AI for Public Good

Strategic Implementation of Artificial Intelligence (AI) to Directly Benefit Citizens and Strengthen Government



Jointly Proposed by

URBAN STRATEGY RESEARCH
Bangladesh First
FOUNDATION FOR STRATEGIC AND DEVELOPMENT STUDIES (FSDS)

DHAKA FORUM INITIATIVE

The Big Idea: A Smarter, Faster Government for the People

This proposal puts forward a simple but transformative idea: harnessing Artificial Intelligence (AI) to solve the everyday problems of our citizens and to accelerate Bangladesh's journey toward becoming a modern democratic nation.

AI is not about complicated technology for its own sake. It is about applying the most powerful tool of the Fourth Industrial Revolution to deliver services, security, and opportunities to people faster, more fairly, and more effectively than ever before. Just as earlier industrial revolutions reshaped societies, AI can change the status quo and act as a great equalizer, allowing developing nations like Bangladesh to leap ahead rather than follow behind.

By adopting AI for public good, we can move from a government that reacts to crises to one that anticipates, predicts, and prevents problems. Everyday public services—whether education, healthcare, transport, or safety—can become as simple and accessible as using a mobile phone app.

This is more than just efficiency. It is a chance to show our people and the world that Bangladesh can lead in technology-driven governance, where democracy, inclusivity, and innovation converge. A state that uses AI to listen, to serve, and to protect will strengthen public trust and global credibility.

If we embrace this leap now, AI can help us climb the development ladder faster than ever imagined, securing a legacy of progress that empowers every citizen and positions Bangladesh as a model for the Global South.

Why This Matters for Bangladesh Now

- Solve Problems People Care About: We can use AI to tackle district-level issues that matter to voters: preventing disease outbreaks before they happen, giving farmers precise advice to save their crops, and ensuring social safety net payments go to the people who truly need them.
- Make Government Services Easy: Citizens are frustrated with long queues and complicated paperwork. We can use AI to simplify these processes. For example, renewing a passport or a trade license could be done from a mobile phone with a face scan, cutting processing time from weeks to days.
- Show Decisive Leadership: Neighboring countries are already moving ahead. By adopting a smart, citizen-focused AI strategy, Bangladesh can establish itself as a regional leader in digital governance, attracting investment and international prestige.

A Practical Model: Learning from Global Leaders

- Taiwan offers a pragmatic model, focusing on using AI to strengthen its democracy and build citizen-centric services while leveraging its existing industrial strengths.
- Singapore provides an aspirational blueprint, using AI to build national systems of excellence. Their top-down, strategic approach is deeply integrated into their national vision.
- Estonia, a global leader in digital governance, uses its KrattAI strategy to allow citizens to access services through natural language and voice commands—a powerful tool for inclusion in a nation with varying literacy levels.

Inside the whitepaper, we provide a detailed ministry-by-ministry summary in the appendix. We offer two real-life examples of how AI can be implemented by each ministry, complete with Key Performance Indicators (KPIs) and a case study framework.

Executive Summary

In the dynamic landscape of modern governance, the strategic application of Artificial Intelligence (AI) presents an unparalleled opportunity for the leadership of Bangladesh to enhance public trust and deliver on the promise of effective governance. For Bangladesh, AI is not merely an incremental technological upgrade; it is a national lever with the potential to act as a great equalizer, allowing the nation to leapfrog traditional developmental constraints. Used wisely, AI can help Bangladesh advance by closing critical service gaps, amplifying the capacity of its institutions, and unlocking new forms of economic and social value for its citizens.

This whitepaper presents a strategic framework for harnessing AI not as a standalone technology but as a tool for building 'collective intelligence,' a concept championed by thinkers like Geoff Mulgan, where AI enhances the capabilities of institutions to solve problems more effectively. This approach aligns with the work of global innovation agencies like the UK's Nesta, which focuses on harnessing technology for social good. It means applying AI to deliver public support that is more efficient, cost-effective, and hassle-free through services that are transparent, auditable, and responsive to the lived realities of the people, from clogged roads in Dhaka to the challenges of accessing healthcare in rural communities.

The single greatest impediment to this vision is the persistent fragmentation of government data, with ministries operating in functional silos that prevent holistic, data-driven decision-making. This framework positions AI as the connective tissue required to break down these barriers, creating the technical and political impetus to build a truly interoperable data ecosystem, a long-held national goal.

To demonstrate the feasibility of this ambition, this report draws lessons from global exemplars. Taiwan offers a pragmatic model of a democracy using AI to deliver people-oriented civic services, while Singapore provides an aspirational blueprint for using AI to build national systems of excellence and enhance global standing. Their experiences prove that a strategic, citizen-centric approach to AI yields profound results.

An assessment of Bangladesh’s current state reveals a solid foundation upon which to build. The nation possesses growing digital connectivity, foundational data center infrastructure, an emerging national AI policy, and a dynamic private-sector tech community. However, significant gaps remain in data quality, interoperability, comprehensive legal guardrails, and specialized civil service capacity.

This document concludes with a clear and focused request. The path forward requires not a large, immediate budgetary outlay, but a mandate for decisive action. We seek the political will and authority to:

1. Establish a Foundational Platform: Authorize the formation of a high-level, cross-ministerial steering committee to oversee the "AI for Public Good" initiative and the development of a central, secure AI platform that can serve the entire government.

2. Execute High-Impact Pilots: Grant this committee the authority to select and implement a portfolio of high-impact pilot projects, as detailed in the comprehensive ministry-by-ministry appendix of this report. This mandate must include the authority to enforce the necessary data sharing among participating ministries, thereby operationalizing the vision of a unified, data-driven state.

Nigeria's proactive approach demonstrates a clear path forward. By acting decisively, Bangladesh can similarly harness AI to accelerate its development, empower its citizens, and secure its position as a leader in the digital age.

We do not need to invent everything from scratch. Taiwan offers a pragmatic model for a country like ours. They have focused on using AI to strengthen their democracy, combat false information, and build citizen-centric services, all while leveraging their existing industrial strengths. Their approach is a practical blueprint for achieving rapid success.



Key National Opportunities

Strategic Foresight

For nations willing to act with strategic foresight, AI offers a powerful means to accelerate development, overcome structural limitations, and create new pathways to prosperity.

National Lever

Because citizens constitute the nation, AI becomes a national lever: the great equalizer that, like past industrial revolutions, lets countries leapfrog constraints.

Advancement Catalyst

Used wisely, AI can help Bangladesh advance closing service gaps, amplifying capacity, and unlocking new forms of economic and social value.

The strategic adoption of AI is not an alternative to Bangladesh's vision for a technologically advanced, knowledge-based economy, but the most potent catalyst for achieving it.

Bangladesh's Vision

The Government of Bangladesh has articulated a clear and ambitious vision for a technologically advanced, knowledge-based economy through its national development initiatives.

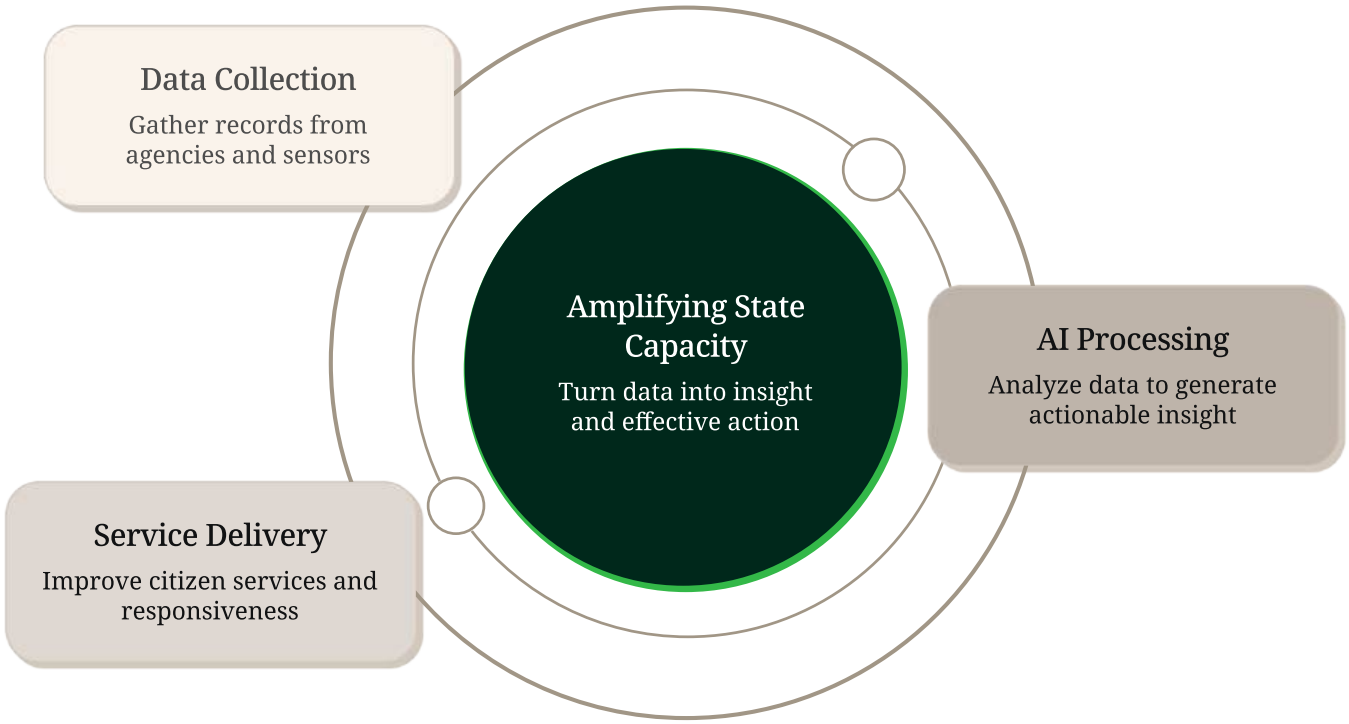
The core proposition of this framework is that AI can translate the high-level goals of national strategy into tangible improvements in the daily lives of citizens.



> AI provides the tools to address persistent challenges in public service delivery, from enhancing the accuracy of medical diagnostics in remote areas to optimizing agricultural yields in the face of climate change.

Amplifying State Capacity

By augmenting the capabilities of the civil service, AI can amplify the state's capacity to deliver on its promises, turning data into insight and insight into effective action.



For too long, the discourse around technology in government has been framed primarily through the lens of cost. Large-scale IT projects are often perceived as significant capital expenditures with uncertain returns.

Inverting the Cost Perspective

> **From cost center → value multiplier**
>
> AI should not be viewed as a new cost center but as a strategic value multiplier that unlocks the latent potential of past investments.

This perspective must be inverted. Bangladesh has already made substantial investments in its digital foundations as part of the 'Digital Bangladesh' programme, establishing a nationwide fiber optic network, expanding mobile coverage, and creating a national data center.

These are invaluable national assets. However, without an intelligence layer to connect, analyze, and act upon the data they hold, their full potential remains unrealized.

Bangladesh’s Digital Foundation

Digital Infrastructure

Nationwide fiber optic network established

1

Mobile Expansion

Extended mobile coverage across the country

2

Data Capacity

Created national data center for information storage

3

These digital foundations represent substantial investments that form the backbone of Bangladesh's technological advancement.

AI as a Strategic Value Multiplier

AI is the critical component that unlocks the latent potential of past investments, transforming a static digital infrastructure into a dynamic, intelligent ecosystem.

By enhancing existing systems, AI turns sunk costs into active, value-generating assets.



Static Infrastructure

Digital foundations without intelligence layer

AI Integration

Adding intelligence to connect and analyze data

Dynamic Ecosystem

Transformed into value-generating assets

Strategic Imperative

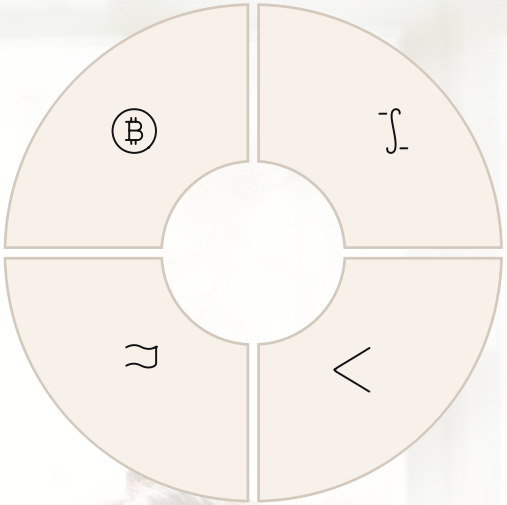
This approach reframes the initiative from a simple request for new funding into a strategic imperative to maximize the return on a decade of national investment in digital infrastructure.

Digital Investment

Past decade of infrastructure development

AI Integration

Adding intelligence layer to existing systems



National Advancement

Achieving development goals faster

Value Generation

Creating economic and social returns

Ensuring Foundational Assets Contribute to National Well-being

1

Economic Productivity

AI transforms digital infrastructure into drivers of economic growth and efficiency

2

Citizen Well-being

Intelligent systems directly improve quality of life through better services

3

State Capacity

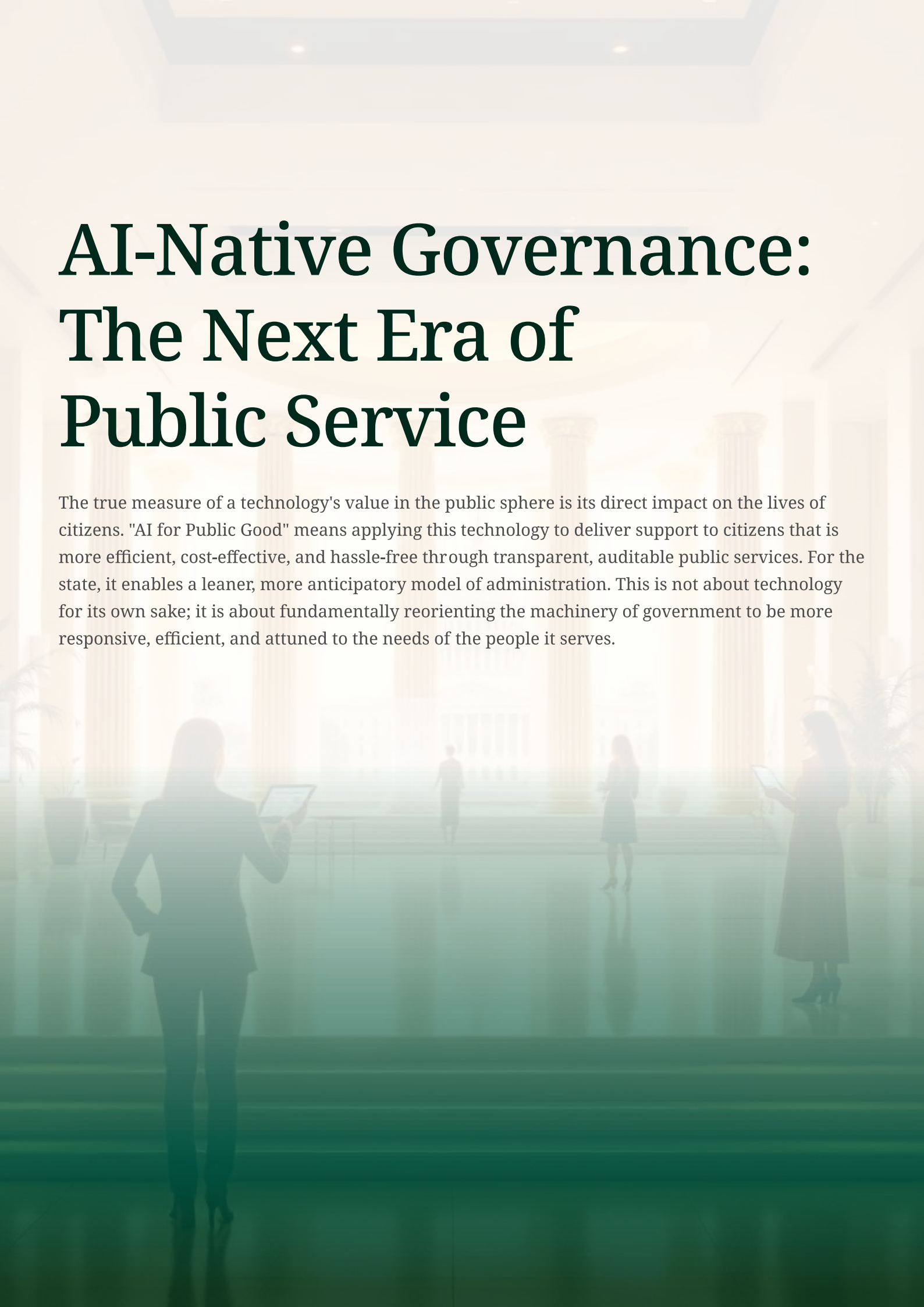
Enhanced government capabilities to deliver on promises to citizens



Digital Bangladesh | ডিজিটাল বাংলাদেশ

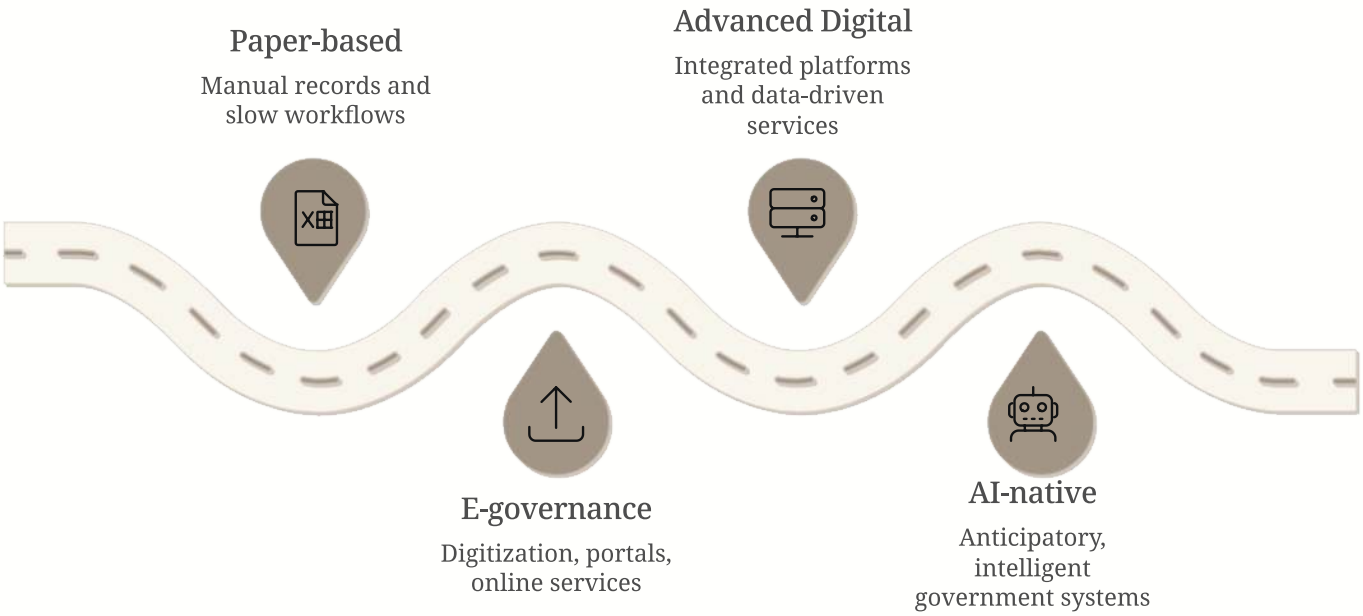
AI-Native Governance: The Next Era of Public Service

The true measure of a technology's value in the public sphere is its direct impact on the lives of citizens. "AI for Public Good" means applying this technology to deliver support to citizens that is more efficient, cost-effective, and hassle-free through transparent, auditable public services. For the state, it enables a leaner, more anticipatory model of administration. This is not about technology for its own sake; it is about fundamentally reorienting the machinery of government to be more responsive, efficient, and attuned to the needs of the people it serves.



From Digitization to Intelligence: The Evolution

The last major wave of technological reform in government was centered on e-governance. This movement was essential, focusing on the critical task of digitization: converting paper records into digital formats, moving manual processes online, and establishing web portals for information and basic transactions. This era built the foundational layer of Bangladesh's digital state.



However, e-governance's primary achievement was the replication of existing bureaucratic processes in a digital medium. While this improved access and created efficiencies, it did not fundamentally change the reactive nature of governance.

The Intelligence Era: Beyond Digitization

The next era is one of intelligence. AI-native governance moves one step beyond records and portals to decisions and outcomes. It represents a paradigm shift from a government that primarily records what has happened to one that can anticipate what is about to happen and intervene proactively.

From reactive to anticipatory government.

Digitization Era

Recording past events and digitizing existing processes

Intelligence Era

Anticipating future needs and proactively addressing challenges

If the last era of e-governance was digitization, the next era is intelligence: AI-native governance that moves one step beyond records and portals to decisions and outcomes.

Concrete Examples: Passport Renewal



From Digital Forms to Intelligent Processing

AI-native governance means moving from simply digitizing a passport renewal application to using biometric and AI-powered verification to process that renewal in a fraction of the time.

Traditional E-Gov

Digital forms replacing paper applications

AI-Native Approach

Biometric verification and automated processing

Citizen Benefit

Dramatically reduced processing time and hassle

Concrete Examples: Public Health

From Reactive to Predictive Healthcare

AI-native governance means shifting from manually compiling public health statistics to using real-time data streams to predict a dengue outbreak before it overwhelms local clinics.

Traditional Approach

Manual compilation of health statistics after outbreaks occur

AI-Native Approach

Real-time data analysis to predict dengue outbreaks before they spread

Community Impact

Proactive intervention that prevents overwhelming local health facilities



Building Trust Through Transparency

This transition holds the potential to address one of the most profound challenges in public administration: the erosion of trust. Citizen frustration with bureaucracy, characterized by long queues, opaque procedures, and the potential for corruption, creates a deficit of confidence between the state and the people.

Each arbitrary delay or inefficient process undermines the legitimacy of public institutions. AIdriven services offer a powerful antidote. By codifying rules into transparent algorithms, automating routine decisions, and creating immutable audit trails, AI-native systems can significantly reduce the space for arbitrariness and rent-seeking.

Trust Through Transparent Rules



Codified Rules

Clear criteria encoded in algorithms that everyone can understand



Automated Decisions

Consistent application of rules without human bias or interference



Immutable Audit Trails

Complete record of all decisions and processes for accountability

> A system that processes a business license or a social benefit claim based on clear, verifiable criteria, and does so predictably and efficiently, is a system that builds trust.

Anti-Corruption Through AI

Reducing Opportunities for Corruption

Each successful interaction becomes a tangible demonstration of a capable, fair, and modern government. In this way, the adoption of AI is not merely a technological project but a core component of a broader good governance and anti-corruption agenda.



Reduced Arbitrariness

Consistent application of rules eliminates discretionary decisions that enable corruption

Transparent Processes

Citizens can see exactly how decisions are made and track their applications

Accountability

Complete audit trails make it possible to review al government actions

Restoring Public Faith in Institutions

The adoption of AI-native governance directly aligns with the fundamental mandate of a government seeking to restore public faith in its institutions. By making government services more efficient, transparent, and responsive, AI can help rebuild the trust that has been eroded by bureaucratic inefficiencies and corruption.



