none"> Develop a fully digital transport management system to streamline license applications, vehicle registration, tax payments, and fine collection for improved efficiency and accessibility. 	
E2E digital license, vehicle registration system with payments integration	<ul style="list-style-type: none"> Enable fully online applications, document uploads, biometric verification, and automated approvals. Implement real-time digital payment solutions for taxes, fines, tolls, and permits, reducing delays. 	
AI-driven application & verification	<ul style="list-style-type: none"> Use machine learning for automated document verification and fraud detection in licensing and vehicle registration. 	
Digital awareness campaigns	<ul style="list-style-type: none"> Promote online application services and digital payments to increase adoption and compliance. 	

7.1.1.3 Land Record Digitization

Context: Bangladesh is digitizing land records to improve transparency, efficiency, and accessibility in land management. A centralized digital land record system will streamline processes, reduce corruption, and ensure secure property rights.

Current State: Bangladesh has introduced e-Porcha (digital land records), e-Mutation (online ownership updates), and online land tax payments to improve service delivery. The e-Deed registration system has enhanced accuracy in property transactions, while satellite imaging and cadastral mapping are being used for land surveys. Efforts are also underway to develop a centralized digital database, but full integration across land registration, ownership verification, and taxation systems is yet to be achieved.

Challenges: Current efforts to achieve full digitization of land records faces certain challenges as follows: -

1. **Fragmented and Manual Processes:** Land records remain scattered across multiple agencies, leading to duplication and inconsistencies.
2. **Lack of System Integration:** No single **interoperable platform** connects land registration, taxation, and ownership verification.
3. **Limited Public Access and Transparency:** Citizens face difficulties accessing land records, increasing dependency on intermediaries.
4. **Slow Dispute Resolution:** The absence of **real-time, tamper-proof digital records** prolongs land-related legal cases.
5. **Limited Use of Emerging Technologies:** AI, GIS mapping, and blockchain adoption remain low, restricting automation and fraud prevention.

Project Charter

Bangladesh must initialize a program involving the following components



Program objectives		
Establish a centralized, tamper-proof digital land record system to enhance transparency, efficiency, and accessibility in land management.		
Program targets		
<ul style="list-style-type: none"> • % of land records digitized and uploaded on the system • % accuracy of land records • Average Application processing time • %Reduction in land-related disputes 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 1: No Poverty • SDG 10: Reduced Inequalities • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Full digitization of land records	<ul style="list-style-type: none"> • Convert all land records into a centralized, tamper-proof digital database with real-time access. 	
Integrated Digital Land Management System:	<ul style="list-style-type: none"> • Develop a single platform linking land registration, taxation, ownership verification, and dispute resolution. • Enable secure online access to land records, property details, and transaction history for citizens and businesses. 	

Advanced technology driven digital surveying	<ul style="list-style-type: none"> Implement latest technology such as Unmanned Aerial Vehicle (UAV)/Drone Surveying, Global Navigation Satellite System (GNSS), GIS mapping, blockchain technology, AI-driven cadastral mapping, etc.
Automated Dispute Resolution System	<ul style="list-style-type: none"> Develop an AI-powered dispute resolution mechanism with digital case tracking to expedite land-related legal issues.

7.1.1.4 Digital Tax Filing

Context: Bangladesh is working towards a modernized, digital-first tax system to improve tax compliance, enhance revenue collection, and minimize fraud. A fully automated, integrated tax filing system will streamline tax administration, improve taxpayer experience, and increase government revenue.

Current State: Bangladesh has implemented e-TIN (electronic Taxpayer Identification Number), VAT Online, and e-Return filing systems, enabling taxpayers to submit tax returns and make payments digitally. The government has also introduced automated tax calculation and digital invoicing for businesses. While digital adoption is increasing, manual verification and document submission are still required in several steps, slowing down processing. Efforts are ongoing to integrate AI-driven compliance monitoring and fraud detection to strengthen tax enforcement.

Challenges:

1. Taxpayers still face manual steps in submission, verification and review of tax refunds, reducing efficiency and leading to delays.
2. Absence of a centralized system connecting income tax, VAT, and customs for unified compliance tracking.
3. Many businesses lack awareness or incentives to adopt digital invoicing and e-filing.

Program objectives		
Develop a fully digital, efficient, and transparent tax filing system to simplify compliance, reduce manual processing, and enhance revenue collection		
Program targets		
<ul style="list-style-type: none"> • %Citizens using digital portal for tax filing • Average processing time • %Increase in tax compliance • User Satisfaction Score 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
End-to-End Online Tax Filing System	<ul style="list-style-type: none"> • Enable fully digital tax return filing, automated calculations, and e-verification with minimal manual intervention. 	
Integrated tax management platform	<ul style="list-style-type: none"> • Connect income tax, VAT, and customs under a unified system for seamless compliance tracking. 	

