FEDERAL REPUBLIC OF NIGERIA

Federal Ministry of Education

In collaboration with the Federal Ministry of Communications, Innovation, and Digital Economy

NIGERIA
National EdTech Strategy

A Unified, Data-Driven and Future-Ready Education System

PREPARED BY

Federal Ministry of Education

IN PARTNERSHIP WITH

mastercard foundation | WORLD BANK GROUP

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Foreword

Education is the foundation of Nigeria's national development and the key to unlocking the potential of our people. As technology continues to reshape economies and societies, our education system must evolve to ensure that every learner acquires the knowledge, skills and competencies needed to thrive in a digital world. Technology is therefore not an end, but a powerful enabler of quality teaching, inclusive learning and effective education governance.

The National EdTech Strategy represents the **Federal Government's** commitment to building a unified, data-driven and future-ready education system. It provides a coherent national framework for integrating technology across teaching and learning, education management, teacher development, digital infrastructure and governance, ensuring that investments in education technology translate into improved learning outcomes and greater equity across Nigeria.

This Strategy aligns with the **Renewed Hope Agenda** of the administration of **His Excellency, President Bola Ahmed Tinubu, GCFR**, and supports the **Federal Ministry of Education's** vision of transforming education into a catalyst for national development, innovation and global competitiveness. It also reflects the strong collaboration between the **Federal Ministry of Education, the Federal Ministry of Communications, Innovation and Digital Economy, State Governments, development partners, the private sector, academia and civil society**. I sincerely appreciate the invaluable contributions of all stakeholders, particularly the **Mastercard Foundation** and the **World Bank Group**, whose partnership has been instrumental in developing this Strategy.

The success of this Strategy will depend on our collective commitment to implementation. I therefore call on all stakeholders to work together in translating its vision into meaningful action, ensuring that every Nigerian learner—regardless of location or circumstance—has access to quality, technology-enabled education.

The National EdTech Strategy is more than a policy document; it is a national commitment to preparing our learners for the future and strengthening the education system that will drive Nigeria's sustainable growth and prosperity.



Dr. Maruf Olatunji Alausa, CON

Honourable Minister of Education

Federal Republic of Nigeria

Preface

The National EdTech Strategy is the product of a collaborative and consultative process undertaken to establish a shared national vision for leveraging technology to transform education in Nigeria. Recognising that digital transformation is fundamental to building a modern, inclusive and globally competitive education system, this Strategy provides a coordinated framework for integrating technology across teaching and learning, education management, digital infrastructure, governance and data systems.

The Strategy lays the foundation for an integrated education system that enables evidence-based decision-making, improves service delivery, reduces duplication and maximises the impact of public and private investments in education technology.

The development of this Strategy reflects the strong partnership between the **Federal Ministry of Education** and the **Federal Ministry of Communications, Innovation & Digital Economy,** supported by extensive engagement with Federal and State Government institutions, education agencies, development partners, academia, private sector and civil society. This inclusive process has ensured that the Strategy responds to Nigeria's priorities while drawing on international best practices and lessons from successful digital transformation initiatives.

As Nigeria advances its digital transformation agenda, education must remain at its centre. The successful implementation of this Strategy will require sustained collaboration, innovation and shared accountability across all levels of government and among our partners. I therefore encourage all stakeholders to embrace this Strategy as a common blueprint for building an education system that is connected, interoperable, resilient and responsive to the needs of every learner.

Together, we can harness innovation to strengthen education, develop the digital talent our nation requires and position Nigeria as a leader in digital learning across Africa.



Dr. Bosun Tijani

Honourable Minister of Communications, Innovation and Digital Economy

Federal Republic of Nigeria

Introduction

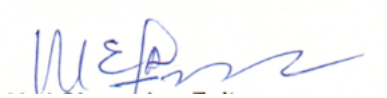
Nigeria’s ambition for an inclusive, resilient and globally competitive education system requires technology investments that improve learning, strengthen institutions and enhance service delivery. Digital adoption has expanded, but fragmented implementation, disconnected systems and uneven access continue to constrain its impact.

The Strategy establishes common standards and coordinated implementation to connect existing systems and support efficient, scalable and sustainable delivery.

The Strategy is closely aligned with the **Federal Government's** education reform agenda and complements existing national policies and frameworks, including the National Education Sector Renewal Initiative (NESRI), the National Policy on Education, and Nigeria's broader digital transformation agenda. It also reinforces our commitment to achieving the Sustainable Development Goals, particularly SDG 4, by expanding equitable access to quality education through innovation and technology.

This document serves as a practical guide for Federal and State Ministries of Education, education agencies, development partners, school leaders, teachers, the private sector and other stakeholders responsible for planning, implementing and monitoring education technology initiatives. Its success will depend on strong leadership, sustained collaboration and shared accountability across all levels of government.

The **Federal Ministry of Education** remains committed to providing the leadership and coordination required to translate this Strategy into meaningful action. Working together with our partners, we can build a connected, interoperable and future-ready education system that empowers every Nigerian learner and strengthens the nation's human capital for sustainable development.



Abel Olumuyiwa Enitan, PhD

Permanent Secretary

Federal Ministry of Education

Acknowledgements

The Federal Ministry of Education extends its sincere appreciation to all institutions, partners and individuals whose expertise, commitment and collaboration contributed to the development of the **National EdTech Strategy**.

The Ministry acknowledges the visionary leadership of the **Honourable Minister of Education** and the **Honourable Minister of Communications, Innovation and Digital Economy**, whose shared commitment to digital transformation has provided the strategic direction for this important national initiative.

We express our profound appreciation to the **National EdTech Taskforce**, comprising the Federal Ministry of Education, the Federal Ministry of Communications, Innovation and Digital Economy, the **Mastercard Foundation** and the **World Bank Group**, for their technical leadership, strategic guidance and unwavering support throughout the Strategy development process.

The Ministry also gratefully acknowledges the valuable contributions of Federal and State Government institutions, education agencies, development partners, academia, the private sector, civil society organisations, technical experts and members of the Nigerian diaspora. Their insights, shared through technical working groups, stakeholder consultations, co-creation workshops and the national digital consultation platform, ensured that this Strategy reflects Nigeria's priorities while drawing on global best practices.

We further recognise the dedication of the six Technical Working Groups and the many professionals whose expertise across education, technology, infrastructure, governance, policy and innovation strengthened the quality and relevance of this Strategy. Their collaborative efforts have produced a practical and forward-looking framework for advancing digital transformation across Nigeria's education sector.

To everyone who contributed their time, knowledge and experience, we extend our sincere gratitude.

List of Abbreviations and Acronyms

- AI: Artificial intelligence
- API: Application Programming Interface
- ASC: Annual School Census
- BECE: Basic Education Certificate Examination
- BYOD: Bring Your Own Device
- CESA: Continental Education Strategy for Africa
- COE: College of Education
- CPD: Continuous Professional Development
- CSR: Corporate Social Responsibility
- DaaS: Device-as-a-Service
- DBI: Digital Bridge Institute
- DFDS: Development Finance Debt Securities
- DFI: Development Finance Institution
- DIB: Development Impact Bond
- DLI: Disbursement Linked Indicator
- DNEMIS: Digital Nigeria Education Management Information System
- ECOWAS: Economic Community of West African States
- EMIS: Education Management Information System
- EOI: Expression of Interest
- ERP: Enterprise Resource Planning
- FCT: Federal Capital Territory
- FME: Federal Ministry of Education
- FMoCIDE: Federal Ministry of Communications, Innovation and Digital Economy
- FMOF: Federal Ministry of Finance
- HR: Human Resources
- ICT: Information and Communication Technology
- IoT: Internet of Things
- ISA: Income Share Agreement
- ISP: Internet Service Provider
- IVA: Independent Verification Agent
- JAMB: Joint Admissions and Matriculation Board
- KPI: Key Performance Indicator
- LGEA: Local Government Education Authority
- LMS: Learning Management System
- M&E: Monitoring and Evaluation
- MEL: Monitoring, Evaluation and Learning
- MoU: Memorandum of Understanding
- NABTEB: National Business and Technical Examinations Board
- NASENI: National Agency for Science and Engineering Infrastructure
- NBTE: National Board for Technical Education
- NCC: Nigerian Communications Commission
- NCCE: National Commission for Colleges of Education
- NDE: National Directorate of Employment
- NDEPS: National Digital Economy Policy and Strategy
- NDLF: National Digital Literacy Framework
- NDLP: National Digital Learning Policy
- NDPA: Nigeria Data Protection Act
- NDPC: Nigeria Data Protection Commission
- NDPR: Nigeria Data Protection Regulation

- NECO: National Examinations Council
- NEDH: National Education Data Hub
- NEDI: Nigeria Digital Education Initiative
- NEMIS: National Education Management Information System
- NEP: Nigeria Electrification Project
- NERDC: Nigerian Educational Research and Development Council
- NESRI: National Education Sector Renewal Initiative
- NGF: Nigerian Governors' Forum
- NIMC: National Identity Management Commission
- NIN: National Identification Number
- NITDA: National Information Technology Development Agency
- NPA: National Personnel Audit (UBEC)
- NREEEP: Nigeria Renewable Energy and Energy Efficiency Policy
- NTDCF: National Teacher Digital Competency Framework
- NTI: National Teachers' Institute
- NUC: National Universities Commission
- O&M: Operations and Maintenance
- OECD: Organization for Economic Co-operation and Development
- OEM: Original Equipment Manufacturer
- PII: Personally Identifiable Information
- PPP: Public–Private Partnership
- PRG: Partial Risk Guarantee
- PTA: Parent-Teacher Association
- REA: Rural Electrification Agency
- RFP: Request for Proposal
- ROI: Return on Investment
- SBMC: School-Based Management Committee
- SCORM: Sharable Content Object Reference Model
- SDG: Sustainable Development Goal
- SLA: Service-Level Agreement
- SME: Subject Matter Expert / Small and Medium Enterprise
- SMEDAN: Small and Medium Enterprises Development Agency of Nigeria
- SPRAPE: Strategic Plan for the Renewal and Advancement of Public Education
- SSCE: Senior School Certificate Examination
- SUBEB: State Universal Basic Education Board
- TETFund: Tertiary Education Trust Fund
- TMIS: Teacher Management Information System
- TPDP: Teacher Professional Development Portal
- TRCN: Teachers Registration Council of Nigeria
- TVET: Technical and Vocational Education and Training
- TWG: Technical Working Group
- UBEC: Universal Basic Education Commission
- UNESCO: United Nations Educational, Scientific and Cultural Organization
- UNICEF: United Nations Children's Fund
- USPF: Universal Service Provision Fund
- WAEC: West African Examinations Council

Executive Summary

The National EdTech Strategy provides a coordinated framework for improving learning and education service delivery through technology. It addresses fragmented data, uneven infrastructure, teacher digital competency gaps and weak coordination by strengthening existing systems rather than creating parallel programmes.

Government-led and ecosystem-owned, the Strategy brings together public leadership, education institutions, innovators, partners and communities while preserving statutory responsibilities.

Five mutually reinforcing strategic pillars guide delivery:

- **Data and Interoperability:** Trusted education data for planning, resource allocation and accountability.
- **Infrastructure Ecosystem:** Reliable power, connectivity and devices with sustainable maintenance.
- **Technology and Procurement:** Open standards, transparent procurement, lifecycle management and locally relevant solutions.
- **Teacher Transformation:** Digital competency, continuous professional learning and technology-enabled pedagogy.
- **Governance and System Coordination:** Aligned leadership, financing, institutional responsibilities and performance management.

Equity and inclusion underpin **all five strategic pillars.** Delivery prioritises underserved learners through accessible Nigerian-language content, shared access, low-bandwidth and supported offline resources, and teacher support.

NEDI has already been deployed and is currently collecting education data. It provides the national education data backbone; the National Teacher Digital Competency Framework (NTDCF) structures teacher development. Both strengthen existing systems.

The recommended roadmap moves from mobilisation and foundation in late 2026–2027 to scale-up in 2028 and optimisation and sustainability in 2029–2030. A recommended six-State demonstration cohort, one State per geopolitical zone, should generate evidence for a national implementation playbook and expansion within available resources.

Responsible AI should begin with literacy, teacher development, research and controlled pilots. Wider adoption requires educational value, affordability, readiness, privacy, child protection, cybersecurity and accountable human oversight.

The recommended delivery model combines joint ministerial oversight, separate technical advice, a Programme Office within the Federal Ministry of Education and State implementation through existing institutions. Public resources anchor delivery, complemented by partner and appropriate private support. Six headline indicators track service readiness, teacher competency, learner participation, interoperability, budget execution and learning improvement.

1 Introduction

1.1 National Context and Baseline (Where Nigeria Stands Today)

Nigeria's education system serves a large and diverse learner population across basic, secondary, tertiary and non-formal education. National and State administrative records provide the basis for implementation denominators.

Over the past decade, Nigeria has invested in digital learning platforms, education management systems, teacher development and infrastructure. These investments demonstrate potential to expand access and strengthen teaching, but fragmented implementation and inconsistent standards have constrained their impact.

Education data is often delayed, incomplete or unreliable. Electricity, connectivity and device access remain uneven, particularly in rural communities; teacher digital competency varies; and information systems frequently operate in isolation. These constraints weaken planning, equitable resource allocation and learning improvement.

Addressing these challenges requires a coordinated national approach that strengthens existing systems and ensures investments translate into measurable improvements in teaching, learning and system performance.

1.2 Why a National EdTech Strategy?

The Strategy connects education data, infrastructure, teacher development, governance and innovation through common standards and coordinated delivery, rather than introducing standalone programmes.

The Strategy represents three fundamental system shifts:

- **From fragmented and delayed data** to trusted, interoperable education data with timely reporting through **NEDI**.
- **From ad hoc teacher training** to a structured national teacher competency and professional development pathway through the **National Teacher Digital Competency Framework (NTDCF)**.
- From one-off infrastructure purchases to reliable lifecycle service delivery, using procurement, leasing, managed services or affordable PPPs as appropriate.

Together, these shifts establish a connected education system in which reliable data informs decisions, teachers are continuously supported, and infrastructure is sustainably managed.

1.3 Vision

To build a digitally enabled, data-driven and inclusive education system that delivers equitable, high-quality learning outcomes for every Nigerian learner.

The Strategy envisions an education system where:

- high-quality data supports planning through timely reporting;
- every school has reliable access to electricity and digital connectivity;
- teachers are digitally competent and supported through continuous professional development;
- learners have equitable access to quality digital learning resources; and
- education systems are interoperable, secure and sustainably financed.

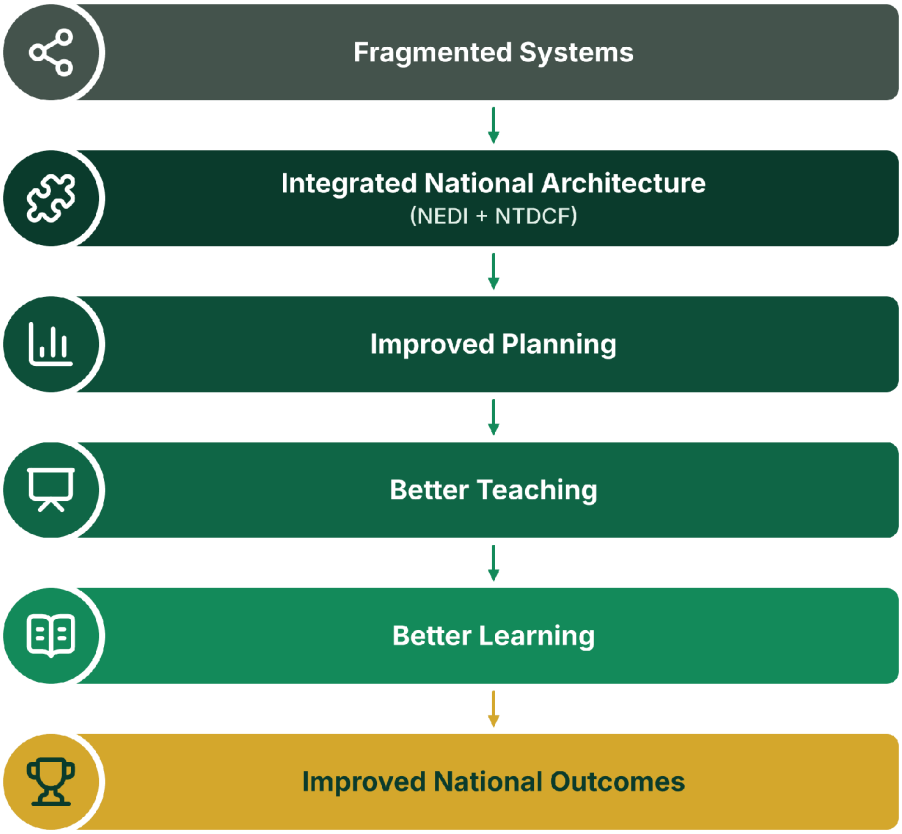
1.4 Mission

To transform Nigeria's education system by strengthening education data, infrastructure, teacher capacity and governance through coordinated, interoperable technology that improves teaching, learning and system performance.

1.5 Strategic Objectives

The Strategy strengthens and connects existing systems across the education ecosystem through common standards, coordinated implementation and evidence-based decision-making.

Figure 1.1 — National Transformation Pathway *— building on existing systems, including NEDI's deployment and ongoing data collection, towards stronger integration and education services.*



1.6 Guiding Principles

Implementation of the Strategy is guided by seven core principles:

- Learner-centred transformation
- System integration and interoperability
- Data-driven decision-making
- Teacher empowerment
- Equity and inclusion
- Sustainability and local ownership
- Public–private collaboration founded on trust, security and responsible innovation

1.7 Equity and Inclusion

Equity and inclusion underpin all five strategic pillars. Technology investments should reduce educational disparities and expand opportunities for underserved learners.

Across all five pillars, use mobile-first, low-bandwidth and supported offline delivery; accessible formats and assistive technologies; curriculum-aligned Nigerian-language resources; and targeted support for underserved learners. State plans should connect rural schools, girls, learners with disabilities, displaced learners and out-of-school children through appropriate formal, non-formal and community education arrangements. Shared access, safe learning spaces and teacher or facilitator support should reduce household device and connectivity barriers. Lack of a NIN must not exclude a learner from education services.

Implementation will promote:

- equitable access for girls and women;
- accessible digital learning environments for learners with disabilities through Universal Design for Learning principles;
- targeted investment in rural and underserved communities;
- multilingual, curriculum-aligned digital learning content; and
- data-driven targeting of vulnerable learners using national education data systems.

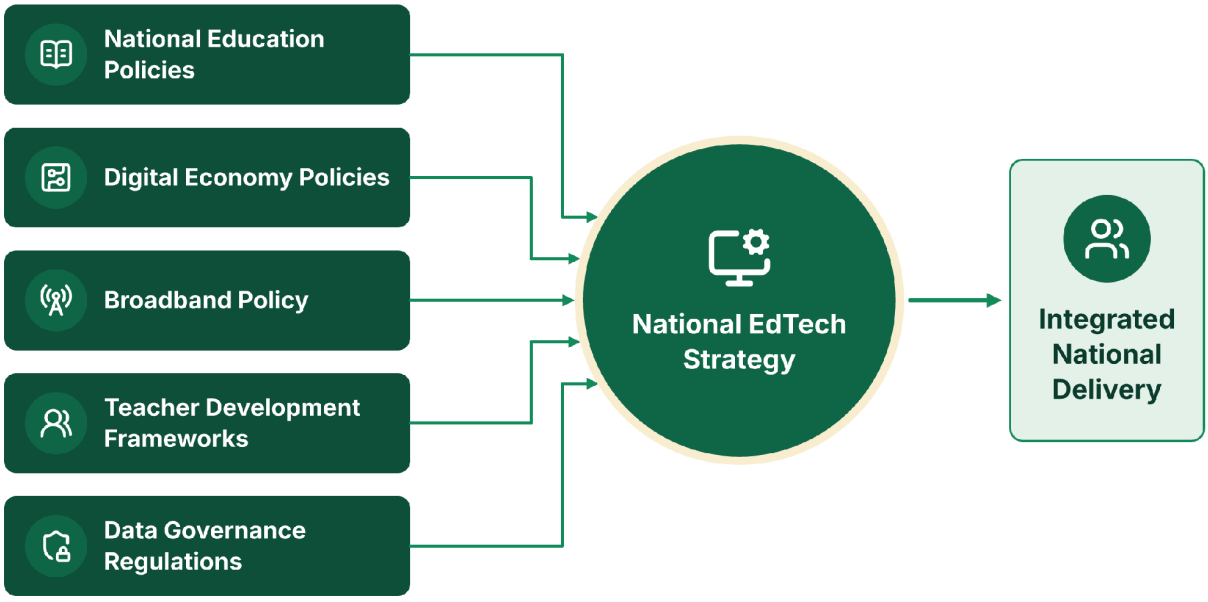
1.8 Policy Alignment

The Strategy complements and operationalises existing national priorities, including:

- National Education Sector Renewal Initiative (NESRI)
- National Policy on Education
- National Digital Learning Policy
- National Digital Literacy Framework
- National Broadband Plan
- Nigeria Data Protection Act
- National Digital Economy Policy and Strategy
- Nigeria's broader Digital Economy Agenda
- Sustainable Development Goal 4
- African Union Continental Education Strategy for Africa (CESA)

Common standards and interoperable architecture translate these priorities into coordinated implementation, without creating parallel structures.