This transformation is not just about technological advancement but about creating a new relationship between citizens and their government4 one based on trust, efficiency, and responsiveness.

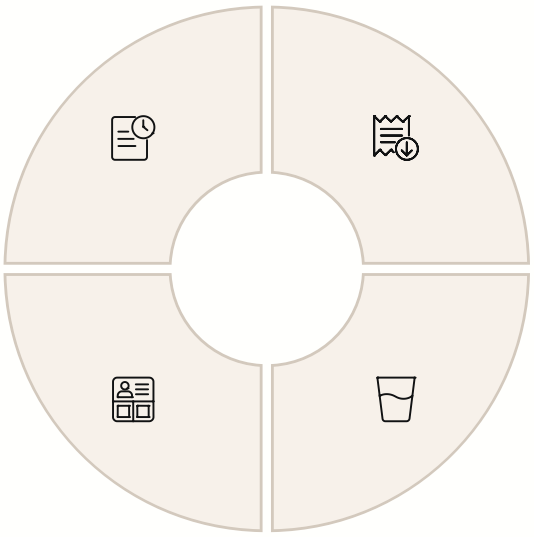
The Future of Public Service

Beyond Technology: A New Governance Model

AI-native governance represents a fundamental reorientation of the machinery of government to be more responsive, efficient, and attuned to the needs of the people it serves. This is not about technology for its own sake4it's about delivering tangible benefits to citizens.

> Each successful interaction becomes a tangible demonstration of a capable, fair, and modern government.





Efficiency

Faster, more streamlined services

Cost-Effectiveness

Lower administrative costs

Transparency

Clear, auditable processes

Anticipatory

Proactive rather than reactive

The shift from e-governance to AI-native governance marks a new chapter in public service4one that promises to transform how citizens interact with their government and how governments fulfill their fundamental responsibilities to the people they serve.

Breaking Silos: Interoperability and the Data-Driven State

Today, ministries are large and often operate in silos, which limits data-driven decision-making. This fragmentation is the single greatest structural barrier to realizing the vision of a resposive, data-driven government.



The Problem of Fragmentation

Isolated Data Repositories

Critical citizen and operational data from national identity records and land registries to public health statistics and social welfare databases are held in isolated repositories, often with incompatible standards and no mechanisms for secure, efficient sharing.

Massive Inefficiencies

This siloing leads to massive inefficiencies, duplication of effort, and, most critically, an incomplete and fragmented understanding of the nation's challenges and the needs of its citizens.

Limited Vision

A government cannot act intelligently if it cannot see the whole picture.

Bangladesh's Recognition of the Challenge

Bangladesh has long recognized this challenge. Initiatives such as the Bangladesh National Digital Architecture (BNDA) have provided a strategic blueprint for a "whole-of-government" approach, and the planned National Data Exchange (NDX) aims to create the infrastructure for data sharing.



However, progress has been slow, hampered by:

- Bureaucratic inertia
- Technical hurdles
- A lack of compelling incentives for individual ministries to prioritize cross-agency collaboration

These initiatives, while conceptually sound, have often been perceived as abstract IT governance projects, disconnected from the urgent, citizen-facing priorities of the government.

AI as a Catalyst for Change

> This is where the strategic implementation of AI can serve as a powerful catalyst for change.

Connective Tissue

AI can be the connective tissue standardizing data flows, enabling secure sharing, and powering cross-ministerial analytics.

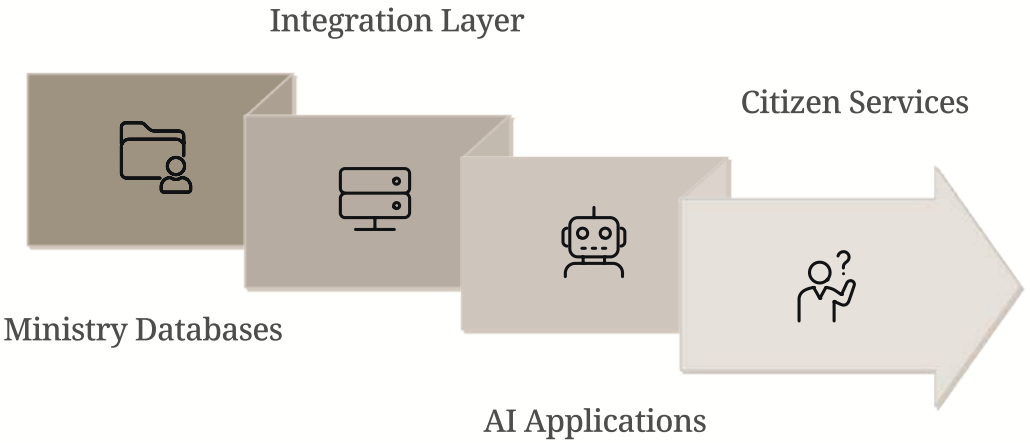
Mandate for Interoperability

The pursuit of high-impact, politically valuable AI applications creates an undeniable mandate for interoperability.

Enabling Integration

It reframes interoperability from a bureaucratic exercise into an unavoidable prerequisite for delivering the modern, intelligent public services that citizens demand and deserve.

Why AI Forces Interoperability



It is impossible, for example, to create an intelligent social safety net system that accurately identifies vulnerable citizens without securely linking data from the Ministry of Social Welfare, the Ministry of Land, the National ID database, and other relevant sources.

It is impossible to build a predictive public health system without integrating data from health clinics, meteorological agencies, and municipal sanitation departments.



AI as a Political and Technical Lever

Policy lever: authority to enforce data-sharing.

By securing a mandate for these tangible AI *outcomes*, the government simultaneously secures a mandate to enforce the necessary data-sharing *inputs*. The AI initiative thus becomes the political and technical lever to break the data silos that have constrained progress for years.

The AI Platform as a Central Hub

The AI platform proposed in this framework is therefore envisioned not just as an analytics engine, but as the central, operational hub that will finally bring the vision of the BNDA and the NDX to life.

Data Collection

Gathering information from various ministries and departments

Improved Public Services

Delivering intelligent citizen-facing solutions



Standardization

Converting to compatible formats through BNDA framework

Secure Sharing

Facilitating exchange through NDX infrastructure

Cross-Ministerial Analytics

Generating insights across government departments

Unified Data Spine for Public Good

This diagram illustrates the data flows from key domains through the Bangladesh National Digital Architecture (BNDA) and National Data Exchange (NDX) layer to the AI platform hosted on a sovereign cloud, enabling cross-ministerial analytics and citizen-facing services as mandated in Section 6.

What Becomes Possible

Intelligent Social Safety Net

Accurately identifies vulnerable citizens by securely linking data from the Ministry of Social Welfare, the Ministry of Land, the National ID database, and other relevant sources.

Predictive Public Health System

Integrates data from health clinics, meteorological agencies, and municipal sanitation departments to anticipate and address public health challenges.

Modern, Intelligent Public Services

Delivers the responsive, data-driven government services that citizens demand and deserve through a whole-of-government approach.

We frame "public-service innovation" throughout the paper; detailed architectural options and operating models will appear later, once the vision and use-cases are clear.

From Concept to Implementation

Current State

Initiatives like BNDA and NDX have been perceived as abstract IT governance projects, disconnected from urgent, citizen-facing priorities.

Future Vision

The AI initiative transforms interoperability from a bureaucratic exercise into an essential foundation for delivering modern, intelligent public services.

By focusing on tangible AI outcomes that address citizen needs, the government creates both the technical capability and political will to overcome the fragmentation that has been the single greatest structural barrier to a responsive, data-driven state.

Global Models for National Ambition: Lessons from Taiwan and Singapore

To embark on a journey of national AI adoption is to navigate uncharted territory. However, Bangladesh need not proceed without a map. Other nations, facing their own unique constraints and opportunities, have pioneered effective strategies for harnessing AI for public good. By examining their successes, we can distill critical lessons in strategic foresight, ethical governance, and practical impl mentation.

In particular, the experiences of Taiwan and Singapore offer a powerful dual perspective: Taiwan as a pragmatic peer demonstrating accessible, citizen-centric innovation, and Singapore as an aspirational leader in building comprehensive, world-class systems. These global examples provide concrete proof that ambitious, AI-driven governance is not only possible but profoundly effective.



Taiwan: A Pragmatic Peer Model for Democratic Innovation

As a vibrant democracy navigating complex geopolitical pressures, Taiwan has strategically employed AI to enhance citizen services, strengthen democratic resilience, and build upon its existing industrial strengths. Its approach offers a highly relevant and accessible model for Bangladesh. The "AI Taiwan Action Plan" prioritizes practical, achievable goals: cultivating talent, promoting industry-specific applications, and creating open testing grounds (regulatory sandboxes) to foster innovation without premature regulatory burdens.

Core Strategic Philosophy

"People-Oriented Democratic Innovation" 3 Leveraging AI to solve citizen problems and strengthen democratic institutions.

Governance Approach

"Guidance-before-legislation" with a principles-based draft AI Basic Act (fairness, transparency, human autonomy).



Taiwan's People-Oriented Digital Services

At the heart of Taiwan's strategy is a "people-oriented" digital services agenda, driven by its Ministry of Digital Affairs (MODA). This focus has translated into tangible improvements in civic life, such as AI applications in transportation to ease congestion and the development of a robust digital identity framework. Critically, Taiwan also leverages AI as a tool for national stability, using it to combat sophisticated disinformation campaigns, a challenge of increasing relevance to all democracies.



1

Transportation

AI applications to ease congestion and improve public transit efficiency

2

Digital Identity

Robust framework for secure citizen identification and service access

3

Disinformation Combat

AI tools to identify and counter sophisticated misinformation campaigns

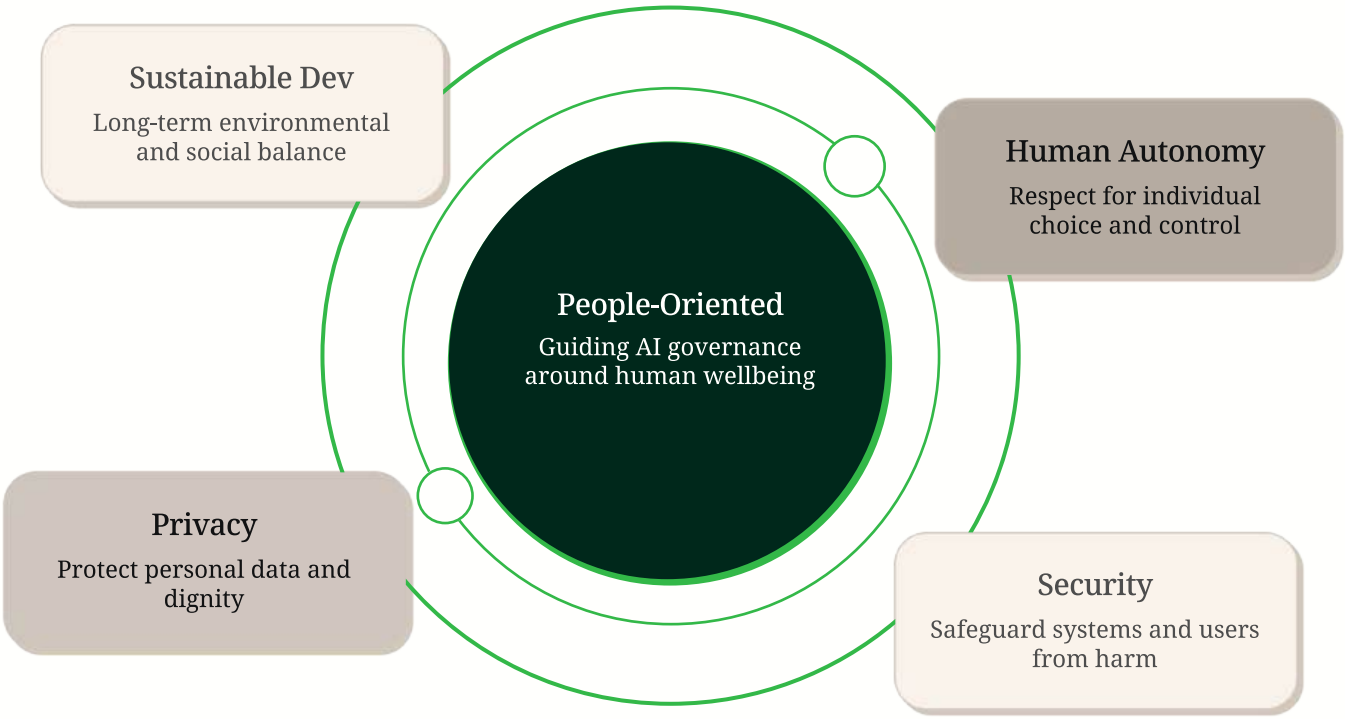
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Civil Service Upskilling

Programs to enhance government workforce AI capabilities

Taiwan's Ethical AI Governance

In terms of governance, Taiwan has adopted a thoughtful "guidance-before-legislation" approach, allowing for flexibility and adaptation as the technology evolves. Its draft "Basic Law on Artificial Intelligence" is built on seven core principles that provide a robust ethical foundation:



This principled yet pragmatic approach to regulation ensures that innovation is guided by human-centric values. For Bangladesh, Taiwan's model demonstrates how to build on existing strengths4just as Taiwan leverages its sem iconductor industry, Bangladesh can build upon its established digital platforms like D-Nothi and the Digital Centers network.

Singapore: A Blueprint for National Prestige and Stability

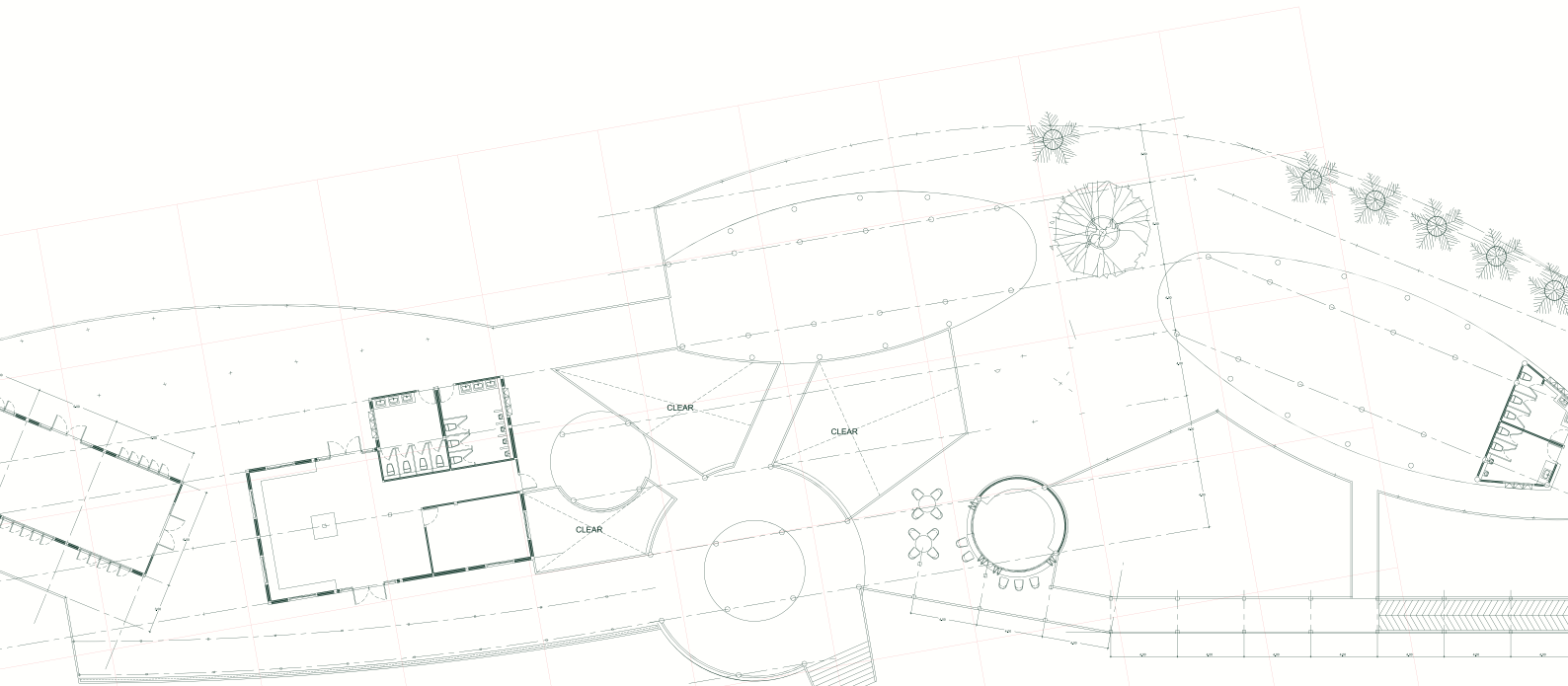
Singapore's National AI Strategy 2.0 (NAIS 2.0) represents a masterclass in strategic, top-down governance, cementing the nation's status as a global leader in technology and innovation. Its vision "AI for the Public Good, for Singapore and the World" is backed by a comprehensive, systems-level approach that offers an aspirational blueprint for Bangladesh. The most critical lesson from Singapore is its deliberate shift "from projects to systems". Rather than pursuing isolated pilot programs, Singapore focuses on building integrated, nationwide AI infrastructure and capabilities that deliver consistent and visible improvements across the entire public sector.

Core Strategic Philosophy

"AI for the Public Good, for Singapore and the World" 3 Building comprehensive systems to drive national progress and global leadership.

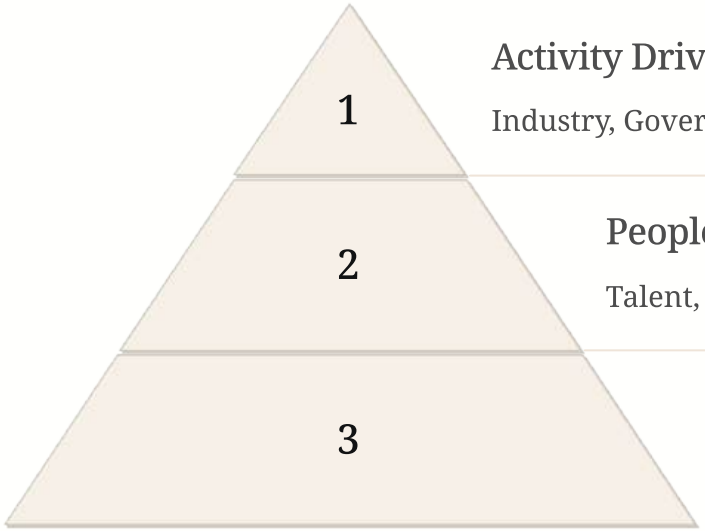
Governance Approach

Voluntary, industry-led Model AI Governance Framework with a practical AI Verify toolkit for testing and validation.



Singapore's Comprehensive Systems Approach

This strategy is organized around three core systems: Activity Drivers (Industry, Government, Research), People & Communities (Talent, Capabilities), and Infrastructure & Environment (Compute, Data, Trusted Environment)4and is operati onalized through 15 concrete actions.



Activity Drivers

Industry, Government, Research

People & Communities

Talent, Capabilities

Infrastructure & Environment

Compute, Data, Trusted Environment

Key Priorities

- Improving public service productivity
- Expanding the AI talent pool to 15,000 professionals
- Establishing "AI Centres of Excellence" for key sectors

Crisis Response Capabilities

Singapore has made significant strides in building capabilities for crisis response, using AI to enhance disaster management and emergency communications.

Singapore's Model AI Governance Framework

On the governance front, Singapore has been a global pioneer with its Model AI Governance Framework. This voluntary, principles-based framework is built on two pillars:



Explainable, Transparent & Fair Decisions

Ensuring AI systems produce understandable and equitable outcomes



Human-Centric Systems

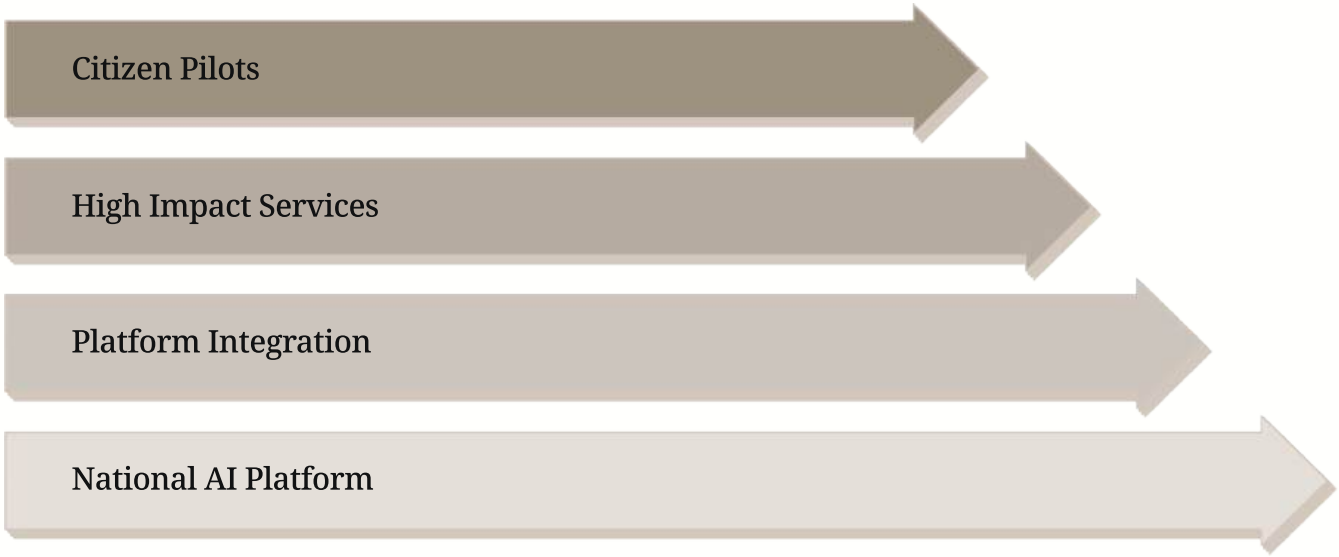
Prioritizing human well-being and autonomy in all AI applications

To make these principles actionable, Singapore developed **AI Verify**, a governance testing framework and software toolkit that allows organizations to validate their AI systems against key ethical principles such as fairness, security, and accountability. This practical approach to ethical AI provides a valuable template for ensuring that AI adoption is both innovative and responsible.

Comparison: Taiwan and Singapore Approaches

Feature	Taiwan	Singapore	Key Lesson for Bangladesh
Core Strategic Philosophy	"People-Oriented Democratic Innovation" 3 Leveraging AI to solve citizen problems and strengthen democratic institutions.	"AI for the Public Good, for Singapore and the World" 3 Building comprehensive systems to drive national progress and global leadership.	Combine a citizencentric focus with a long-term vision for building national capabilities.
Governance Approach	"Guidance-beforelegislation" with a princ ples-based draft AI Basic Act (fairness, transparency, human autonomy).	Voluntary, industryled Model AI Governance Framework with a practical AI Verify toolkit for testing and validation.	Adopt a flexible, principles-based regulatory approach that fosters innovation while ensuring accountability. Develop practical tools for ethical assessment.
Key Initial Priorities	Transportation, digital identity, combating disinformation, and upskilling the civil service.	Improving public service productivity, attracting top global talent, and establishing sectoral "Centres of Excellence".	Prioritize highvisibility projects that solve everyday citizen problems while simultaneously investing in building a sustainable talent pipeline.
Data & Infrastructure Focus	Leveraging existing industrial strengths (semiconductors) and promoting open data for public use.	Systematically increasing national high-performance computing capacity and establishing trusted cross-border data flows.	Build on existing digital assets (e.g., D-Nothi, National Data Center) and the new sovereign cloud while creating a clear strategy for data sharing and infrastructure scaling.
Primary Lesson	Start with empathetic, high-impact citizen services to build momentum and demonstrate value quickly.	Think in terms of building sustainable, interconnected systems, not just executing isolated, one-off projects.	The optimal path for Bangladesh is to use citizen-facing pilot projects as the catalyst for building a unified, systemic national AI platform.