Incentives for adoption	<ul style="list-style-type: none"> Introduce tax incentives for businesses that adopt digital invoicing and real-time tax reporting.
Use of AI/ML in tax refund and compliance systems	<ul style="list-style-type: none"> Implement an AI-driven tax refund system to expedite claim verification and disbursement. Deploy machine learning and analytics for fraud detection, risk assessment, and predictive tax compliance monitoring.

7.1.1.5 Disaster Warning & Response Coordination System

Context: Bangladesh is often vulnerable to natural disasters, including floods, cyclones, landslides, and river erosion, impacting millions of lives and livelihoods annually. A digitally integrated early warning system will improve risk assessment, emergency response, and post-disaster recovery efforts, ensuring greater resilience against climate-related disasters.

Current State: Bangladesh has implemented early warning systems and disaster response frameworks, including the Cyclone Preparedness Program (CPP) and Flood Forecasting and Warning Center (FFWC). Satellite and weather monitoring systems provide basic forecasting, while mobile-based early warnings are issued through SMS alerts and sirens. The Mujib Climate Prosperity Plan and National Adaptation Plan (NAP) outline long-term resilience strategies.

Challenges:

- Fragmented Coordination Across Agencies:** Lack of a centralized response system results in delayed emergency actions.
- Limited Real-Time Data & Predictive Analytics:** Absence of AI-driven forecasting for early disaster detection and impact prediction, minimal deployment of UAVs (drones) and satellite imaging for real-time disaster assessment.
- Manual Alert Dissemination:** Early warnings rely on SMS and sirens, limiting reach and effectiveness.

- Limited coordination in post-disaster response & relief distribution:** Lack of automated tracking of affected populations, leading to resource misallocation.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop a technology-driven early warning and response coordination system to enhance disaster preparedness, minimize risks, and ensure rapid emergency response.		
Program KPIs		
<ul style="list-style-type: none"> • Disaster Prediction Accuracy • # of people trained by the system • %Reduction in casualties & economic damage from disasters 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 9: Industry, Innovation, and Infrastructure • SDG 13: Climate Action 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	

Centralized disaster response platform	<ul style="list-style-type: none"> Establish an integrated national emergency response system, linking meteorological data, rescue teams, and local authorities.
Automated multi-channel alert system	<ul style="list-style-type: none"> Implement geo-targeted mobile alerts, digital billboards, and community radio warnings for effective outreach.
Use of AI, drone & UAV technology for real-time tracking	<ul style="list-style-type: none"> Deploy machine learning models and satellite data integration for more accurate disaster forecasting. Use UAVs, remote sensors, and satellite imaging for real-time damage assessment and rescue operations.
Blockchain-based relief distribution system	<ul style="list-style-type: none"> Ensure transparent tracking of disaster aid and relief funds to prevent misallocation and enhance efficiency.

7.1.1.6 Passport Services

Context: Bangladesh is advancing towards a fully digital passport issuance system to improve efficiency, security, and accessibility. The introduction of e-passports was a key milestone, but further enhancements are needed to streamline application processes, reduce physical visits, and ensure faster delivery.

Current State: Bangladesh has introduced e-passports with biometric data to enhance security and reduce fraud. An online application and appointment system is in place, allowing applicants to initiate the process digitally. Integration with the National ID database has improved identity verification, and digital payments are available for passport fees. However, biometric enrollment and final document submission still require in-person visits to passport offices

Challenges: Despite a strong start, there are a few challenges faced still

- Cumbersome Application Process:** Still requires physical presence for biometric verification and document submission, making it difficult especially, for those living in rural areas
- Processing Delays:** Long turnaround times and limited real-time tracking.

3. **Identity Verification Inefficiencies:** Manual verification leads to processing errors.
4. **Lack of Home Delivery:** Citizens must return to passport offices to collect passports.

Program objectives		
Enable a fully digital, secure, and accessible passport issuance system to streamline applications, enhance verification, and ensure timely delivery		
Program KPIs		
<ul style="list-style-type: none"> • %applications processed digitally • Reduction in time to process applications • User Satisfaction Score 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Fully Online Application Process	<ul style="list-style-type: none"> • Enable citizens to submit applications, upload documents, make payments, and complete identity verification online. 	
Biometric Enrollment at UDCs	<ul style="list-style-type: none"> • Implement biometric enrollment at Union Digital Centers (UDCs) with online appointment scheduling to reduce the burden on passport offices. 	