Figure** 1.2 — **Policy Alignment



1.9 Stakeholder Ecosystem

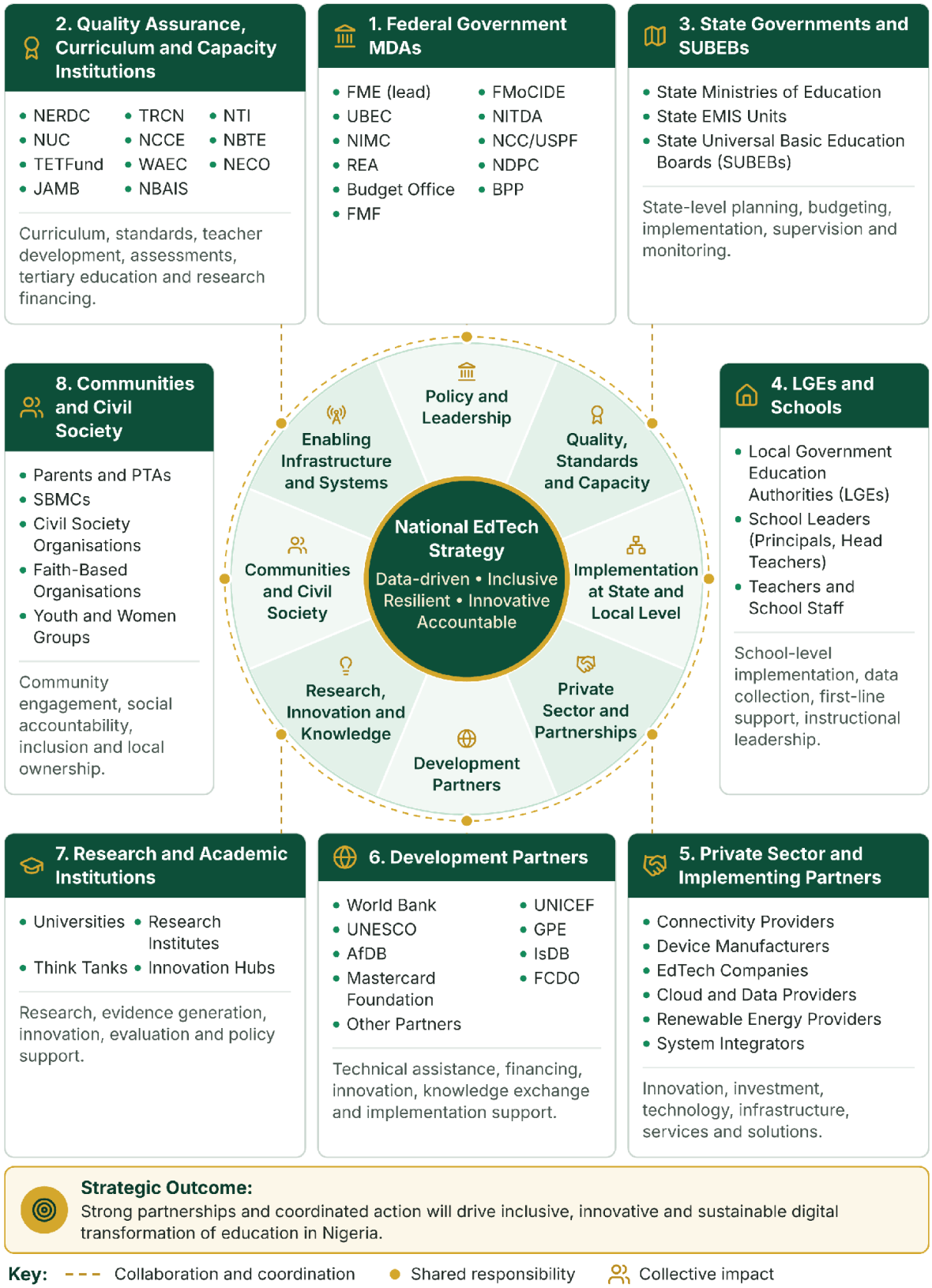
Digital transformation requires coordinated leadership and collaboration across government, education institutions, development partners, the private sector and communities. This whole-of-government and whole-of-society approach connects governance, curriculum, financing, teacher development, infrastructure, regulation and service delivery.

The Strategy is government-led and ecosystem-owned. Federal and State Governments, educational institutions, innovators, academia, civil society, foundations and development partners contribute to delivery and accountability, while statutory policy, regulatory and public-accountability responsibilities remain with the relevant public institutions.

Stakeholders fall into six broad groups. National ministries and regulators (FME, FMoCIDE, NITDA, NIMC and NDPC, among others) set policy, standards and data protection; State and Local Government bodies (State Ministries of Education, SUBEBs, LGEAs) deliver implementation on the ground; education and examination bodies (UBEC, NERDC, TRCN, NTI, universities and colleges, WAEC, NECO and JAMB) embed digital competencies into curricula, certification and assessment; the private sector delivers infrastructure, devices and platforms through performance-based partnerships; development partners provide technical and financial support; and civil society, professional associations, school leaders and parents ground implementation in community accountability. The full allocation of responsibilities by institution is provided in Annex 1, Table A1.4.

Figure** 1.3 — **National Education Stakeholder Ecosystem

A whole-of-government and whole-of-society approach to delivering the National EdTech Strategy



1.10 Role of the Private Sector

The private sector is a strategic partner in investment, innovation and delivery under the national reference framework. Transparent procurement, performance-based partnerships and vendor-neutral interoperability standards will support participation. Government retains policy leadership, standards, coordination, regulation and public accountability; ecosystem participation does not transfer statutory authority.

1.11 Positioning of the Strategy

The Strategy provides the national reference framework for coordinating public and private EdTech investment and implementation. It integrates—not replaces—existing education systems through common standards, compatible services and joined-up delivery.

1.12 Interoperability and Open Standards

Interoperability is a cross-cutting requirement across all five pillars and approved public and private education systems. It is not restricted to a single platform. Institutions will use documented APIs, common data definitions and vendor-neutral open standards, supported by role-based permissions, privacy safeguards, cybersecurity, data governance and clear institutional accountability.

NEDI is the national education data backbone and an important reference implementation within this wider architecture. It supports data exchange, analytics and performance reporting without replacing all existing systems. Governance and programme coordination remain with the relevant committees and Programme Office.

FME, FMoCIDE and system owners should implement documented interfaces, lawful processing purposes, data-sharing agreements, role-based access, audit trails, interoperability tests, change control and clear responsibilities for correction and incident response.

Chapters 2–6 set out delivery priorities for each of the five strategic pillars.

2 Pillar One: Data and Interoperability (NEDI)

Pillar Introduction

Accurate, timely and trusted data supports education planning, financing, teacher deployment and infrastructure investment. Nigeria's digitisation efforts provide a foundation, but fragmented institutional systems continue to constrain coordination and evidence-based decisions.

NEDI has already been deployed and is currently collecting education data. Pillar One builds on this operational foundation to strengthen data exchange, quality assurance and analytical services within the interoperability framework defined in Section 1.12. Deployment and ongoing collection do not imply that all priority datasets, interfaces or national coverage targets have been completed.

2.1 Strategic Intent

Pillar One establishes a trusted, secure and interoperable data ecosystem for collaboration across all levels of government.

Priority datasets will be exchanged through agreed standards, with validation and reporting schedules that improve accuracy and timeliness.

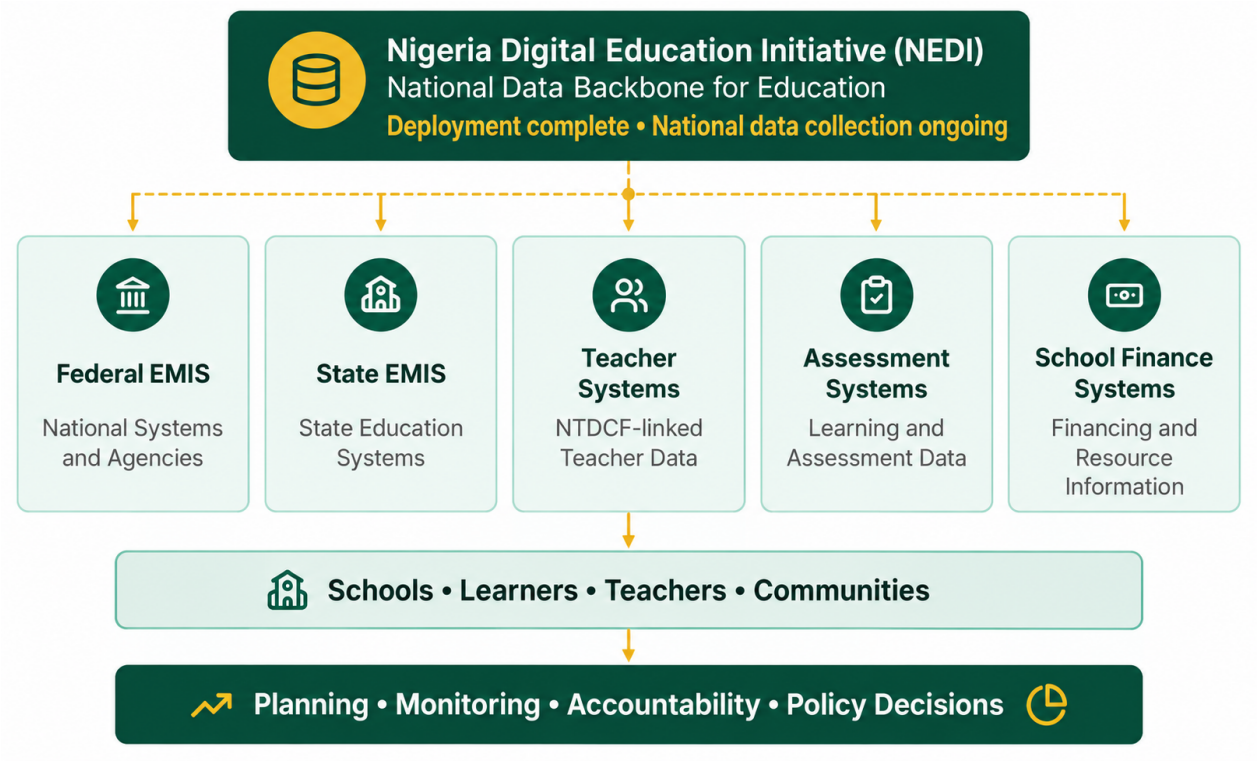
The Strategy also promotes robust data governance through compliance with the Nigeria Data Protection Act and transparent accountability mechanisms.

2.2 Why this Pillar Matters

Fragmented education data arrangements duplicate effort, delay decisions and constrain equitable resource allocation and performance monitoring across the education sector.

Interoperable data will help government identify needs, allocate resources, monitor progress and strengthen accountability. It will also support teacher development, digital learning, infrastructure planning and future innovation.

Figure 2.1 — Nigeria Digital Education Initiative (NEDI) *— already deployed and currently collecting education data.*



2.3 Strategic Priorities

The Strategy will pursue the following strategic priorities:

i. **Strengthen the Deployed NEDI Backbone**
Build on NEDI's deployment and ongoing data collection to strengthen secure exchange and reporting on the agreed schedule.

ii. **Strengthen Interoperability**
Adopt common data standards so existing systems can share information automatically, while preserving institutional autonomy.

iii. **Improve Education Data Quality**
Prioritise high-value national datasets — school census, teacher workforce, enrolment and financing — while strengthening data validation and quality assurance.

iv. **Promote Trusted Data Governance**
Institutionalise policies safeguarding privacy, security and compliance with the Nigeria Data Protection Act to build public confidence in education data systems.

v. **Enable Evidence-Based Decision-Making**
Leverage dashboards and analytics to support planning, resource allocation and equity monitoring across government.

Figure 2.2 — Priority National Education Datasets

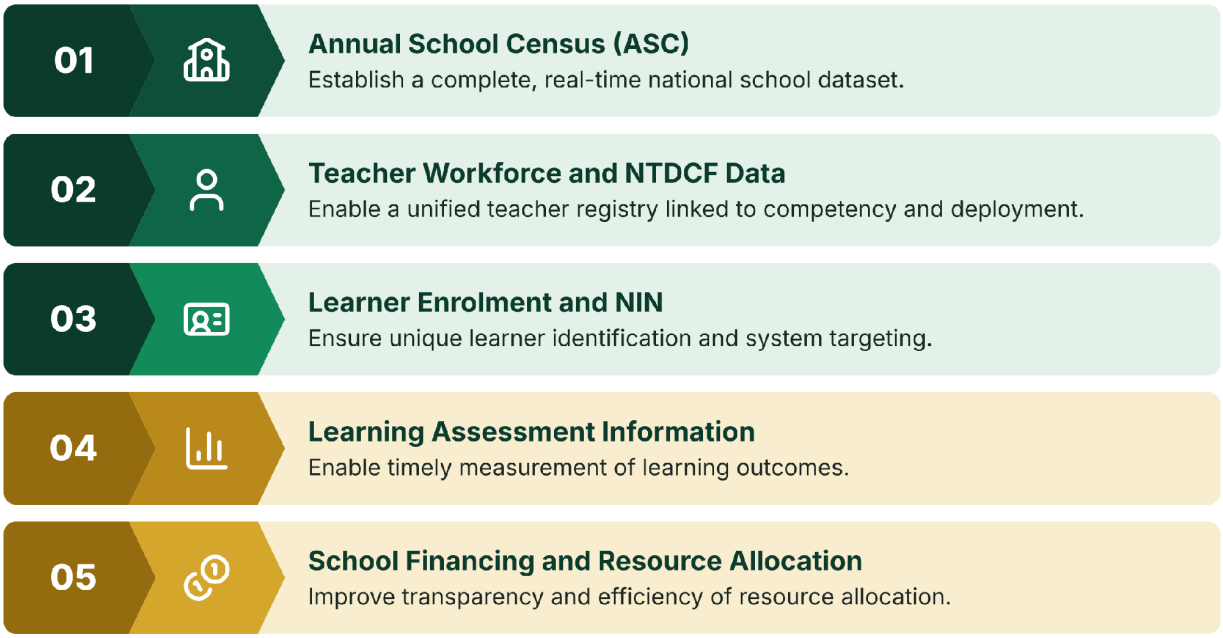
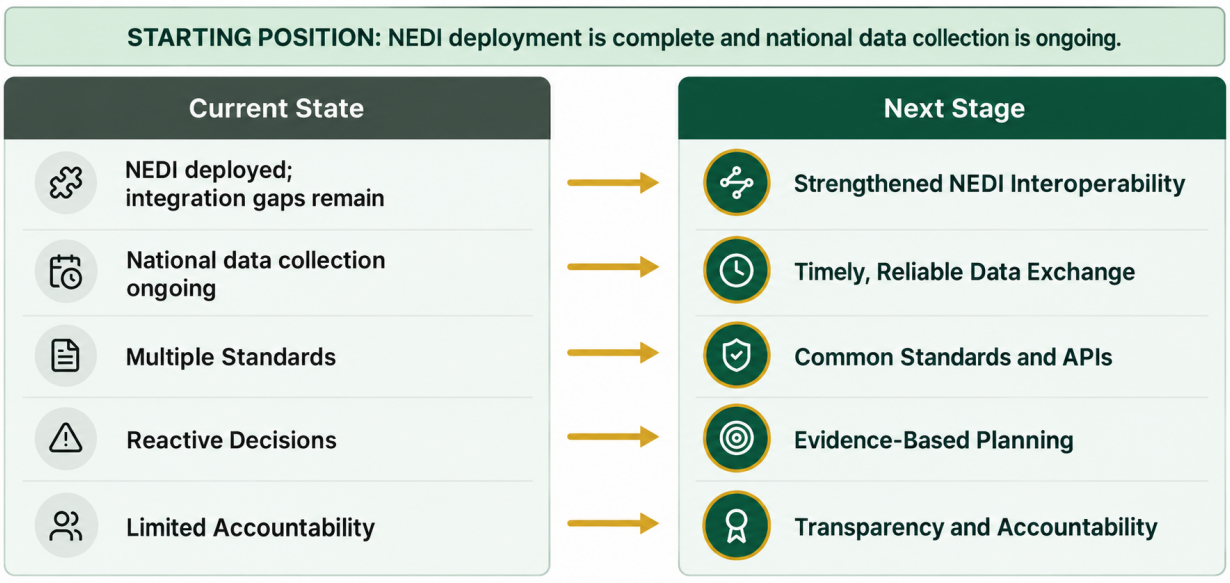


Figure 2.3 — National Transformation under Pillar One *— strengthening data quality, secure exchange and reporting on NEDI's already-deployed backbone and ongoing data collection.*



Strategic shift: from fragmented datasets to secure, standards-based exchange through the national education data backbone.

2.4 National Transformation

The Strategy connects existing systems through common standards, enabling coordinated decision-making without requiring every institution to use a single platform.

Teacher registration, certification and professional development records will be linked through interoperable information systems aligned with NTDCF, supporting coordinated workforce planning.

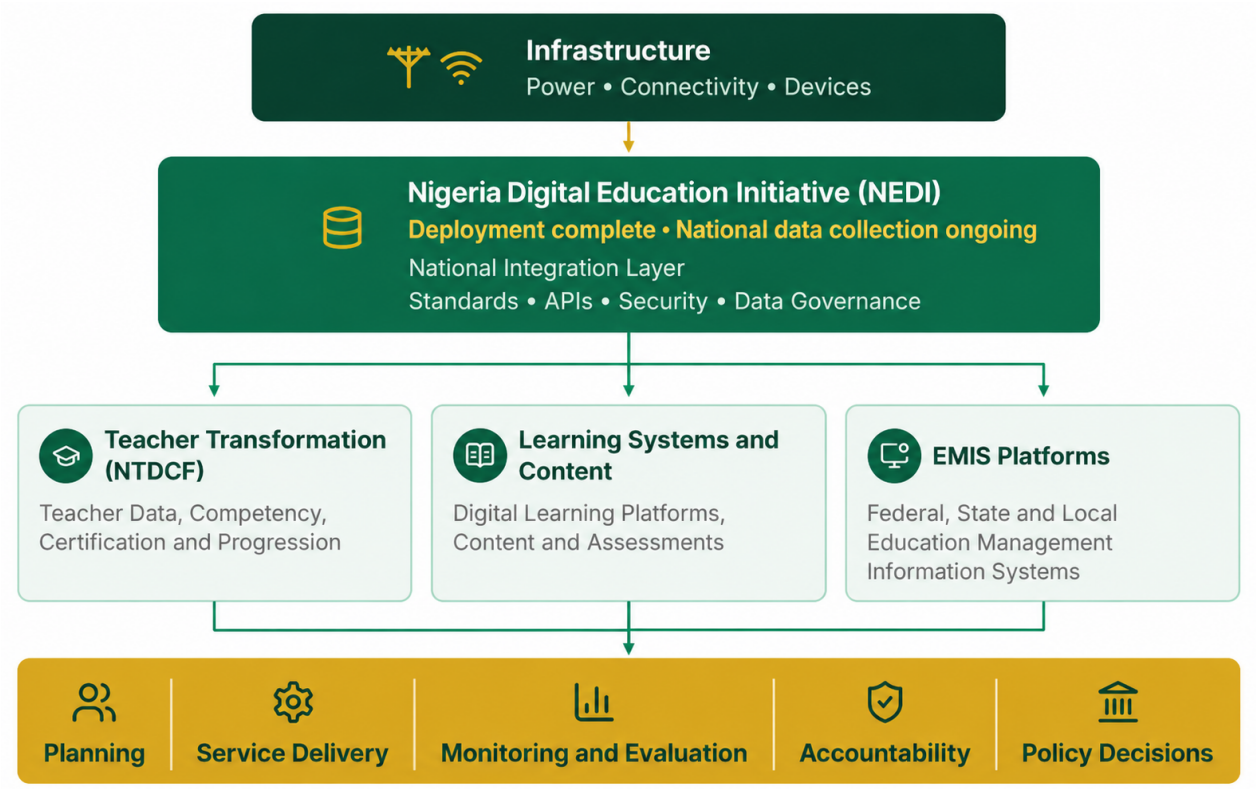
2.5 Expected Outcomes

Implementation of this Pillar will result in:

- A trusted and interoperable national education data ecosystem.
- Improved availability, quality and timeliness of education data.
- Enhanced planning, financing and resource allocation.
- Integrated teacher workforce information through NTDCF.
- Stronger monitoring, evaluation and accountability.
- Improved coordination across Federal, State and Local Government institutions.
- Greater public confidence in education data through secure governance and compliance with national data protection requirements.

These outcomes provide the data foundation for delivery across the remaining pillars.

Figure 2.4 — NEDI within the National Education Data Interoperability Architecture *— NEDI is deployed and collecting data; remaining priority interfaces and integrations are implementation objectives, not completed achievements.*



Section 1.12 defines the Strategy-wide data exchange architecture and distinguishes NEDI from Programme Office coordination.

Implementation Reference

Implementation activities and responsibilities for Pillar One are set out in Annex 1: Detailed Implementation Plan. Technical standards and operational guidance are provided in Annex 2: Technical Implementation Guide, Section A2.2 (Data and Interoperability – NEDI).

3 Pillar Two: Infrastructure Ecosystem

Pillar Introduction

Reliable power, connectivity and functioning devices enable digital learning, secure data exchange and teacher professional development. Schools require integrated services that remain usable and affordable throughout their lifecycle.

Pillar Two coordinates these services through a national delivery framework, with differentiated packages suited to school needs and local conditions.

Infrastructure investment is assessed by its contribution to educational quality, equity and resilience, not asset acquisition alone.

3.1 Strategic Intent

This Pillar seeks a reliable, equitable and sustainable infrastructure ecosystem enabling every school to participate in digital transformation.

Infrastructure investments will be planned as integrated packages of electricity, connectivity and devices, supported by lifecycle management. The Strategy prioritises rural, underserved and off-grid communities while strengthening coordination across government levels.

Infrastructure supports NEDI data services, NTDCF-aligned professional learning and other approved interoperable education systems.