Synthesis: A Balanced Approach for Bangladesh



The Bangladesh Synthesis

Citizen pilots as catalyst → Unified national platform

Immediate Actions (Taiwan Model)

- Identify high-impact citizen services for AI enhancement
- Build on existing digital platforms like D-Nothi
- Develop flexible, principles-based governance
- Leverage Digital Centers network for implementation

Long-term Vision (Singapore Model)

- Transition from projects to integrated systems
- Build sustainable national AI capabilities
- Develop practical ethical assessment tools
- Establish sectoral Centers of Excellence

Foundation for an AI-Ready Bangladesh: Current-State Assessment

To build an AI-ready nation, Bangladesh must start from its current position, strategically leveraging its assets while candidly addressing its deficits. The transition from the 'Digital Bangladesh' of today to the technologically advanced Bangladesh of tomorrow requires a clear-eyed assessment of the foundational pillars upon which this future will be constructed. This analysis evaluates the nation's readiness across four critical domains: Connectivity and Compute; Data Foundations; Legal and Ethical Guardrails; and Talent and Operations. The assessment reveals a nation with significant foundational strengths but also critical gaps that must be the focus of immediate and concerted investment.

Assessment Overview

Bangladesh's journey toward becoming AI-ready requires a comprehensive understanding of its current capabilities and challenges. This assessment examines four critical pillars that form the foundation for AI readiness.

Connectivity & Compute

Reliable broadband, cloud, and edge infrastructure

Legal & Ethical Guardrails

Regulation, privacy, and accountable governance



Data Foundations

Quality, interoperable, and accessible datasets

Talent & Operations

Skilled workforce, governance, and sustainable ops

Each pillar represents a critical domain that must be strengthened to support Bangladesh's AI ambitions. The following sections provide a detailed assessment of each domain, highlighting current assets, identifying gaps, and discussing implications for AI development.

Connectivity and Compute

The digital backbone of an AI-powered state is its physical infrastructure for connectivity and computation. Bangladesh has made significant strides in this area over the past decade. However, while foundational access has expanded, the quality and ubiquity required for advanced, data-intensive AI applications are not yet universal.

1

What We Have

- Internet penetration at 44.5% as of early 2025
- Widespread cellular mobile connections (65% broadband - 3G or higher)
- National Tier-III certified data center operated by Bangladesh Computer Council (BCC)
- Growing ecosystem of private data centers attracting investment
- Oracle sovereign cloud region (OCI Dedicated Region) through Bangladesh Data Center Company Limited (BDCCL)

2

Gaps/Risks

- Substantial portion of population remains offline
- Limited access to high-speed data services for many
- Low median mobile internet speeds on global indices
- Fixed broadband concentrated in urban centers, reinforcing urban-rural digital divide

Implications for AI: The current connectivity infrastructure may limit real-time AI services that depend on low-latency connections, while the sovereign cloud capability provides a significant strategic asset for running mission-critical AI workloads.

Key Infrastructure: Tier-III certified data center, Oracle sovereign cloud (OCI Dedicated Region)

Data Foundations

Data is the lifeblood of artificial intelligence. The quality, accessibility, and interoperability of a nation's data assets are the primary determinants of its ability to deploy effective AI solutions. While Bangladesh has generated vast amounts of digital data through its e-governance initiatives, the foundational structures for managing this data as a strategic national asset are underdeveloped.

What We Have

- Frameworks for data architecture and standards under Bangladesh National Digital Architecture (BNDA)
- Initiatives by Bangladesh Bureau of Statistics to develop a National Quality Assurance Framework
- Plans for a National Data Exchange (NDX)
- Vast amounts of digital data generated through e-governance initiatives

Gaps/Risks

- Inconsistent enforcement and adoption of data standards across ministries
- Pervasive data quality challenges (incomplete, inconsistent, non-standardized)
- Information silos between government ministries and agencies
- Major databases (national identity, health, banking, land records) functioning in isolation
- Formidable technical and bureaucratic barriers to achieving interoperability

Implications for AI: The fragmentation of data prevents the creation of a holistic view of citizen needs or government operations, making cross-cutting AI applications nearly impossible to implement effectively.

Legal & Ethical Guardrails

The power of AI necessitates a robust framework of laws and ethical guidelines to ensure its use is safe, fair, and aligned with fundamental rights. Bangladesh is in the process of developing this crucial governance layer, but the existing and proposed frameworks require strengthening to build public trust and meet international standards.

What We Have

- Final stages of enacting a comprehensive Personal Data Protection Act (PDPA) or Ordinance
- Introduction of essential data protection principles, including user consent requirements
- Existing protections under the Cyber Security Act, 2023
- Draft National Artificial Intelligence Policy 2024 with vision for leveraging AI

Gaps/Risks

- Lack of truly independent Data Protection Authority
- Overly broad exemptions for government and law enforcement access to data
- Mandatory data localization requirements that could stifle innovation
- AI policy lacks specific institutional mechanisms for cross-agency coordination
- Insufficient guidelines for mitigating risks like algorithmic bias
- Weak enforcement provisions in current policy frameworks

Implications for AI: The challenge is to translate high-level policy into a concrete, operational framework for responsible AI development and deployment that builds public trust while enabling innovation.

Key Policies: PDPA draft, National Artificial Intelligence Policy 2024

Talent & Operations

A successful national AI strategy depends not only on technology and data but also on people and processes. This includes the skills of the civil service to manage AI initiatives and the efficiency of government operations to procure and deploy them.

What We Have

- Burgeoning and cost-effective private-sector AI talent pool
- Bangladesh becoming an attractive hub for AI software development and outsourcing
- Foundational ICT training provided by Bangladesh Computer Council (BCC)
- Innovative service design training initiatives

Gaps/Risks

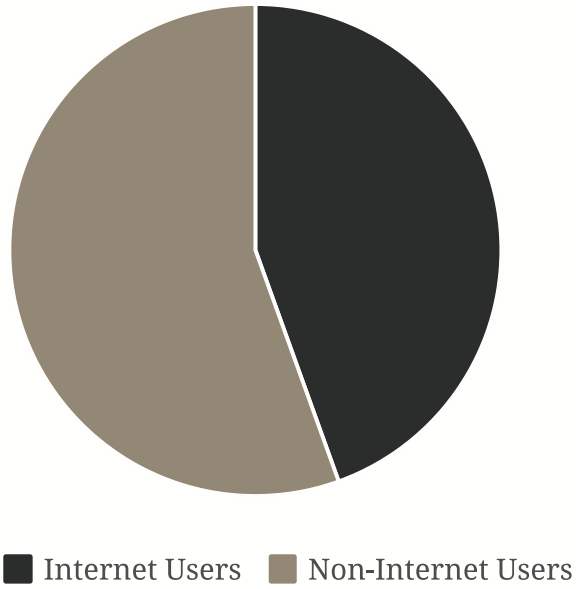
- Substantial skills gap within the civil service
- Specialized, strategic AI literacy for policymakers and public managers still in its infancy
- Slow, bureaucratic procurement processes vulnerable to manipulation
- Current procurement framework ill-suited for agile, iterative AI development
- Potential bottlenecks in partnering with innovative private-sector firms

Implications for AI: Building AI capacity within the civil service is essential for the government to become an intelligent buyer and responsible steward of AI technologies, while modernizing IT procurement is critical for successful implementation.

Key Programs: Bangladesh Computer Council (BCC) training initiatives

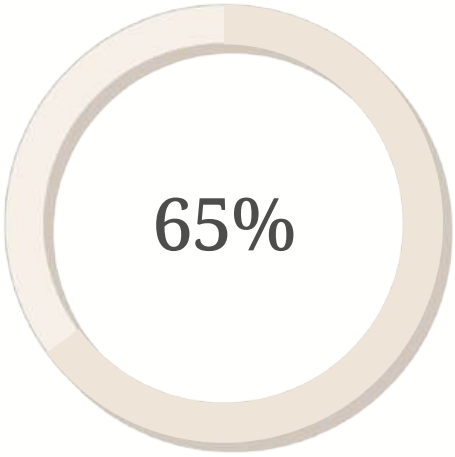
Connectivity Infrastructure: A Closer Look

Bangladesh's connectivity infrastructure shows a mixed picture of progress and challenges. While cellular mobile connections are widespread, the quality and coverage of high-speed internet remain significant concerns, particularly in rural areas.



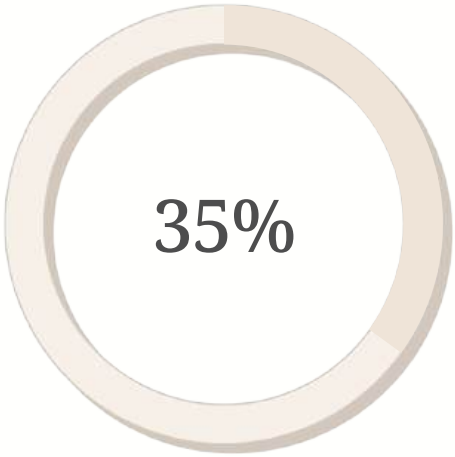
Broadband Connectivity

Of all mobile connections:



Broadband

3G or higher connections



Basic

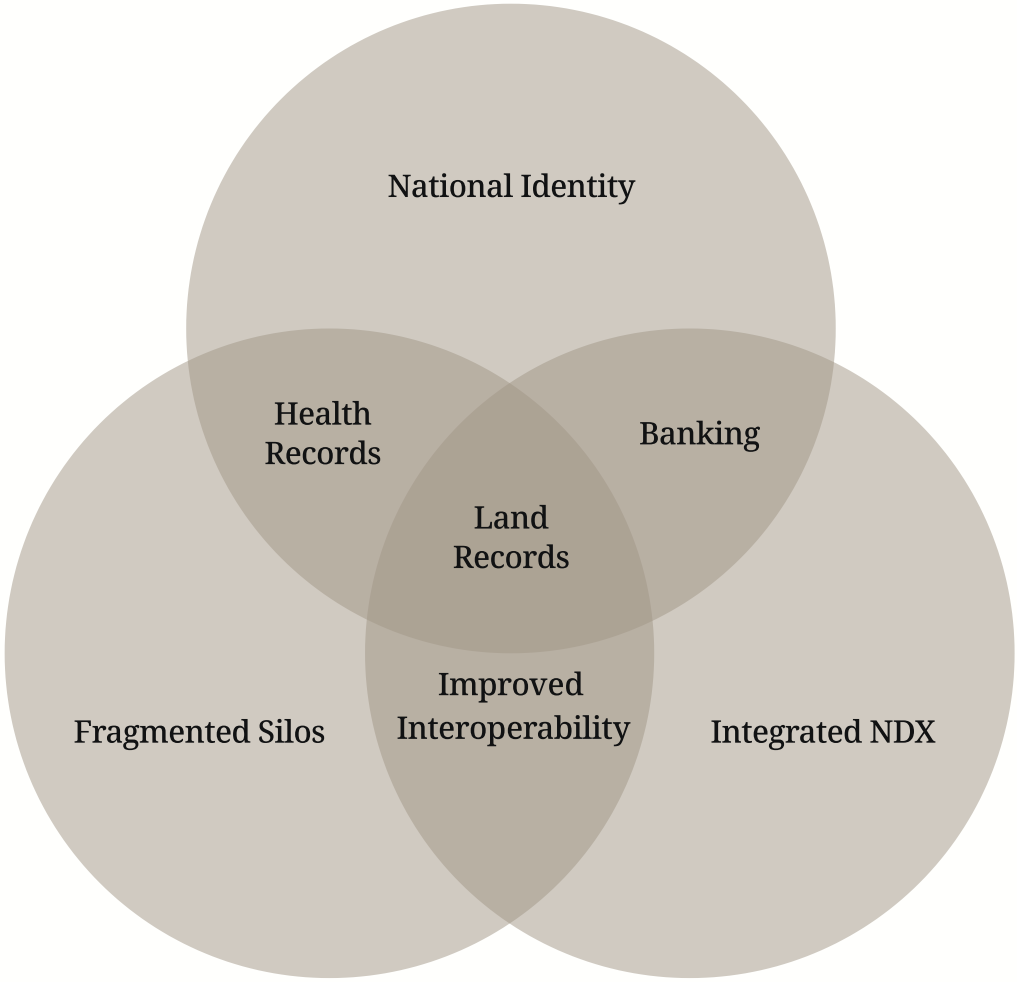
2G or lower connections

The urban-rural digital divide remains a significant challenge, with fixed broadband largely concentrated in urban centers. This disparity could limit the equitable deployment of AI applications across the country, potentially exacerbating existing socioeconomic inequalities.

The recent implementation of an Oracle sovereign cloud region through the Bangladesh Data Center Company Limited represents a significant step forward in compute infrastructure, providing the government with secure, scalable cloud services while maintaining data sovereignty.

Data Ecosystem Challenges

The data ecosystem in Bangladesh faces significant challenges that could impede AI development and deployment. Despite generating vast amounts of digital data through e-governance initiatives, the country struggles with data quality, standardization, and interoperability issues.



The Bangladesh National Digital Architecture (BNDA) provides frameworks for data architecture and standards, but their enforcement and adoption across ministries have been inconsistent. This has led to pervasive data quality challenges, with data often being incomplete, inconsistent, or collected using non-standardized methods.

The most critical weakness in Bangladesh's data ecosystem is interoperability. Government ministries and agencies largely operate in information silos, with major databases functioning in isolation. This fragmentation prevents the creation of a holistic view of citizen needs or government operations, making cross-cutting AI applications nearly impossible to implement effectively.

While the government has identified interoperability as a core philosophical pillar of its digital strategy and has plans for a National Data Exchange (NDX), the technical and bureaucratic barriers to achieving this vision remain formidable.

Legal Framework Development

Bangladesh is at a critical juncture in developing the legal and ethical frameworks necessary for responsible AI deployment. The country is in the final stages of enacting a comprehensive Personal Data Protection Act (PDPA) or Ordinance, which introduces essential data protection principles such as requiring clear user consent for data processing.

1. **Cyber Security Act, 2023**
   Provides some data protections but does not constitute a comprehensive, rights-based data privacy regime
2. **Personal Data Protection Act (PDPA)**
   In final stages of enactment, introduces essential data protection principles including user consent requirements
3. **National Artificial Intelligence Policy 2024**
   Articulates vision for leveraging AI for national development and prioritizes key sectors for adoption
4. **Future Governance Framework**
   Need to translate high-level policy into concrete, operational framework for responsible AI development

However, there are significant concerns about the draft PDPA, including:

- Lack of a truly independent Data Protection Authority to ensure unbiased enforcement
- Overly broad exemptions for government and law enforcement access to data without judicial oversight
- Mandatory data localization requirements that could stifle innovation

The draft National Artificial Intelligence Policy 2024 articulates a strong vision for leveraging AI for national development but lacks specific institutional mechanisms for cross-agency coordination, clear guidelines for mitigating risks like algorithmic bias, and robust enforcement provisions.

Talent and Operational Readiness

Private Sector Strengths

Bangladesh has a burgeoning and cost-effective private-sector AI talent pool, making it an increasingly attractive hub for AI software development and outsourcing. This represents a significant national asset that can be leveraged for AI development.



Public Sector Challenges

Despite the private sector strengths, a substantial skills gap exists within the civil service. While foundational ICT training is provided by bodies like the Bangladesh Computer Council (BCC), specialized, strategic AI literacy for policymakers and public managers is still in its infancy.

Government procurement processes in Bangladesh are often slow, bureaucratic, and vulnerable to manipulation. This system is ill-suited for the agile, iterative nature of AI development and deployment, potentially becoming a major bottleneck for AI implementation.

Building AI Capacity

Essential for the government to become an intelligent buyer and responsible steward of AI technologies

Modernizing Procurement

Critical for accommodating agile development methodologies and partnering with innovative private-sector firms

Public-Private Partnerships

Leveraging private sector expertise while building public sector capabilities

Building AI capacity within the civil service and modernizing IT procurement processes will be critical success factors for Bangladesh's AI strategy implementation.

Mandate for Action (Next 6-9 Months)

This framework has articulated the profound opportunity that Artificial Intelligence presents for Bangladesh, a chance to accelerate national progress, enhance public service delivery, and build a more responsive, resilient, and trusted state. The current moment offers a unique window of opportunity. An interim government is uniquely positioned to cut through long-standing bureaucratic inertia and lay the groundwork for systemic, cross-governmental change.



The Strategic Imperative

The analysis is clear: the technological potential is immense, the strategic imperative is urgent, and the foundational elements are in place to begin. What is now required is the political will to act decisively.

The challenge of breaking down ministerial data silos, for instance, is less a technical problem than one of political will, a challenge this administration is well-equipped to meet.

Cost-smart, speed-first.

The path forward is not contingent on a massive, immediate budgetary allocation. Instead, it depends on a clear mandate for action.

The initial steps require political authority and strategic focus more than they require vast new expenditures. To translate the vision outlined in this whitepaper into a tangible reality, we respectfully request that the Government of Bangladesh grant the following mandate.

Permission to Create the Foundational Platform

1

Steering Committee Formation

Authorize the immediate formation of a high-level, cross-ministerial **"AI for Public Good" Steering Committee**.

2

Committee Composition

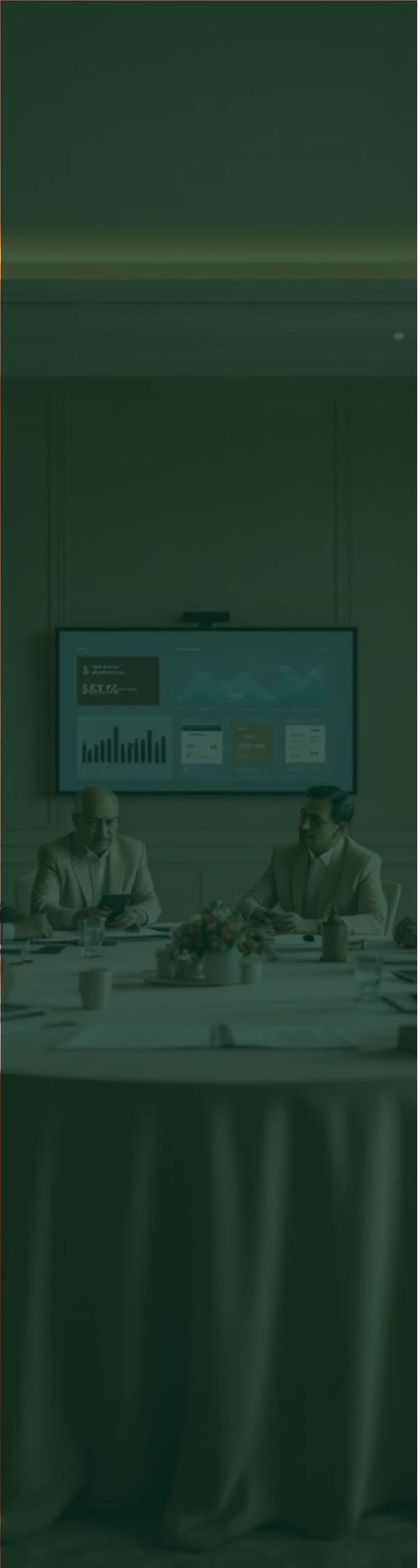
This committee, comprising key representatives from pivotal ministries and chaired by a senior figure within the Chief Adviser's Office.

3

Platform Development

Tasked with overseeing the development of a central, secure, and scalable AI platform that will serve as the core infrastructure for all future government AI initiatives.

This platform will ensure standardization, security, and efficiency while leveraging the new sovereign cloud capabilities.



Opportunity to Implement and Enforce

Select High-Impact Pilots

Grant the Steering Committee explicit authority to select **three to five high-impact pilot projects** within the next six to nine months.

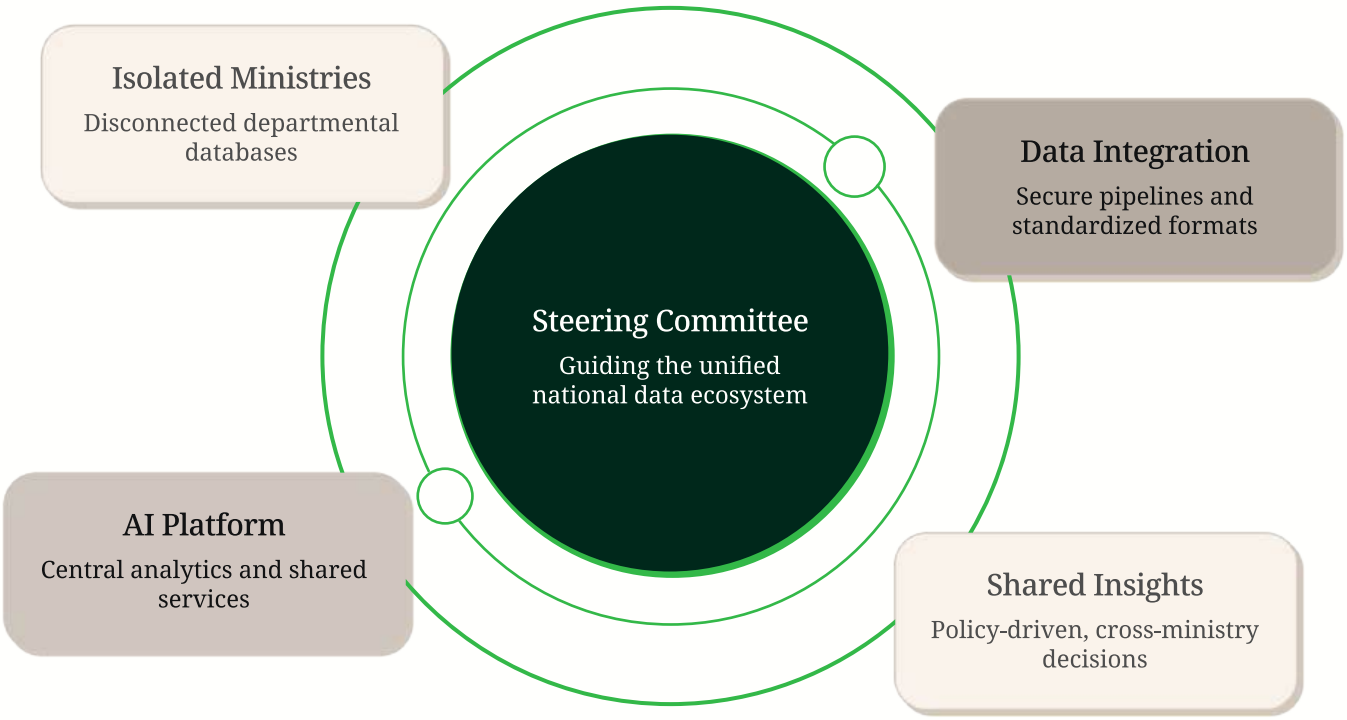
Fund Implementation

Provide necessary resources to fund and execute these pilots, drawn from the comprehensive blueprint provided in the Appendix of this report.