Real-time application tracking	<ul style="list-style-type: none"> Introduce real-time tracking for passport applications, providing citizens with status updates and notifications.
Online NID/Digital ID Verification	<ul style="list-style-type: none"> Utilize online NID and Digital ID verification for passport applications, eliminating the need for physical NID verification.
Home delivery of passports	<ul style="list-style-type: none"> Offer home delivery services for e-passports, allowing citizens to receive their passports at their doorstep.

7.1.1.7 Immigration Services

Context: Bangladesh is modernizing its immigration services to enhance security, efficiency, and traveler convenience. With increasing international travel and the need for seamless border control, a fully digital and automated immigration system is essential. The introduction of e-visas and biometric-based verification has been a step forward, but further improvements are required to streamline processing, reduce wait times, and enhance security at entry and exit points.

Current State: Bangladesh has implemented biometric-based immigration systems, including fingerprint and facial recognition, at major international airports and land ports. An e-visa system is in place, allowing travelers to apply online, but document submission and approvals still involve manual steps. Automated gates for biometric passport holders have been introduced on a limited scale, improving efficiency for select travelers. However, real-time tracking of visa applications remains limited, and integration between immigration, security agencies, and airlines needs further enhancement to ensure seamless operations.

Challenges: The current immigration system faces certain challenges as outlined below :-

- **Manual Processing Delays:** Immigration checks still involve significant manual interventions, leading to long queues and slow processing times.
- **Limited Automation at Entry/Exit Points:** Automated **e-gates** are available only at select airports, limiting benefits for frequent travelers.
- **Lack of Real-Time Tracking:** Travelers cannot track visa applications and approvals in real-time, leading to uncertainty in processing timelines.

Program objectives		
Develop a fast, automated, and secure immigration system to enhance traveler experience, improve border security, and enable seamless entry and exit.		
Program targets		
<ul style="list-style-type: none"> • %immigrations processed through system • Reduction in time to process applications • # of complaints per month with system 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	

Implement Biometric Systems at Checkpoints	<ul style="list-style-type: none"> Deploy contactless fingerprint and facial recognition systems to enable faster and more secure passenger clearance
Fully online e-Visa system	<ul style="list-style-type: none"> Enable end-to-end online processing, including submission, document verification, payments, and real-time tracking.
Expand Automated Gates for E-Passport Holders	<ul style="list-style-type: none"> Install biometric-enabled smart gates across all major airports and land ports to expedite entry and exit for eligible travelers
Real-Time Tracking of Visa Applications:	<ul style="list-style-type: none"> Introduce a digital tracking system with status notifications for applicants.
Secure data sharing across agencies	<ul style="list-style-type: none"> Ensure seamless and real-time integration between immigration, airlines, and security agencies for better border control and security management.

7.1.2 Efficient Government

7.1.2.1 Smart Grid

Context: Bangladesh is transitioning towards a modernized and digitally enabled power grid to improve energy efficiency, reliability, and sustainability. As electricity demand continues to grow, manual grid operations, power interruptions, and transmission losses pose significant challenges. A Smart Grid will integrate advanced digital technologies, real-time monitoring, and automation to enhance grid stability, reduce losses, and support the adoption of renewable energy sources.

Current State: Bangladesh has made progress in grid automation, with the introduction of SCADA (Supervisory Control and Data Acquisition) systems, GIS mapping, and smart meters. The government has also initiated projects for distributed energy resource management and grid-scale battery storage, but full-scale integration of AI-driven automation, smart metering, and decentralized energy management is yet to be achieved.

Challenges:

1. High transmission & distribution losses result due to outdated infrastructure and lack of predictive maintenance.
2. Limited Integration of Renewable Energy due to challenges in storing and managing intermittent solar and wind energy.
3. Increased risk of grid hacking and system vulnerabilities due to digital transformation.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop an intelligent, automated, and resilient power grid to enhance energy efficiency, integrate renewable energy, and ensure reliable electricity supply		
Program targets		
<ul style="list-style-type: none">• System Average Interruption Duration Index (SAIDI)• Smart Meter penetration rate• %renewable energy integration		