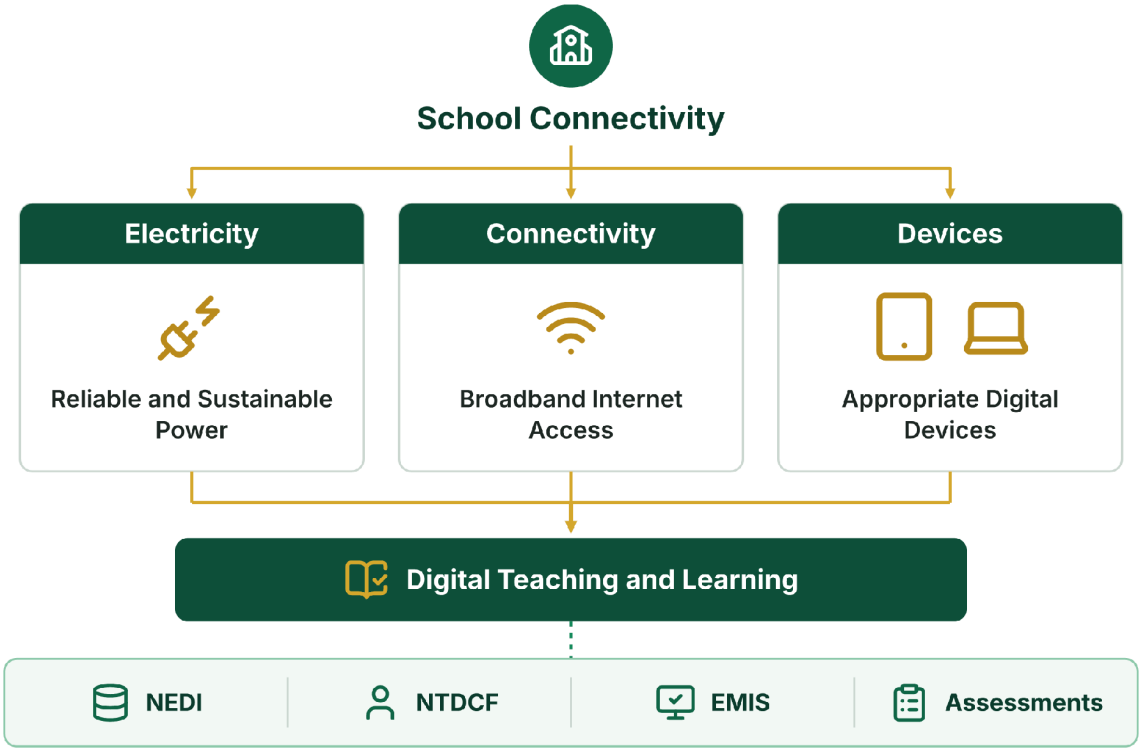
3.2 Why this Pillar Matters

Without reliable infrastructure, many schools — particularly in rural and underserved communities — cannot give learners access to digital resources, support teacher participation in professional development, or use education data for planning and decision-making.

The Strategy moves beyond isolated infrastructure projects to sustainable services that remain functional, affordable and responsive to schools and learners.

Integrated delivery connects classroom needs with education management and sustainable service provision.

Figure 3.1 — The School Connectivity Tripod



3.3 Strategic Priorities

The Strategy will pursue five strategic priorities.

i. **Expand Reliable School Infrastructure**
Provide schools with reliable electricity, connectivity and devices through integrated, coordinated investment.

ii. **Prioritise Equity**
Target investment towards rural and underserved communities using geospatial mapping and readiness assessments.

iii. Promote **Sustainable Service Delivery**
Compare procurement, leasing, managed services and PPP options with funded maintenance and enforceable service levels.

iv. **Standardise Infrastructure**
Develop national infrastructure standards by education level to improve planning, procurement and value for money.

v. **Strengthen National Connectivity**
Leverage existing initiatives, including Project BRIDGE and the USPF, to expand affordable broadband connectivity for schools.

Table 3.1 — Integrated School Infrastructure Components

Component	Strategic Purpose	Contribution
Electricity	Reliable power supply	Supports continuous operation of digital systems
Broadband Connectivity	Internet access	Enables digital learning, teacher development and data exchange

Component	Strategic Purpose	Contribution
Digital Devices	Teaching and learning tools	Supports learners, teachers and school administration
Maintenance Services	Infrastructure sustainability	Reduces downtime and extends asset lifespan
Performance Monitoring	Service quality	Supports accountability through NEDI dashboards

3.4 National Transformation

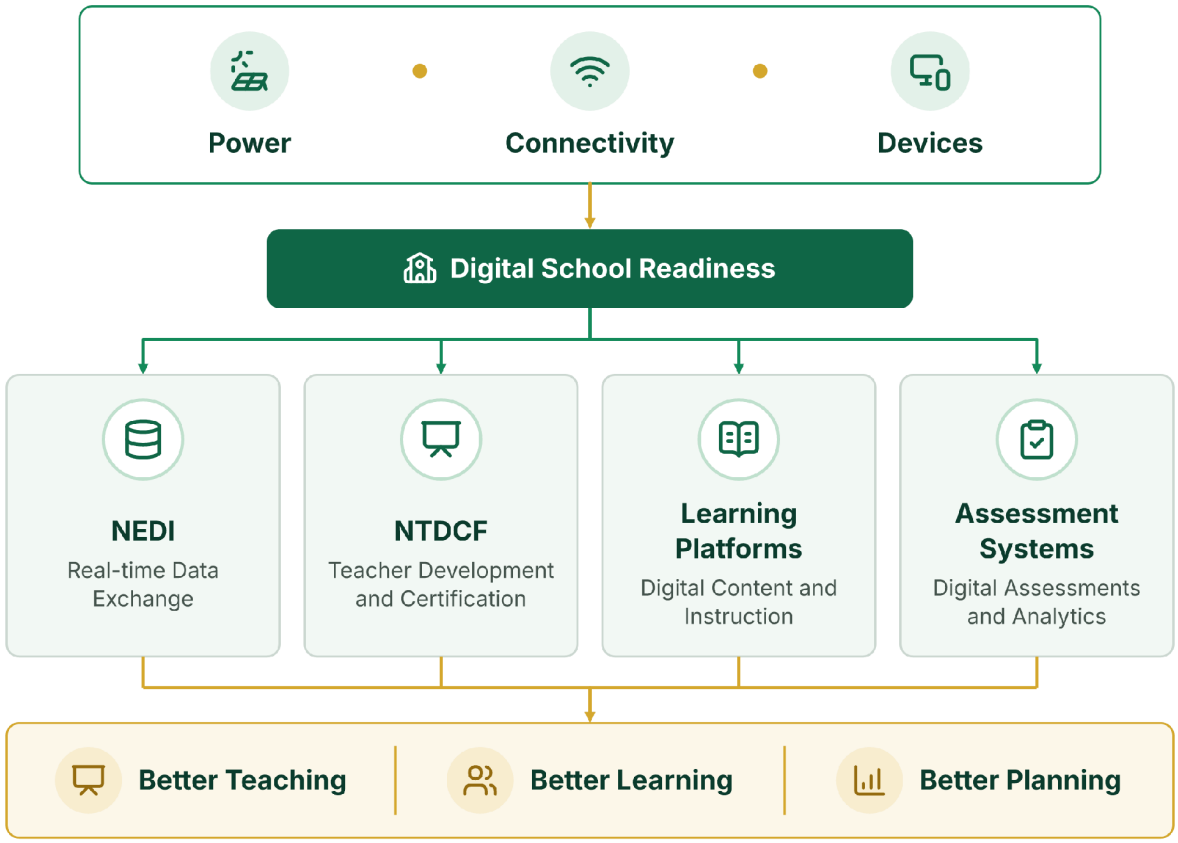
Integrated electricity, connectivity and device services will support teaching, learning and education management together.

Infrastructure investments will directly enable:

- secure data exchange through NEDI, with timely reporting;
- teacher professional development through **NTDCF**;
- digital teaching, learning and assessment;
- improved planning and resource allocation; and
- equitable access to quality education across Nigeria.

The Strategy also recognises that sustainable infrastructure requires long-term financing, lifecycle management and partnerships that ensure schools remain connected and operational beyond initial deployment.

Figure 3.2 — Infrastructure as a System Enabler



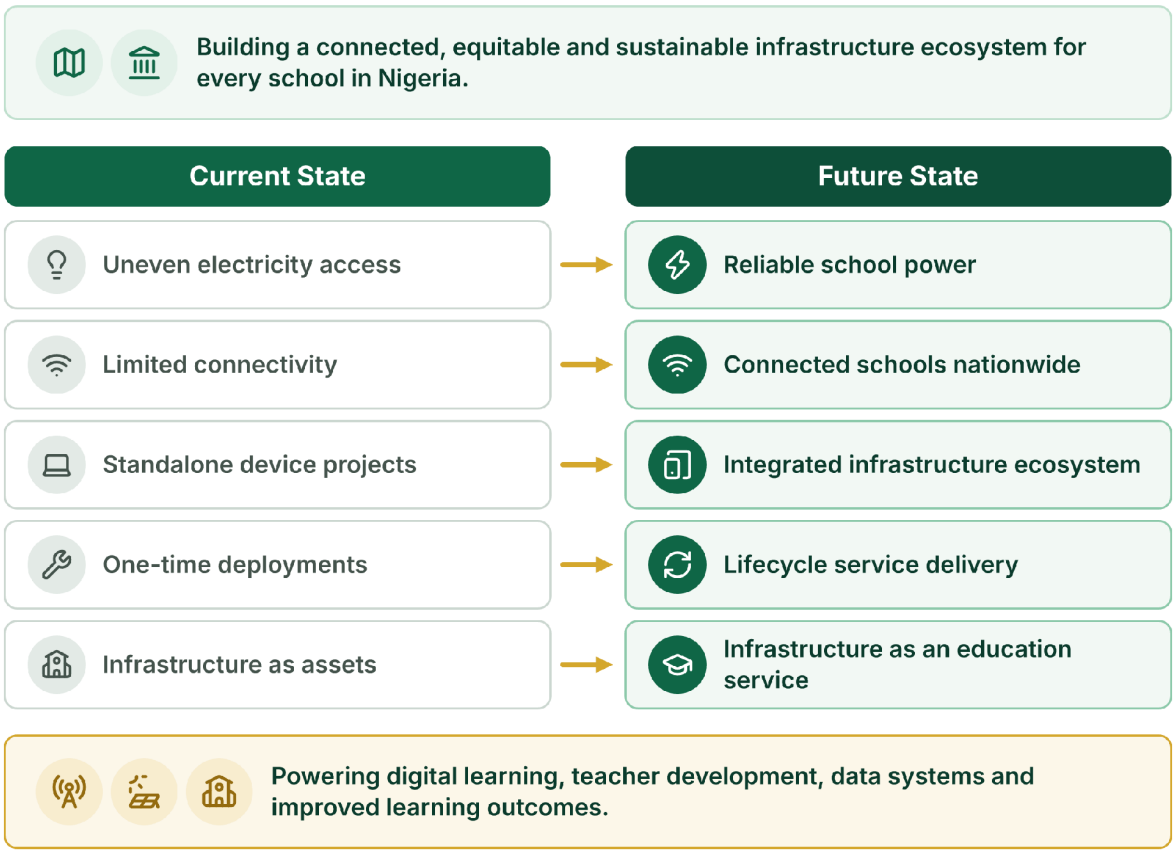
3.5 Expected Outcomes

Successful implementation of this Pillar will result in:

- expanded access to reliable electricity and broadband connectivity for schools;
- equitable access to digital infrastructure across urban, rural and underserved communities;
- sustainable infrastructure supported through performance-based service delivery;
- improved access to digital teaching, learning and assessment;
- strengthened implementation of NEDI and NTDCF;
- increased resilience and efficiency of education service delivery; and
- enhanced learning outcomes through a connected and inclusive education ecosystem.

These outcomes provide the physical foundation for digital education delivery.

Figure 3.3 — National Infrastructure Transformation



Implementation Reference

Implementation activities and responsibilities for Pillar Two are set out in Annex 1: Detailed Implementation Plan. Technical standards and operational guidance are provided in Annex 2: Technical Implementation Guide, Section A2.3 (Infrastructure Ecosystem).

4 Pillar Three: Technology and Procurement

Pillar Introduction

Well-selected and sustainably managed technology can improve teaching, education management and accountability. Fragmented investments, however, create incompatible systems, vendor lock-in and underused assets.

Pillar Three establishes a common technology governance and procurement framework linking digital investment to educational value, interoperability and sustainable delivery, while supporting Nigerian EdTech innovation.

Procurement is therefore a strategic instrument for quality and value for money, rather than a transaction focused on equipment supply.

4.1 Strategic Intent

This Pillar seeks a transparent, interoperable and performance-driven technology environment supporting teaching, learning and education management.

Technology solutions will comply with Strategy-wide interoperability and open standards, exchange relevant approved data with NEDI and other authorised systems where appropriate, support NTDCF-aligned teacher development and meet national priorities.

The Strategy also promotes sustainable procurement models that prioritise quality, security and long-term service delivery while strengthening Nigeria's digital economy.

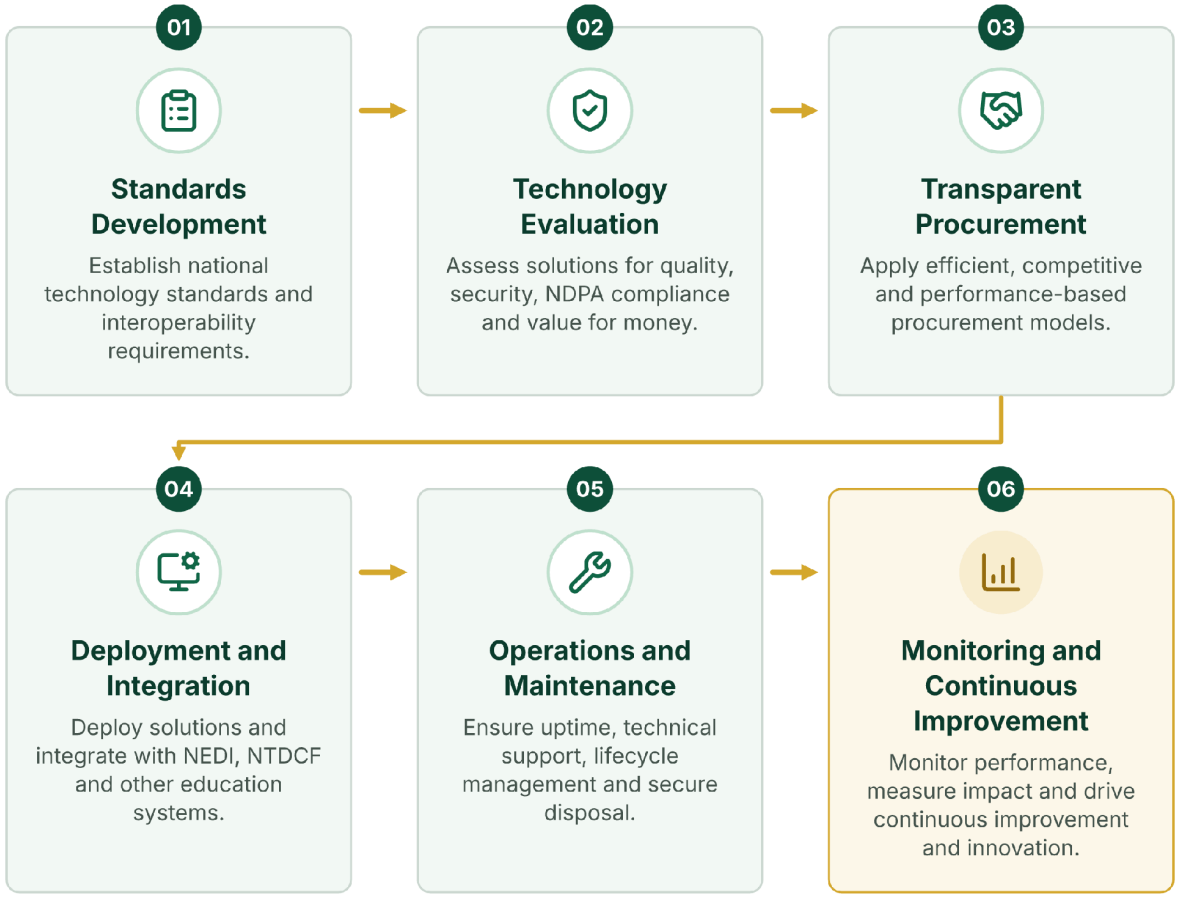
4.2 Why this Pillar Matters

Technology represents a significant share of education expenditure, yet many past initiatives were implemented independently, producing incompatible systems, inconsistent standards and duplicated investment.

Without coordinated procurement, education institutions risk acquiring technologies that cannot communicate with one another, become obsolete quickly or fail to support classroom practice.

A common framework for technology standards, procurement and lifecycle management will reduce these risks while supporting learning outcomes, interoperability, sustainable services and Nigerian EdTech innovation.

Figure 4.1 — Technology Investment Lifecycle



4.3 Strategic Priorities

The Strategy will pursue six strategic priorities.

i. **Standardise Education Technologies**
Develop vendor-neutral technical and interoperability standards for approved public and private education systems, including secure data exchange with NEDI where relevant.

ii. **Promote Transparent Procurement**
Strengthen procurement through competitive, performance-based approaches that improve accountability and reduce duplication.

iii. **Adopt Lifecycle Management**
Transition from one-time acquisition to lifecycle service models covering deployment, maintenance and secure disposal.

iv. **Strengthen Nigeria's EdTech Ecosystem**
Support local innovation through open technical standards and structured collaboration between educators, researchers and technology providers, encouraging Nigerian developers to build curriculum-aligned solutions.

v. **Prioritise Teaching and Learning Outcomes**
Technology decisions will be evaluated on their contribution to learning outcomes, not on adoption alone.

vi. **Promote Responsible Digital Innovation**
Technology solutions will comply with data protection, cybersecurity and ethical standards while supporting responsible adoption of AI and other emerging technologies.

Table 4.1 — Technology Procurement Principles

Principle	Strategic Purpose
Interoperability	Vendor-neutral integration with approved public and private systems, including NEDI where relevant
Transparency	Fair and competitive procurement
Value for Money	Efficient use of public resources
Sustainability	Lifecycle management and long-term support
Security	Compliance with national cybersecurity and data protection requirements
Innovation	Strengthen Nigerian EdTech and local digital markets

4.4 National Transformation

Technology procurement links institutional needs to interoperable solutions and sustainable services, as summarised in Table 4.2.

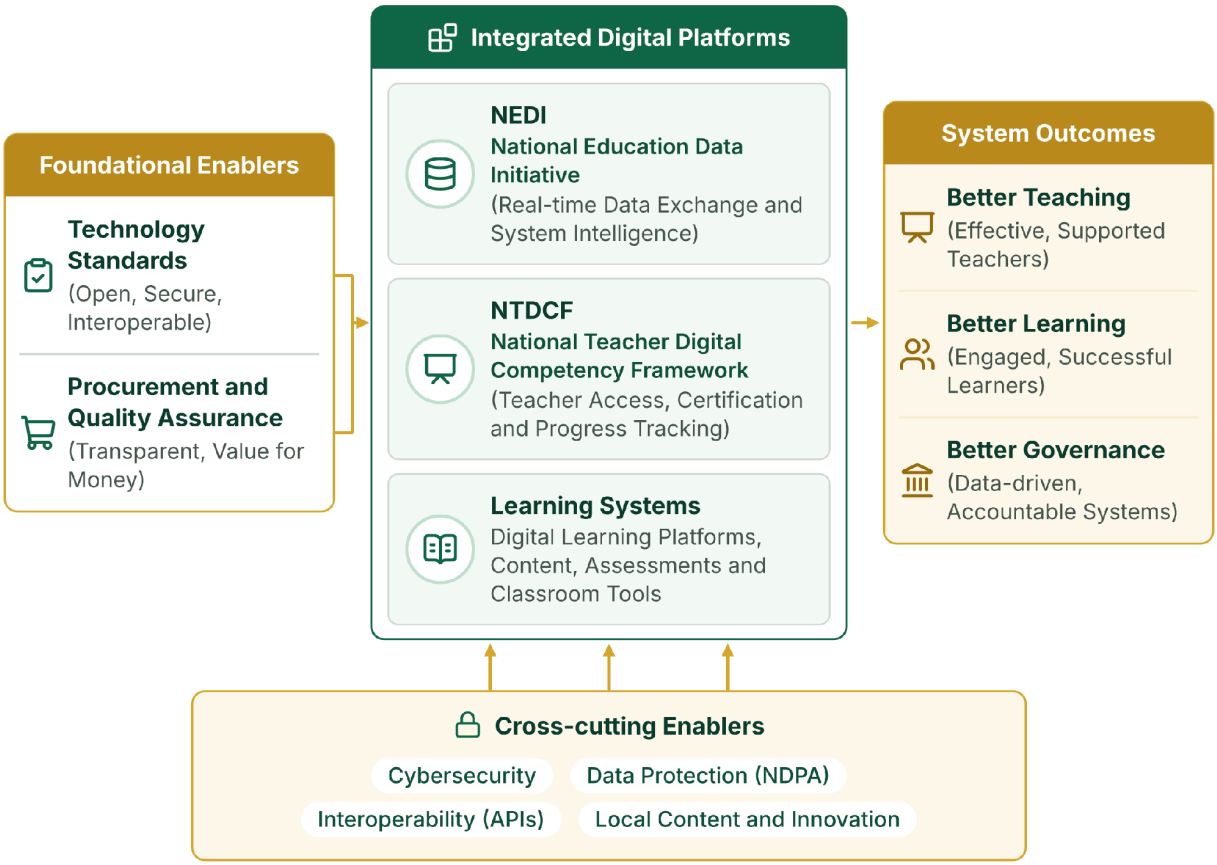
*Table 4.2 — Technology and **Procurement: Intended System Shifts***

Current State	Future State
Standalone technology purchases	Integrated national technology ecosystem
Vendor-specific solutions	Open, interoperable platforms
One-time procurement	Lifecycle service delivery
Asset ownership	Sustainable technology services
Technology-centred investments	Learning-centred investments

Technology will be selected, deployed and managed to support:

- NEDI-enabled education data;
- NTDCF-driven teacher development;
- digital teaching and learning;
- curriculum delivery;
- assessment and school management; and
- evidence-based policy and planning.