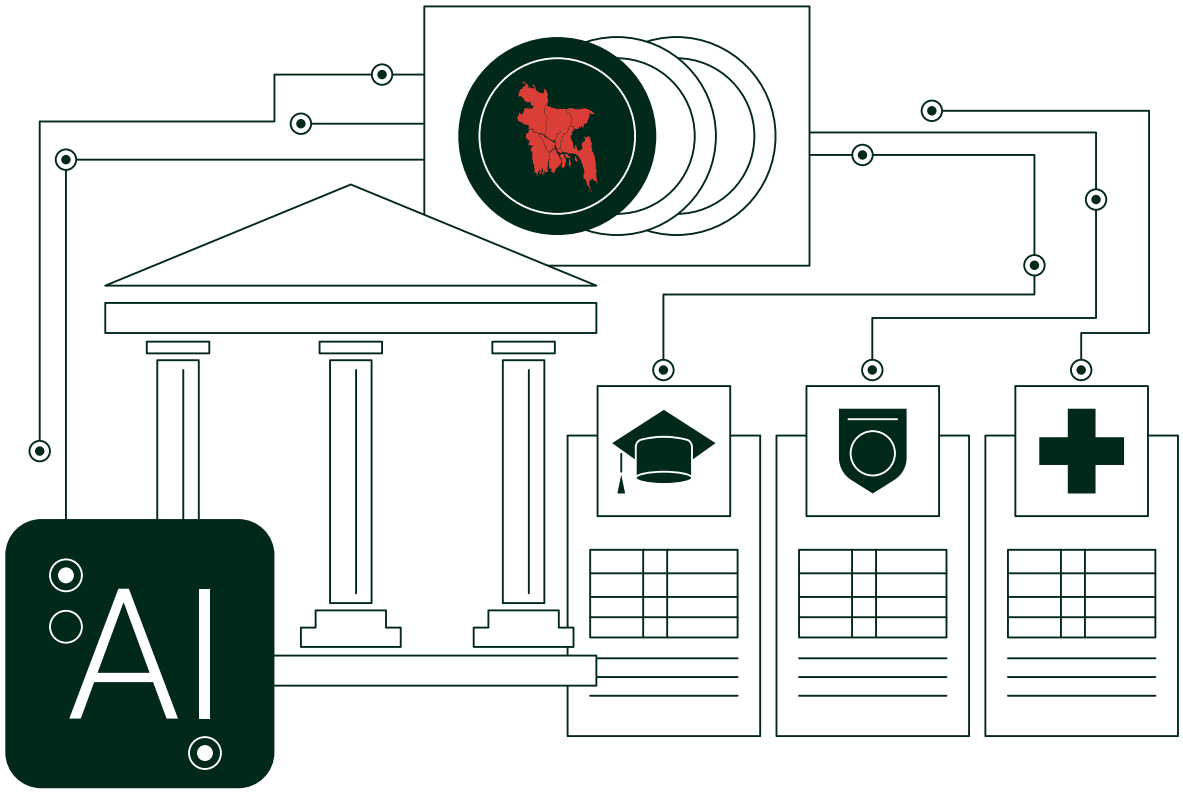
Enforce Protocols

Include authority to **enforce the necessary data sharing and interoperability protocols** among all participating ministries for successful execution.

Breaking Down Silos



This provision is the key to operationalizing the vision of a unified data ecosystem and breaking the institutional silos that have hindered progress. The challenge of breaking down ministerial data silos is less a technical problem than one of political will, a challenge this administration is well equipped to meet.



Implementation Timeline

Day 0

Mandate granted by Government of Bangladesh

- Authorization of "AI for Public Good" Steering Committee
- Granting of implementation and enforcement powers

Month 6-9

Completion of 3-5 high-impact pilot projects

Established data sharing and interoperability protocols

Visible Wins by Month 6-9

Pilot Projects

Three to five high-impact pilot projects successfully implemented and demonstrating tangible results

Data Ecosystem

Functioning cross-ministerial data sharing and interoperability protocols in place

Platform Foundation

Central, secure, and scalable AI platform established as core infrastructure

Governance Structure

Active "AI for Public Good" Steering Committee with demonstrated authority

Strategic Shift in Governance

> By granting this mandate, the government will not be launching a series of isolated technology projects. It will be initiating a fundamental and strategic shift in the machinery of the state4one that prioritizes dat a-driven decisions, citizen-centric outcomes, and a culture of continuous innovation.

This is the first, essential step toward building the technologically advanced Bangladesh of tomorrow. The mandate represents a systemic, cross-governmental change that leverages the unique position of the interim government to cut through bureaucratic inertia.



Political Will Over Budget

The path forward is not contingent on a massive, immediate budgetary allocation. Instead, it depends on a clear mandate for action. The initial steps require:

- Political authority
- Strategic focus
- Cross-ministerial collaboration
- Enforcement capabilities

Mandate, not money

This initiative prioritizes political will and strategic authority over large budgetary requirements, making it feasible to implement even with limited financial resources.

Window of Opportunity

Interim Government Advantage

Uniquely positioned to cut through long-standing bureaucratic inertia

Breaking Data Silos

Enforcing data sharing and interoperability across ministries



Clear Mandate for Action

Political authority to create foundational platform and enforce implementation

High-Impact Pilots

3-5 strategic projects within 6-9 months to demonstrate value

Cost-smart, speed-first. Mandate, not money.

Appendix

A Blueprint for Impact: Ministry-by-Ministry AI Reommendations



This appendix provides a detailed portfolio of high-impact, empathetic, and actionable AI recommendations for 40 government ministries and offices. Each proposal is designed to address a tangible problem faced by the citizens of Bangladesh, leveraging AI to deliver a concrete solution while upholding strict ethical and performance standards. The consistent three-part structure: **The Citizen's Problem - The AI-Powered Solution - Safeguards & KPIs** ensures that every recommendation remains grounded in the lived realities of the people, technologically feasible, and aligned with the principles of responsible governance.

Office of the Chief Advisor Prime Minister

The Citizen's Problem

The highest level of government requires real-time, cross-cutting insights to make strategic decisions, but critical information is often fragmented across ministries, delayed, or presented in dense, unstructured reports. This hinders the ability to anticipate emerging national challenges, from economic shocks to public health crises, and to monitor the real-world impact of policy implementation.

1

National AI-Powered Policy Dashboard

Develop a secure, executive-level dashboard that uses AI to synthesize and visualize key national indicators in real time. National leaders worldwide are adopting such tools to enhance oversight. The system would ingest data streams from key ministries (Finance, Health, Disaster Management, etc.) and use Natural Language Processing (NLP) to summarize daily reports, news, and public sentiment, flagging emerging issues for immediate attention. This provides the national leadership with a unified, data-driven view of the country's status.

KPIs: Reduction in time required to compile cross-ministerial briefing reports; real-time alerts for key national risk indicators (e.g., inflation spikes, disease clusters).

Case Study: India's Intelligent Grievance Monitoring System (IGMS) 2.0 provides the Prime Minister's Office with an AI-powered dashboard for real-time analysis of public grievances by ministry, state, and district, enabling data-driven oversight and expediting the redressal process.

2

AI-Assisted Governance and Innovation Monitoring

Create an AI tool to monitor the progress and performance of key government initiatives and public service delivery across all ministries. The platform would track project implementation data from the Ministry of Planning, analyze service delivery metrics from platforms like MyGov, and identify bottlenecks or performance gaps. This provides the head of government with an evidence-based mechanism to ensure accountability and drive a culture of innovation.

KPIs: Centralised tracking of national priority projects; automated flagging of significant delays.

Case Study: The United States government utilizes public-facing Agency Performance Dashboards to provide an overview of the workforce, budget, and IT maturity of major federal agencies. This promotes accountability and allows stakeholders to track organizational health and performance.

Ministry of Public Administration

The Citizen's Problem

The civil service, the engine of government, faces significant challenges in efficiency, transparency, and accountability, often burdened by colonial-era bureaucratic structures and manual processes. Recruitment is lengthy, promotions can be subjective, and there is a critical need to upskill the workforce for a digital-first era, which hinders the overall quality of public service delivery.

AI-Powered Human Resource Management

Implement an AI-driven platform to modernize civil service HR management. The system would automate and streamline the initial stages of recruitment by analyzing applications for eligibility and required skills. For existing civil servants, it would use AI to identify skills gaps based on performance data and recommend personalized training modules from institutions like BPATC or BCC, helping to build a future-ready workforce.



KPIs: 30% reduction in recruitment processing time; measurable improvement in post-training performance metrics for targeted skills.

Case Study: The UK government trialed Microsoft 365 Copilot with 20,000 civil servants, finding that the AI tool saved users an average of 26 minutes per day on administrative tasks, equivalent to nearly two working weeks per year.

Intelligent Automation for Administrative Process

Deploy Robotic Process Automation (RPA) and AI tools to automate high-volume, repetitive administrative tasks within ministries, such as file processing, data entry, and internal report generation. This would leverage the data within the D-Nothi system to train models that can classify documents, extract key information, and route files automatically, freeing up public officials to focus on more complex, citizen-facing work.

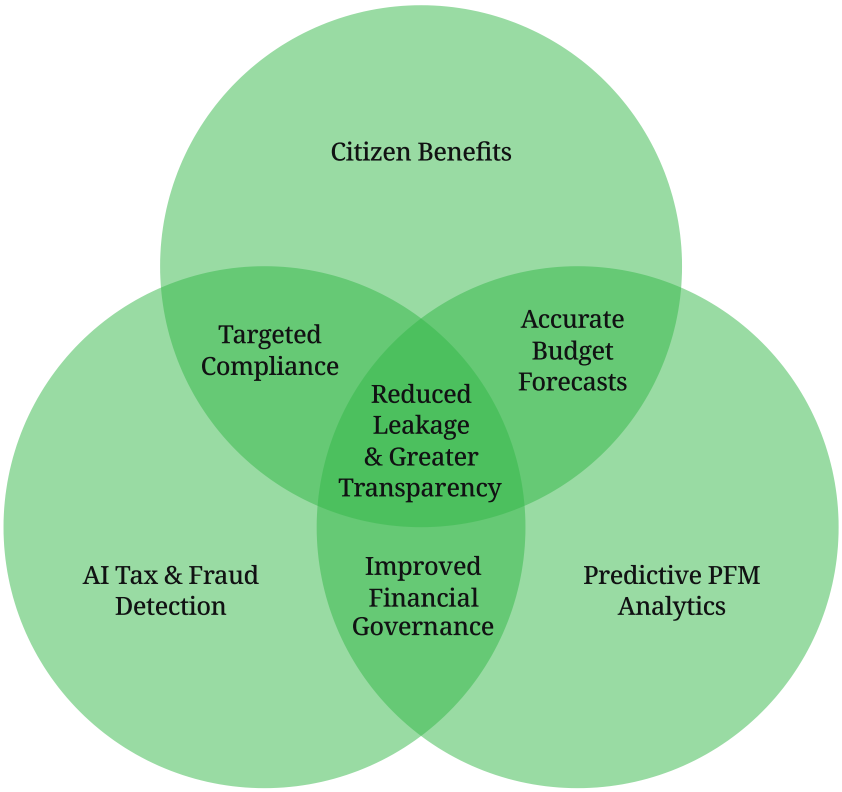
KPIs: 40% reduction in processing time for targeted administrative tasks; 25% reduction in manual data entry errors.

Case Study: In the UK civil service trial, AI was used for everyday tasks like drafting documents, summarizing lengthy emails, updating records, and preparing reports, demonstrating its effectiveness in reducing the burden of routine administrative work.

Ministry of Finance

The Citizen's Problem

Citizens and businesses face challenges with opaque and inefficient public financial management, while the government grapples with revenue leakage, suboptimal budget allocation, and the risk of fraud. The banking sector faces vulnerabilities, including high rates of non-performing loans, which impact economic stability and citizens' trust in financial institutions.



AI for Intelligent Tax Administration and Fraud Detection

Develop an AI-powered system to enhance tax revenue collection and reduce fraud. The system would analyze anonymized financial data, tax filings, and trade information to identify patterns and anomalies indicative of tax evasion or fraudulent claims (e.g., for VAT refunds). This would allow the National Board of Revenue (NBR) to conduct more targeted, risk-based audits, improving efficiency and fairness.

KPIs: 10% increase in detection of high-risk anomalies in tax filings; 15% reduction in fraudulent VAT refund claims.

Case Study: The U.S. Internal Revenue Service (IRS) uses AI to mitigate fraud and strengthen payment reclamation processes, recovering $375 million in fiscal year 2023 alone.

Predictive Analytics for Public Financial Management and Budgeting

Implement a machine learning platform to improve the forecasting of government revenues and expenditures. The model would analyze historical economic data, global commodity prices, remittance trends, and other macroeconomic indicators to generate more accurate budget projections. This would enable more dynamic and responsive fiscal policy, helping to optimize the allocation of public funds towards priority areas like social safety nets and infrastructure development.

KPIs: 1Reduction of budget forecast error by 5 percentage points; early warning alerts for potential fiscal shortfalls.

Case Study: Singapore's Ministry of Finance uses machine learning algorithms to forecast revenues and optimize expenditures as part of its national AI strategy.

Ministry of Law, Justice and Parliamentary Affairs

The Citizen's Problem

The justice system is severely overburdened, with a case backlog exceeding four million cases. This results in extreme delays, denying citizens timely access to justice, particularly for the poor and vulnerable. Civil cases, often related to land disputes, can span generations, eroding public faith in the legal system.

Case Filing

AI scans new case filings, automatically classifies them by type and complexity, extracts key entities, and identifies potential candidates for Alternative Dispute Resolution.

1

Case Triage

System prioritizes cases based on urgency, complexity, and resource requirements, helping to manage the judicial workflow more efficiently.

2

Legal Research

AI-powered legal research assistant helps judges and staff quickly find relevant case law and precedents, summarize lengthy judgments, and identify applicable legal precedents.

3

Case Resolution

Faster processing leads to quicker resolution of cases, reducing the backlog and improving citizens' access to justice.

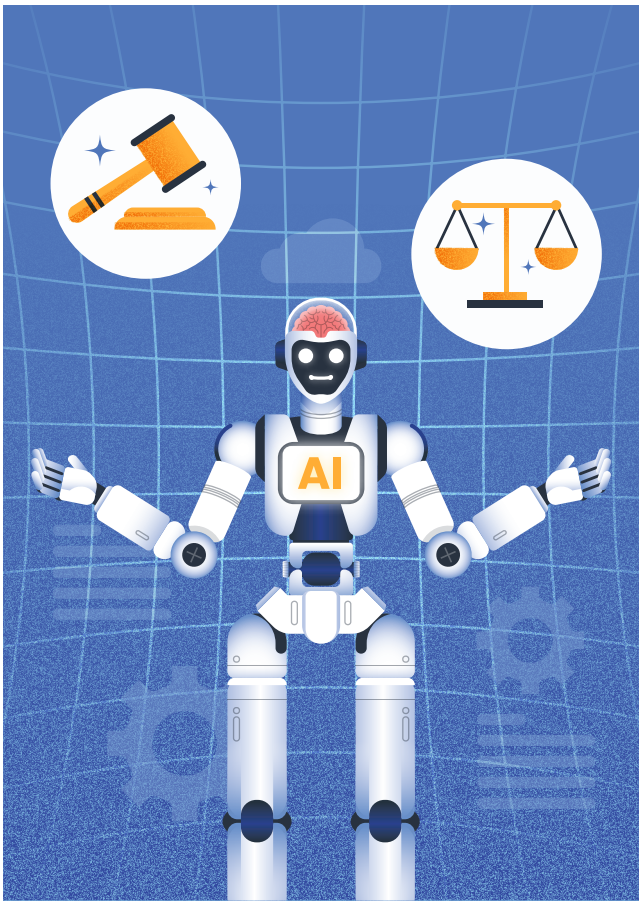
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Recommendation 1: AI-Assisted Case Management and Triage

Pilot an AI tool for intelligent case processing and triage in a specific judicial district. The system would use Natural Language Processing (NLP) to scan new case filings, automatically classify them by type and complexity, extract key entities, and identify potential candidates for Alternative Dispute Resolution (ADR), helping to reduce administrative backlogs.

KPIs: 25% reduction in case intake and classification time; 15% increase in the identification and successful referral of cases to ADR.

Case Study: In the United States, AI-powered case management software is used in legal workflows to analyze documents, manage transcripts, and create case chronologies, allowing legal teams to extract key insights faster and streamline trial preparation.





Recommendation 2: Intelligent Legal Research and Precedent Analysis

Develop an AI-powered legal research assistant for judges and judicial staff. This tool would be trained on a secure, comprehensive database of Bangladeshi laws, statutes, and historical court judgments. It would allow users to perform semantic searches to quickly find relevant case law and precedents, summarize lengthy judgments, and identify legal precedents that might otherwise be missed in manual research. This would accelerate legal reasoning and improve the consistency of judicial decisions.

Safeguards & KPIs: The tool must be used for research support, not as a substitute for judicial interpretation. The training data will be carefully curated and validated by legal experts to ensure accuracy and prevent the inclusion of overturned precedents. KPIs: 30% reduction in time spent on legal research for typical cases; improved access to a wider range of relevant precedents; user satisfaction rating of over 85% from participating judges and staff.

Ministry of Home Affairs

The Citizen's Problem

Citizens in major urban centers face significant public safety threats, including violent crime, robbery, and theft, often exacerbated by a lack of proactive policing and resource allocation. The unpredictable nature of political demonstrations and civil





Predictive Crime Hotspot Mapping

Pilot a predictive policing platform in a specific metropolitan police jurisdiction (e.g., a thana in Dhaka like Mohammadpur). The system will analyze historical crime data, demographic data, and other variables to forecast crime hotspots with a high degree of accuracy, allowing police to deploy patrols and resources proactively.

KPIs: : 15% reduction in reported street crime in targeted hotspots; improved police response times in high-risk areas.

Case Study: Hartsfield-Jackson Atlanta International Airport uses AI-driven video tools to monitor crowd density, allowing security managers to allocate staff more efficiently and enhance safety in a crowded public venue.

AI-Powered Public Safety Monitoring

Augment existing public CCTV networks with AI-powered video analytics to enhance public safety in crowded areas. The system can be trained to automatically detect anomalies such as large, rapidly forming crowds, traffic accidents, or unattended baggage, providing real-time alerts to a central command center.

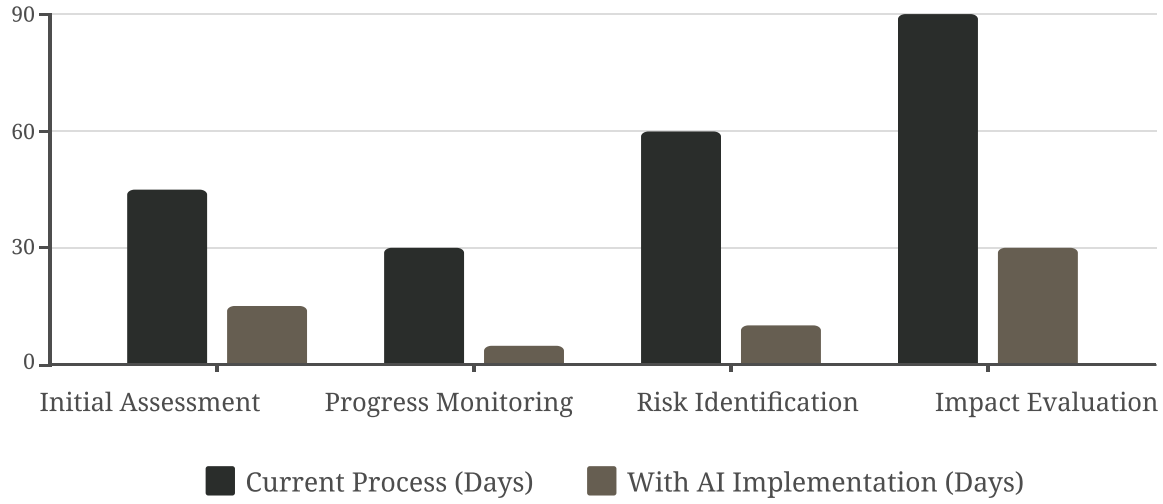
KPIs: 50% quicker detection of critical public safety incidents (e.g., accidents, fires) in monitored zones.

Case Study: Hartsfield-Jackson Atlanta International Airport uses AI-driven video tools to monitor crowd density, allowing security managers to allocate staff more efficiently and enhance safety in a crowded public venue.

Ministry of Planning

The Citizen's Problem

National development projects, which are crucial for improving citizens' quality of life, often suffer from significant delays, cost overruns, and a disconnect between planned objectives and on-theground impact. The lack of real-time, data-driven monitoring makes it difficult for policymakers to assess the effectiveness of public investments.



The chart shows the potential time savings in days across different project phases when implementing AI-powered monitoring systems for development projects.

Recommendation 1: AI-Powered Annual Development Programme (ADP) Monitoring

Develop an AI-driven platform to monitor the implementation of the Annual Development Programme (ADP). The system would integrate project data from the Implementation Monitoring and Evaluation Division (IMED), financial data, and use satellite imagery to independently verify progress on large infrastructure projects, with predictive models forecasting potential delays.

KPIs: : Automated early warning alerts for 20% of projects at risk of significant delay, 10% reduction in average project completion time.

Case Study: The United States government utilizes public-facing Agency Performance Dashboards that provide an overview of the workforce, budget, and IT maturity of major federal agencies, promoting accountability and allowing stakeholders to track performance.

Recommendation 2: AI for EvidenceBased National Planning and Policy Simulation

Create an AI-powered policy simulation tool to support the formulation of long-term national plans. The model would use vast datasets from the Bangladesh Bureau of Statistics (BBS) and other sources to simulate the potential socioeconomic and environmental impacts of different policy choices, enabling planners to design more robust, evidence-based strategies.

KPIs: : Integration of simulation results into the planning documents for the next Five-Year Plan; capacity to model at least three major national policy scenarios.

Case Study: The Asian Development Bank (ADB) has used computer vision techniques on satellite imagery to predict and map poverty at a granular level in the Philippines and Thailand, providing policymakers with data for more inclusive and better-targeted policy interventions.

Ministry of Agriculture

The Citizen's Problem

Farmers, who form the backbone of the nation's food security, face immense challenges from climate change, rising input costs, soil salinity in coastal areas, and drought, leading to crop losses and increased vulnerability.

Farmer Input

Farmers upload photos of crops or receive SMS alerts based on local

AI Analysis

System analyzes images, weather data, and soil conditions

Personalized Recommendations

AI generates specific advice on planting, irrigation, and disease treatment

Implementation

Farmers apply recommendations to improve crop health and yields

Data Collection

Results feed back into the system to improve future recommendations

Recommendation 1: AI-Powered Climate - Adaptive Advisory Service

Launch a personalized, AI-driven advisory service for farmers, delivered via SMS and a simple mobile app. The system would analyze satellite imagery, local weather forecasts, and soil sensor data to provide hyper-local advice on optimal planting times, irrigation needs, and pest/disease outbreaks.

KPIs: Reach 1 million farmers within two years; 15% increase in crop yields for participating farmers in pilot regions.

Case Study: Smart Farm Agritech, a pioneering agricultural technology company, integrates AI to analyze data from sensors to determine the precise amounts of water and fertilizer required, cutting water consumption by as much as 25% while maintaining or boosting crop yields.