SDGs impacted	
<ul style="list-style-type: none"> • SDG 7: Affordable and Clean Energy • SDG 9: Industry, Innovation, and Infrastructure • SDG 11: Sustainable Cities and Communities 	
Program execution & ownership	
Lead Agency	ICT Division
Implementing Body	ICT Division
Funding Partner	TO BE UPDATED
Implementation Tracks	
Components	Activities
Grid Automation & Digital Monitoring	<ul style="list-style-type: none"> • Implement Advanced Distribution Management Systems (ADMS), AI-driven Energy Management Systems (EMS), and Automatic Generation Control (AGC) to optimize grid operations.
Smart Metering & Consumer Participation	<ul style="list-style-type: none"> • Roll out smart meters to provide consumers with real-time energy usage insights and demand-side management capabilities.
Renewable energy adoption	<ul style="list-style-type: none"> • Deploy Distributed Energy Resource Management Systems (DERMS) and battery energy storage solutions to enhance grid stability with solar and wind energy.
Cybersecurity & Resilience Measures	<ul style="list-style-type: none"> • Establish grid security frameworks, AI-based threat detection, and backup systems to safeguard against cyberattacks.
Predictive Maintenance & Fault Detection	<ul style="list-style-type: none"> • Use AI and IoT-based monitoring to predict and prevent equipment failures, reducing outages and maintenance costs.

7.1.2.2 e-Procurement

Context: Public procurement is a key driver of economic development, accounting for a significant share of government expenditure. The adoption of e-Government Procurement (e-GP) has improved efficiency, transparency, and vendor participation, but procurement remains fragmented, requiring further automation, integration, and standardization. A comprehensive e-procurement marketplace is essential to enhance cost efficiency, prevent delays, and optimize purchasing decisions.

Current State: Bangladesh's e-GP system currently handles over 60% of public procurement, offering digital tendering, contract management, and e-payment services. The system has reduced procurement lead times and improved vendor participation, while efforts are underway to expand integration with financial and budgeting systems and to introduce automated purchase tracking and demand forecasting to further optimize procurement processes.

Challenges: Despite recent developments, the system faces certain challenges :-

1. **Fragmented Procurement Categories:** Lack of standardized specifications and pricing benchmarks across agencies.
2. **Limited Vendor and Buyer Integration:** No unified procurement marketplace for competitive pricing and efficiency.
3. **Delayed Payments:** Manual processing leads to payment backlogs, discouraging vendor participation.
4. **Limited System Interoperability:** No seamless integration with financial and budgeting systems.

Initiatives Recommended for Bangladesh

- Develop a One-Stop E-Procurement Marketplace: Integrate vendor registration, catalog-based purchases, and automated bidding for tenders and direct purchases.

- Enhance Payment and Financial Integration: Enable real-time electronic payments to expedite vendor settlements.
- Implement Demand Forecasting and Analytics: Use AI-driven insights for optimized procurement and cost efficiency.
- Establish Standardized Procurement Categories: Define clear specifications and pricing benchmarks across ministries.
- Ensure Full Integration with Government Systems: Link e-procurement with financial, budgeting, and project execution systems for seamless operations.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop a centralized, transparent, and fully digital e-procurement system to enhance efficiency, reduce corruption, and streamline government purchasing processes.		
Program targets		
<ul style="list-style-type: none"> • %government ministries adopting the platform • Average cost savings per ministry • %Reduction in procurement time • User Satisfaction Score 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 9: Industry, Innovation, and Infrastructure • SDG 12: Responsible Consumption and Production • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	

Implementing Body	ICT Division
Funding Partner	TO BE UPDATED
Implementation Tracks	
Components	Activities
Full digitization of land records	<ul style="list-style-type: none"> Convert all land records into a centralized, tamper-proof digital database with real-time access.
Integrated Digital Land Management System:	<ul style="list-style-type: none"> Develop a single platform linking land registration, taxation, ownership verification, and dispute resolution. Enable secure online access to land records, property details, and transaction history for citizens and businesses.
Advanced technology driven digital surveying	<ul style="list-style-type: none"> Implement latest technology such as Unmanned Aerial Vehicle (UAV)/Drone Surveying, Global Navigation Satellite System (GNSS), GIS mapping, blockchain technology, AI-driven cadastral mapping, etc.
Automated Dispute Resolution System	<ul style="list-style-type: none"> Develop an AI-powered dispute resolution mechanism with digital case tracking to expedite land-related legal issues.

7.1.2.3 Government ICT Capability Building

Context: The Bangladesh Public Administration Training Center (BPATC) provides structured training programs for civil servants, incorporating leadership and policy development. Integrating comprehensive ICT training into these programs will ensure officials at all levels are equipped with the necessary digital skills to manage e-governance initiatives, enhance service efficiency, and support the country's digital transformation efforts.