Figure 4.2 — Technology as an Education Enabler



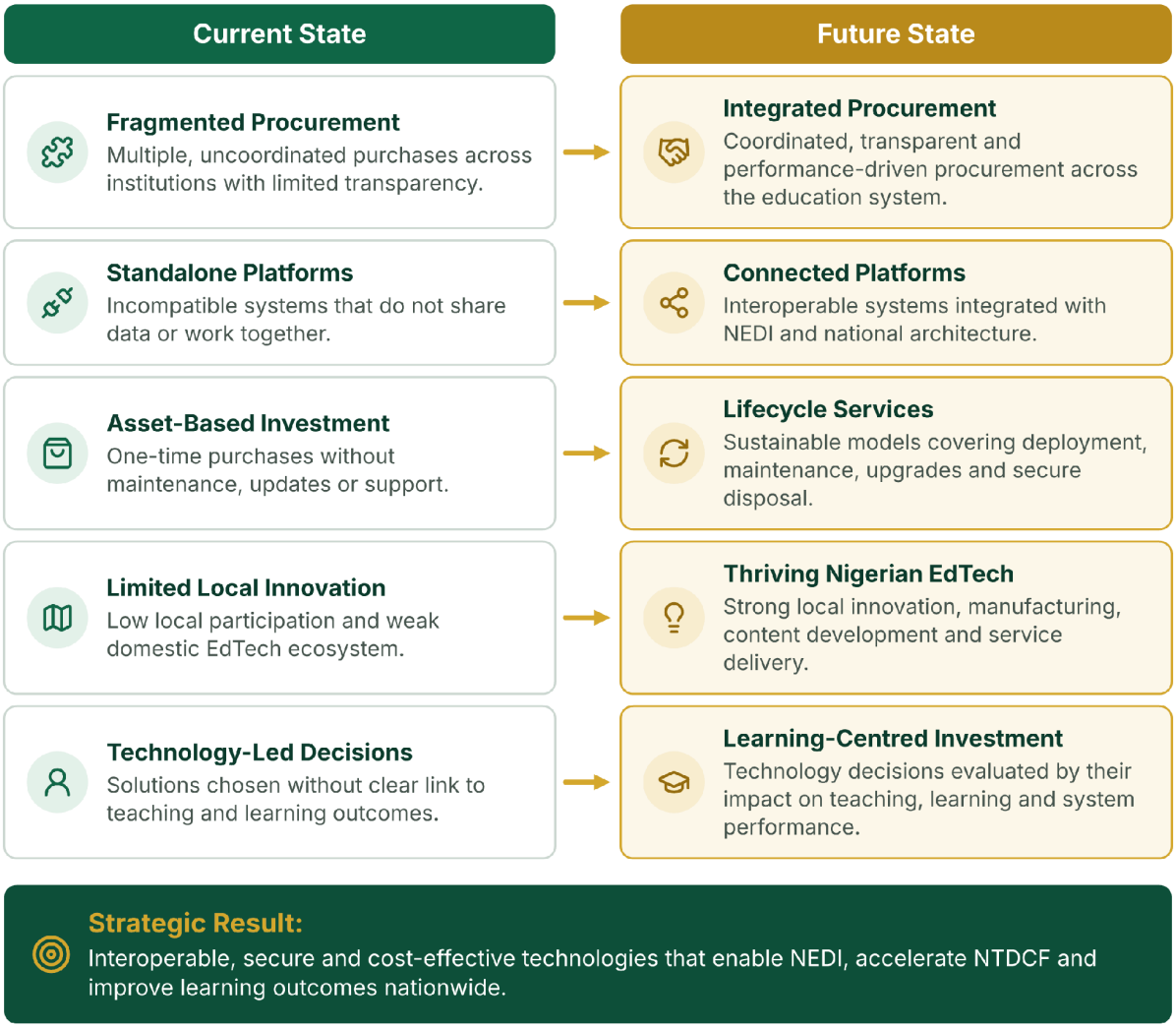
4.5 Expected Outcomes

Successful implementation of this Pillar will result in:

- interoperable education technologies that integrate seamlessly across the education system;
- transparent and efficient procurement processes that deliver greater value for money;
- sustainable technology lifecycle management that improves reliability and reduces long-term costs;
- strengthened Nigerian EdTech innovation and increased local participation in education technology delivery;
- enhanced teacher access to high-quality digital tools and professional development resources;
- improved learner access to curriculum-aligned digital learning solutions; and
- technology investments that consistently translate into measurable improvements in teaching, learning and education system performance.

These outcomes support a trusted technology ecosystem and locally relevant innovation.

Figure 4.3 — Technology Transformation Framework



Implementation Reference

Implementation activities and responsibilities for Pillar Three are set out in Annex 1: Detailed Implementation Plan. Technical standards and operational guidance are provided in Annex 2: Technical Implementation Guide, Section A2.4 (Technology and Procurement).

5 Pillar Four: Teacher Transformation

Pillar Introduction

Technology improves education when teachers can apply it effectively in classroom practice. Digital competency, professional confidence and continuing support are essential to this process.

Pillar Four places teachers at the centre of digital transformation through coordinated competency development and lifelong professional learning. Technology should empower teachers, not replace them.

NTDCF aligns teacher preparation, professional development, certification and career progression within a coherent national pathway.

5.1 Strategic Intent

This Pillar seeks to establish a nationally coordinated teacher development system that equips every teacher with the digital competencies needed for effective teaching, assessment and professional learning.

The Strategy institutionalises NTDCF as the national standard for teacher digital competency, progression and professional development, integrating pre-service and in-service pathways across teacher education institutions and professional bodies.

Approved teacher information systems will supply verified records through NEDI for professional development monitoring and workforce planning.

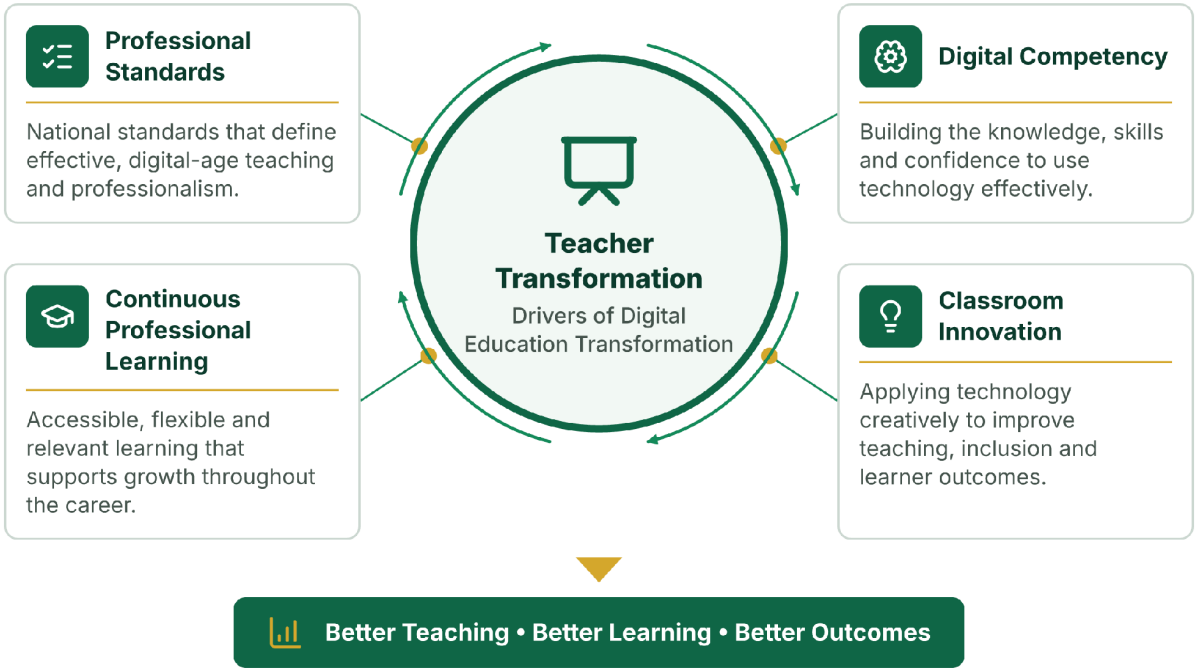
5.2 Why this Pillar Matters

Many teachers still need more support to confidently integrate technology into teaching, assessment and classroom management, since professional development is often inconsistent, fragmented or disconnected from classroom practice.

Stronger digital competencies, accessible professional learning and recognised progression pathways will help improve teaching quality, learner engagement and education outcomes.

The Strategy also recognises that teacher transformation must ultimately benefit learners. Investments in teacher capability will therefore be accompanied by efforts to strengthen learners' digital competencies, ensuring that every Nigerian learner develops the knowledge, skills and values required to thrive in a digital society.

Figure 5.1 — Teachers at the Centre of Digital Transformation



5.3 Strategic Priorities

The Strategy will pursue six strategic priorities.

i. **Institutionalise NTDCF**
Establish NTDCF as the national standard for teacher digital competency, certification and career progression.

ii. **Strengthen Professional Learning**
Develop a national Teacher Professional Development Portal (TPDP) offering flexible, personalised learning through online, offline and blended delivery.

iii. **Align Pre-service and In-service Teacher Development**
Strengthen coordination among teacher education institutions and professional bodies so preparation, licensing and certification follow one coherent framework.

iv. **Promote Technology-Enabled Pedagogy**
Support teachers in integrating digital technologies into lesson planning, instruction and assessment, encouraging collaboration and reflective practice.

v. **Strengthen Learner Digital Competency**
Promote learner digital literacy alongside teacher development, aligning curriculum and pedagogy with the National Digital Literacy Framework.

vi. **Enable Data-Driven Teacher Development**
Leverage NEDI to monitor competency progression, identify learning needs and support workforce planning.

***Table 5.1** — National Teacher Competency Pathway*

Competency Level	Focus Area	Expected Capability
Foundational	Digital literacy	Confident use of digital devices, communication and basic digital resources

Competency Level	Focus Area	Expected Capability
Intermediate	Technology-enabled teaching	Digital lesson planning, learner assessment and classroom integration
Advanced	Data-informed instruction	Digital pedagogy, mentoring and use of education data to improve learning
Leader / Innovator	System leadership	Innovation, coaching, AI-enabled teaching and national professional leadership

Table 5.2 — Institutional Roles

Institution	Primary Responsibility
Federal Ministry of Education	Policy leadership and coordination
Federal Ministry of Communications, Innovation and Digital Economy / NITDA	Digital literacy standards and innovation
Teachers Registration Council of Nigeria (TRCN)	Professional standards, licensing and certification
National Teachers' Institute (NTI)	Professional development programmes
NCCE, NUC and NBTE	Integration into pre-service teacher education
UBEC and State Ministries of Education	State-level implementation and teacher support

5.4 National Transformation

Teacher institutions retain responsibility for standards, certification and professional learning under NTDCF. Approved information systems exchange relevant records through NEDI to support workforce planning.

Teachers should receive tailored professional learning, mentoring and recognition. Education leaders should use workforce evidence with clearly recorded observation dates to plan support.

Figure 5.2 — National Teacher Development Ecosystem

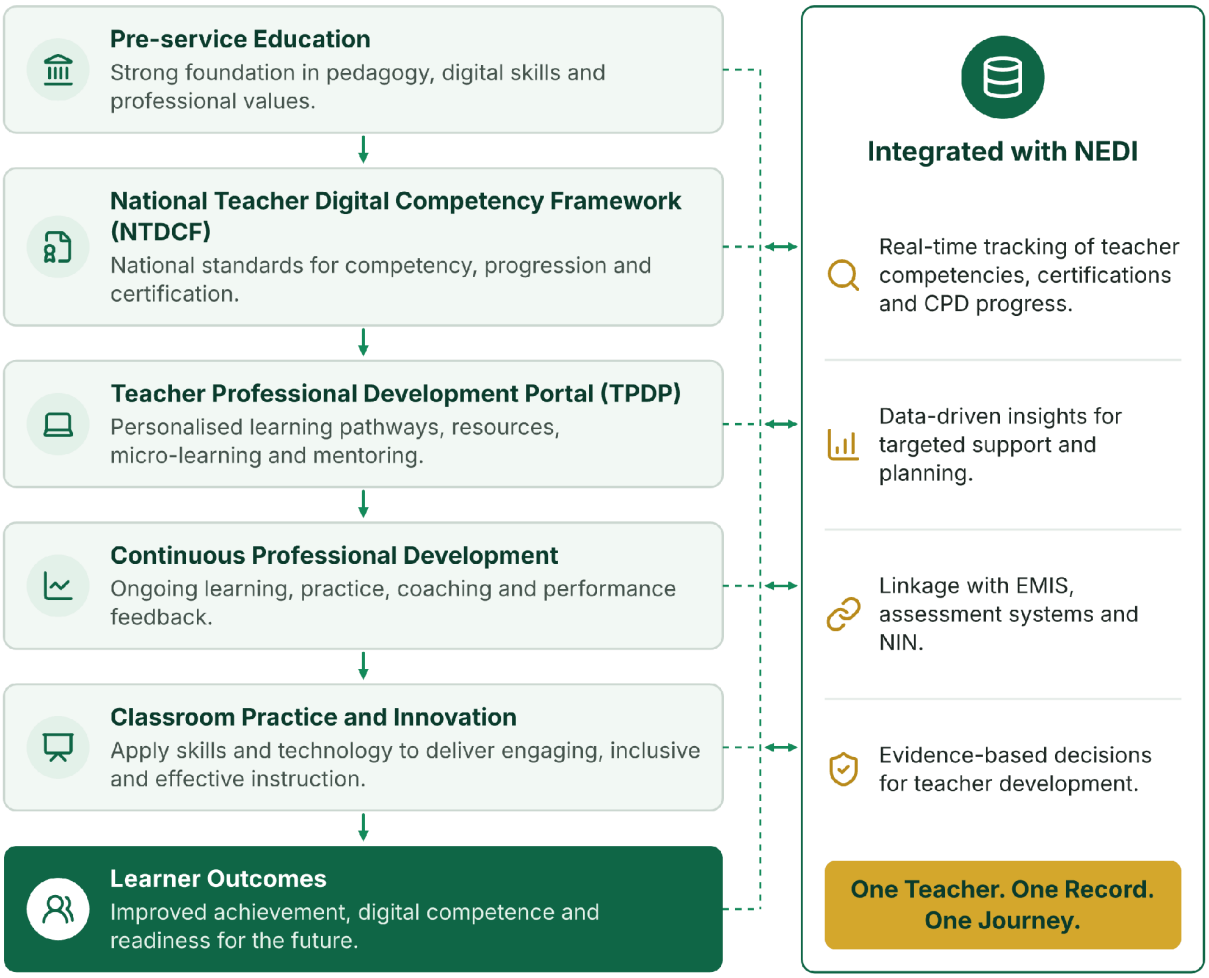
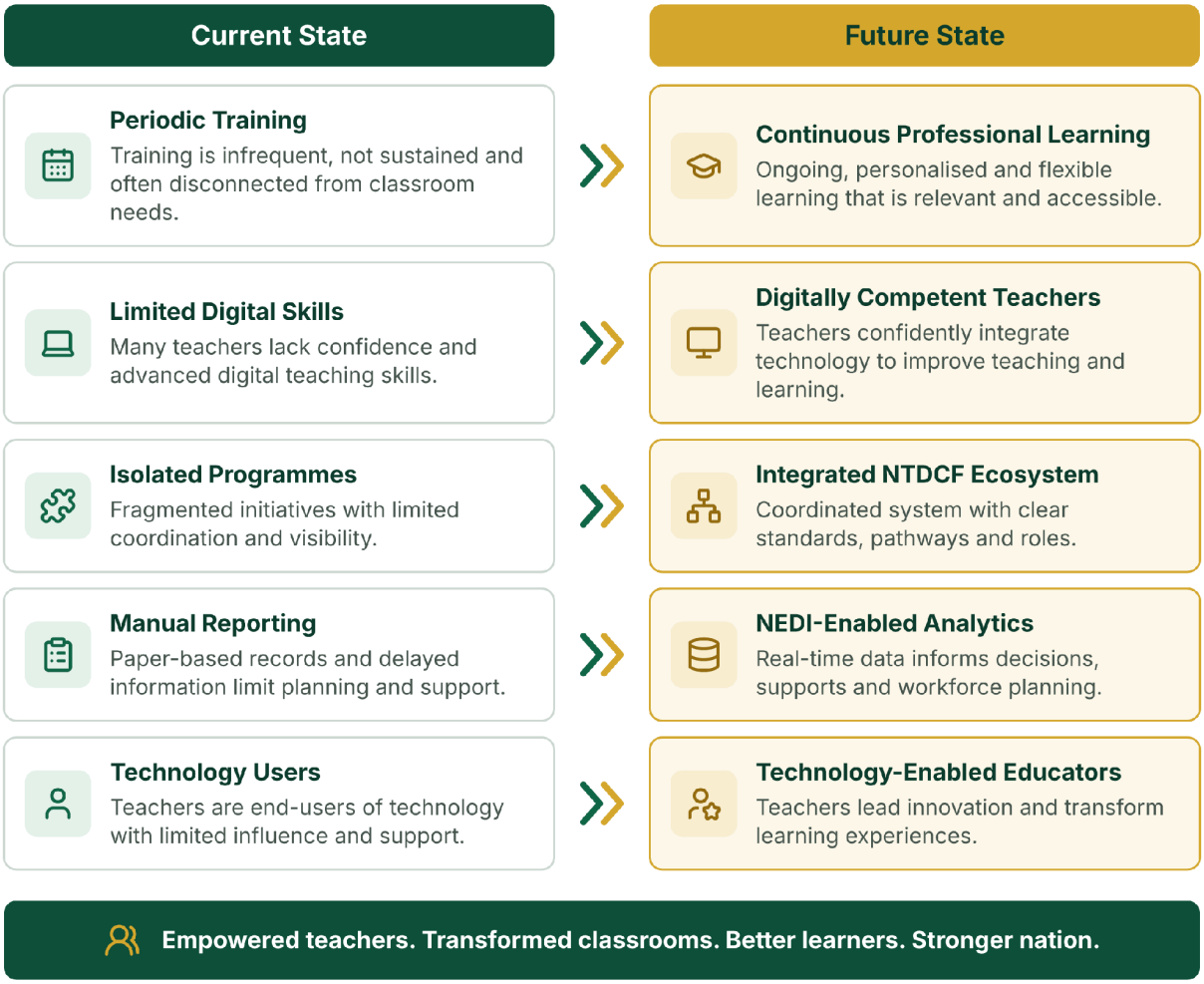


Figure 5.3 — Teacher Transformation Framework



5.5 Expected Outcomes

Successful implementation of this Pillar will result in:

- a nationally coordinated teacher development system anchored by NTDCF;
- digitally competent teachers equipped to integrate technology into teaching and learning;
- stronger alignment between pre-service and in-service teacher development;
- improved access to continuous professional learning and mentoring;
- enhanced learner digital competency through technology-enabled pedagogy;
- timely reporting of teacher competency progression through NEDI on the agreed assessment schedule; and
- improved teaching quality, learner engagement and education outcomes across Nigeria.

These outcomes strengthen teachers' capacity to lead digital education delivery.

Implementation Reference

Implementation activities and responsibilities for Pillar Four are set out in Annex 1: Detailed Implementation Plan. Technical standards and operational guidance are provided in Annex 2: Technical Implementation Guide, Section A2.5 (Teacher Transformation).

6 Pillar Five: Governance and System Coordination

Pillar Introduction

Effective digital transformation requires institutions that align policy, financing and delivery and remain accountable for education outcomes.

The recommended governance model separates strategic oversight, technical advice, integrated programme coordination and State delivery. It comprises the Joint Ministerial Steering Committee, National EdTech Technical Steering Committee, Nigeria EdTech Programme Office and State EdTech Delivery Teams. Technical advice and programme coordination are complementary functions, not successive command levels. Existing statutory responsibilities remain unchanged.

Governance links performance evidence, with clearly recorded observation dates, to delivery follow-up and corrective action.

6.1 Strategic Intent

This Pillar seeks an integrated governance framework enabling effective planning, implementation and continuous improvement across the digital education system.

The Strategy defines institutional responsibilities and decision-making authority across government and delivery partners. NEDI supplies data for performance reporting; the Programme Office coordinates follow-up through the relevant governance bodies.

Governance arrangements will support coordinated implementation of all Pillars while giving States flexibility to adapt to local contexts.

6.2 Why this Pillar Matters

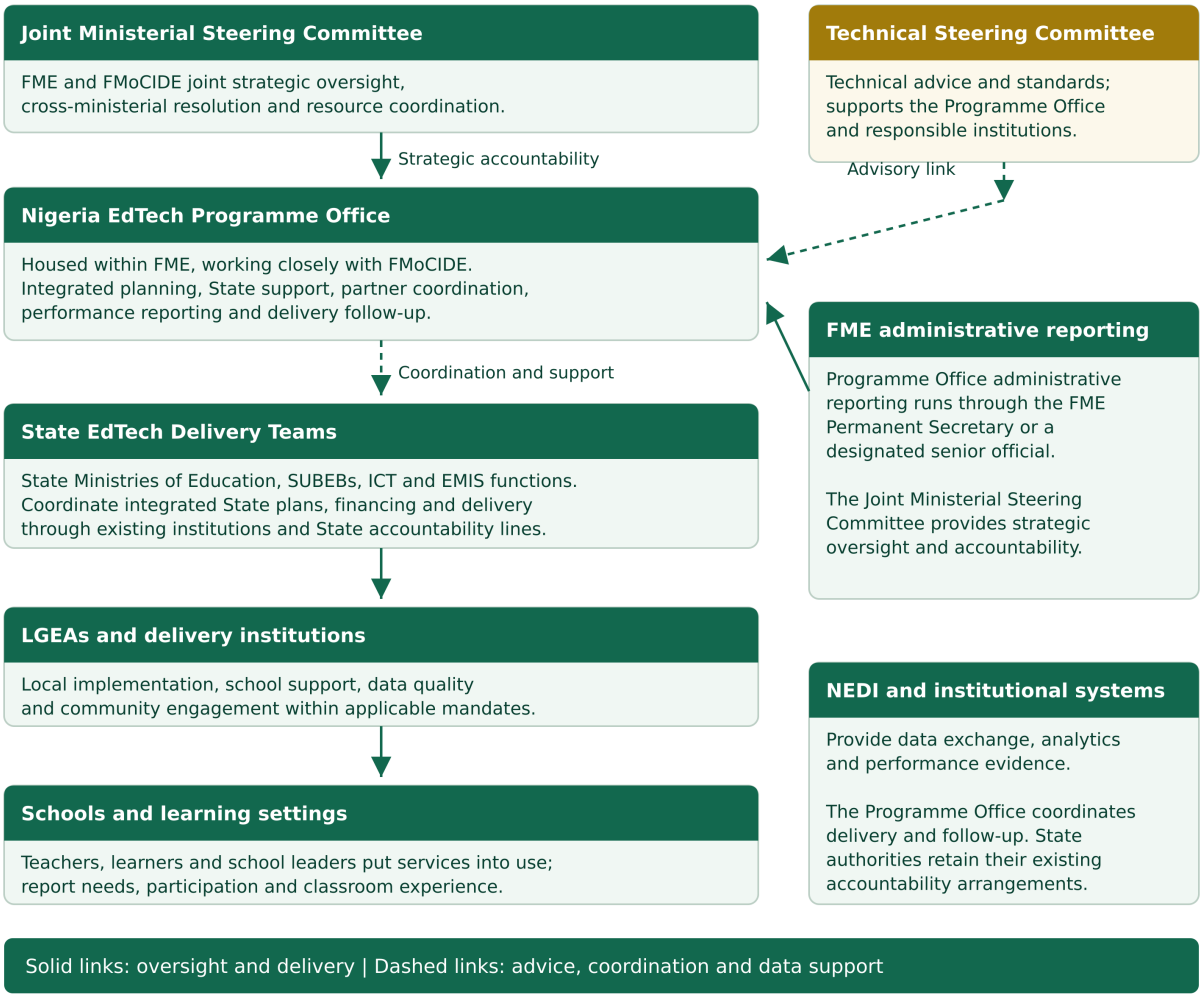
Without coordinated leadership, even well-designed policies can result in fragmented implementation, duplicated investment and weaker accountability across institutions with different mandates and capacity.