Recommendation 2: AI for Crop Health Monitoring and Supply Chain Optimization

Deploy an AI platform that uses computer vision to help farmers diagnose crop diseases early. Farmers can upload photos of affected plants via a mobile app, and the AI model will identify the disease and recommend appropriate treatments. The aggregated data can also create a national crop health dashboard to predict and manage large-scale outbreaks.

KPIs: 85% accuracy in identifying the top 10 common crop diseases; 20% reduction in crop losses due to pests and diseases.

Case Study: The "Krishi Bot" project in Bangladesh uses AI to give farmers instant crop disease diagnoses via smartphone photos, reducing crop losses by up to 40% and demonstrating a successful local application of this technology.

Ministry of Health & Family Welfare

The Citizen's Problem

Citizens face a healthcare system with a severe shortage of trained personnel in rural areas, over-centralization, and poor quality of care, leading to high out-of-pocket expenses and unequal access to services.

2

Week Early Warning

AI-powered surveillance system provides advance warning for 75% of predicted disease outbreaks

20%

Reduction

Expected decrease in outbreak severity through early intervention

15%

Improvement

Increase in diagnostic accuracy for targeted conditions in rural pilot clinics

100K

Youth Users

Target for mental health chatbot adoption in the first year

Recommendation 1: AI-Powered Predictive Outbreak Surveillance

Establish an AI-driven public health surveillance system to predict and prevent outbreaks of infectious diseases like Dengue and Cholera. The model would ingest real-time data from clinics, hospitals, meteorological agencies, and sanitation reports to identify emerging hotspots and trigger alerts for proactive interventions.

KPIs: 2-week advance warning for 75% of predicted disease outbreaks in pilot zones; 20% reduction in outbreak severity.

Case Study: The U.S. Centers for Disease Control and Prevention (CDC) uses AI models to detect and predict the spread of infectious diseases by analyzing electronic health records, travel data, and environmental factors, enabling early warning alerts.

Recommendation 2: AI-Assisted Diagnostics and Mental Health Support

Deploy two targeted AI tools: an AI-powered diagnostic imaging tool to assist rural clinics with analyzing X-rays for conditions like tuberculosis, and an anonymous, AI-powered chatbot in Bangla to provide initial mental health support and risk assessment for youth.

KPIs: 15% improvement in diagnostic accuracy for targeted conditions in rural pilot clinics; 100,000 youth users for the mental health chatbot in the first year.

Case Study: The U.S. CDC has improved surveillance speed and accuracy by automatically detecting tuberculosis from chest X-rays. Globally, AI-powered chatbots are increasingly used in clinical settings to improve individual mental health and wellbeing.

Ministry of Education

The Citizen's Problem

The education system is challenged by a high student-teacher ratio, significant quality disparities between urban and rural schools, and a disconnect between the curriculum and the skills required for the modern economy, resulting in unequal learning outcomes and leaving many young people unprepared for the workforce.

AI for Career Pathways and "Verify-to-Hire" Readiness

Launch a national AI-powered career matchmaking platform to bridge the gap between higher education and employment. This system would use a proprietary "Skills Graph" to map the relationships between skills, courses, and successful career outcomes, providing students with predictive placement guidance. It would also feature a "Verify-to-Hire" job simulator, allowing students and job seekers to engage in real-world simulations to generate a multi-dimensional skill profile for employers. This initiative can be accelerated by partnering with local pioneers like Lead Academy, which is already developing these technologies.

KPIs: 25% increase in the employment rate for graduates using the platform; 1,000 companies onboarded to the "Verify-to-Hire" system in the first year.

Case Study: Lead Academy in Bangladesh is building a matchmaking engine using semantic analysis and a predictive "Learning to Rank" model trained on historical placement data. By supporting and scaling such local innovations, the government can create a powerful, data-driven ecosystem that connects education directly to economic opportunity.

AI-Driven Teacher Assistant and Professional Development Tool

Develop an AI tool to support teachers by automating administrative tasks such as grading routine assignments and tracking attendance. This would free up teachers' time to focus on mentoring and student engagement, while also providing insights for targeted professional development.

KPIs: Reduction in teacher time spent on administrative tasks by 5 hours per week.

Case Study: Automated grading and assessment tools use AI to evaluate assignments and provide detailed feedback, streamlining the grading process, ensuring consistency, and saving teachers valuable time that can be redirected to more impactful activities.

LEAD ACADEMY
www.lead.academy

DREAMERS ACADEMY
Dream • Learn • Lead

Ministry of Social Welfare

The Citizen's Problem

Social safety net programs suffer from significant targeting errors, with benefits often failing to reach the most deserving due to administrative inefficiencies and lack of data. Citizens, particularly vulnerable groups, face a confusing and fragmented system to access benefits.

AI-Powered Vulnerability Scoring

Develop an AI-driven system to create an objective "vulnerability score" for identifying and prioritizing beneficiaries. The model would cross-reference an applicant's NID information with other government databases (e.g., land records, tax data) to assess eligibility based on transparent criteria, reducing subjectivity and mistargeting.

KPIs: 20% reduction in inclusion and exclusion errors in targeted safety net programs.

Case Study: In Bangladesh, the "MobileAid" pilot used machine learning and mobile phone data to predict poverty, proving to be more accurate than community-based selection and significantly faster and cheaper than traditional survey-based methods for targeting aid.

Unified AI Chatbot for Citizen Inquiries

Launch a multilingual AI chatbot as a single point of contact for citizens to inquire about all social welfare programs. The chatbot would provide clear information on eligibility, application procedures, and payment status, simplifying a currently fragmented system.

KPIs: 500,000 unique users in the first year; 30% reduction in call volume to ministry helplines for basic inquiries.

Case Study: Singapore's GovTech agency deployed AI-powered chatbots like "Ask Jamie" across more than 70 government websites, resulting in a 50% reduction in call center workload and providing 24/7 responses in multiple languages.



Ministry of Disaster Management and Relief

The Citizen's Problem

Bangladesh is one of the world's most climate-vulnerable nations, with citizens facing constant threats from cyclones, floods, and river erosion. Effective disaster response is often hampered by delays in disseminating early warnings and challenges in pre-positioning relief supplies.

Recommendation 1: AI-Powered Early Warning and Evacuation Routing System

AI Solution

Implement an AI-powered system that integrates real-time cyclone tracking data, flood models, and population density data. The system would generate and disseminate hyper-local early warnings and optimized evacuation routes via SMS to citizens in vulnerable districts.

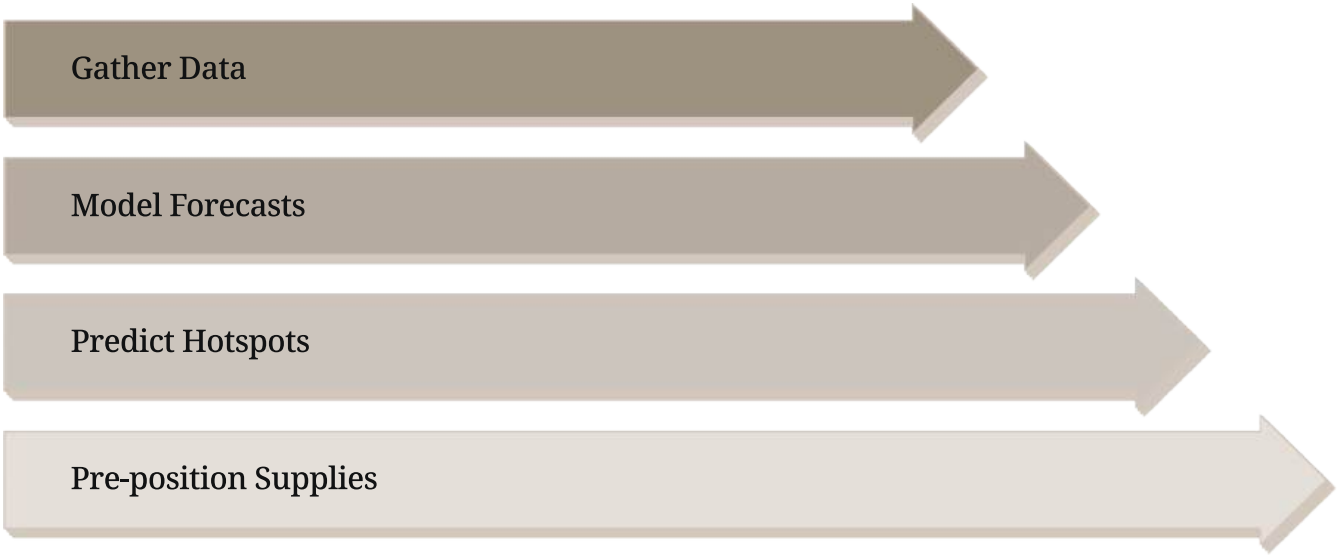
KPIs

Dissemination of evacuation alerts to 95% of mobile users in a target area within 30 minutes of a high-level warning.

Case Study

Japan's Meteorological Agency implemented an AI-powered earthquake prediction system using deep learning to analyze seismic data in real time, increasing detection accuracy by 70% and enabling faster evacuations.

Recommendation 2: Predictive Analytics for Relief Pre-positioning



AI Solution

Use a predictive analytics model to optimize the pre-positioning of emergency relief supplies ahead of predictable disasters. The model would analyze historical disaster impact data, weather forecasts, and vulnerability maps to predict which areas will be hit hardest and what their specific needs will be.

KPIs

24-hour reduction in the average time to deliver essential relief to affected communities.

Case Study

AI-powered solutions are used globally to analyze data from sensors, satellites, and social media to optimize resource allocation and damage assessment. This allows for the efficient distribution of aid and coordination of emergency services during a crisis.

Ministry of Road Transport and Bridges

The Citizen's Problem

Millions of citizens in urban centers lose countless hours to crippling traffic congestion, impacting productivity and quality of life. Road accidents remain tragically high due to poor driving standards and inadequate infrastructure.

Recommendation 1:
AI-Powered Adaptive Traffic Management

AI Solution

Pilot an AI-driven adaptive traffic signal control system in a high-congestion corridor. The system will use real-time video feeds from cameras and IoT sensors to analyze traffic flow and dynamically adjust signal timings to optimize traffic flow and reduce wait times.

KPIs

15% reduction in average commute time along the pilot corridor; 10% decrease in intersection-related accidents.

Case Study

In São Paulo, Brazil, an AI-driven smart traffic management system reduced travel time by 25% in high-traffic zones by using AI-powered sensors to adjust traffic signals in real-time and predict congestion patterns.



Recommendation 2: Predictive Road Safety and Infrastructure Maintenance

Data Collection

Historical accident data, road condition reports, traffic patterns, and weather information

AI Analysis

Predictive modeling to identify accident hotspots and infrastructure failure risks

Proactive Action

Targeted maintenance and safety improvements before failures occur

AI Solution

Develop a predictive model that identifies road accident hotspots and infrastructure failure risks. The model will ingest historical accident data, road condition data, and weather data to forecast high-risk zones and predict maintenance needs, enabling a shift from reactive to proactive maintenance.

KPIs

20% reduction in fatalities/serious injuries in targeted hotspots; 15% reduction in emergency road repair costs.

Case Study

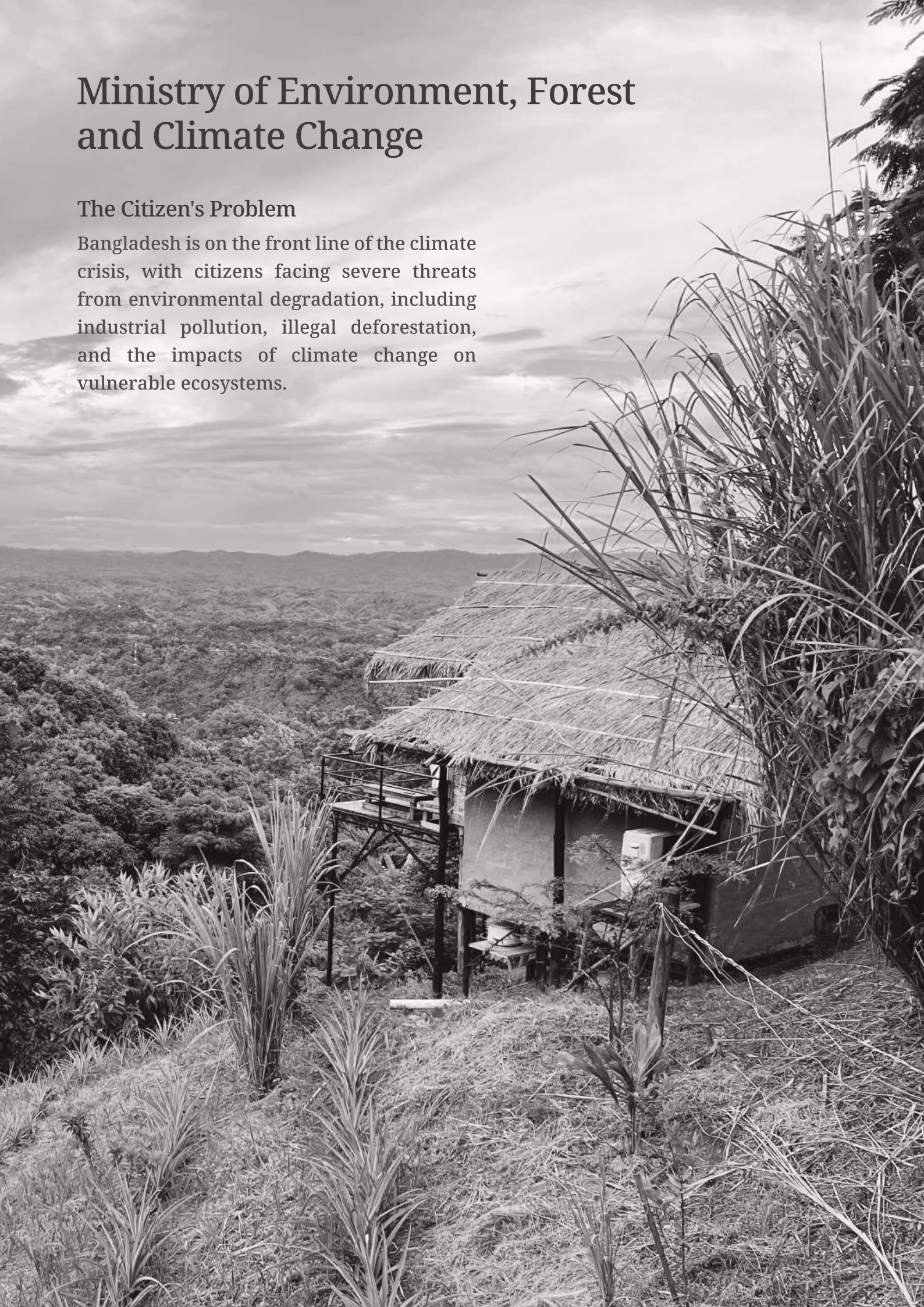
In Australia, certain localities are testing an AI system that provides real-time diagnostics on roads, alerting them to early indications of pavement wear and tear that can result in potholes, allowing for preventative maintenance.



Ministry of Environment, Forest and Climate Change

The Citizen's Problem

Bangladesh is on the front line of the climate crisis, with citizens facing severe threats from environmental degradation, including industrial pollution, illegal deforestation, and the impacts of climate change on vulnerable ecosystems.



Recommendation 1: AI-Powered Environmental Monitoring and Enforcement

AI Solution

Deploy an AI platform that analyzes high-resolution satellite imagery to automatically detect illegal environmental activities. The system can be trained to identify illegal hill-cutting or unauthorized deforestation, flagging the exact GPS coordinates for immediate investigation and enforcement.



KPIs

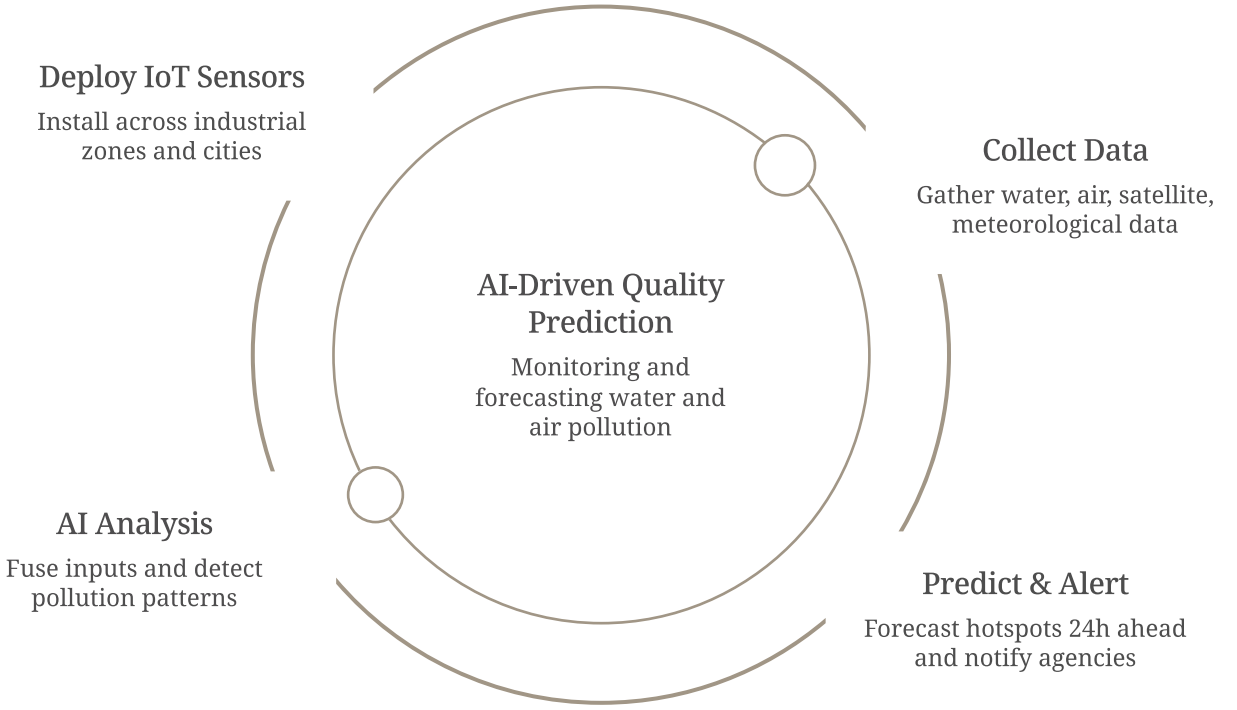
50% increase in the detection rate of illegal deforestation and hill-cutting activities.

Case Study

Global Forest Watch uses AI and satellite data to identify illegal logging and deforestation activities in real time. This enables timely intervention and better enforcement of conservation policies globally.



Recommendation 2:
AI-Driven Water and Air Quality Prediction



AI Solution

Create an AI model to monitor and predict water and air quality in industrial zones and major cities. The system would fuse data from IoT sensors, satellite data, and meteorological data to predict pollution hotspots and issue early warnings to the public and regulatory agencies.

KPIs

24-hour advance warning of high-pollution events (air or water).

Case Study

AI-driven monitoring systems are used globally to measure pollution levels in real-time. By analyzing historical data and current conditions, these models can forecast air and water quality, allowing authorities to take preventive measures to protect public health.

Ministry of Fisheries And Livestock

The Citizen's Problem

Smallholder fish and livestock farmers face significant challenges from disease outbreaks, climate change impacts, poor access to veterinary care, and lack of quality feed, leading to low productivity and economic insecurity.



Recommendation 1: AI-Powered Aquaculture Management System



Mobile Monitoring

Real-time water quality analysis and recommendations



Disease Detection

Early identification of fish health issues through image analysis



Optimized Operations

AI-driven recommendations for feeding and management

AI Solution

Develop an AI-driven mobile application to help fish farmers optimize their operations. The system would use AI to analyze data from water quality sensors and provide real-time recommendations on feeding schedules and disease prevention. Computer vision features could allow farmers to upload images of fish to detect early signs of disease.

KPIs

10% increase in fish farm productivity in the pilot program; 15% reduction in fish mortality due to disease.

Case Study

In the U.S., an AI-aided computer vision system was developed for real-time monitoring of fish in aquaculture systems, detecting fish with more than 85% precision, thereby improving health monitoring and production efficiency without causing stress to the fish.

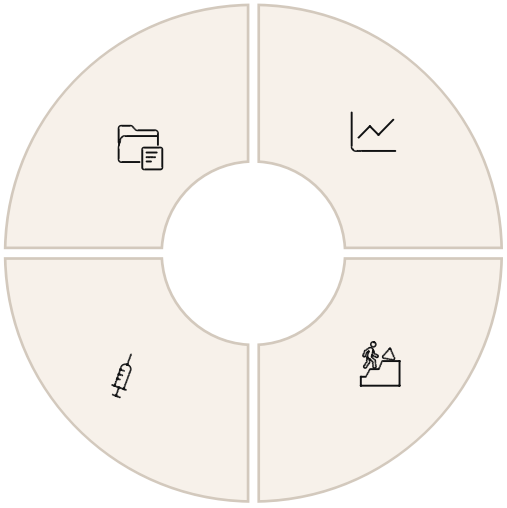
Recommendation 2: Livestock Disease Surveillance and Early Warning

Data Collection

Veterinary field reports, livestock movement records, environmental factors

Proactive Response

Targeted vaccination campaigns in predicted outbreak zones



Pattern Analysis

AI identifies disease outbreak patterns and risk factors

Risk Prediction

System forecasts high-risk areas 3 weeks in advance

AI Solution

Create a national AI-powered surveillance system to predict and track livestock disease outbreaks. The system would analyze data from veterinary field reports, livestock movement records, and environmental factors to identify patterns and predict areas at high risk of an outbreak, enabling proactive vaccination campaigns.

KPIs

3-week advance warning for predicted disease outbreaks; 25% reduction in the geographic spread of major livestock diseases.

Case Study

OnceCup AI, a pioneering agri-tech company, has developed AI systems specifically designed to enhance livestock health management, demonstrating the potential for AI to transform how animal health is monitored on farms.

Ministry of Land

The Citizen's Problem

Land disputes are endemic in Bangladesh, clogging the justice system and causing immense hardship for citizens. The process of land registration, mutation, and record-keeping is complex, opaque, and prone to corruption and forgery, making it difficult for citizens to secure their property rights.



Recommendation 1: AI-Powered Land Record Digitization and Verification

Document Scanning

OCR technology digitizes paper deeds and ledgers

Data Extraction

AI extracts key information from scanned documents

Cross-Verification

System flags inconsistencies and potential forgeries

Secure Database

Creation of verified digital land records

AI Solution

Use AI-powered Optical Character Recognition (OCR) and Intelligent Document Processing (IDP) to accelerate the digitization and verification of historical land records. The system would scan paper deeds and ledgers, automatically extracting key information and cross-referencing it with existing digital records to flag inconsistencies and potential forgeries.

KPIs

50% acceleration of the land record digitization process; 20% reduction in errors compared to manual data entry.

Case Study

Globally, AI-powered systems are used to digitize, classify, and validate land-related documents such as deeds and registration forms. This reduces human error, clears administrative backlogs, and helps detect anomalies or fraudulent claims.