Current state: The Bangladesh Public Administration Training Center (BPATC) under Ministry of Public Administration (MoPA) is the apex institution responsible for the training and capacity-building of public sector officials across various government levels. It provides structured training programs such as the Foundation Training Course (FTC) for entry-level officers, the Advanced Course on Administration and Development (ACAD) for mid-level officers, and the Senior Staff Course (SSC) for high-

ranking officials. These programs aim to enhance administrative efficiency, leadership skills, and policy implementation capabilities.

However, while BPATC offers a 360-degree training framework, ICT training remains fragmented and inconsistent across different levels of government officials. Existing programs focus primarily on traditional administrative functions, with limited integration of digital governance, technology management, and emerging technologies like AI, IoT, and cybersecurity. As digital transformation accelerates across public services, there is an urgent need to embed ICT skill development within BPATC's structured training programs to equip government officials with the technical knowledge required to effectively implement and oversee digital initiatives.

Challenges: To build a digitally proficient public sector, the government must address key gaps:

1. **Limited ICT training integration:** Digital competencies are not completely embedded into foundational and advanced BPATC programs, leaving civil servants unprepared for digital governance.
2. **Low motivation to undertake ICT training:** Since ICT training programs for government officials are optional and not linked to career progression, officials are not incentivized to focus on them, leading to low participation in digital skills development.
3. **Lack of role-specific ICT training:** While some officials require deeper technical expertise, others are in need of basic ICT proficiency to effectively lead digital initiatives, make informed policy decisions, and oversee e-governance projects. However, there is no structured role-based training approach to address these varied needs.
4. **Limited specialized training for ICT officials:** While general ICT training is lacking, there is also no structured advanced training track for ICT officials to deepen their expertise and take on higher technical responsibilities in government
5. **Weak understanding of emerging technologies:** There is minimal awareness and expertise among officials in emerging technologies such as AI, cybersecurity, cloud computing, etc. and their applications in government services
6. **Lack of industry-academia collaboration:** There are no structured partnerships with industry leaders and academic institutions to provide advanced, hands-on training in emerging technologies, limiting access to cutting-edge skills and best practices.

Program Charter

Bangladesh must implement a program involving multiple components

Program objectives

Develop a structured, role-specific ICT training framework to equip government officials with essential and advanced digital skills for effective governance and digital transformation.

Program targets

- % of govt. officials undergone basic ICT training
- # of mandatory training programs integrated with ICT curriculum
- # of specialized training programs introduced

Implementation timeline

Launch: 6 months

Stabilize: 18-24 months

Scale: 3-4 years

SDGs impacted

- SDG 16: Peace, Justice, and Strong Institutions

Program execution & ownership

Lead Agency	ICT Division
Implementing Body	ICT Division
Funding Partner	TO BE UPDATED

Implementation Tracks

Components	Activities
Generalist track	<ul style="list-style-type: none"> • Embed ICT Curriculum in existing training programs: Integrate ICT training into BPATC programs (FTC, ACAD, SSC) as a mandatory component, ensuring that all government officials—from junior recruits to senior



	<p>leaders—are equipped with a foundational ICT toolkit and knowledge of digital service offerings.</p> <ul style="list-style-type: none"> • Develop new intermediate training program (Digital leadership training): Introduce a new Digital Leadership Training program for mid-level BCS recruits (5+ years) to equip them with the ability to drive digital initiatives, enhance e-governance, and leverage emerging technologies like AI, cybersecurity, etc. • Introduce basic ICT proficiency training: Develop mandatory ICT training module for workforce in rural areas / officials that have not taken any ICT training last 3 years to ensure they have the basic digital know-how required to leverage existing government ICT solutions and make informed technology-related decisions.
Specialized track	<ul style="list-style-type: none"> ▪ Initiate specialized ICT training program for ICT workforce: Establish an advanced certification-based program for ICT officials focusing on specialized areas like cybersecurity, AI, data analytics, and enterprise architecture to enhance their ability to design, implement, and manage government digital initiatives. ▪ Incorporate industry-academia collaboration: Develop structured partnerships with leading academic institutions and technology firms to offer joint certification programs, industry-led workshops, and advanced technical courses tailored to the evolving needs of government ICT professionals. ▪ Include internationally accredited certifications: Integrate globally recognized certification programs into ICT training to ensure industry-standard expertise and international recognition for government ICT professionals. ▪ Leverage Non-Resident Bangladeshis (NRBs) as foreign trainers: Utilize NRBs whenever possible to deliver specialized training with local relevance, ensuring alignment with Bangladesh's digital transformation needs. ▪ Establish a dedicated National ICT Training Academy: Leverage the National ICT Training Academy as a central hub for these specialist ICT training programs, ensuring standardized training, knowledge-sharing, and upskilling opportunities for ICT professionals.