This Pillar addresses these challenges by establishing a governance framework that promotes collaboration, strengthens institutional capacity and aligns implementation across Federal, State and Local Government levels.

By integrating governance with performance monitoring and education data, decision-makers will be able to monitor progress, identify implementation challenges and respond more effectively to emerging needs.

Figure 6.1 — National Governance Architecture

Strategic oversight, programme coordination, technical advice and State-owned delivery



6.3 Strategic Priorities

The Strategy will pursue five strategic priorities.

i. **Strengthen National Leadership and Coordination**
Establish a coordinated governance architecture that strengthens collaboration across ministries, State Governments, development partners and the private sector.

ii. **Promote Shared Accountability**
Clearly define institutional responsibilities and decision-making authority across government to ensure coordinated accountability.

iii. Embed **Performance Management**
Use NEDI evidence for reporting on the agreed schedule; the Programme Office coordinates quarterly consolidation and follow-up.

iv. **Strengthen State and Local Delivery**
Support State and Local Government Education Authorities through technical assistance that strengthens last-mile delivery.

v. **Promote Sustainable Governance**
Institutionalise governance arrangements and ethical digital practices to ensure long-term sustainability of education technology reforms.

6.3.1 Recommended Nigeria EdTech Programme Office

House the Nigeria EdTech Programme Office within FME, working closely with FMoCIDE. Administrative reporting runs through the FME Permanent Secretary or designated senior official; strategic accountability is to the Joint Ministerial Steering Committee. Co-location with NEDI may reduce operating costs, but the Office retains a distinct, Strategy-wide mandate across all five pillars.

The Office coordinates integrated annual plans, State support, partner alignment, financing follow-up, monitoring, risk escalation, communications and institutional continuity. It maintains a single workplan, budget tracker, risk register and decision log. It provides secretariat services to both national committees, without replacing accounting officers, procuring entities, regulators or State authorities.

Table 6.1 — Governance Responsibilities

Governance body	Recommended function and relationship
Joint Ministerial Steering Committee	Strategic oversight, cross-ministerial resolution and resource oversight; receives consolidated performance reports. Recommended joint leadership by FME and FMoCIDE.
National EdTech Technical Steering Committee	Technical direction and advice on standards, design, educational quality and delivery evidence; advises the Joint Committee and Programme Office. It is not a line manager of the Office or State Teams.
Nigeria EdTech Programme Office	Integrated coordination, secretariat support and delivery follow-up; administrative reporting through FME and strategic accountability to the Joint Committee.
State EdTech Delivery Teams	State implementation through existing ministries, SUBEBs, LGEAs, schools and relevant educational institutions; accountable through State arrangements and linked to the Office for support and reporting.

6.3.2 Recommended Programme Office Organogram and Role Profiles

Figure 6.2 — Programme Office Organogram — Recommended Reporting Relationships

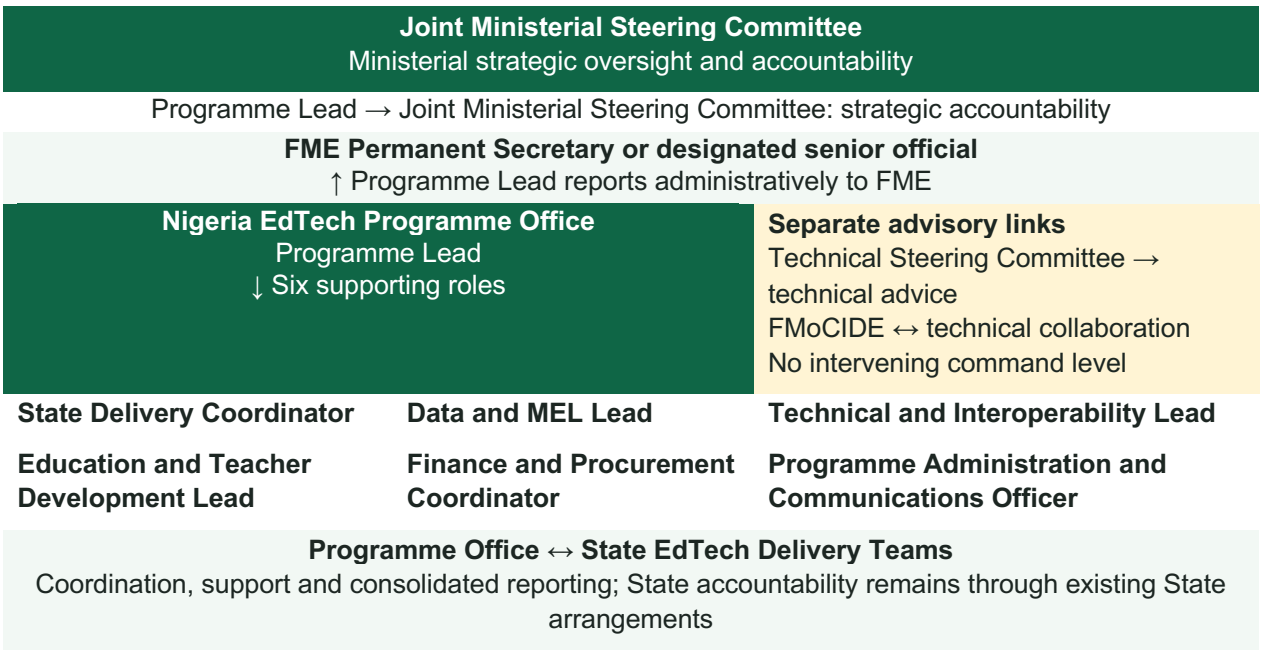


*Table 6.2 — Recommended Programme Office **Seven-Role Core Team***

Role	Core responsibility
Programme Lead	Leads integrated planning, delivery follow-up, risk escalation and committee reporting; maintains cross-pillar priorities and institutional continuity.

State Delivery Coordinator	Supports State plans, LGEA and school coordination, demonstrations and peer learning; resolves delivery dependencies with State focal points.
Data and MEL Lead	Consolidates the six-indicator dashboard, data quality checks, evaluations and the learning agenda; protects cohort and source distinctions.
Technical and Interoperability Lead	Coordinates standards, priority interfaces, infrastructure reliability and technical assurance with system owners and FMoCIDE.
Education and Teacher Development Lead	Connects NTDCF assessment, mentoring, curriculum-aligned content, accessibility, Nigerian-language resources and responsible AI practice.
Finance and Procurement Coordinator	Tracks budgets, releases, commitments and expenditure; supports lifecycle costing, procurement scheduling and contract performance while preserving the statutory responsibilities of accounting officers and procuring entities.
Programme Administration and Communications Officer	Maintains records, action logs, committee logistics, accessible communications and stakeholder feedback.

6.3.3 Operating Arrangements

Use approximately seven core roles as a lean planning recommendation, prioritising secondments and shared FME finance, procurement, legal, HR and ICT services. Draw on specialist safeguarding, accessibility, cybersecurity, engineering, AI and evaluation expertise through time-limited assignments. Federal resources should cover Office operations from inception within the governance allocation in Table 10.1.

The Office should hold weekly internal delivery check-ins, monthly State and institutional follow-up, and quarterly consolidated performance and risk reviews. The Technical Steering Committee should meet quarterly for technical advice; the Joint Committee should review strategy twice yearly and consider urgent escalations as needed. Maintain decision rights, conflicts-of-interest declarations, action owners and deadlines. Publish an accessible annual implementation report with expenditure and delivery evidence, excluding personal and security-sensitive information.

State Teams should build on existing arrangements, with a designated education focal point and participation from SUBEB, State ICT and EMIS functions, teacher development, LGEAs and school leadership. Partner expertise may be invited for defined tasks. State authorities determine staffing within existing institutions rather than creating another programme or parallel secretariat.

6.4 National Transformation

The recommended governance model aligns planning, financing, technical advice and performance management while preserving Federal, State, LGEA and institutional mandates.

NEDI and other approved systems supply verified data for performance reporting. Programme coordination and governance remain with the relevant committees and Nigeria EdTech Programme Office; integration with NTDCF supports monitoring of teacher certification and professional development.

Figure 6.3 — Governance Driven by Data

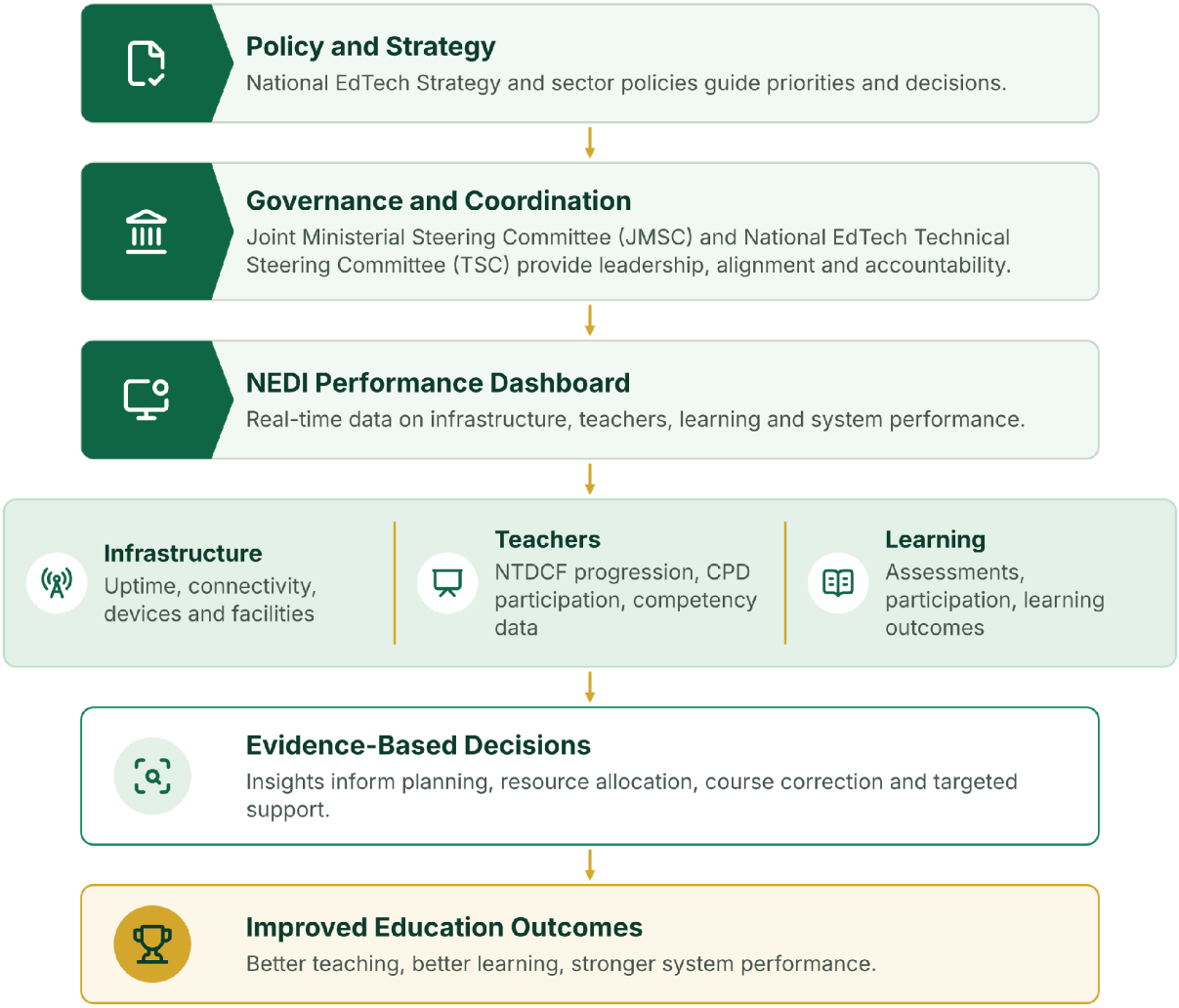
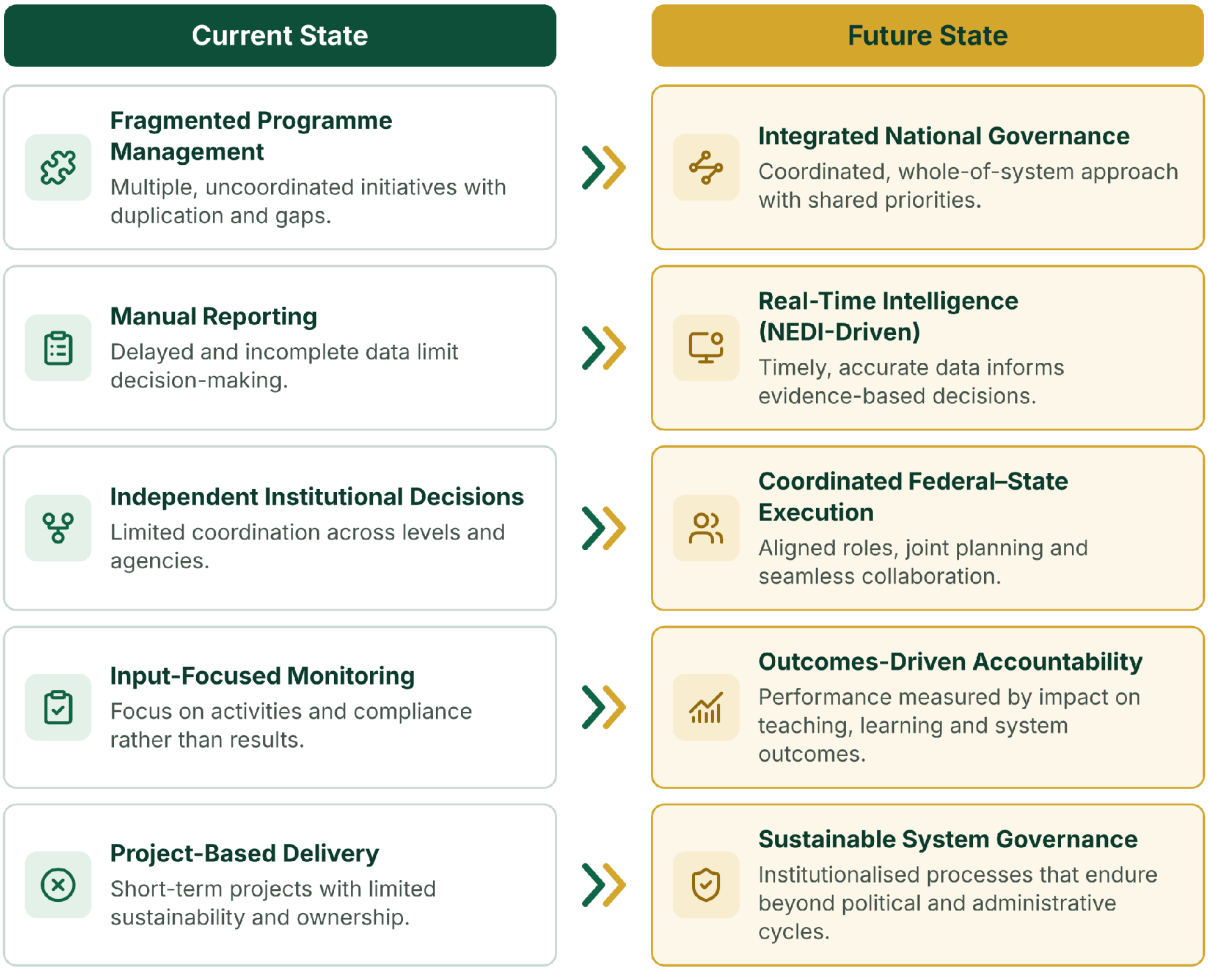


Figure 6.4 — Governance Transformation Framework



6.5 Expected Outcomes

Successful implementation of this Pillar will result in:

- a coordinated national governance architecture that aligns implementation across all levels of government;
- clearly defined institutional roles, responsibilities and accountability mechanisms;
- strengthened collaboration among government, development partners, civil society and the private sector;
- improved monitoring, benchmarking and evidence-based decision-making through NEDI;
- stronger State and Local Government implementation capacity;
- sustainable governance arrangements that support continuous improvement and long-term reform; and
- greater transparency, accountability and public confidence in the delivery of education technology initiatives.

These outcomes provide the institutional foundation for coordinated and sustained implementation.

Implementation Reference

Implementation activities and responsibilities for Pillar Five are set out in Annex 1: Detailed Implementation Plan. Technical standards and operational guidance are provided in Annex 2: Technical Implementation Guide, Section A2.6 (Governance and System Coordination).

7 Monitoring, Evaluation and Learning

7.1 Introduction

Monitoring, evaluation and learning (MEL) links implementation evidence to decisions, accountability and continuous improvement.

The MEL framework measures progress across all five pillars, strengthens accountability and turns implementation evidence into improvements in teaching, learning and system performance.

Supported by the **Nigeria Digital Education Initiative (NEDI)**, the framework enables timely access to reliable data, strengthens collaboration across Federal, State and Local Government institutions and provides decision-makers with the evidence required to improve policy implementation and resource allocation.

7.2 Strategic Intent

The MEL framework measures implementation and education outcomes through a common national performance management cycle.

Monitoring identifies progress and delivery constraints; evaluation examines results; learning informs corrective action and future investment.

Rather than focusing only on activities and outputs, the framework measures progress towards improved education outcomes and responsible stewardship of public resources.

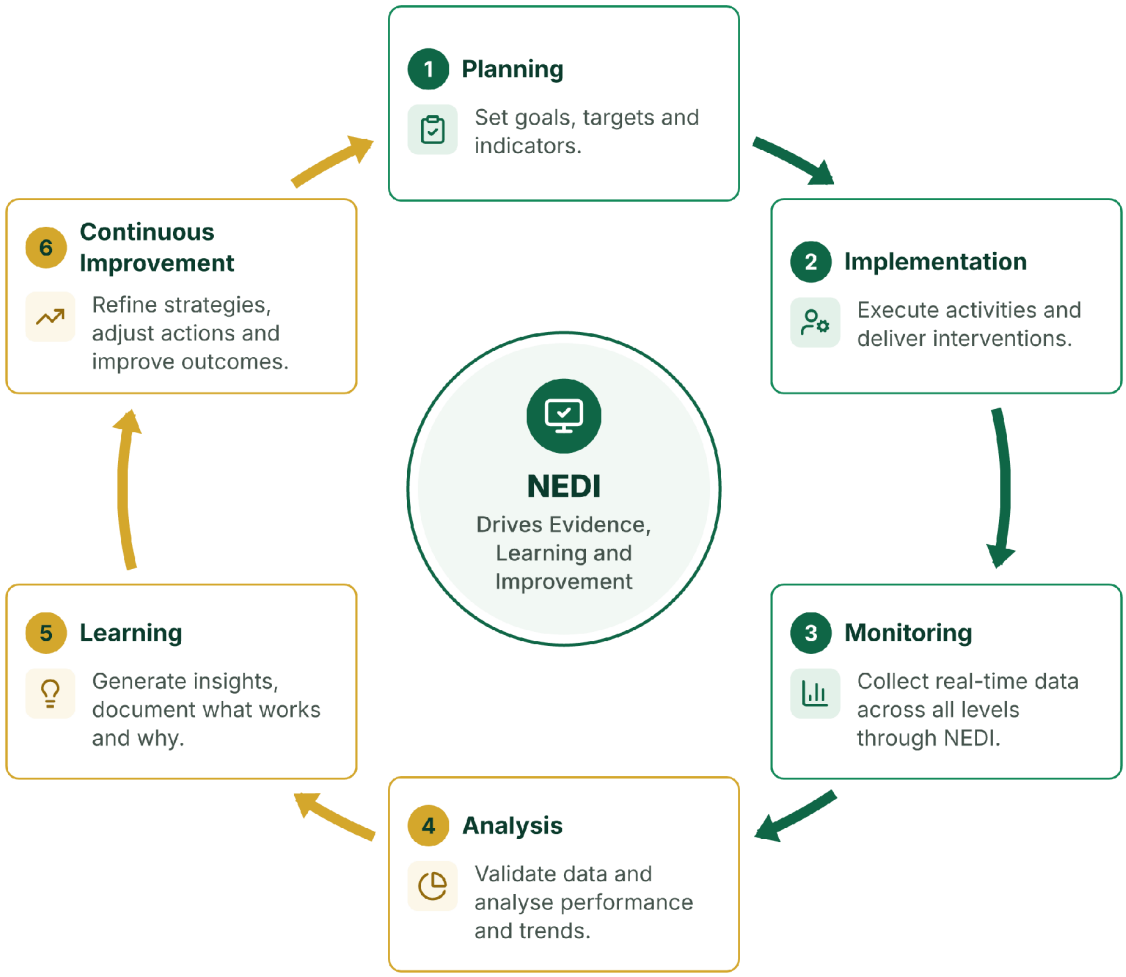
7.3 Why Monitoring, Evaluation and Learning Matters

Reforms involving multiple institutions require timely, comparable information to identify delivery gaps and avoid fragmented implementation.