Recommendation 2: AI-Assisted Land Use Monitoring and Planning



AI Solution

Develop an AI platform that analyzes satellite and drone imagery to monitor land use changes in real time. The system can automatically classify land as agricultural, residential, or commercial, and detect unauthorized construction or encroachment on public land, providing planners with an accurate, up-to-date national land use map.

KPIs

Creation of a national dynamic land use map updated quarterly; 30% increase in the detection of illegal encroachment on public lands.

Case Study

AI platforms like Google Earth Engine analyze vast datasets of satellite imagery to identify patterns, classify land use, and detect changes over time, assisting in urban planning and deforestation tracking.

Ministry of Water Resources (MOWR)

The Citizen's Problem

Citizens face a dual crisis of water management: devastating floods during the monsoon season and acute water scarcity and salinity intrusion in the dry season. Centralized approaches have often overlooked local needs, impacting livelihoods and access to safe drinking water.

Recommendation 1: AI-Powered River and Flood Forecasting System

7

Days

Increased flood forecast lead time from current 3 days

20%

Improvement

In accuracy of flood inundation mapping

100+

Countries

Where similar AI flood prediction systems are active

AI Solution

Enhance the national flood forecasting system with AI models that provide more accurate and longer-lead-time predictions. The system would integrate data from river gauges, rainfall radars, satellite imagery, and upstream river flow data to provide more precise forecasts of river levels and inundation areas.

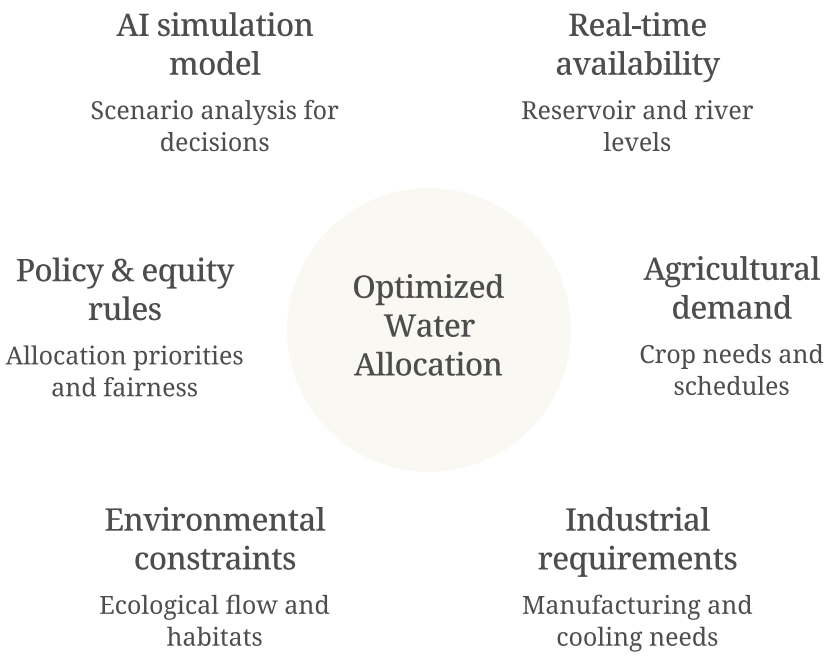
KPIs

Increase flood forecast lead time from 3 days to 7 days for major river basins; 20% improvement in the accuracy of flood inundation mapping.

Case Study

Google's Flood Hub uses AI to process diverse publicly available data sources, providing locally relevant flood forecasts up to 7 days in advance. The system is active in over 100 countries, demonstrating the scalability and effectiveness of AI in flood prediction.

Recommendation 2:
AI for Optimal Water Resource Allocation



AI Solution

Enhance the national flood forecasting system with AI models that provide more accurate and longer-lead-time predictions. The system would integrate data from river gauges, rainfall radars, satellite imagery, and upstream river flow data to provide more precise forecasts of river levels and inundation areas.

KPIs

Increase flood forecast lead time from 3 days to 7 days for major river basins; 20% improvement in the accuracy of flood inundation mapping.

Case Study

Google's Flood Hub uses AI to process diverse publicly available data sources, providing locally relevant flood forecasts up to 7 days in advance. The system is active in over 100 countries, demonstrating the scalability and effectiveness of AI in flood prediction.

Ministry of Commerce

The Citizen's Problem: Consumers engaging in the rapidly growing e-commerce sector are vulnerable to fraud, misleading advertisements, and poor service, with weak enforcement of consumer protection laws undermining trust. Simultaneously, legitimate businesses seeking to export face complex procedures and a lack of market intelligence, hindering the national goal of export diversification away from an over-reliance on ready-made garments (RMG).

Recommendation 1: AI-Powered E-Commerce Fraud Detection and Consumer Protection



Automated Monitoring

NLP scans online platforms and social media for misleading claims and fake reviews



Risk Identification

System flags high-risk e-commerce operators based on complaint patterns



Proactive Protection

Enables early investigation and public warnings before widespread fraud occurs

AI Solution

Create an AI platform for the Directorate of National Consumer Rights Protection (DNCRP) to monitor the digital marketplace for fraudulent activities and unfair practices. The system would use NLP to scan online platforms and social media (Fcommerce) for misleading claims, fake reviews, and unusually high complaint volumes related to specific sellers. This would enable proactive investigations and public warnings, protecting consumers and building trust in the digital economy.

KPIs

30% increase in the identification of high-risk e-commerce operators; 25% reduction in the time required to investigate consumer complaints.

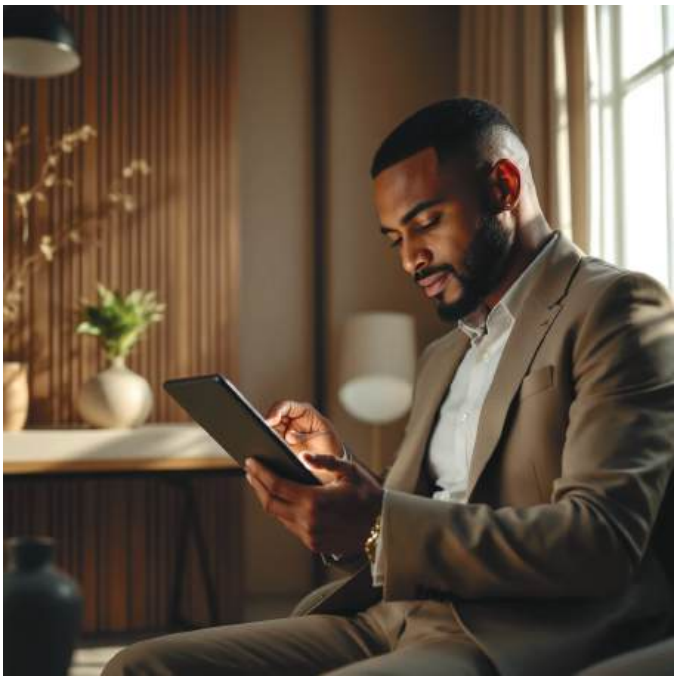
Case Study

Global e-commerce platforms like Amazon and eBay utilize sophisticated AI systems to detect fraudulent activities, such as fake listings or suspicious payment transactions, helping to maintain trust and protect both buyers and sellers on their platforms.

Recommendation 2: AI Trade Intelligence Platform for Export Promotion

AI Solution

Launch an AI-driven trade intelligence portal to support Bangladeshi exporters, particularly SMEs in non-RMG sectors. The platform would analyze global trade data, market trends, tariff schedules, and regulatory requirements in potential export markets. It would provide businesses with actionable insights on identifying new market opportunities, understanding compliance standards, and optimizing supply chains, thus supporting the national goal of export diversification.



KPIs

10,000 active SME users within two years; measurable increase in export inquiries to non-RMG sectors.

Case Study

The United Nations Industrial Development Organization (UNIDO) is fostering an ecosystem where small businesses can harness AI's potential responsibly through initiatives like AIM Global, which serves as a platform for knowledge exchange and collaboration for SMEs adapting to the changing landscape of global trade.

Recommendation 3: AI-Enhanced Crowdfunding for Economic Democratization

AI Solution

Launch an AI-driven trade intelligence Foster a vibrant and secure crowdfunding ecosystem by creating a regulatory framework supported by AI. Many innovative SMEs, creative projects, and social enterprises fail due to a lack of access to traditional capital. An AI-powered platform under the Ministry of Commerce could analyze campaign proposals for viability and fraud risk, protecting backers and building trust. AI can also match projects with interested investors, both domestic and international. This initiative would support global platforms like Kickstarter, GoFundMe, and LaunchGood, while also promoting local innovation like Bangladesh's new crowdfunding platform, uddom.io, to ensure transparency and security in alternative financing.

KPIs

Facilitate Tk 100 crore in alternative financing for SMEs and creative projects within two years; reduce crowdfunding fraud rates to below global averages.

Case Study

Global crowdfunding platforms like Kickstarter use sophisticated algorithms to analyze campaign data, predicting success rates and flagging high-risk projects for review. This AI-driven vetting process helps maintain platform integrity and protects backers, demonstrating a proven model for building a trustworthy digital financing ecosystem.

Ministry of Industries

The Citizen's Problem: Industrial growth, while vital for job creation, is often accompanied by significant environmental pollution and workplace safety risks that harm citizens' health and well-being. Small and Medium Enterprises (SMEs), which are critical for employment, struggle to access financing, technology, and training, limiting their growth and contribution to the economy.

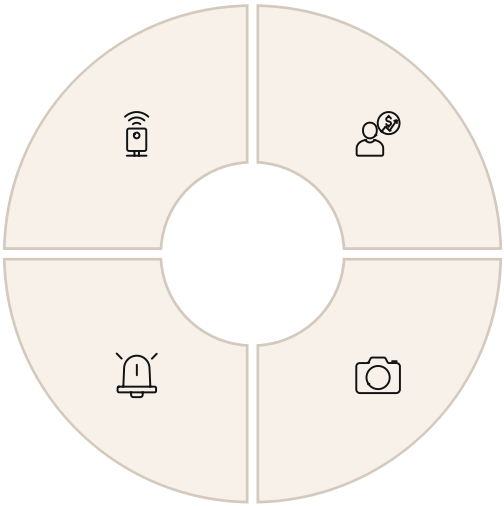
Recommendation 1: AI for Predictive Maintenance and Workplace Safety in Factories

IoT Sensors

Monitor machinery conditions in real-time

Predictive Analytics

Forecast equipment failures before they happen



Real-time Alerts

Notify supervisors of safety violations immediately

Video Analytics

Monitor safety protocol compliance on factory floors

AI Solution

Pilot an AI-powered platform in state-owned or partner factories to improve workplace safety and operational efficiency. The system would use IoT sensors on machinery to predict equipment failures before they happen (predictive maintenance), reducing downtime and preventing accidents. AI-powered video analytics could also monitor factory floors for safety protocol violations (e.g., workers not wearing protective gear, unsafe operation of machinery) and alert supervisors in real time.

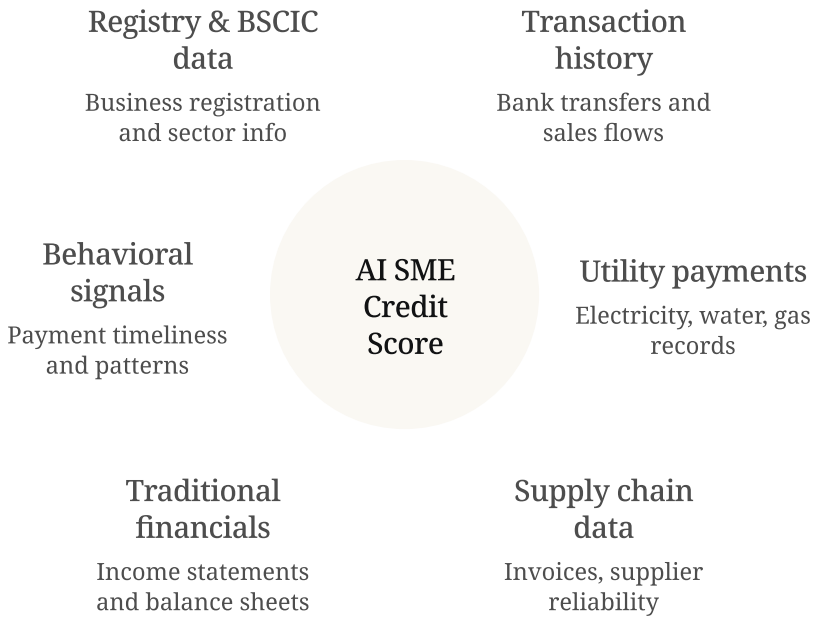
KPIs

20% reduction in machine downtime due to unexpected failures; 15% decrease in workplace accidents in pilot factories.

Case Study

A technology-focused defense and security firm in the US used a Virtual Reality (VR) program during employee orientation to simulate the identification of workplace hazards, which increased employee engagement and reduced the chance of injury during training.

Recommendation 2: AI-Driven Credit Scoring and Support for SMEs



AI Solution

Develop an AI-based credit scoring model for SMEs in partnership with financial institutions and the Bangladesh Small and Cottage Industries Corporation (BSCIC). The model would use alternative data sources (e.g., transaction history, utility payments, supply chain records) in addition to traditional financial statements to assess the creditworthiness of SMEs that lack formal credit histories. This would expand access to finance for deserving small businesses, fueling growth and job creation.

KPIs

25% increase in loan approvals for SMEs without traditional credit histories.

Case Study

Bank BRI in Indonesia implemented an AI-driven credit scoring system using agricultural data to provide microloans to millions of rural borrowers without formal credit histories. The system reduced loan processing time from two weeks to less than two days and lowered default rates.

Ministry of Foreign Affairs

The Citizen's Problem: In an increasingly complex and volatile geopolitical landscape, the nation's interests—from trade and investment to the welfare of its diaspora and regional stability—depend on agile, informed, and coordinated diplomacy. Traditional diplomatic methods struggle to keep pace with the sheer volume and velocity of global information, potentially leading to missed opportunities or reactive policy-making.

Recommendation 1: AI-Powered Global Monitoring and Diplomatic Early Warning System

Continuous Monitoring

AI analyzes thousands of open sources in multiple languages

Pattern Recognition

System identifies emerging geopolitical, economic, and security trends

Early Warning

Alerts on potential diplomatic or trade disputes affecting Bangladesh

Actionable Briefs

Daily concise reports on top 5 emerging global issues

AI Solution

Implement an AI platform to provide diplomats and policymakers with real-time global intelligence and early warnings. The system would continuously monitor and analyze thousands of open sources—international news, policy papers, social media, and economic data—in multiple languages. Using NLP and trend analysis, it would identify emerging geopolitical, economic, and security risks and opportunities relevant to Bangladesh's interests, providing concise, actionable briefs to the ministry and diplomatic missions abroad.

KPIs

Daily automated briefs on the top 5 emerging global issues affecting Bangladesh; early warning alerts for potential diplomatic or trade disputes.

Case Study

The United States' embassy in Guinea began using ChatGPT to condense daily media reports for the ambassador, write speeches, draft project proposals, and create social media posts, demonstrating AI's utility in streamlining routine diplomatic tasks.

Recommendation 2: AI for Consular Services and Diaspora Engagement



AI Solution

Deploy an AI-powered chatbot and virtual assistant to support Bangladeshi embassies and consulates in providing services to the large diaspora community. The chatbot, available 24/7 on embassy websites, would answer frequently asked questions about passport renewals, visas, and other consular services in both Bangla and English. This would free up consular staff to handle more complex cases and improve the service experience for millions of expatriates.

KPIs

50% reduction in routine phone and email inquiries to consular sections; 24/7 availability of basic consular information.

Case Study

Australia's government employs an AI-powered chatbot named "Sophie" to assist with visa and citizenship inquiries, delivering real-time, personalized information and guiding users through travel documentation and emergencies without delay.

Ministry of Defence

The Citizen's Problem: National sovereignty and citizen safety depend on a modern, capable, and efficient defence force. However, Bangladesh faces challenges from outdated military hardware, evolving security threats in a complex geopolitical region, and the need to optimize resource allocation for modernization efforts.

Recommendation 1: AI for Predictive Maintenance of Defence Assets

20%

Increase

In operational availability of targeted asset fleets

15%

Reduction

In unplanned maintenance costs

27%

Extension

Average increase in defense equipment lifespan

AI Solution

Implement an AI-driven predictive maintenance system for high-value military assets, such as aircraft, naval vessels, and armored vehicles. By installing IoT sensors and analyzing historical maintenance logs and operational data, the system can predict component failures before they occur. This increases operational readiness, enhances safety for personnel, reduces long-term maintenance costs, and ensures that critical assets are available when needed.

KPIs

20% increase in the operational availability of targeted asset fleets; 15% reduction in unplanned maintenance costs.

Case Study

A 2024 Deloitte analysis showed that AI-based predictive maintenance can cut down on unplanned equipment stoppages by half across manufacturers, while experts estimate it extends the lifespan of defense equipment by an average of 27%.

Recommendation 2: AI-Powered Intelligence, Surveillance, and Reconnaissance (ISR) Analysis



Case Study: AI-Powered Military Intelligence

> During Operation Glowing Symphony, the U.S. military integrated AI and cyber tools to process and analyze vast amounts of data from multiple sources, which was key to dismantling the Islamic State (IS) and demonstrated AI's ability to enhance situational awareness and decision-making.

This case study demonstrates how AI can transform military intelligence capabilities by processing enormous volumes of data from diverse sources, enabling faster and more effective decision-making in complex operational environments.

AI Solution

Develop an AI platform to augment the analysis of ISR data from sources like satellite imagery, drones, and maritime surveillance feeds. The system would use computer vision and pattern recognition to automatically detect, identify, and track objects or activities of interest (e.g., unauthorized maritime vessels, changes in border activity), flagging them for human analysts. This would dramatically increase the speed and capacity of intelligence analysis, allowing a smaller number of analysts to cover a much larger area and focus on high-level strategic assessment.

KPIs

75% reduction in the time required to analyze a standard set of satellite or drone imagery.

Ministry of Food

Ensuring food security for a population of nearly 180 million is a monumental challenge, marked by price volatility for essential commodities, post-harvest losses, and inefficiencies in the public food distribution system. Citizens, especially the urban poor, are vulnerable to sudden price hikes, while the government needs better tools to manage national food reserves and stabilize the market.

1

AI-Powered Food Price and Supply Forecasting

Create an AI model to forecast the supply, demand, and price of essential food commodities (e.g., rice, wheat, onions, potatoes). The model would analyze a wide range of data, including domestic production estimates, import data, weather patterns, global market prices, and transportation logistics. This would provide the Ministry of Food with early warnings of potential shortages or price spikes, enabling proactive measures such as timely imports, release of stocks from public reserves, or market interventions like the Open Market Sale (OMS) program.

KPIs:

- 3-month advance forecast of potential supply-demand gaps for key commodities.

Case Study: A global food manufacturer used C3 AI's Demand Forecasting application to unify data from 18 disparate sources, significantly improving its daily forecast accuracy and reducing the time required to generate production schedules by 96%.



Ministry of Food (continued)

1

AI for Optimizing the Public Food Distribution System (PFDS)

Use AI to optimize the logistics and inventory management of the PFDS. An AI-driven system would analyze regional demand patterns, storage capacity at various government silos and warehouses, and transportation network data to determine the most efficient way to store and distribute food grains across the country. This would minimize transportation costs, reduce spoilage, and ensure that food supplies are available where they are most needed, particularly in disaster-prone or food-insecure regions.

KPIs:

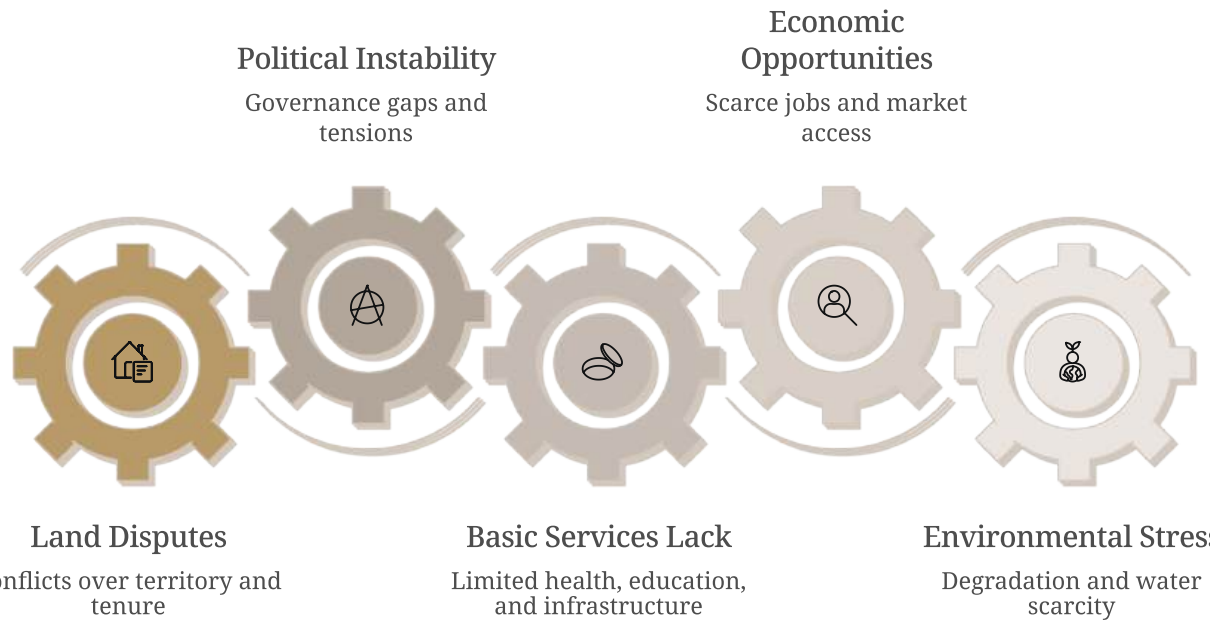
- 10% reduction in logistical costs for food grain distribution
- 5% reduction in storage losses due to spoilage

Case Study: AI applications are being used in food bank and pantry operations to address challenges like variability in food donations and difficulties in matching supply with demand, with models developed to optimize food collection, distribution, and inventory processes.



Ministry of Chittagong Hill Tracts Affairs

The communities of the Chittagong Hill Tracts (CHT) face unique and deeply entrenched challenges, including unresolved land disputes, political instability, and a lack of access to basic services and economic opportunities. Development has often been unplanned, failing to benefit local indigenous communities and exacerbating environmental degradation and water scarcity.



1

AI-Powered Land Dispute and Resource Mapping

Use AI and geospatial analysis to create a comprehensive, multi-layered digital map of the CHT. This platform would integrate satellite imagery, historical land records, and data on customary land use patterns. AI algorithms could help identify overlapping land claims and areas of potential conflict, providing the Land Commission with a neutral, data-driven tool to support dispute resolution. The map could also identify areas vulnerable to landslides or deforestation, guiding sustainable development and conservation efforts.

KPIs:

- Creation of the first integrated digital resource map for the CHT
- Identification and classification of 50% of outstanding land dispute claims

Case Study: Indigenous communities globally are using AI as a tool to monitor climate change and deforestation and to map ancestral lands. However, the UN emphasizes that for such technologies to be empowering, they must be developed with the Free, Prior, and Informed Consent (FPIC) of the communities to avoid becoming a new form of digital colonization.