<p>Incentivize ICT training through career progression (both tracks)</p>	<ul style="list-style-type: none"> ▪ Link completion of structured ICT training programs to career advancement opportunities to encourage higher participation and ensure skill development aligns with long-term professional growth.
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7.1.2.4 Legal Case Management Platform

Context: An efficient legal case management system is essential for reducing case backlogs, expediting trials, and ensuring transparent judicial processes. A centralized digital case management platform will enable end-to-end case tracking, automated scheduling, and virtual court proceedings, ensuring faster dispute resolution and improve legal accessibility.

Current state: Bangladesh has implemented digital court dashboards, e-cause lists, and case monitoring tools, offering better visibility into court proceedings. The Amar Adalat app provides case updates, and efforts are underway to expand e-courtroom capabilities. However, case filing, document submission, and hearing processes still require in-person visits, and limited automation slows down court operations. While digitization initiatives are growing, full-scale case management automation is yet to be achieved.

Challenges:

1. Manual & Paper-Based Court Procedures: Case filings, documentation, and scheduling rely on physical records, causing delays and inefficiencies.
2. Inefficient Case Tracking & Scheduling: No real-time case status updates for citizens, lawyers, or court officials.
3. Limited Public Access to Legal Information: Citizens struggle to file cases online or track case progress without physically visiting courts.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop a fully digital, integrated legal case management system to streamline court processes, improve case tracking, and enhance judicial transparency.		
Program targets		
	2026	2030
<ul style="list-style-type: none"> • # of legal professionals, courts, agencies onboarded onto the platform • %Reduction in case processing time • %Increase in case resolution rates 		
SDGs impacted		
■ SDG 16: Peace, Justice, and Strong Institutions		
Program execution & ownership		
Lead Agency	Ministry of Public Administration	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
E2E digital case mgmt. system	<ul style="list-style-type: none"> • Implement a nationwide legal platform for case filing, tracking, scheduling, and document management. 	

Centralized National Case Database	<ul style="list-style-type: none"> Integrate all courts into a unified digital records system to improve case coordination and legal transparency.
Real-time case tracking and e-court development	<ul style="list-style-type: none"> Expand e-court capabilities to enable remote case hearings and digital evidence submission Provide citizens, lawyers, and judges with AI-driven case status updates and automated alerts.
Online Case Filing & Grievance Redressal	<ul style="list-style-type: none"> Develop a citizen-friendly portal to enable digital petition submission, case progress tracking, and legal aid access.

7.1.2.5 HR Management Systems

Context: An efficient HR management system is essential for managing personnel records, payroll, promotions, performance tracking, and workforce planning in the public sector. A comprehensive, fully integrated HR platform will improve service delivery, transparency, and workforce planning by enabling real-time employee data access and automated HR workflows

Current State: Bangladesh has implemented GEMS, covering over 20,000 civil servants, with plans to onboard 1.4 million government employees. The system manages appointments, transfers, and training records but lacks advanced functionalities like performance management, benefits tracking, and organizational workforce planning. While some ministries have adopted partial digital HR solutions, there is no unified system ensuring seamless HR operations across all of government

Challenges:

1. Fragmented HR Data Across Ministries: No centralized database for managing all government employees.
2. Limited HR Functionality: GEMS does not fully cover performance management, payroll integration, or employee benefits tracking.

3. Manual Processing of HR Tasks: Transfers, promotions, and leave management still involve manual approvals, causing delays.
4. Lack of Workforce Analytics & Planning: No real-time insights into workforce efficiency, skills tracking, or retirement planning.
5. Limited Integration with Other Government Systems: No direct linkage with finance, payroll, or performance tracking platforms.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop a centralized digital HR management system to streamline employee records, automate administrative processes, and enhance workforce efficiency across government agencies.		
Program targets		
<ul style="list-style-type: none"> ▪ % of HR processes automated ▪ % of HR functions adopting platform across ministries ▪ User Satisfaction Score 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 16: Peace, Justice & Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	



Implementation Tracks	
Components	Activities
Fully integrated Govt. HR platform	<ul style="list-style-type: none"> Expand GEMS to cover all civil servants and integrate payroll, benefits, and leave management.
Performance Management & Workforce Analytics	<ul style="list-style-type: none"> Develop a unified HR records system for real-time access to personnel data across ministries.
Automated HR Workflows	<ul style="list-style-type: none"> Implement AI-driven analytics to track employee productivity, training needs, and career progression.
Centralized Employee Database	<ul style="list-style-type: none"> Enable digital approvals for transfers, promotions, and performance appraisals to reduce delays.
Integration with Payroll & Financial Systems:	<ul style="list-style-type: none"> Link GEMS with budget planning, payroll processing, and pension schemes for efficiency.