A common national approach tracks implementation, evaluates outcomes and documents lessons throughout the Strategy.

It also strengthens institutional learning by ensuring that successful practices are identified, shared and scaled while implementation challenges are addressed through timely corrective action.

Figure 7.1 — National Monitoring, Evaluation and Learning Cycle



7.4 Guiding Principles

Implementation of the MEL framework will be guided by the following principles:

- **Evidence-based decision-making** – Decisions are informed by reliable, high-quality data and timely reporting at the frequency appropriate to each dataset.
- **Results orientation** – Performance is measured across inputs, outputs, outcomes and impact.
- **Transparency and accountability** – Progress is communicated through clear reporting, benchmarking and public accountability.
- **Interoperability** – Monitoring systems are integrated through NEDI and aligned with existing education information systems.
- **Continuous learning** – Evidence generated through implementation informs policy refinement and future investment decisions.
- **Equity and inclusion** – Performance measurement considers equitable access and outcomes for all learners.

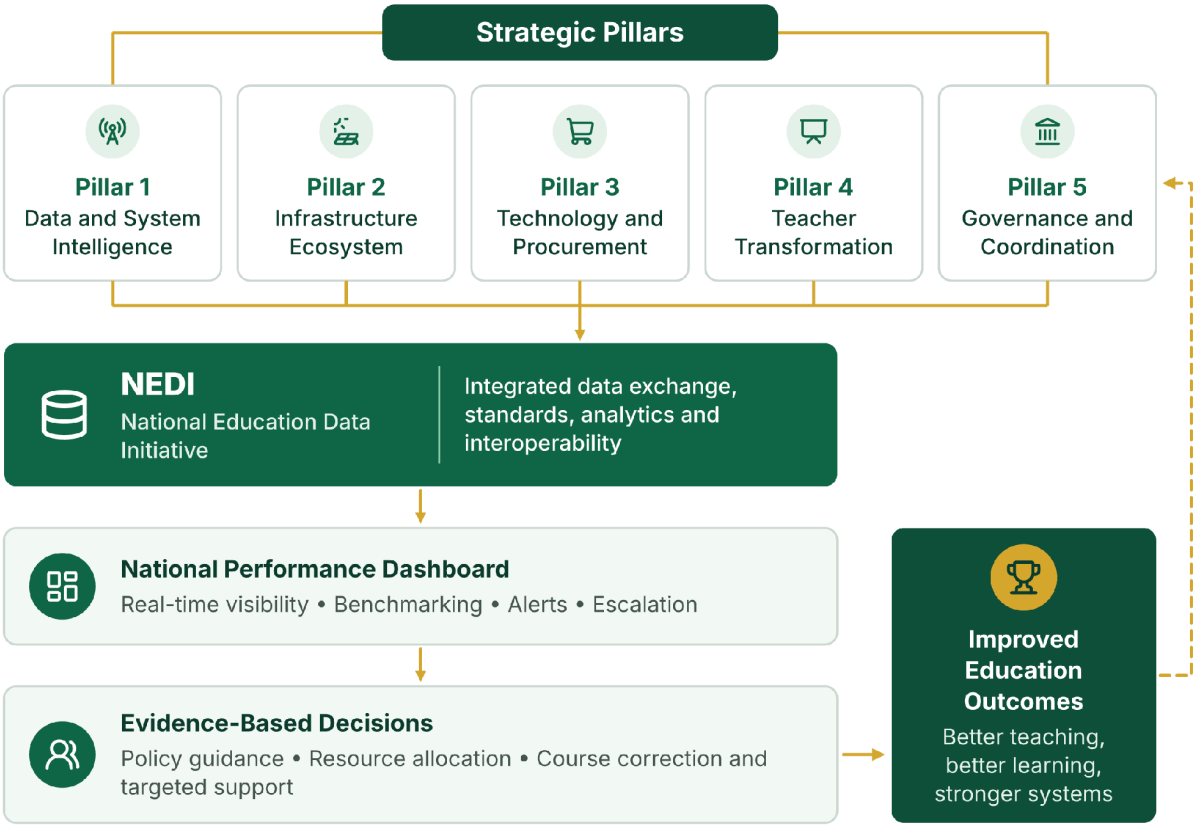
7.5 Monitoring and Evaluation Framework

The MEL framework uses verified data from NEDI and other existing approved information systems under the Strategy-wide interoperability framework. The Programme Office coordinates reporting; responsible institutions retain data ownership and accountability. The framework supports:

- implementation monitoring across all Strategic Pillars;
- education system performance tracking;

- teacher competency monitoring through NTDCF;
- infrastructure and service delivery monitoring;
- financial accountability and resource utilisation;
- learning outcome measurement; and
- continuous policy improvement.

Figure 7.2 — Integrated Performance Framework



7.6 Learning and Knowledge Management

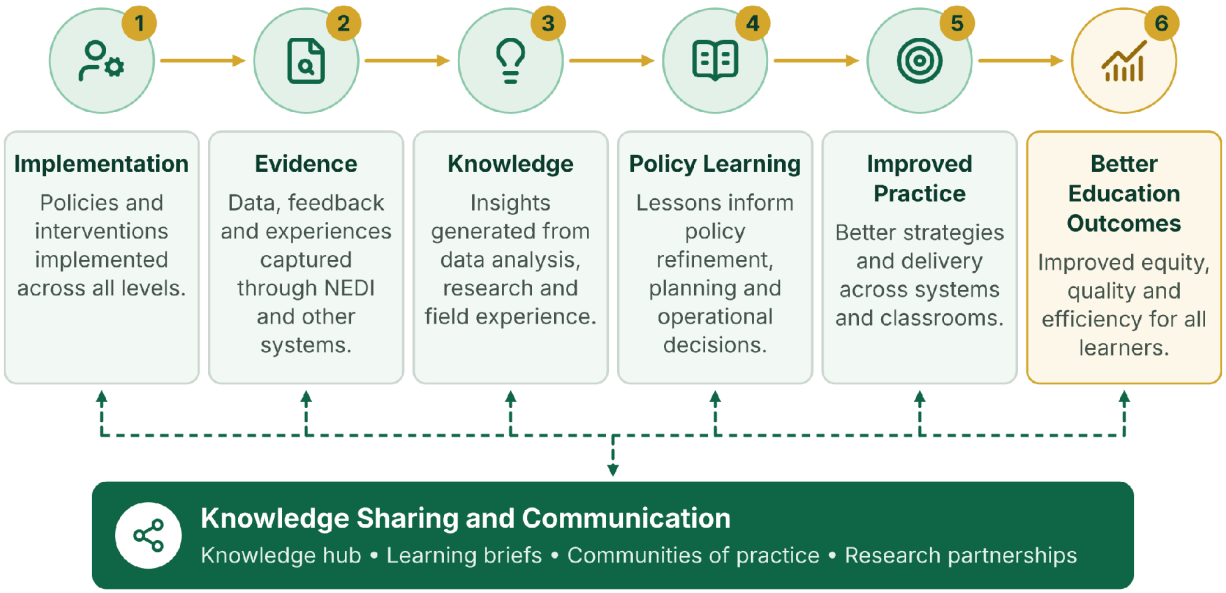
The Strategy promotes continuous learning by capturing implementation experience and translating evidence into improved policy and practice.

Knowledge generated through implementation will support:

- quarterly performance and learning reviews;
- annual national implementation forums;
- knowledge products and policy briefs;
- collaboration among Federal and State Governments;
- partnerships with academia, development partners and the private sector; and
- peer learning with regional and international education systems.

The Programme Office will coordinate knowledge sharing and dissemination with responsible institutions. NEDI will supply approved data and analytical evidence for benchmarking and learning.

Figure 7.3 — Learning and Knowledge Management Cycle



7.7 National Performance Indicators

Consolidate these six indicators quarterly. Report national coverage separately from participating-cohort results, using disclosed denominators and observation dates.

Table 7.1 — Six-indicator headline dashboard

Headline indicator	Definition and measurement	Responsible institution and data source	Reporting frequency and indicative milestone
1. School digital service readiness	Schools meeting minimum power, usable connectivity and functioning-device conditions ÷ schools in the disclosed implementation frame. Conditions support scheduled learning, curriculum access, synchronisation and planned shared-device use. Show component rates, service thresholds and missing data.	FME/UBEC and State Ministries of Education/SUBEBs; ASC/EMIS returns, school asset registers, power and connectivity service logs.	Quarterly consolidation; annual ASC and dated service observations. End-2027: integrated school services in operation for funded demonstration cohorts, with maintenance. 2028: resource-based expansion.

2. Teacher digital competency	Teachers demonstrating a specified NTDCF level through practical tasks, portfolios or classroom observation ÷ all in-scope teachers. Show level and assessment coverage; attendance or course completion alone is insufficient.	TRCN with FME, NTI and State education authorities; existing certification, assessment and professional development records where available.	Annual or termly observations; quarterly consolidation with assessment dates. End-2027: supported competency assessment and mentoring underway for participating teachers. 2028: extend supported delivery.
3. Active learner participation	Unique eligible learners completing at least one curriculum-aligned digital or supported offline activity in the term ÷ eligible learners in participating education arrangements. Deduplicate; show activity intensity separately.	State education authorities, LGEAs and schools; enrolment and attendance registers, classroom activity records and available platform logs.	Termly observations; quarterly consolidation with term dates. First full school year: curriculum-aligned activities underway for participating learners, with digital/offline participation and exclusion gaps recorded.
4. Priority-system interoperability	Functioning priority interfaces ÷ interfaces scheduled for completion to date in the annual plan. Accepted tests and operational logs must demonstrate secure, usable exchange; an API specification alone is insufficient.	FME/NEDI with FMoCIDE and responsible system owners; annual plans, interface registers, acceptance tests and exchange logs.	Quarterly operational evidence. End-2027: scheduled foundation interfaces functioning within funded plans. 2028: extend priority interfaces across participating systems.
5. Budget execution	Actual expenditure ÷ full annual implementation budget × 100. Show appropriations, releases, commitments, expenditure and variances separately. Distinguish Federal and State budgets; count transfers once.	FME and State accounting/finance authorities; existing budget schedules, release warrants, ledgers and reconciled financial returns.	Quarterly, year-to-date. From mobilisation: funded delivery and quarterly reconciliation under public finance rules; explain variances against the full annual budget.
6. Learning improvement	Change in mean score or stated proficiency rate on comparable assessments. Disclose cohort, sample, subject, grade, dates, attrition and uncertainty. Observed change is not automatically attributable to technology.	FME and State assessment authorities with NERDC and relevant assessment bodies; existing comparable assessment files and school assessment records where suitable.	Annual or termly assessment; quarterly consolidation with observation dates. First full school year: comparable starting and end-year observations for participating cohorts. No predetermined gain.

Table 7.1 is the authoritative definition, responsibility, source and frequency reference for all headline reporting templates. Record observation dates, numerator, denominator, coverage, missing data and any denominator changes. Report unavailable baselines as “not measured”, not zero. Consolidate quarterly while retaining dated annual or termly observations. National rates use a disclosed national frame; participating-cohort results must not be presented as national coverage. Supporting operational measures are in Section A2.7.

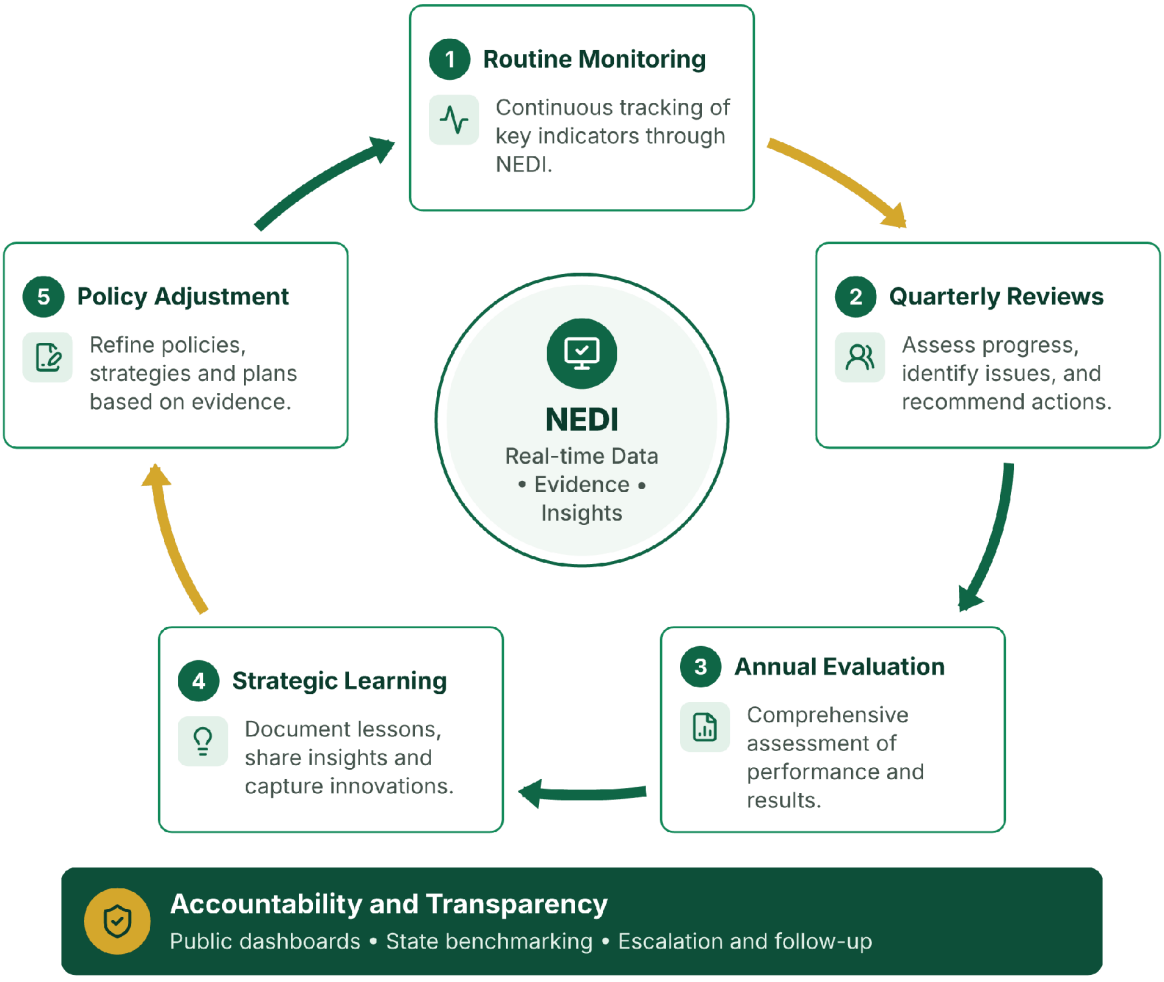
7.8 Performance Reviews and Evaluation

Implementation progress will be reviewed through a structured national performance management process comprising:

- routine implementation monitoring;
- periodic performance reviews;
- independent evaluations;
- strategic learning reviews; and
- end-of-cycle evaluation.

These reviews will support adaptive implementation by identifying emerging risks, documenting lessons learned and informing future policy and investment decisions.

Figure 7.4 — National Performance Review Cycle



Implementation Reference

Detailed monitoring and evaluation methodologies, indicator definitions and reporting templates are provided in Annex 2: Technical Implementation Guide, Section A2.7 (Monitoring, Evaluation and Learning).

8 Future Capability: Responsible Use of Artificial Intelligence and Emerging Technologies in Education

8.1 Introduction

AI, advanced analytics, immersive technologies and adaptive learning systems may support personalised learning, teacher effectiveness, education planning and research. Indigenous innovation can develop applications suited to Nigerian curricula, languages and institutional needs.

Adoption presents risks relating to data privacy, child protection, digital exclusion, algorithmic bias, misinformation, cybersecurity, academic integrity and overdependence on automated systems. Integration shall therefore be governed to ensure that technology strengthens educational quality and human capability.

Adoption will be phased, inclusive and evidence-based. AI literacy, teacher development, research and controlled pilots may begin where readiness and safeguards permit. Advanced applications require stronger institutional capacity and demonstrated educational value; they build on, rather than substitute for, foundational education systems.

8.2 Strategic Intent

The Strategy seeks to promote responsible, secure and inclusive adoption of AI and other emerging technologies across teaching, learning, administration, research and innovation, while safeguarding privacy, educational integrity and public trust. AI shall complement human capability, empower teachers and strengthen learners' critical thinking and independent problem-solving.

Implementation shall align with national education priorities, applicable legislation, NEDI, NTDCF and existing governance arrangements. AI remains an enabling capability, not a separate pillar or parallel delivery structure.

Three interconnected priorities guide implementation:

i. **Strengthen AI research and innovation:** promote indigenous research, multilingual educational models and locally relevant applications.
ii. **Empower teachers and institutions:** develop the competencies needed to evaluate and responsibly use AI in instruction, assessment, professional development and management.
iii. **Prepare learners for an AI-enabled future:** strengthen AI literacy, mathematics and science, computational thinking, creativity, digital citizenship and independent reasoning.

8.3 Strategic Priorities

The Strategy will:

- Promote responsible AI and emerging technologies that support teachers, learners, researchers and administrators.
- Strengthen AI literacy and foundational competencies while preserving independent reasoning and assessment integrity.
- Integrate AI competencies into existing teacher professional development frameworks.
- Encourage indigenous research, multilingual educational models and locally relevant innovation.
- Use AI-enabled analytics responsibly to support education planning and decision-making.
- Prioritise affordable, accessible, low-bandwidth and offline-capable solutions.
- Establish safeguards for privacy, child protection, cybersecurity, transparency and human oversight.
- Adopt carefully governed pilots and scale only where evidence and readiness justify expansion.
- Align implementation with NEDI, NTDCF and existing national delivery structures.

8.3.1 AI Literacy, Curriculum Integration and Assessment

The Federal Ministry of Education shall work with relevant curriculum agencies, examination bodies and educational institutions to progressively integrate AI literacy into approved programmes. Foundational learning shall cover age-appropriate AI awareness, responsible technology use, digital citizenship, online safety and verification of AI-generated information. Higher-level programmes may introduce data literacy, computational thinking, ethical analysis and practical AI-assisted problem-solving.

Mathematics, science, statistics, logic and independent reasoning remain essential foundations. Assessment guidance shall distinguish activities that permit AI assistance from those requiring independent competence. Practical demonstrations, supervised assessments and project-based learning shall help verify learner understanding.

8.3.2 Teacher Professional Development and Institutional Capacity

AI competencies shall be integrated into existing teacher professional development arrangements, particularly NTDCF. Capacity development shall address responsible use, lesson planning, verification of generated content, differentiated learning, formative assessment, data interpretation and educational leadership.

Progressive competency pathways may be developed and validated with relevant teacher education and professional regulatory institutions. Delivery shall use approved platforms, blended learning, school-based mentoring and peer learning. School-based AI champions may support continuing development where appropriate. Teachers retain responsibility for instructional decisions and shall verify accuracy, appropriateness and curriculum relevance before using AI-generated materials.

8.3.3 Indigenous AI Research, Models and Innovation

The Strategy shall encourage collaboration among universities, research institutions, government agencies, innovators, development partners and the private sector to develop curriculum-aligned applications, multilingual resources and locally relevant learning tools. Research shall support the development and adaptation of educational AI models for Nigerian curricula and languages.

A Nigerian Education AI Benchmark may be considered to evaluate curriculum accuracy, subject competence, language relevance, accessibility, safety and instructional usefulness. Supervised research apprenticeships, practical innovation projects and shared research infrastructure may also be supported. Proposed models and applications shall undergo technical, educational, legal and financial evaluation before wider adoption.

8.3.4 Education Data and AI-Enabled Decision Support

AI-enabled education analytics shall be anchored on NEDI and other approved education management information systems within the Strategy-wide interoperability framework. Tools may support analysis of learning gaps, attendance patterns, resource distribution, forecasting and targeted interventions.

Applications shall comply with approved data governance arrangements, including data quality standards, lawful processing, access restrictions, cybersecurity and audit mechanisms. AI analytics shall provide decision support and shall not independently determine consequential outcomes affecting learners, teachers or institutions.

8.3.5 Infrastructure, Connectivity and Inclusive Access

Implementation shall leverage existing national digital education infrastructure, approved learning platforms and connectivity initiatives. Priority shall be given to mobile-first, low-bandwidth and offline-capable resources, assistive technologies and affordable access models suited to underserved communities.

Secure hosting, sustainable computing resources, connectivity and technical support shall underpin AI-enabled services. Adoption shall not create additional barriers for institutions or learners without commercial AI services or advanced infrastructure.

8.3.6 Responsible AI Governance, Ethics and Safeguards

Standards and operational guidance should address privacy, child protection, cybersecurity, algorithmic bias, transparency, accountability, academic integrity, responsible procurement and human oversight. Educational AI systems should undergo proportionate risk assessment and technical evaluation before deployment, with documented safeguards and accountable institutional oversight.

High-impact decisions—including admission, progression, discipline, welfare and eligibility—shall remain subject to human judgement and review. Governance shall encourage innovation while protecting learners, teachers and institutions from foreseeable risks.

Identifiable learner data must not be entered into public AI tools. Education data must not be reused for advertising or commercial model training outside explicitly governed, lawful arrangements. Contracts should specify permitted purposes, retention, access, transfers, deletion and remedies for misuse. Teachers retain professional judgement; consequential educational decisions retain accountable human responsibility and accessible routes for challenge and correction. AI use must be age-appropriate and support independent reasoning rather than replace it.