Ministry of Chittagong Hill Tracts Affairs

2

AI for Sustainable Agriculture and Tourism Planning

Develop an AI-driven decision support tool to promote sustainable livelihoods in the CHT. For agriculture, the tool would analyze topography and soil data to recommend climate-resilient crops and sustainable farming techniques (e.g., contour farming to prevent erosion). For tourism, it would identify potential eco-tourism sites while also modeling the potential environmental and cultural impact to ensure development is low-impact and benefits local communities directly, rather than being dominated by outside interests.

KPIs:

- Development of climate-resilient agricultural plans for 100 villages in the pilot phase

Case Study: In Africa, some tourist destinations have begun using AI tools to manage sensitive ecological sites and protected areas. The technology assists in monitoring natural components, creatures, and phenomena, and collecting complex data to make suitable decisions for sustainable management.





Ministry of Civil Aviation and Tourism

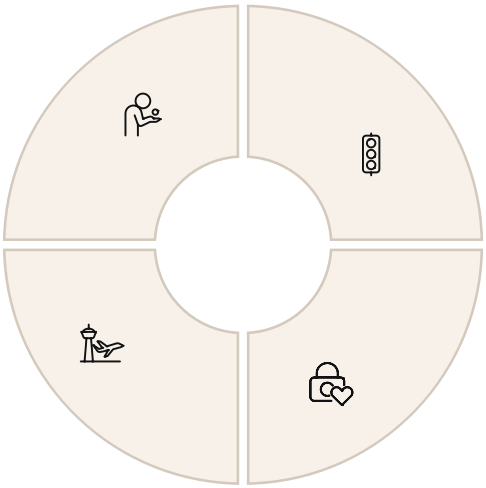
The tourism sector's potential is severely hampered by a poor international brand image, inadequate infrastructure, and safety concerns, resulting in far fewer foreign tourists compared to neighboring countries. At airports, passengers face inefficiencies and security risks, while the aviation system requires modernization to ensure safe and competitive transport.

Poor International Brand Image

Limited global awareness of Bangladesh's tourism offerings

Airport Inefficiencies

Long wait times and security challenges



Inadequate Infrastructure

Insufficient facilities to support tourism growth

Safety Concerns

Perceived and actual safety issues deterring visitors





Ministry of Civil Aviation and Tourism

1

AI-Powered Predictive Airport Operations Management

Implement an AI-driven system at Hazrat Shahjalal International Airport to optimize passenger flow and resource allocation. The system would use machine learning to predict passenger arrival patterns based on flight schedules and historical data. This would enable airport authorities to proactively allocate staff and resources for check-in, security, and immigration, reducing queue times. AI-powered video analytics could also monitor runway and apron activity to improve aircraft turnaround times and enhance safety.

KPIs:

- 20% reduction in average passenger wait times at security and immigration

Case Study: Amsterdam-Schiphol Airport uses AI-enabled scanners that are so precise, passengers are not required to remove safe liquids and laptops from their bags, helping security lines move faster while still flagging real threats.

2

AI-Driven Tourism Intelligence and Promotion Platform

Create an AI-powered platform for the Bangladesh Tourism Board to drive a data-informed tourism strategy. The system would analyze global travel trends, social media sentiment, and airline booking data to identify high-potential source markets and tourist preferences. It would then help craft targeted digital marketing campaigns to promote specific attractions (e.g., Sundarbans, archaeological sites) to niche audiences, helping to reshape Bangladesh's international image and attract a more diverse range of visitors.

KPIs:

- Identification of 5 new high-potential international tourist markets

Case Study: Aviation analytics firm Cirium has developed an AI assistant that analyzes vast datasets on traveler analytics to help airlines and airports optimize network planning and improve the passenger experience, demonstrating how AI can be used to derive strategic insights from tourism-related data.

Ministry of Women and Children Affairs

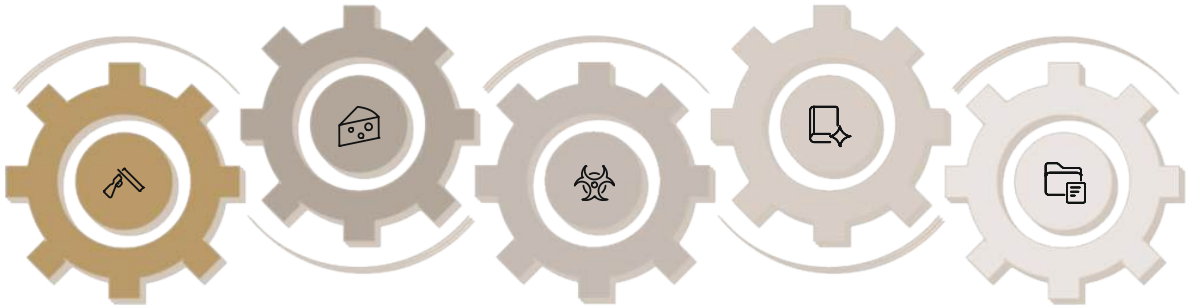
Women and children in Bangladesh continue to face significant challenges, including gender-based violence, child marriage, commercial sexual exploitation, and unequal access to education and economic opportunities. A lack of timely data and effective intervention mechanisms makes it difficult for authorities to protect the most vulnerable populations.

Child Marriage

Early unions hinder development

Unequal Access

Education and economic barriers



Gender-based Violence

Physical, sexual, and emotional abuse

Commercial Exploitation

Sexual exploitation and trafficking

Data & Intervention Gaps

Collection and program challenges





1

AI-Powered Early Warning System for Child Protection

Develop an AI-driven system to identify children at high risk of dropping out of school, being forced into child labor, or becoming victims of child marriage. The model would analyze anonymized data from education systems (e.g., irregular attendance), health records, and social welfare databases to identify risk patterns. This would enable social workers and local authorities to provide targeted, preventive support to vulnerable families before a crisis occurs.

KPIs:

- 15% reduction in school dropout rates in pilot areas
- Identification of high-risk families for proactive support

Case Study: The concept of AI-powered early warning systems is well-established in public health, where machine learning and NLP are used to integrate diverse data sources (epidemiological, climate, web data) for earlier outbreak detection and improved prediction accuracy, a model that can be adapted for child protection.

2

AI Tool for Detecting Online Exploitation and Harmful Content

Deploy a sophisticated AI tool to help law enforcement and the ministry monitor public online platforms for content related to the sexual exploitation and abuse of children (CSAM) and the trafficking of women and children. The AI would use image and text analysis to detect and flag illegal and harmful content for immediate review and action by human investigators, helping to disrupt criminal networks and protect victims.

KPIs:

- 50% increase in the detection rate of publicly accessible CSAM hosted in Bangladesh

Case Study: The United Nations' "AI for Safer Children" initiative provides a global hub of over 80 cutting-edge AI tools for law enforcement. After adopting a tool from the hub, investigators in Argentina reported that the time spent analyzing child abuse images and videos was reduced from 1-2 weeks to just one day.

Ministry of Textiles & Jute

The jute industry, a sector with immense heritage and potential, is plagued by numerous problems including low productivity, outdated technology, and an inefficient supply chain, which harms the livelihoods of millions of farmers and workers. In the dominant textile sector, maintaining quality control and adapting to fast-changing global fashion trends are constant challenges for manufacturers.

Low Productivity

Outdated manufacturing processes limiting output

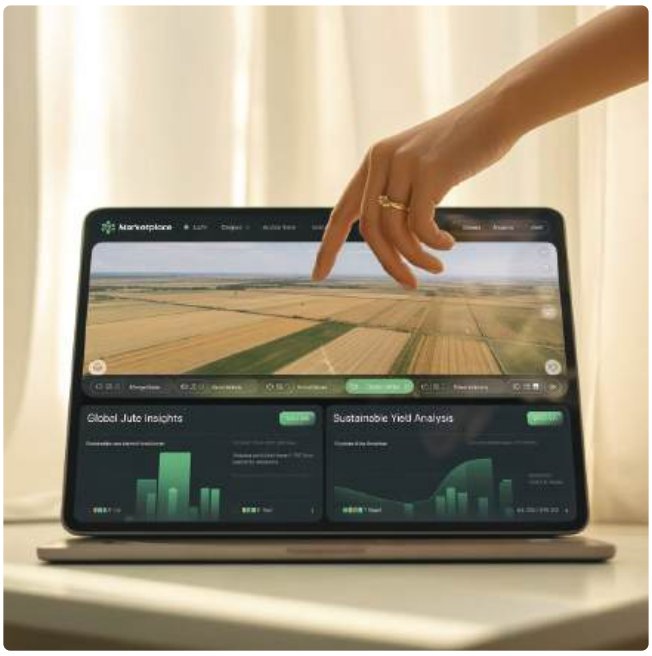
Outdated Technology

Lack of modern equipment and techniques

Inefficient Supply Chain

Poor coordination between farmers, processors, and markets





Ministry of Textiles & Jute

1

AI-Powered Quality Control in Textile and Garment Manufacturing

Introduce AI-powered computer vision systems on production lines to automate quality control. High-resolution cameras would scan fabrics and finished garments for defects such as stitching errors, color inconsistencies, or fabric flaws with greater speed and accuracy than human inspectors. This would reduce waste, improve the quality of exports, and enhance the competitiveness of Bangladesh's RMG sector.

KPIs

- 20% reduction in the defect rate for finished garments; 10% reduction in material waste.

Case Study

A leading technical textile producer in Germany integrated an AI-based inspection system that reduced defect rates by 40% and saved over $2 million annually in material costs.

2

AI for Jute Crop Yield Forecasting and Market Linkage

Develop an AI model to forecast national and regional jute yields by analyzing satellite imagery, weather data, and soil conditions. This would provide the ministry and industry bodies with accurate supply estimates, enabling better planning and price stabilization. The platform could also serve as a digital marketplace, using AI to connect jute farmers directly with mills and exporters, ensuring fairer prices and reducing the role of intermediaries who often exploit farmers.

KPIs:

- 90% accuracy in national jute yield forecasts
- 10% increase in the average price received by farmers using the digital marketplace

Case Study: Research integrating AI and Explainable AI (XAI) to predict crop yields has demonstrated exceptional predictive performance, with R^2 scores reaching 0.92. This framework provides a transparent tool for mitigating climate change effects and can be scaled for precision farming and policy development.

Ministry of Local Government, Rural Development and Co-operatives

Citizens in rural and urban areas often receive poor quality local government services due to inefficient resource allocation, lack of accountability, and a disconnect between central planning and local needs. In urban areas, this manifests as poor waste management and waterlogging, while in rural areas it can mean poorly maintained roads and infrastructure.

Urban Challenges

- Poor waste management
- Chronic waterlogging
- Inadequate drainage systems
- Unplanned development

Rural Challenges

- Poorly maintained roads
- Inadequate infrastructure
- Limited access to services
- Disconnected from central planning

Governance Issues

- Inefficient resource allocation
- Lack of accountability
- Poor coordination
- Limited data for decision-making





Ministry of Local Government, Rural Development and Co-operatives

1

AI for Urban Waste and Drainage Management

Pilot an AI-powered system in a city corporation like Chattogram to tackle chronic waterlogging and waste management issues. The system would use IoT sensors in drains to predict blockages before they cause flooding. AI-powered analysis of satellite and drone imagery could identify illegal waste dumping hotspots for targeted enforcement. This data would allow for the optimized routing of waste collection vehicles, improving efficiency and service quality.

KPIs:

- 20% reduction in urban flooding incidents in the pilot zone
- 15% improvement in waste collection efficiency

Case Study: Seoul, South Korea, implemented AI-powered smart waste bins that use computer vision to identify waste types, automatically sort recyclables, and send real-time data to optimize collection routes, resulting in a 40% reduction in waste overflow.

2

AI-Driven Rural Infrastructure Planning and Monitoring

Use an AI tool to help Local Government Engineering Department (LGED) prioritize and monitor rural infrastructure projects. The platform would analyze geospatial data, population density, and economic activity to identify which rural road or bridge projects would have the highest impact on connectivity and livelihoods. After construction, AI can analyze satellite imagery to monitor the condition of the infrastructure over time, flagging areas in need of maintenance before they fail.

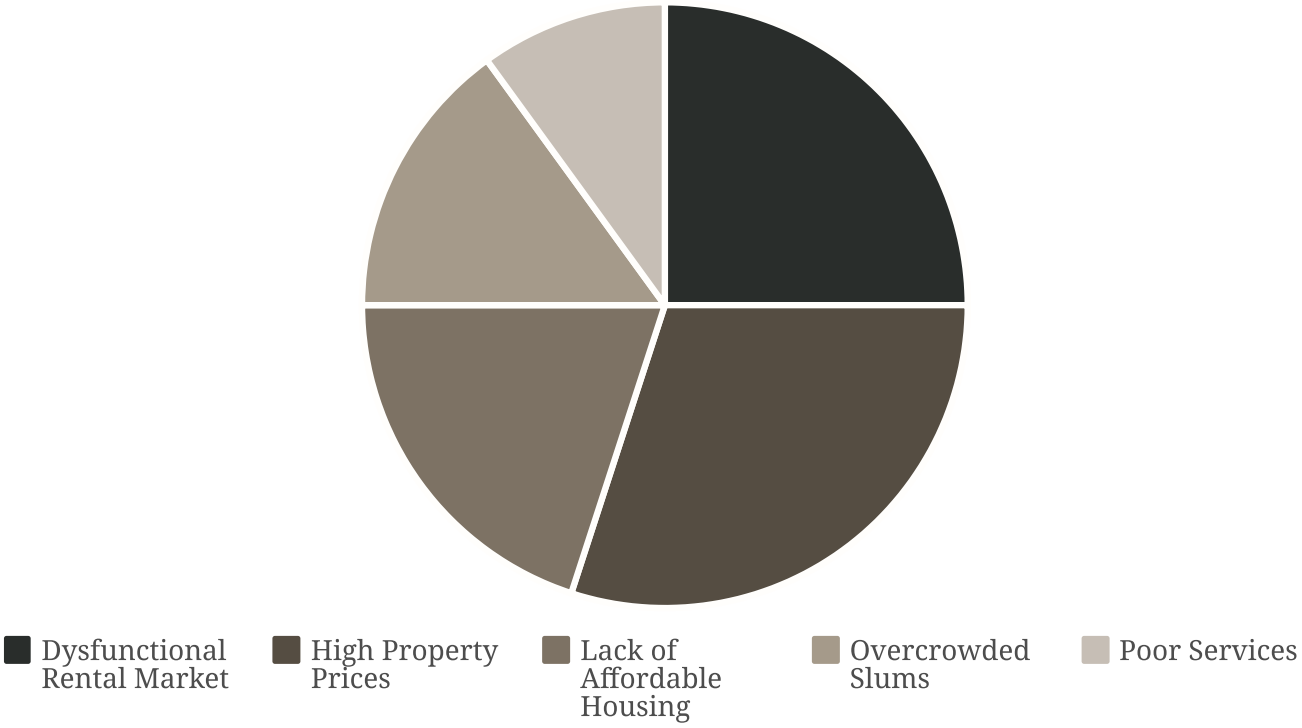
KPIs:

- Development of a data-driven priority list for rural infrastructure projects

Case Study: AI is being used in rural development to optimize resource allocation for infrastructure like energy and transportation by analyzing large volumes of data related to soil composition, weather patterns, and population needs, enabling more efficient and sustainable planning.

Ministry of Housing and Public Works

Rapid urbanization has created a severe housing crisis, particularly for low- and middle-income groups in cities like Dhaka. A dysfunctional rental market, skyrocketing property prices, and a lack of affordable public housing force millions to live in overcrowded slums with poor services and no security of tenure.







Ministry of Housing and Public Works (Continued)

1

AI for Urban Planning and Affordable Housing Site Selection

Develop an AI-powered urban planning tool for agencies like RAJUK to identify optimal locations for affordable housing projects. The model would analyze geospatial data on land availability (including public land), proximity to public transport, employment centers, schools, and utilities. It would also simulate the impact of new developments on traffic and public services, helping to create more sustainable and well-integrated urban communities.

KPIs:

- Identification of enough suitable land for 50,000 affordable housing units in major cities

Case Study:

In Frederick County, Maryland, the AI-powered architecture firm 'cove' used generative design algorithms to optimize the unit count, daylight access, and site layout for a 150-unit income-restricted housing project in minutes instead of weeks, accelerating timelines and reducing risk.

2

AI-Powered Building Permit and Compliance System

Create an AI-driven platform to streamline the building permit approval process and monitor construction compliance. The system would allow architects and developers to submit digital building plans (e.g., BIM models), which an AI engine would automatically check against the national building code for compliance violations. During construction, AI analysis of drone or satellite imagery could be used to detect deviations from the approved plans, flagging them for inspection.

KPIs:

- 50% reduction in the average time to process a building permit application

Case Study:

Government agencies like the US Environmental Protection Agency (EPA) are exploring AI to bolster compliance monitoring. Drones equipped with image-recognition technology can spot unpermitted construction or illicit waste dumps much faster than traditional on-the-ground inspection teams.

Ministry of Expatriates' Welfare and Overseas Employment

Over 13 million Bangladeshis work abroad, contributing significantly to the economy through remittances. However, they are highly vulnerable to exploitation by unscrupulous recruitment agencies, face poor working conditions, and struggle to access consular support and reintegration services upon their return.

13M+

Bangladeshi Workers Abroad

Contributing significantly to the national economy through remittances

$22B

Annual Remittances

Vital foreign exchange earnings supporting families and the economy

1000s

Cases of Exploitation

Workers facing fraud, poor conditions, and rights violations







Ministry of Expatriates' Welfare and Overseas Employment

1

AI-Powered Migrant Worker Support and Rights Platform

Launch an AI-powered mobile app and chatbot for migrant workers and their families. The platform would provide authenticated information on safe migration procedures, verify the legitimacy of recruitment agencies, and offer guidance on labor rights in destination countries in multiple languages. An AI-driven complaint mechanism could help workers report abuse or exploitation, with the system automatically classifying and routing cases to the appropriate government agency or embassy for follow-up.

KPIs:

- 20% reduction in reported cases of recruitment fraud

Case Study: In Canada, an AI assistant called "Botler" was created to guide applicants through their immigration procedures by analyzing their profiles, reviewing documentation, and generating personalized recommendations based on current regulations.

2

AI for Remittance Trend Analysis and Reintegration Planning

Use AI to analyze remittance data from Bangladesh Bank and other sources to understand economic trends and the financial health of the diaspora. The model could predict shifts in remittance flows based on economic conditions in host countries, providing an early warning system for policymakers. The platform could also analyze data from returning migrants to identify their skills and needs, helping to design more effective reintegration and reskilling programs that match their experience with opportunities in the domestic job market.

KPIs:

- 90% accuracy in short-term remittance forecasting

Case Study: AI-driven predictive models are highly effective in deciphering complex patterns in consumer behavior, a methodology directly applicable to analyzing remittance trends. These models enhance strategic planning by enabling organizations to tailor services to meet user expectations more accurately.

Ministry of Liberation War Affairs

The process of verifying genuine freedom fighters and distributing welfare benefits is complex and has been susceptible to fraud, with an estimated 90,000 fake freedom fighters identified. This not only misappropriates public funds but also dishonors the legacy of true heroes. Furthermore, preserving the vast and often fragmented historical record of the Liberation War for future generations is a critical national challenge.

90,000

Estimated Fake Freedom Fighters

Identified in the verification process

100%

Need for Accurate Verification

To ensure benefits reach genuine freedom fighters

50+

Years Since Liberation War

Making historical preservation increasingly urgent





Ministry of Liberation War Affairs

1

AI-Assisted Freedom Fighter Verification System

Develop an AI-powered system to assist the National Freedom Fighter Council (Jamuka) in the verification process. The system would digitize and cross-reference historical archives, gazettes, and testimonial records. AI could identify inconsistencies, flag potentially fraudulent claims based on anomalous patterns, and link related documents to build a more comprehensive and verifiable profile for each applicant. This would streamline the work of human verification committees, allowing them to focus on complex cases.

KPIs:

- 40% reduction in verification processing time
- 25% increase in detection of fraudulent claims

Case Study: The U.S. Department of Veterans Affairs (VA) uses an AI model to identify and prevent fraudulent changes to benefit payments. The system flags suspicious activity for review, ensuring that benefits are directed to legitimate veterans and their families.

2

AI-Powered Living Archive of the Liberation War

Create a "Living History" AI platform to preserve and share the stories of the Liberation War. The project would involve recording oral histories from surviving freedom fighters and witnesses. AI-powered speech-to-text technology would transcribe these interviews in Bangla, and NLP would index them by theme, location, and event. An interactive, AI-powered public portal would allow students, researchers, and citizens to explore this rich archive, asking questions in natural language and discovering interconnected stories, ensuring the memory of 1971 is preserved in an accessible and engaging way for future generations.

KPIs:

- Collection and transcription of 1,000 oral histories in the first phase
- A public portal with 100,000 visitors in its first year

Case Study: Major historical archives and museums globally are using AI to digitize oral histories. AI-powered transcription and natural language processing make vast audio and video collections searchable, allowing the public to easily find and engage with personal stories and historical events.

Ministry of Posts, Telecommunications and Information Technology

The Citizen's Problem

Despite progress under the 'Digital Bangladesh' initiative, a significant digital divide persists, with many citizens lacking affordable, high-quality internet access, particularly in rural areas. The government also faces the challenge of ensuring that its digital services are secure, interoperable, and effectively governed to build a truly inclusive and knowledge-based economy.



Ministry of Posts, Telecommunications and Information Technology (Continued)

1

AI-Powered National Cybersecurity Threat Intelligence Center

Use AI to analyze telecommunication network data to identify underserved and unserved areas with precision. The platform would model network performance, usage patterns, and geographic data to pinpoint connectivity gaps. This would enable BTRC and private operators to make data-driven decisions on infrastructure investment, such as where to build new towers or extend fiber networks to bridge the digital divide most effectively. AI could also optimize network traffic management to improve service quality in congested areas.

KPIs

- Creation of a national real-time connectivity map; 10% increase in broadband coverage in previously underserved upazilas.

Case Study

Telecom operators worldwide use AI to manage complex networks. By analyzing network data, AI can predict congestion, identify faults, and automatically re-route traffic to enhance performance and ensure a more reliable and energy-efficient network for customers.

2

AI-Powered National Cybersecurity Threat Intelligence Center

Establish an AI-driven National Cybersecurity Threat Intelligence Center under the ICT Division. This center would use AI and machine learning to analyze network traffic from government systems, open-source intelligence, and global threat feeds to detect and predict cyberattacks in real time. It would provide automated alerts to government agencies, critical infrastructure operators, and financial institutions, enabling a proactive and coordinated national defense against cyber threats.

KPIs

- 50% reduction in time to detect major cyber threats against government networks; automated sharing of actionable threat intelligence.

Case Study

Europol's Internet Organised Crime Threat Assessment highlights the use of AI to analyze network traffic and identify malicious activities. This allows law enforcement to detect and mitigate sophisticated cyberattacks, protecting critical national infrastructure and public data.

Ministry of Religious Affairs

The Citizen's Problem

Managing the logistics of the Bishwa Ijtema, one of the largest peaceful religious gatherings in the world, presents immense challenges in crowd management, safety, and service delivery for millions of devotees. Furthermore, mosques across the country are often underutilized, serving primarily as places for prayer rather than as the dynamic community hubs they have historically been.

1

AI-Powered Ijtema Management System

Develop an AI-powered mobile application and support system specifically for the Bishwa Ijtema. The app would provide personalized information on schedules and logistics. AI-driven crowd flow analytics, using anonymized data from cameras and mobile networks, could help organizers manage congestion, predict crowd movements, and enhance safety at key locations around the venue. An AI chatbot could answer pilgrims' frequently asked questions in Bangla, reducing the burden on support staff.