7.1.3 Enabling Businesses

7.1.3.1 Investor Single Window Clearance System

Context: The Single Window System (SWS) for clearances and approvals in Bangladesh aims to streamline the regulatory process by creating a unified platform that integrates multiple government services into one centralized system, improving efficiency and reducing delays.

Current state: Currently, all 5 Investment Promotion Agencies (IPAs) have their own standalone platforms offering 27 services

Challenges: Few challenges faced in Bangladesh are: -

- It takes 2-3 weeks to register a business in Bangladesh due to multiple approvals, manual interventions and bureaucratic delays. Countries like Singapore (ranked 2nd on the global EODB index) can register businesses in less than a day
- Limited interactions between agencies result in process efficiencies for investors

- Requirement of physical visits and unexpected delays in processes deters investors from registering new businesses

Program objectives		
Implement a robust single window platform to streamline applications, approvals, compliance, grievance redressal simplifying the investment process		
Program targets		
<ul style="list-style-type: none"> % of services integrated into SWS platform % manual touchpoints digitized Reduction in number of days required to register a business 		
SDGs impacted		
<ul style="list-style-type: none"> SDG 8: Decent Work and Economic Growth SDG 9: Industry, Innovation, and Infrastructure SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Complete service integration	<ul style="list-style-type: none"> Integrate all 27 services into the SWS platform, providing investors with a centralized, transparent, and efficient method to manage all required clearances and approvals and respond to investor queries. Review current workflows for these services to reduce number of manual touchpoints required for approval. 	

	<ul style="list-style-type: none"> Implement real-time tracking, document verification, and automated approval processes to streamline clearance procedures and minimize delays.
Integrate online payment facility	<ul style="list-style-type: none"> Enable online payment options for all services on the platform, making transactions faster and more secure.
Set up a monitoring committee	<ul style="list-style-type: none"> Set up a monitoring committee to regularly review any delays in the processing of applications and enforce accountability for adherence to SLAs to ensure a smooth and efficient approval process

7.1.3.2 Maritime Single Window

Context: A Maritime Single Window (MSW) system will create a centralized digital platform, integrating customs, port authorities, and shipping agencies to enable seamless exchange of information and faster clearance of cargo.

Current State: Bangladesh has introduced Bangladesh Single Window (BSW) for trade facilitation, allowing businesses to submit import, export, and transit documentation electronically. Additionally, efforts are underway to develop a National Maritime Port Strategy, which includes plans for a Maritime Single Window.

Challenges

- Manual Documentation Process:** Reliance on physical forms and approvals slows down port operations, multiple government agencies require separate documentation, leading to delays and inefficiencies.
- Lack of Real-Time Shipment Tracking:** Limited digital tracking hinders visibility and delays responses to logistics bottlenecks.
- Data Silos Among Stakeholders:** Absence of a fully integrated system causes duplication and coordination challenges between customs, port authorities, and shipping agencies.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Establish a unified digital platform to streamline maritime trade operations, enhance port efficiency, and improve regulatory compliance		
Program targets		
<ul style="list-style-type: none"> • # of agencies integrated • %Reduction in time taken to process requests • %manual procedures digitized 		
SDGs impacted		
<ul style="list-style-type: none"> • SDG 9: Industry, Innovation, and Infrastructure • SDG 16: Peace, Justice, and Strong Institutions 		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	
Unified Maritime Single Window Platform	<ul style="list-style-type: none"> • Develop a centralized digital system for submission, processing, and clearance of all maritime trade documents. • Enable real-time data exchange between customs, port operators, shipping lines, and regulatory bodies. 	

Implement latest technology innovations (AI, IoT, etc.)	<ul style="list-style-type: none"> • Implement AI-driven risk profiling and automated approval mechanisms to expedite shipments. • Deploy IoT-enabled tracking systems for end-to-end cargo visibility and predictive analytics for port efficiency.
Digital Payment & Transaction Processing	<ul style="list-style-type: none"> • Introduce secure online payments for port fees, customs duties, and service charges, reducing transaction delays.