8.3.7 Phased Adoption and Demonstration Pilots

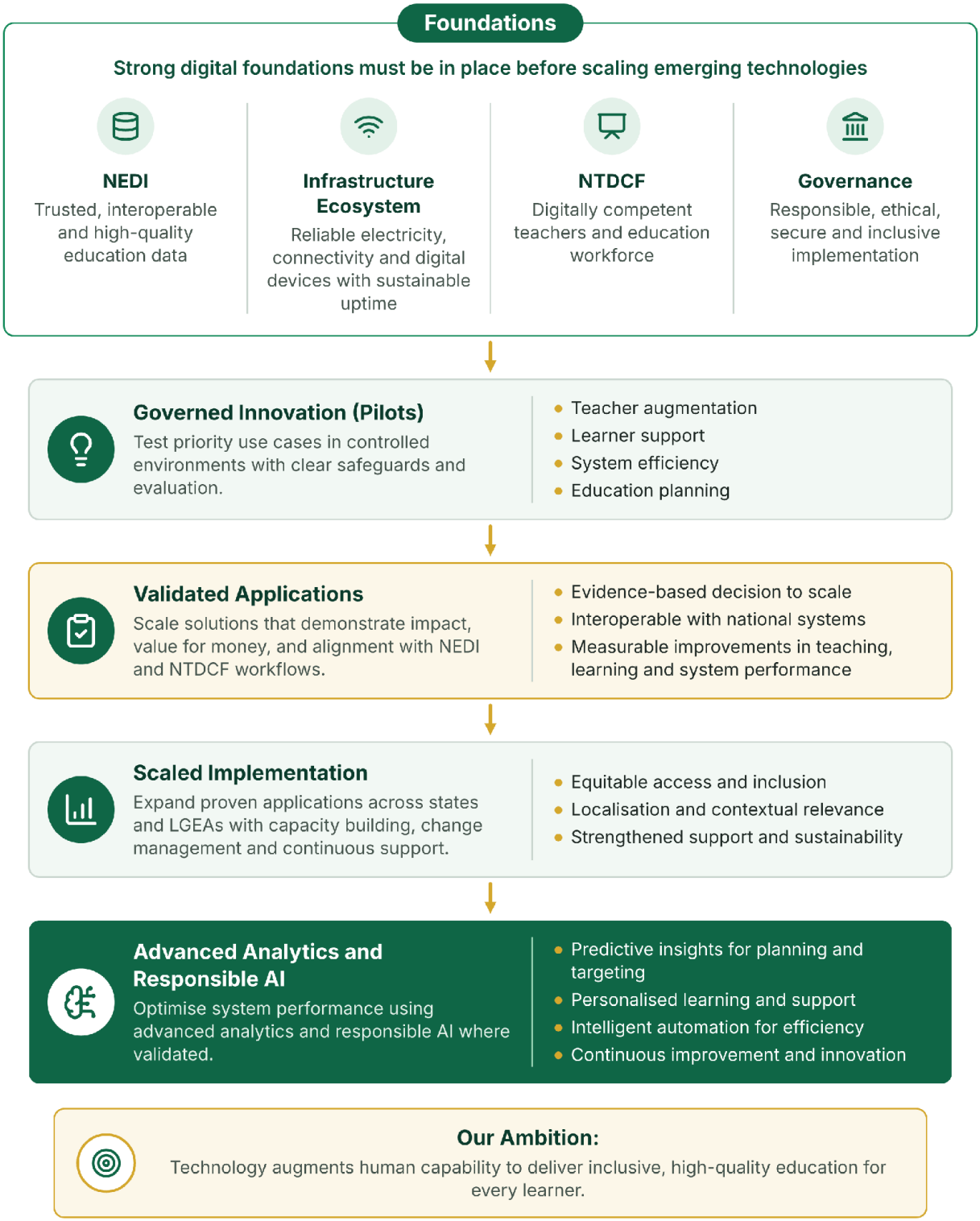
Align AI adoption with mobilisation and foundation in late 2026–2027, scale-up in 2028, and optimisation and sustainability in 2029–2030. Phases may overlap according to readiness. Begin with AI literacy, supported teacher development, research and controlled demonstrations; extend delivery where evidence, affordability and safeguards justify it. Advanced applications require appropriate institutional capacity and accountable human oversight.

Pilots may address AI literacy, mathematics, teacher development and responsible education analytics. Define objectives, safeguards, monitoring and evaluation criteria for each activity. Extend delivery according to demonstrated educational value, affordability and institutional readiness.

Table 8.1 — Foundational Readiness for** Artificial Intelligence and **Emerging Technologies

Foundational requirement	Strategic consideration
Education data and interoperability	Reliable, secure and interoperable education data anchored on NEDI and approved systems
Digital infrastructure	Appropriate power, connectivity, devices, computing resources and accessible platforms
Teacher capacity	NTDCF-aligned digital and AI competencies for responsible instructional use
Curriculum and learning	Age-appropriate AI literacy, strong foundational skills and assessment integrity
Research and innovation	Indigenous research, curriculum-aligned models and educational AI evaluation
Governance and safeguards	Privacy, child protection, transparency, cybersecurity, accountability and human oversight
Institutional readiness	Evidence-based pilots, technical evaluation, sustainable financing and implementation capacity

Figure 8.1 — Progressive Adoption Pathway for Emerging Technologies in Education



8.4 National Ambition

Nigeria's long-term ambition is an education ecosystem in which AI and emerging technologies complement human capability, improve educational quality and system performance, and expand learning opportunities for every learner. Nigerian learners shall develop the knowledge, creativity, responsibility

and independent reasoning needed to contribute to national development rather than merely consume AI-generated information.

As digital foundations mature, validated applications may progressively support personalised learning, teacher development, education planning, predictive analytics, indigenous innovation and service delivery. Teachers remain central, with their professional judgement and human relationships preserved. Nigeria shall strengthen its capacity to research, develop, evaluate and responsibly deploy solutions reflecting national curricula, languages and priorities. Success shall be measured by demonstrated improvements in learning outcomes, teacher effectiveness, inclusion, institutional performance and learner independence.

Implementation Reference

Annex 2, Section A2.8 provides operational AI safeguards and assurance guidance. Annex 1, Section A1.3 connects responsible AI actions with the integrated State demonstration plans and the late 2026–2030 roadmap.

9 Implementation Roadmap (2026–2030)

9.1 Introduction

Implementation will build foundational services, expand delivery through participating cohorts and sustain functioning systems. Federal–State collaboration, supported by partners and the private sector, is central to this phased approach.

The detailed implementation plan, sequencing, timelines and institutional responsibilities are provided in **Annex 1**.

9.2 Implementation Approach

The three phases below align delivery priorities with institutional readiness, available resources and evidence from implementation.

Phase I — late 2026–2027: mobilisation and foundation

The first phase establishes governance arrangements, NTDCF and priority infrastructure while strengthening the already-deployed NEDI and its ongoing data collection, priority interfaces and reporting. AI literacy, teacher development, indigenous research and controlled pilots may begin progressively where institutional readiness and safeguards permit, as set out in Chapter 8.

Phase II — 2028: scale-up

Use delivery evidence to extend implementation through Federal–State collaboration, priority interfaces, supported teacher development and affordable infrastructure packages. National expansion remains cohort-based within available resources.

Phase III — 2029–2030: optimisation and sustainability

The final phase focuses on continuous improvement and the responsible adoption of advanced analytics and emerging technologies.

Figure 9.1 — National Implementation Pathway *— Phase I strengthens the already-deployed NEDI and ongoing data collection; subsequent phases extend integration and optimise services within available resources.*



9.3 National Delivery Model

Delivery uses the recommended arrangements in Section 6.3. The Programme Office coordinates cross-pillar workplans and reporting; State EdTech Delivery Teams coordinate implementation through existing State institutions, LGEAs and schools.

9.3.1 Integrated State Demonstrations

Begin with a recommended six-State demonstration cohort, one State per geopolitical zone. This cohort size is a planning recommendation, not a record of State selection. Balance commitment, delivery

capacity and existing infrastructure with equity and the needs of underserved populations. Provide targeted planning, technical and school-support assistance so that lower-capacity States are not systematically excluded; readiness determines the support package rather than eligibility alone.

Each participating State should use one integrated delivery plan covering power, connectivity, devices and maintenance; NTDCF-aligned teacher development and classroom support; curriculum-aligned Nigerian-language and accessible content; education data and priority interfaces; responsible AI where appropriate; and financing, safeguarding and the six-indicator dashboard. State Teams deliver through existing institutions, LGEAs and schools, without a separate programme or governance structure.

Use the first full school year to examine adoption and sustained participation, comparable learning observations, inclusion, teacher workload, service reliability and lifecycle cost. The learning agenda should compare online and supported offline delivery, identify which support packages enable classroom use, examine who remains excluded, and assess the recurring cost per functioning service and participating learner. Use proportionate mixed-method evidence and disclose cohorts, assessment comparability and limitations.

The Programme Office should compile a national implementation playbook after that school year and update it annually. It should document deployment quantities, unit and recurrent costs, delivery and maintenance models, procurement options, teacher support, accessible and Nigerian-language content, safeguarding, lessons and adaptations for wider rollout. Expansion should use demonstrated feasibility, education evidence and available public resources rather than assume universal coverage.

9.4 Policy Enablers

Implementation will be supported by complementary policy measures that encourage adoption and strengthen accountability, including aligning teacher digital competency with professional standards and creating an enabling environment for private sector participation.

Implementation Reference

The detailed implementation roadmap, including milestones, financing arrangements and risk management, is provided in Annex 1: Detailed Implementation Plan.

10 Financing Strategy

10.1 Introduction

Digital education requires predictable capital and recurrent financing. The financing strategy aligns resource mobilisation, expenditure management and lifecycle provision with phased delivery and national ownership.

Prioritise integrated foundations, extend affordable delivery through participating cohorts and sustain recurrent services.

Federal and State government resources should anchor implementation and recurrent costs from inception, including Programme Office operations. Development partner support and appropriate private participation should complement public financing through technical assistance, innovation and service delivery. Integrate capital, maintenance, subscriptions, replacement and support into public planning and budgets; disclose contractual payments, guarantees and contingent liabilities. Institutional financing remains within statutory mandates and applicable budget and procurement rules.

10.2 Indicative Priority Investment Envelope (2026–2030)

The indicative priority investment envelope is US$225 million for late 2026–2030, supporting phased delivery across participating cohorts.

Table 10.1 allocates the indicative envelope by component and financing period. Affordable coverage depends on validated lifecycle unit costs and the delivery package.

*Table 10.1 — Indicative **Priority Investment Envelope** by **Component** and **Financing Period** (US$ million)*

Component	Late 2026–2027	2028	2029–2030	Total
Federal infrastructure and data systems, including NEDI and EMIS modernisation	18	10	7	35
State and LGEA capacity building	12	10	8	30
Power infrastructure	22	18	10	50
Connectivity infrastructure	20	18	7	45
Devices and lifecycle management	12	14	9	35
Teacher training and EdTech	7	8	5	20
Governance, monitoring and coordination, including Programme Office operations	4	3	3	10
Total	95	81	49	225

10.2.1 Costing Assumptions and Recurrent Provision

Annual implementation budgets should specify participating cohorts, deployable quantities, price dates and lifecycle unit costs for power, connectivity, shared devices, content and teacher support within each component allocation. Coverage will reflect available resources, delivery capacity and lifecycle costs.

Lifecycle estimates include deployment, maintenance, subscriptions, accessible content, replacement, secure disposal and technical support over the planned service period. Programme Office operations fall within the existing US$10 million governance, monitoring and coordination allocation, not an additional budget. Assign maintenance and any contingency provision once to the relevant component; do not add them again as general overheads.

Record capital and recurrent costs separately within each allocation, including obligations beyond 2030. Use dated market benchmarks and update annual budgets for inflation and naira–US dollar exposure. Stagger imported purchases and assess local repair and support. Price or service-standard changes affect affordable quantities within the US$225 million envelope.

Federal infrastructure and data systems include NEDI, EMIS modernisation, secure hosting, interfaces and dashboards. Devices and lifecycle management cover acquisition or service delivery, repair, replacement and secure disposal. Teacher training and EdTech include NTDCF, TPDP, curriculum content and appropriate AI support. Maintenance and subscriptions are included within the relevant components, not additional allocations.

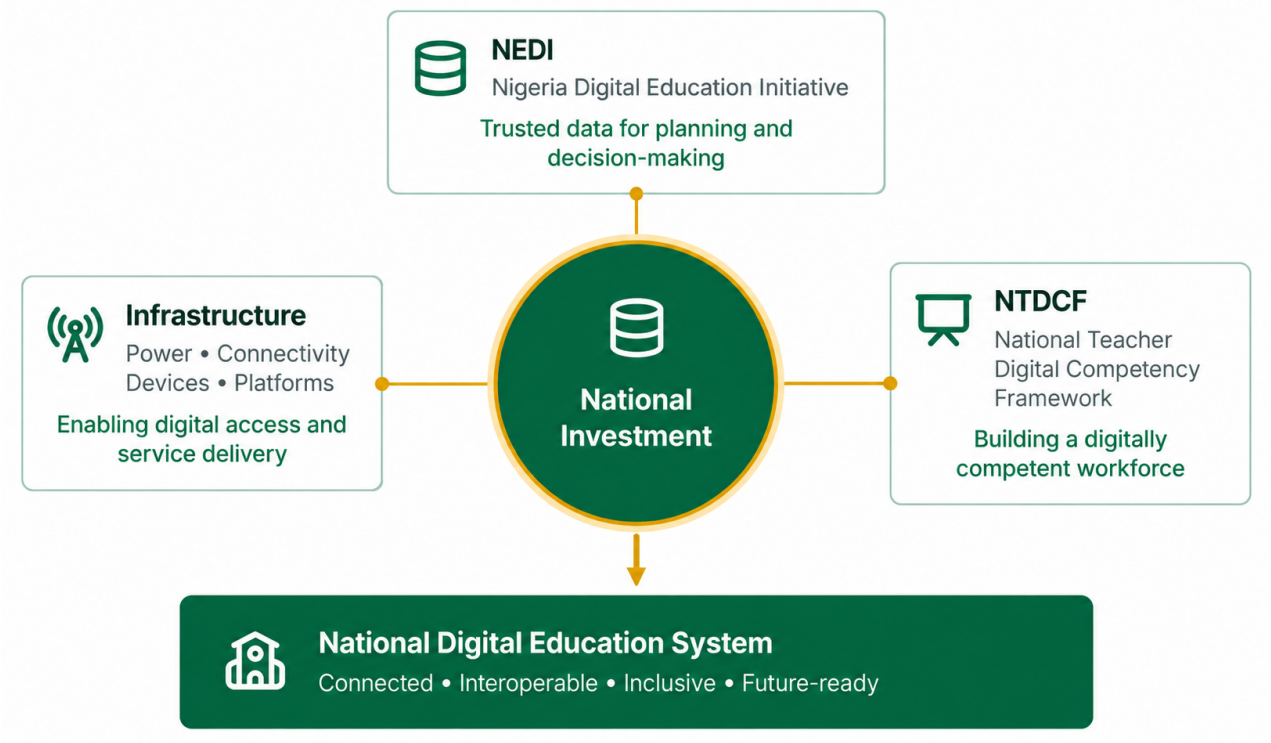
Financing Profile:

The financing periods in Table 10.1 align with the roadmap's foundation, scale-up and sustainability phases. They may overlap according to readiness, school calendars and procurement schedules.

Strategic Principle:

Public resources anchor capital and recurrent delivery from inception; investments should sustain functioning education services rather than count equipment purchases alone.

Figure 10.1 — Strategic Investment Priorities



10.3 Multi-Source Financing Model

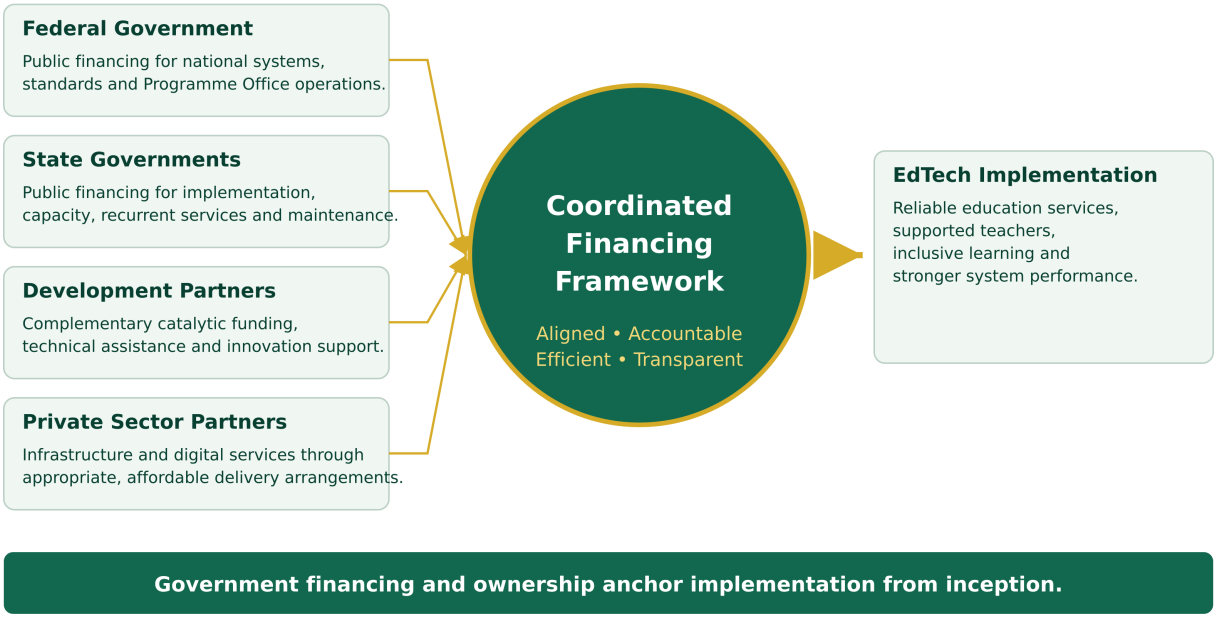
Coordinate complementary financing against integrated Federal and State implementation plans, without establishing a new pooled fund.

Select public procurement, leasing, managed services or PPP arrangements according to affordability, value for money, delivery capacity and manageable fiscal risk. PPPs do not remove government payment obligations; disclose service payments, guarantees, contingent liabilities and termination exposure. Device-as-a-Service is an option, not a default.

*Table 10.2 — Coordinated **Financing** and **Delivery Options***

Investment area	Public financing anchor and complementary support
National data systems and platforms	Federal resources; partner technical assistance and appropriate innovation support
Teacher development and content	Federal and State resources; relevant statutory agency support within mandates
Power, connectivity and devices	Federal and State resources; procurement, leasing, managed services or affordable PPP delivery
Operations, maintenance and replacement	Public recurrent budgets from inception; contract payments remain government obligations
Programme Office and MEL	Federal resources within the governance allocation; shared services and secondments where practical

Figure 10.2 — Blended Financing Framework



NEDI supports performance evidence; the Programme Office coordinates reporting and follow-up.

10.4 Strategic Financing Principles

Implementation of the Strategy will be guided by the following principles:

- National ownership: Federal and State resources anchor implementation and recurrent costs from inception.
- **Performance-based financing**, linking investment to measurable results.
- **Value for money**, through interoperable systems and coordinated procurement.
- **Blended financing**, leveraging complementary public and private investment.
- **Sustainability**, through lifecycle funding and long-term operations and maintenance.
- **Accountability**, supported by NEDI-enabled monitoring and financial transparency.

10.5 Sustainability

Sustainability requires digital education to be embedded in public planning and recurrent budgets, supported by local implementation capacity and appropriate private participation.

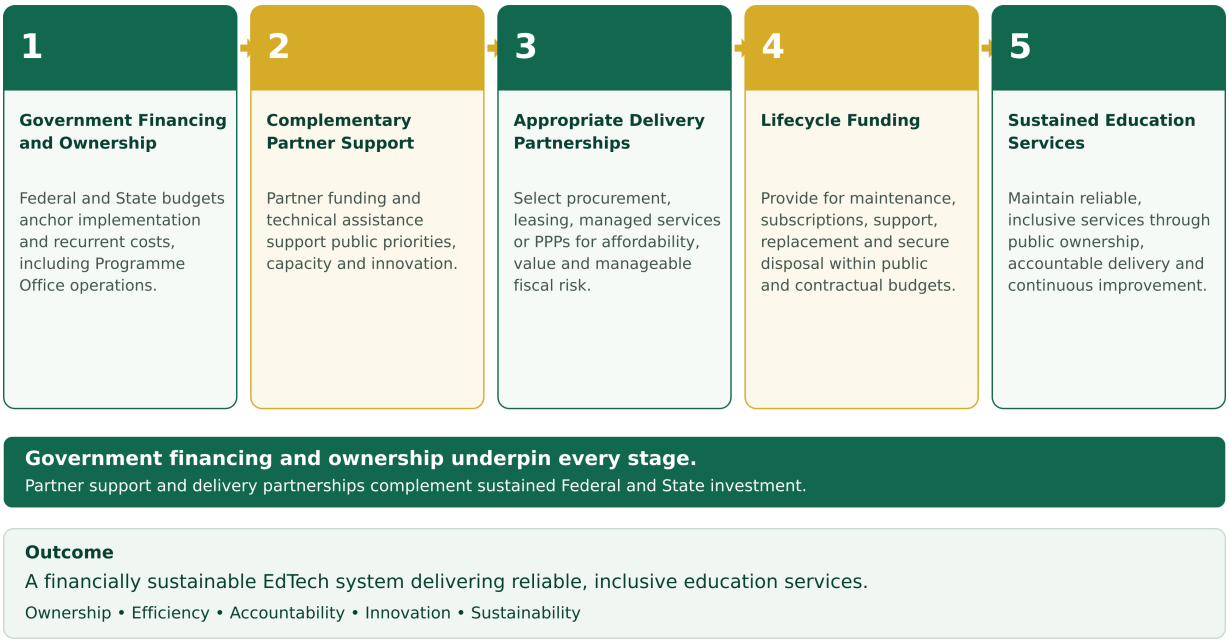
The Strategy therefore promotes:

- dedicated Federal and State budget lines for digital education;
- performance-based funding linked to measurable outcomes;
- sustainable Public–Private Partnership models;
- strengthened local digital and EdTech markets; and
- continuous investment in national capacity, innovation and system maintenance.

Sustain services through recurrent budgets, local delivery capacity and funded maintenance and replacement.

Figure 10.3 — Pathway to Financial Sustainability

Figure 10.3 Pathway to Financial Sustainability



10.6 Expected Outcome

Successful implementation of the financing strategy will establish a financially sustainable digital education system characterised by:

- predictable and coordinated investment;
- stronger Federal and State ownership;
- increased private sector participation;
- efficient, performance-based resource allocation;
- improved value for money; and
- long-term sustainability of national digital education systems.