KPIs

- 15% reduction in congestion-related incidents
- 30% decrease in routine inquiries to support centers.

Case Study

Saudi authorities use AI algorithms to manage crowds during the Hajj pilgrimage in Mecca. The system analyzes real-time data to monitor crowd density, predict movements, and prevent safety incidents, ensuring a safer experience for millions of pilgrims—a model directly applicable to the Bishwa Ijtema.

2

AI Platform for Mosque-Based Community Development

Launch an AI-powered platform to help transform mosques into vibrant community centers for social and economic empowerment. The platform would provide mosque committees with tools to manage and promote community services such as skills development workshops, digital literacy programs, and health clinics. An AI-driven management system could automate administrative tasks, manage donations transparently, and use a chatbot to connect community members with counseling, financial literacy programs, and other vital services.

KPIs

- 25% increase in non-prayer-related community programs hosted at pilot mosques;
- 50,000 community members accessing new services via the platform in the first year.

Case Study

In Indonesia, the Jogokariyan mosque in Yogyakarta has become a model for community empowerment through economic initiatives, including managing funds to support local SMEs and social welfare programs. This demonstrates how mosques can be revitalized as hubs for both spiritual and socio-economic development.

Ministry of Religious Affairs (Continued)

3

AI for Digitization and Semantic Search of Religious

Launch a project to digitize and create an intelligent, searchable archive of important Islamic and other religious texts, manuscripts, and scholarly works held by the Islamic Foundation and other institutions. AI-powered OCR would convert scanned texts into digital format, and NLP models trained on religious terminology would enable powerful semantic search capabilities. This would create an invaluable resource for scholars, students, and the public, preserving cultural heritage and making it accessible for research and learning.

KPIs

- Digitization and indexing of 10,000 key documents in the first phase;
- A public portal with advanced search capabilities.

Case Study

Libraries and academic institutions worldwide are using AI to digitize and analyze historical texts. AI-powered tools for Optical Character Recognition (OCR) and Natural Language Processing (NLP) make vast archives of cultural and religious heritage searchable and accessible to a global audience of researchers and the public.powerful semantic search capabilities. This would create an invaluable resource for scholars, students, and the public, preserving cultural heritage and making it accessible for research and learning.







Ministry of Primary and Mass Education

The Citizen's Problem

The primary education system, the foundation of a child's learning journey, is hampered by a shortage of skilled teachers, outdated teaching methods, and significant quality disparities between different types of schools. This creates an uneven playing field for children from the very beginning, impacting national human capital development.

1

AI-Based Foundational Learning & Talent Pipeline

Develop and deploy an "Agentic AI Tutor" platform, accessible on low-cost devices, focused on foundational literacy (Bangla), numeracy, and STEM skills for primary school students. Moving beyond simple adaptive learning, this system would create a "Student Knowledge Graph" to model each learner's unique pathway in real-time. It would provide personalized lessons, AI-powered code review for early STEM projects, and instant feedback, building a pipeline of future talent from an early age. This initiative can be scaled by partnering with and supporting local innovators like Dreamers Academy, which is already building foundational models for this purpose.

KPIs

- 15% improvement in foundational literacy and numeracy scores in pilot schools
- Adoption by 500,000 students in two years.

Case Study

Alpha School in the U.S. uses an AI-powered personal tutor, suggesting that personalized instruction can deliver better outcomes. In Bangladesh, Dreamers Academy is already developing an "Agentic AI Tutor," providing a locally-developed, scalable model ready for national implementation.

2

AI Tool for Teacher Performance Support and Mentoring

Create an AI-powered tool to support primary school teachers' professional development. Teachers could securely upload recordings of their lessons, and an AI model (trained with expert educators) would provide confidential, constructive feedback on teaching practices, such as student engagement levels and clarity of instruction. The platform would also recommend specific training resources and connect teachers with experienced mentors, creating a scalable system for continuous improvement.

KPIs

- Voluntary adoption by 10,000 teachers in the first year;
- 85% of users reporting the feedback is helpful.

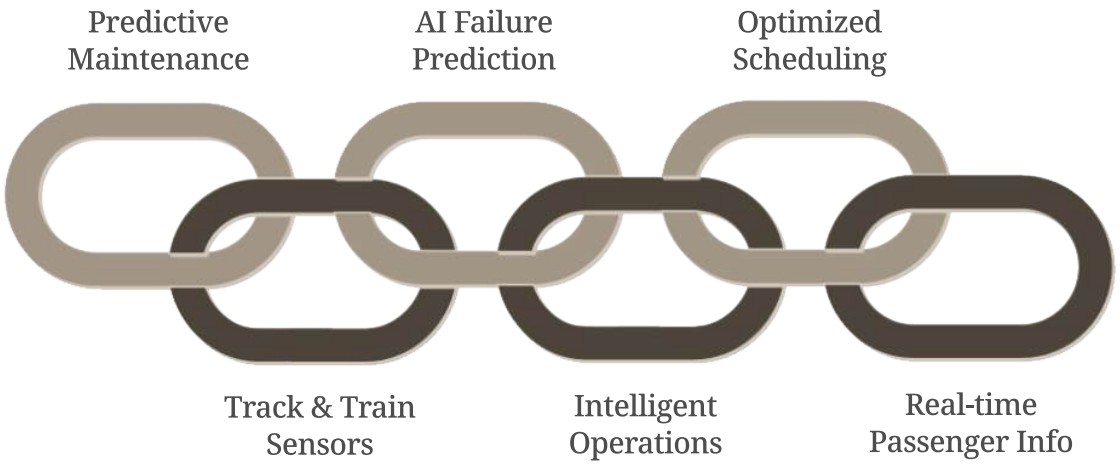
Case Study

In the UK, pilots have shown that generative AI can support teachers with up to 75% of the time they spend on lesson planning and marking. This frees up educators to focus on high-impact activities like classroom instruction and student mentorship.

Ministry of Railways

The Citizen's Problem

Railway passengers frequently endure service delays, safety risks from outdated infrastructure and derailments, and difficulties in obtaining tickets. Despite significant investment, the railway system struggles with operational inefficiencies, including a shortage of locomotives and coaches, and poor maintenance of tracks and bridges, leading to a frustrating and often unsafe travel experience.



1

AI-Powered Predictive Maintenance for Tracks and Rolling Stock

Implement an AI-driven predictive maintenance system to improve the safety and reliability of the railway network. The system would use data from sensors on locomotives and tracks, along with historical maintenance records, to predict equipment failures and track degradation before they happen. This allows Bangladesh Railway to shift from a reactive to a proactive maintenance schedule, repairing tracks, engines, and coaches before they fail, thereby reducing derailments, delays, and costs.

KPIs

- 25% reduction in train delays caused by equipment failure
- 15% decrease in track-related derailments

Case Study

Network Rail in the UK uses an AI-powered app called "Insight" that analyzes data from tracks and trains to predict and prevent faults up to a year in advance. This has significantly reduced track-related delays and enhanced safety by allowing for preemptive maintenance.

Ministry of Railways

2

Intelligent Railway Operations and Passenger Information System

Develop an AI-powered system to optimize train scheduling and provide real-time information to passengers. The system would analyze real-time train location data, track conditions, and passenger loads to optimize timetables and manage disruptions more effectively. A passenger-facing mobile app would provide live train tracking, accurate arrival/departure time predictions, platform information, and instant alerts about delays, significantly improving the passenger experience.

KPIs

- 90% accuracy in real-time train arrival predictions
- 20% reduction in passenger complaints related to lack of information

Case Study

The Beijing-Zhangjiakou high-speed railway in China uses AI to improve construction and operations, including intelligent dispatching and real-time traffic management. This has reduced travel time and costs, demonstrating the power of AI in optimizing railway efficiency.



Ministry of Shipping

The Citizen's Problem

The Port of Chittagong, the nation's primary maritime gateway, suffers from severe congestion, customs delays, and operational inefficiencies that slow down trade, increase costs for businesses, and impact consumers. Maritime safety in Bangladesh's congested waterways is a major concern, with a high frequency of accidents and a need for better domain awareness and coordination.



1

AI-Powered Port Operations and Congestion Management

Implement an AI-driven "Port Optimizer" platform for the Chittagong Port Authority. The system would create a digital twin of the port, using real-time data from vessel tracking (AIS), container terminals, and customs to predict vessel arrival times, optimize berth allocation, and manage container yard stacking. This would reduce ship turnaround times, alleviate yard congestion, and improve the overall flow of cargo, similar to systems used in the ports of Los Angeles and Rotterdam.

KPIs

- 20% reduction in average vessel waiting time
- 15% increase in container handling efficiency

Case Study

The Port of Rotterdam uses a digital twin that merges real-time sensor feeds with historical data to create a live, 3D model of the port. This allows operators to view all operations as they happen, predict vessel arrivals, and optimize schedules to prevent congestion before it occurs.

Ministry of Shipping

2

AI for Maritime Surveillance and Safety

Deploy an AI-powered maritime surveillance system to improve safety and security in Bangladesh's territorial waters. The system would analyze data from coastal radar, AIS, and satellite imagery to automatically detect and flag anomalous vessel behavior, such as ships deviating from established lanes, entering restricted zones, or engaging in potential illegal fishing or piracy. This would provide the Coast Guard and Navy with enhanced domain awareness, enabling more rapid and targeted responses to maritime threats.

KPIs

- 50% increase in detection of vessels engaged in illegal activities
- 30% reduction in search and rescue response time

Case Study

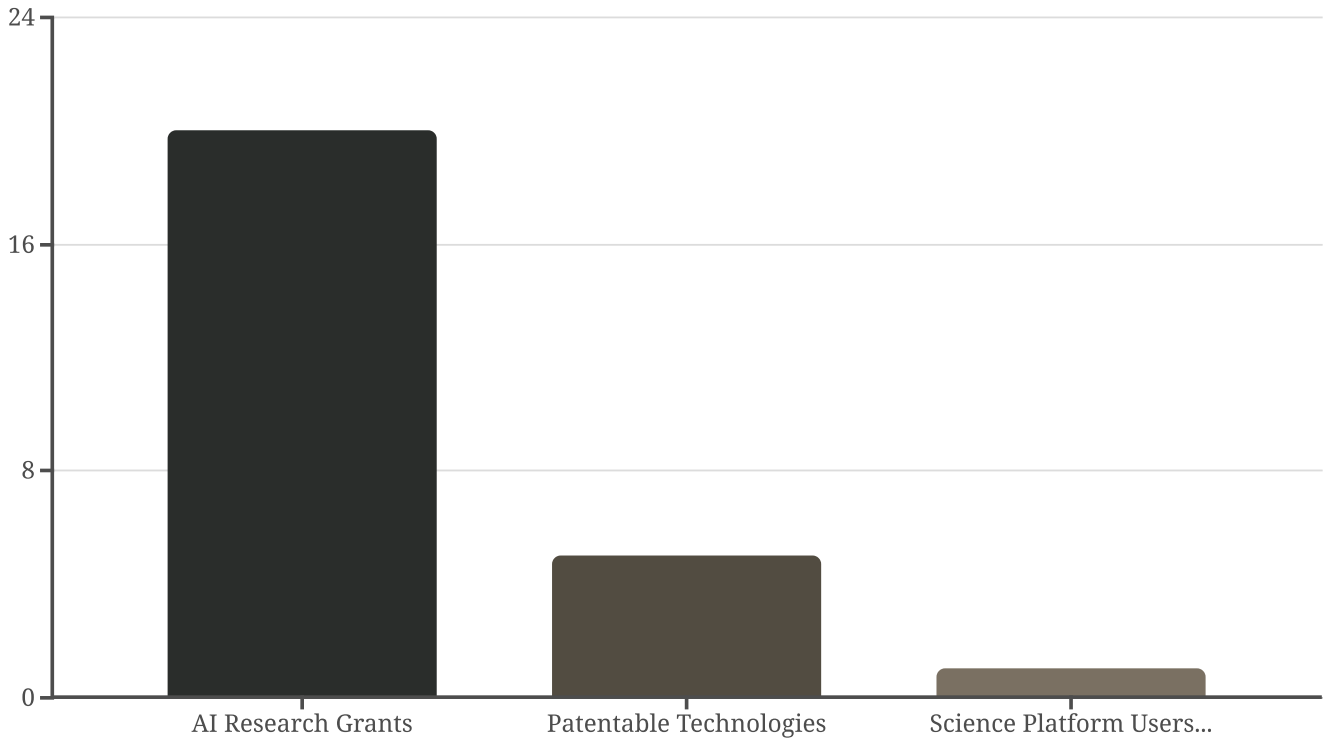
Globally, AI-powered systems are transforming maritime security by analyzing data from satellites, drones, and automatic identification systems (AIS) to detect patterns and anomalies. This allows authorities to identify threats like illegal fishing or piracy in real-time, enhancing surveillance over vast oceanic spaces.



Ministry of Science and Technology

The Citizen's Problem

Bangladesh needs to build a strong domestic foundation in science and technology to drive innovation, create high-value jobs, and solve national challenges. However, there is a gap between academic research and practical, industry-relevant application, and a need to foster a more vibrant national ecosystem for emerging technologies like AI.





Ministry of Science and Technology

1

National AI Research and Development Grant Challenge

Establish a competitive grant program, administered by the ministry, to fund applied AI research projects at Bangladeshi universities and research institutions. The program would issue "Grand Challenges" focused on solving specific national problems outlined in this whitepaper (e.g., AI for agriculture, AI for healthcare). An AI-powered platform could be used to manage the grant application and review process, using NLP to match proposals with expert reviewers and track project progress and outcomes.

KPIs

- Funding of 20 high-potential applied AI research projects in two years
- Creation of at least 5 patentable AI technologies

Case Study

The UK government is delivering a new state-of-the-art supercomputing facility and an AI Research Resource. This initiative provides researchers and SMEs with access to powerful computing infrastructure to make new discoveries and drive economic growth, demonstrating a model for government-led R&D investment.

2

AI-Powered "Science for Citizens" Platform

Launch a public-facing AI platform to increase science and technology literacy among the general population, especially students. The platform would use generative AI to explain complex scientific concepts (e.g., climate change, vaccine technology, AI itself) in simple, accessible Bangla. It could feature an interactive chatbot where students can ask scientific questions and receive easy-to-understand answers, fostering curiosity and building a foundation for a future knowledge-based society.

KPIs

- 1 million users in the first two years
- Partnership with the Ministry of Education to integrate into school curriculum

Case Study

Museums and science centers worldwide are deploying AI-powered chatbots and virtual assistants to engage with the public. These tools answer questions, provide personalized tours of exhibits, and explain complex scientific topics in an accessible way, enhancing public education and outreach.

Ministry of Youth and Sports

The Citizen's Problem

A significant portion of Bangladesh's large youth population is not in employment, education, or training (NEET), facing a severe lack of opportunities and skills relevant to the modern economy. In sports, talent identification and development are often subjective and lack a data-driven approach, limiting the potential of promising young athletes.

1

AI-Powered Skills Development and Mentorship Platform for Youth

Create a mobile-first platform that uses AI to help unemployed youth identify their aptitudes, explore potential career paths, and connect with relevant skills training programs (both government and private). The AI would act as a personalized career counselor, recommending courses in high-demand fields (like digital marketing, graphic design, or AI data annotation) and matching users with online mentors and apprenticeship opportunities, addressing the urgent need for job creation.

KPIs

- 500,000 youth registered on the platform within two years
- 20% of users successfully enrolling in a recommended training program

Case Study

In Tampere, Finland, an AI-driven initiative successfully matched employee skills to employer needs by processing thousands of anonymous resumes and job openings. The system identified hidden potential and highlighted targeted training courses to rapidly close skill gaps and increase employability.

2

AI for Sports Analytics and Talent Identification

Introduce an AI-powered sports analytics program for key national sports (e.g., cricket, football) through the Bangladesh Krira Shikkha Protishtan (BKSP). The system would use computer vision to analyze video footage of youth athletes during games and training sessions, providing objective data on performance metrics (e.g., running speed, batting technique, passing accuracy). This data-driven approach would help coaches identify promising talent early and design personalized training regimes to develop their potential.

KPIs

- Implementation for at least two national youth sports teams
- Identification of 20 high-potential athletes

Case Study

Youth sports leagues are increasingly using AI to analyze player data and tailor training programs. AI-powered analytics provide objective player evaluations and real-time insights, allowing coaches to make data-driven decisions to optimize performance and reduce injury risk.

Ministry of Information and Broadcasting

The Citizen's Problem

The media landscape, while quantitatively large, suffers from declining journalistic standards, political polarization, and the rapid spread of misinformation and disinformation, which erodes public trust and social cohesion. Citizens struggle to distinguish between credible news and harmful falsehoods, a challenge that is being amplified by new technologies.

1

AI-Powered Misinformation and Disinformation Detection

Establish a non-governmental, independent fact-checking entity supported by the ministry with an AI-powered platform to detect and analyze the spread of misinformation. The system would monitor public social media platforms and online news portals to identify false narratives, manipulated content (including deepfakes), and coordinated inauthentic behavior. It would provide real-time alerts and analysis to journalists and the public, helping to inoculate society against harmful disinformation campaigns.

KPIs

- Daily public reports on top 5 trending false narratives
- 50% reduction in time to debunk major misinformation

Case Study

Taiwan's Ministry of Digital Affairs (MODA) uses AI and machine learning tools to combat online fraud and cyberattacks. The system inspects an average of 30,000 cases daily and reports thousands of suspected cases, demonstrating how AI can be used for large-scale monitoring and detection of harmful online content.

2

AI for Archiving and Accessing National Broadcast Heritage

Use AI to digitize, preserve, and make accessible the vast archives of Bangladesh Television (BTV) and Bangladesh Betar. AI-powered tools would automate the process of transcribing decades of audio and video content, while computer vision could identify and tag key people, locations, and events in historical footage. This would create a searchable, public digital archive, preserving the nation's cultural and historical heritage for future generations.

KPIs

- Digitization and indexing of 10,000 hours of archival footage in the first phase
- A public portal with AI-powered search

Case Study

Major national broadcasters and archives, such as the BBC and the U.S. Library of Congress, use AI-powered tools to transcribe, tag, and index their vast historical audio and video collections. This makes decades of cultural heritage searchable and accessible to researchers, filmmakers, and the public.

Ministry of Power, Energy and Mineral Resources

The Citizen's Problem

Citizens and industries are frequently affected by power shortages and load shedding, which disrupts daily life and hinders economic productivity. The national power grid faces challenges in balancing supply and demand, leading to inefficiencies and an unstable energy supply.

1

AI for Power Grid Optimization

Develop an AI-powered energy management system that creates a "digital twin" of the national power grid. By analyzing historical consumption data, weather forecasts, and industrial activity schedules, the AI could predict demand spikes with high accuracy.

KPIs

- 15% reduction in frequency and duration of load shedding in pilot areas
- 5% improvement in overall grid efficiency

2

AI-Driven Renewable Energy Integration

Use AI to facilitate the integration of renewable energy sources into the national grid. AI models can provide highly accurate forecasts of solar and wind power generation based on weather predictions and satellite data.

KPIs

- 10% increase in renewable energy successfully integrated into the grid
- 95% accuracy in 24-hour-ahead generation forecasts

Ministry of Cultural Affairs

The Citizen's Problem

Bangladesh's rich cultural heritage, including archaeological sites, museums, and intangible traditions, is at risk from neglect, environmental threats, and a lack of modern tools for preservation and public engagement. Future generations may lose connection with their history due to the inaccessibility of these cultural assets.

1

AI for Archaeological Site Monitoring

Use AI to monitor and protect the country's archaeological sites. The system would analyze satellite and drone imagery to detect subtle changes in topography or vegetation that could indicate illegal excavation or encroachment.

KPIs

- 50% increase in early detection of threats to archaeological sites
- Creation of detailed 3D models for 20 major sites

2

AI-Powered Virtual Museum Experience

Develop an AI-powered virtual museum experience for the Bangladesh National Museum and other cultural institutions. The platform would allow users to take immersive virtual tours of galleries.

KPIs

- 500,000 virtual visitors in the first year
- Partnerships with schools to use the platform as an educational tool

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Authors

Our distinguished authors bring diverse expertise across AI, entrepreneurship, research, and international development to create impactful solutions for public good.

Dr. Zulkarin Jahangir

Ashfaq Mohammad Zaman

Md. Sowad Al-Mughni

Authors Details

Dr. Zulkarin Jahangir

Regional AI Representative, UNDP



International development leader shaping digital inclusion and national AI-readiness.

Dr. Zulkarin Jahangir is an international development leader with 20+ years shaping policy and programs across the Global South.

ICT Strategy Development

Recently co-developed an ICT strategy for the Government of Bangladesh in collaboration with the University of Oxford.

e-Provisions

Preparing "e-Provisions" to streamline citizen3state services.

1

Digital Inclusion Frameworks

Advancing national frameworks for digital inclusion, designing action plans to close the digital divide.

2

3

Academic Leadership

Assistant Professor of Management and Director of NSU Startups Next at North South University, teaching strategic management and mentoring founders.

4

His prior research leadership spans the World Food Programme, BRAC Institute of Governance and Development, the University of Oxford, and BRAC.

20+

Years of Experience

Shaping policy and programs across the Global South

4

Advanced Degrees

PhD (SOAS, University of London), MBA (University of Lincoln), MSc (Sheffield Hallam University), and executive training from Harvard Business School

He contributes to national AI-readiness dialogues with senior government and international stakeholders.

Ashfaq Mohammad Zaman



Chartered accountant turned entrepreneur building education and digital-transformation ventures.

Ashfaq Mohammad Zaman is a chartered accountant turned entrepreneur who co-founded LEAD Academy and has built businesses across diverse industries.

Leadership

Previously served as Regional Director at SFAI International, and today advises Bangladesh's a2i innovation agency on education, sustainability, and digital transformation.

Community

A TEDxGulshan curator and ambassador for the National Society of High School Scholars, he mentors initiatives such as the Queen's Young Leaders Programme.

Education

CPA (Ireland/UK) and an alumnus of Heriot-Watt, Oxford, Cambridge, and Stanford programs, with credentials in Business Sustainability, Lean Six Sigma (Yellow/Green), and Design Thinking.

He contributes thought leadership to BBC, Foreign Policy, and Reuters.

Md. Sowad Al-Mughni



Product leader applying AI to public-good challenges and mission-critical operations.

Md. Sowad Al-Mughni is a product leader applying AI to public-good challenges and mission-critical operations. In his career, he has shipped 10+ products with measurable lift (≈ +30% retention, 225% time-to-market, +330% outbound velocity, +21% revenue).

AI Initiatives

He is incubating several AI initiatives in stealth: at his venture Kitalon Labs, Inc. spanning hiring intelligence, financial-ops automation, and no-code agent tooling to turn frontier models into deployable systems.

Education Innovation

He's also helping LEAD Academy evolve into an AI-first education company.

Early Leadership

Earlier, as a student leader with Engineers Without Borders Canada (University of Windsor Chapter, 2011–12), he secured $100K in funding and earned the University's Gold W Award.

He has worked with RIM, ORION, ENGINEERING.com, IMpulse (BD) Ltd., Venturas Ltd and multiple other startups in Canada. His mission: turn bold ideas into scalable realities—make the impossible possible.