7.1.3.3 Customs Single Window

Context: The Customs Single Window (CSW) aims to create a digital platform where traders can submit all import, export, and transit documentation electronically, ensuring seamless coordination between customs, regulatory bodies, and trade stakeholders.

Current State: Bangladesh launched the National Single Window (NSW) initiative under the Bangladesh Regional Connectivity Project, supported by the World Bank. The NSW is designed to integrate 15 certificate, licensing, and permit-issuing agencies, allowing businesses to submit trade documentation through a single portal. The ASYCUDA World system has been introduced to digitize customs operations, but inter-agency integration remains incomplete, requiring manual approvals.

Challenges:

- Fragmented Trade Processing System: Multiple agencies require separate approvals, and there isn't a mechanism leading to delays.
- Limited Integration & Automation: Many agencies still rely on paper-based processes, physical inspections, leading to slow clearances, reducing efficiency.
- Low Awareness & Adoption Among Traders: Many businesses lack knowledge and training on using digital customs platforms.

Program Charter

Bangladesh must implement a program with the following components

Program objectives		
Develop a fully integrated Customs Single Window (CSW) system to streamline trade processes, reduce clearance times, and enhance efficiency in import and export operations.		
Program targets		
<ul style="list-style-type: none">• # of agencies integrated• %Reduction in time taken for customs clearances• %manual procedures automated• %growth in import/export transactions		
SDGs impacted		
<ul style="list-style-type: none">• SDG 9: Industry, Innovation, and Infrastructure• SDG 16: Peace, Justice, and Strong Institutions		
Program execution & ownership		
Lead Agency	ICT Division	
Implementing Body	ICT Division	
Funding Partner	TO BE UPDATED	
Implementation Tracks		
Components	Activities	

Unified Customs Single Window platform	<ul style="list-style-type: none"> Integrate customs, regulatory agencies, banks, and trade bodies into a single digital platform. Enable real-time document submission, tracking, and approval for importers and exporters.
Seamless Inter-Agency Data Integration	<ul style="list-style-type: none"> Connect ASYCUDA World with trade licensing, taxation, and logistics systems to ensure real-time information sharing. Enable one-time document submission for multi-agency processing.
Digital Payment & Transaction Processing	<ul style="list-style-type: none"> Introduce integrated digital payments for customs duties, port charges, and related fees. Enable automated reconciliation with the National Board of Revenue (NBR).
AI-Driven Risk-Based Inspections	<ul style="list-style-type: none"> Implement automated risk assessment tools to reduce manual inspections and speed up clearances. Introduce predictive analytics to identify high-risk shipments for targeted inspections.

ABBREVIATIONS

Serial	Abbreviation	Detailed Meaning
01	N-CERT	National Computer Emergency Response Team
02	N-SOC	National Computer Emergency Response Team
03	NCSA	National Cyber Security Agency
04	SSL	Secure Sockets Layer
05	TLS	Transport Layer Security
06	P2P	Person to Person / Peer to Peer
07	G2P	Government to Person
08	P2G	Person to Government
09	SOC	Security Operations Center
10	NID	National Identification
11	BDRIS	Birth and Death Registration Information System
12	KYC	Know Your Customer
13	EKYC	Electronic Know Your Customer
14	CRVS	Civil Registration and Vital Statistics
15	BBS	Bangladesh Bureau of Statistics
16	NBR	National Board of Revenue
17	BB	Bangladesh Bank
18	MFS	Mobile Financial Services
19	SIM	Subscriber Identity Module
20	eSIM	Embedded Subscriber Identity Module

Serial	Abbreviation	Detailed Meaning
21	TIN	Tax Identification Number
22	CDR	Call Detail Records
23	BMET	Bureau of Manpower, Employment and Training
24	BANBEIS	Bangladesh Bureau of Educational Information and
25	A2I	Aspire to Innovate
26	MRA	Microcredit Regulatory Authority
27	CIB	Credit Information Bureau
28	GD	General Diary
29	ITC	International Terrestrial Cable
30	IIG	International Internet Gateway
31	IGW	Internet Gateway
32	BGD eGov CIRT	Bangladesh e-Government Computer Incident Response
33	NDMC	National Data Governance Council
34	NDR	National Data Repository
35	NODP	National Open Data Platform
36	ITEE	Information Technology Engineers Examination
37	AI	Artificial Intelligence
38	IoT	Information of Things
39	UNDP	United Nations Development Programme.
40	BNDA	Bangladesh National Digital architecture BUS.

Serial	Abbreviation	Detailed Meaning

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