Collectively, these measures ensure that investment in **NEDI**, **NTDCF** and digital infrastructure continues to deliver measurable improvements in teaching and learning.

Implementation Reference

Table 10.1 is the authoritative component and period allocation. Annex 1, Section A1.7 and Annex 2, Section A2.9 provide implementation guidance without additional investment allocations.

11 Risk Management and Mitigation

11.1 Strategic Risks

Implementation carries risk across five categories, summarised below. The full risk register — with likelihood and impact ratings and detailed mitigation actions for each risk — is provided in Annex 1.

Political and governance risk. Changes in leadership or uneven commitment can slow delivery. Maintain cross-institutional records, clear State responsibilities and a rollout that balances readiness with equity, including targeted lower-capacity support.

Technical and operational risk. Address poor data quality, delivery delays and unsuitable technology through validation at collection or exchange, diversified suppliers, open standards and lifecycle procurement.

Capacity and human resources risk. A shortage of skilled personnel and uneven teacher adoption could limit impact. This is managed through sustained capacity-building, teacher champions and clear professional career pathways.

Financial and sustainability risk. Delayed public releases, unfunded recurrent commitments, cost escalation and partner shortfalls can disrupt delivery. Anchor operations in Federal and State budgets from inception, phase commitments within fiscal capacity, and track inflation, exchange-rate exposure and lifecycle costs. Partner support remains complementary.

External and environmental risk. Security challenges, natural disasters or macroeconomic shocks could disrupt delivery in some areas. This is managed through flexible, remote-capable delivery models and climate-resilient infrastructure standards.

11.2 Mitigation Implementation

Governance Mechanisms

- **Quarterly Risk Reviews**: the Programme Office coordinates reviews of emerging implementation, financing, security and data risks, using evidence from NEDI and other approved systems and escalating corrective actions through the relevant governance arrangements.
- **State-Level Risk Officers**: designated officials within State implementation structures monitor state-specific risks, escalate red flags, and coordinate mitigation responses.
- **Contingency Planning**: alternative implementation approaches documented in advance for high-impact risks, including low-connectivity environments, delayed identity integration, and vendor failure scenarios.
- **Insurance and Guarantees**: appropriate risk-transfer mechanisms adopted for insurable infrastructure, service continuity, and contract performance.
- **Pilot-Learn-Scale Approach**: test reforms in controlled environments before national rollout, especially for NIMC integration, device service models, and digital assessments.
- Operational monitoring: use real-time alerts for continuously monitored service uptime and security events; report procurement, training and data quality at their appropriate observation frequencies.
- **Mid-Course Corrections**: annual strategy reviews authorise reallocation of resources, adjustment of timelines, and redesign of low-performing interventions.
- Learning agenda: document adoption, comparable learning evidence, inclusion, teacher workload, service reliability and lifecycle costs to inform annual plans and the next delivery phase.

12 Expected Outcomes and Impact

12.1 Introduction

The National EdTech Strategy is designed to deliver measurable improvements in education governance, teaching, learning and service delivery by strengthening the foundations of Nigeria's digital education system.

The Strategy adopts a phased results pathway, recognising that sustainable transformation depends on establishing strong system foundations before scaling implementation and achieving long-term impact.

12.2 Expected Outcomes

The following are intended outcomes, not achieved results. Delivery depends on participating cohorts, implementation quality and available resources; learning gains are measured rather than predetermined.

Short-Term Outcomes

System Foundations

- National governance arrangements operational.
- NEDI's ongoing data collection, secure exchange and reporting strengthened on the existing deployed backbone.
- Priority education datasets digitised and interoperable.
- Initial deployment of reliable school infrastructure.
- NTDCF institutionalised as the national teacher competency framework.
- Strengthened Federal–State coordination and accountability.

Medium-Term Outcomes

System Integration and Scale

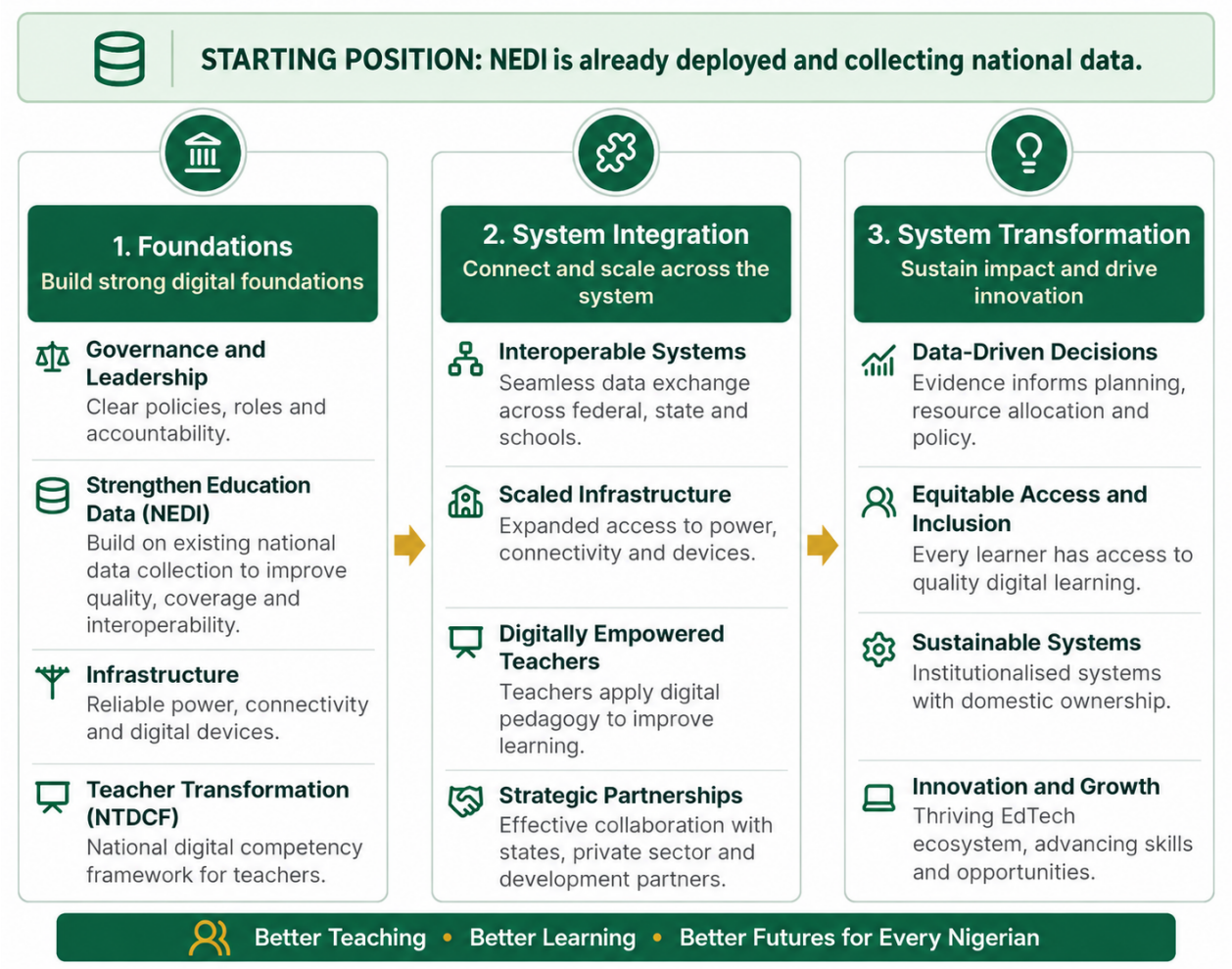
- Priority education systems exchange trusted data and provide timely reporting.
- Reliable digital infrastructure available to participating school cohorts within funded delivery plans.
- Teachers applying digital pedagogy in classroom practice.
- Improved interoperability across education platforms.
- Performance-based service delivery and stronger private sector participation.
- Greater efficiency in planning, financing and resource allocation.

Long-Term Outcomes

System Transformation

- A fully integrated and data-driven education system.
- Equitable access to quality digital learning opportunities.
- Digitally empowered teachers delivering improved learning outcomes.
- Sustainable national ownership of digital education systems.
- A vibrant Nigerian EdTech ecosystem supporting innovation and economic growth.
- Nigeria recognised as a continental leader in digital education transformation.

Figure 12.1 — National Transformation Pathway *— NEDI's deployment and ongoing data collection form part of the existing foundation; stronger exchange, coverage and reporting are intended improvements, not achieved results.*



These intended gains can strengthen transparent planning, education accountability and national innovation, provided that institutions sustain effective delivery and use evidence to adapt implementation.

Table 12.1 — Transformation Outcomes

Current State	Future State
Fragmented education systems	Integrated national digital ecosystem
Delayed education data	Dated performance information
Uneven infrastructure	Equitable digital access
Isolated teacher training	Continuous professional learning
Project-based implementation	Coordinated national delivery
Limited accountability	Performance-driven governance

12.3 Theory of Change

The five pillars connect investment to reliable services, usable curriculum resources, supported teachers and accountable institutions. These conditions can improve participation, classroom practice and learning.

Equity and inclusion underpin delivery; domestic financing sustains it; responsible AI provides an additional enabling capability. Results depend on implementation quality and context and must be tested through MEL.

The theory of change explicitly links all five pillars:

- **Data and Interoperability:** trusted records support planning and targeted services.
- **Infrastructure Ecosystem:** reliable power, usable connectivity and functioning devices enable learning.
- **Technology and Procurement:** educationally useful, accessible and interoperable solutions offer sustainable lifecycle value.
- **Teacher Transformation:** demonstrated NTDCF competency and classroom support strengthen pedagogy.
- **Governance and System Coordination:** clear responsibilities, domestic budgets and delivery follow-up sustain implementation.

Together, the five pillars connect investment to functioning services, sustained participation and stronger classroom practice. Comparable assessments examine learning improvement; evaluation distinguishes observed changes from effects attributable to technology and records costs, inclusion and reliability.

Figure 12.2 — National Theory of Change

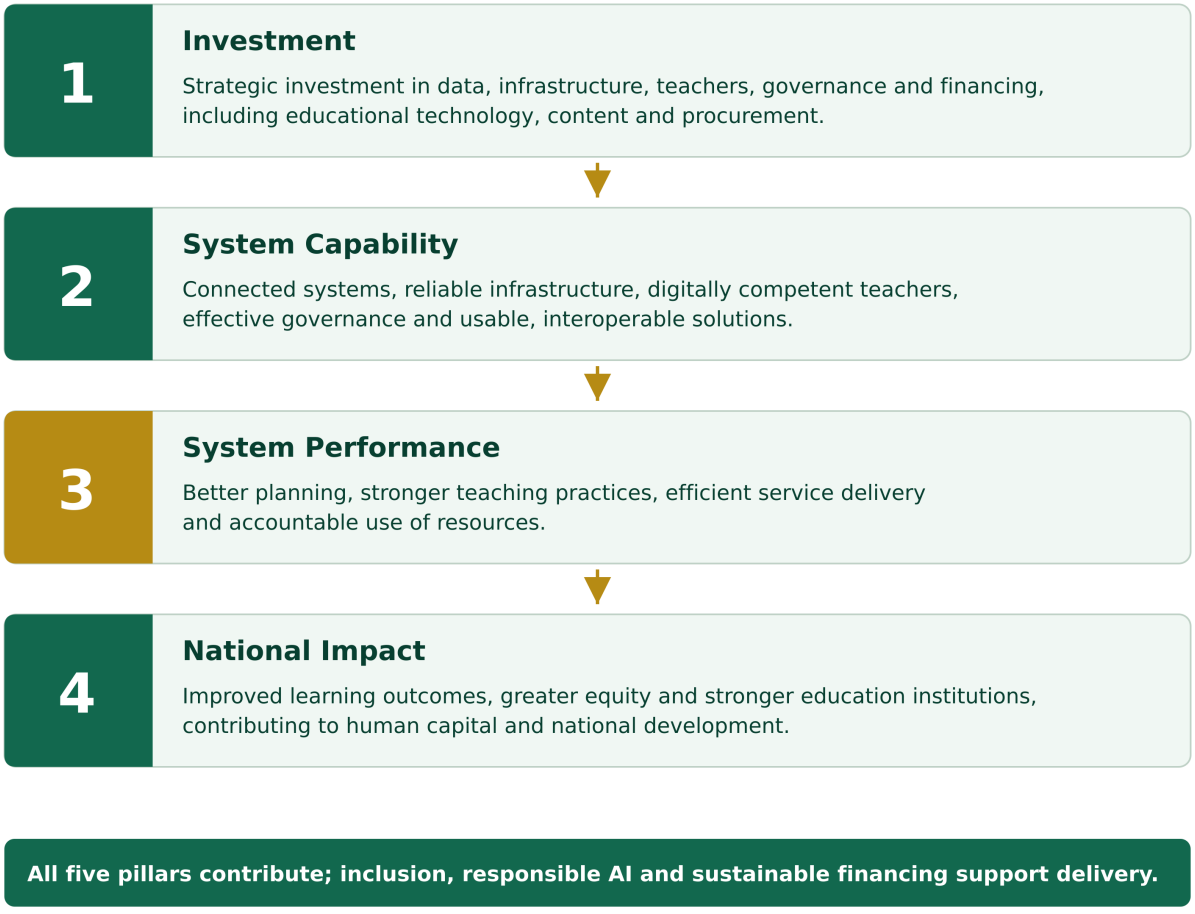
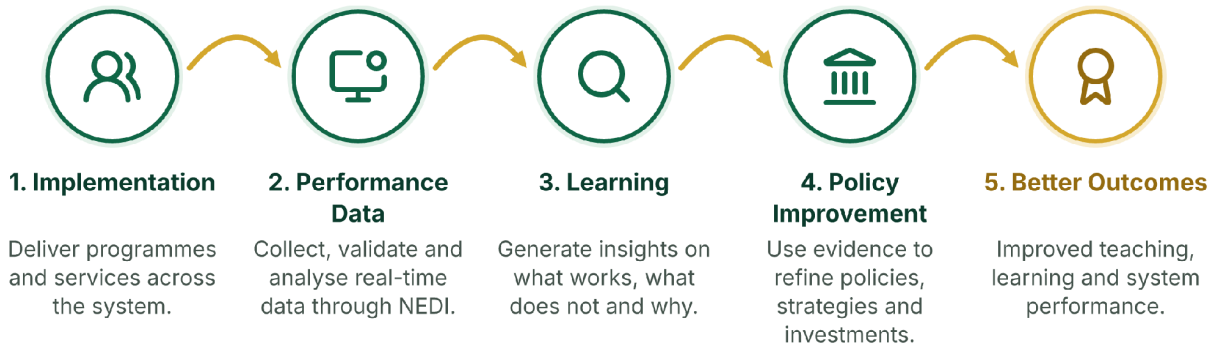


Figure 12.3 — Continuous Improvement Cycle



12.4 Continuous Learning and Improvement

Continuous monitoring, evaluation and institutional learning will use NEDI evidence to refine policy and guide future investment as needs and opportunities change.

13 Alignment with National and Global Frameworks

13.1 Introduction

The Strategy aligns existing national policies, regional commitments and global development priorities within a common digital education implementation framework.

It operationalises these priorities through interoperability, coordinated delivery and aligned investment rather than introducing a separate policy agenda.

13.2 Alignment with National Frameworks

The Strategy complements key national policies and reform initiatives across education, digital transformation, connectivity and teacher development.

Table 13.1 — National Policy Alignment

National Policy / Framework	Strategic Alignment
National Education Sector Renewal Initiative (NESRI)	Data-driven education reform and improved learning outcomes
National Digital Learning Policy	Digital learning, teacher development and digital content
National Digital Economy Policy and Strategy	Digital infrastructure, interoperability and innovation
National Broadband Plan	School connectivity and digital access
National Digital Literacy Framework	Teacher and learner digital competencies
Nigeria Data Protection Act / NDPR	Secure, ethical and trusted education data governance
Renewable Energy and Energy Efficiency Policy	Sustainable school electrification

The Strategy therefore serves as the national implementation framework through which these complementary policies are translated into coordinated action.

Figure 13.1 — National Policy Integration Framework

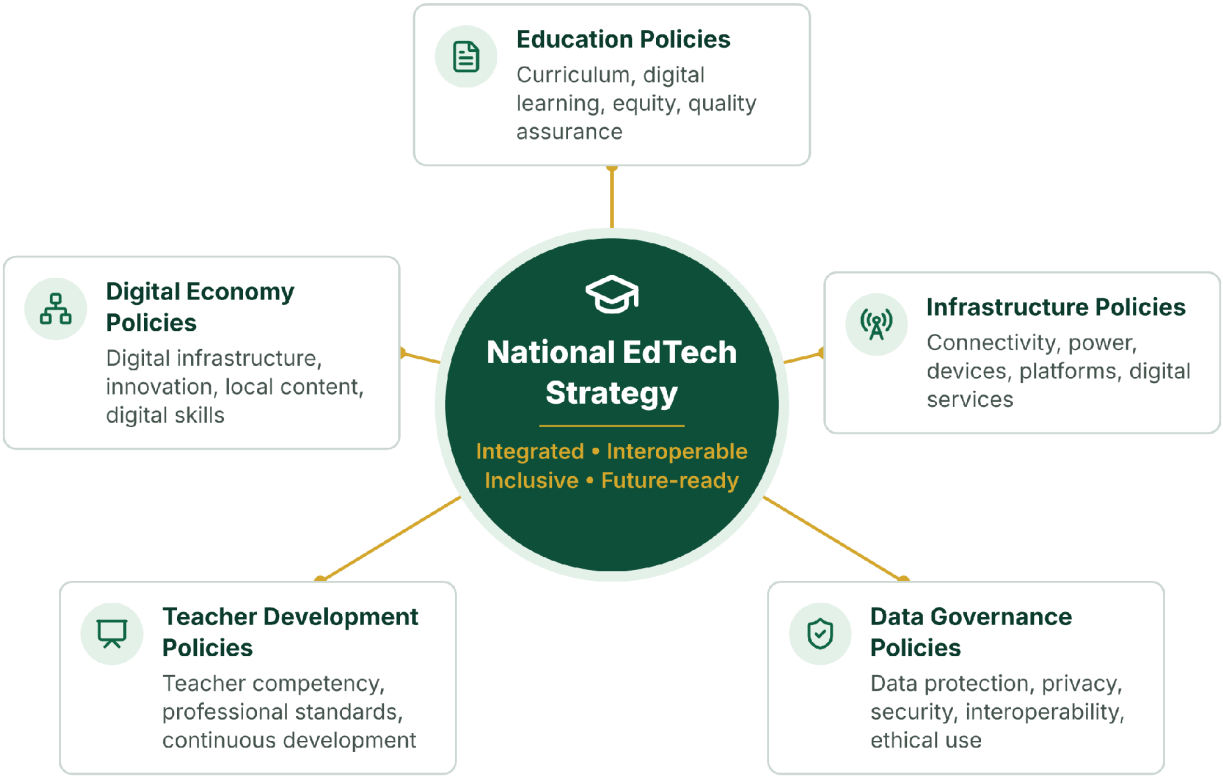
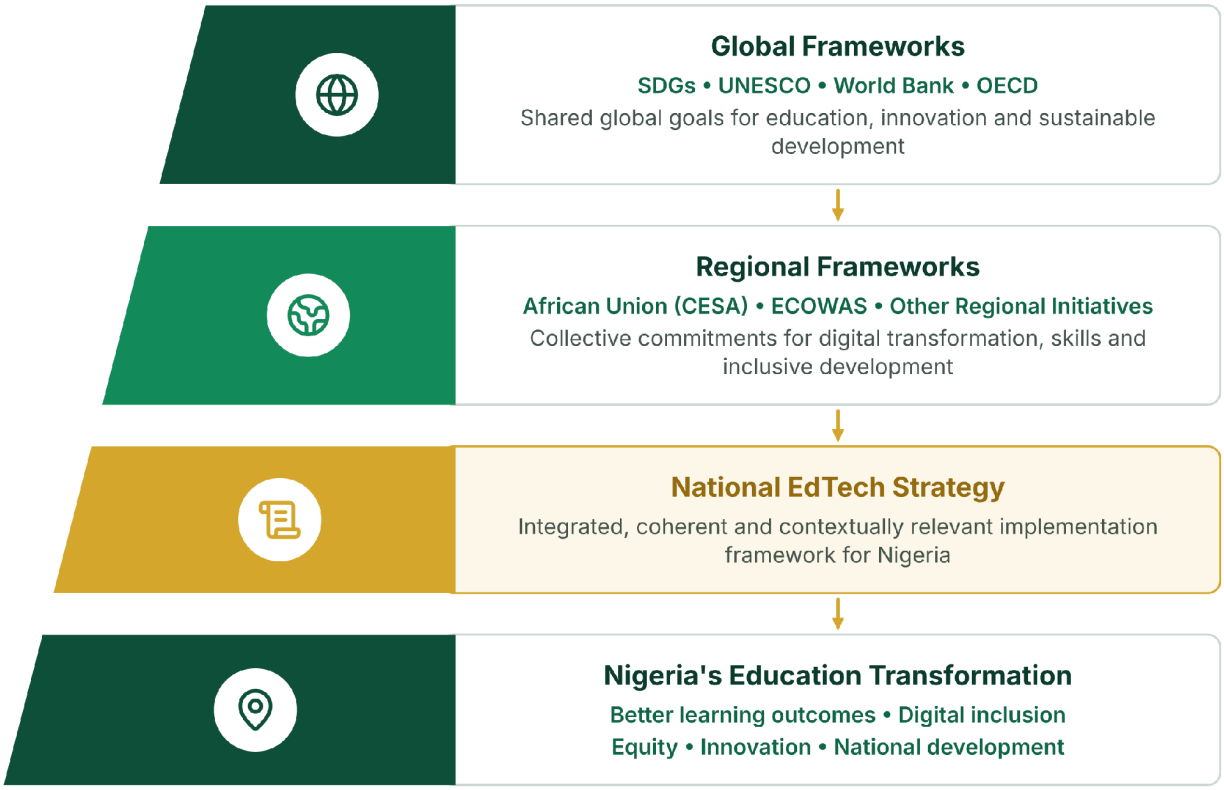


Figure 13.2 — Regional and Global Alignment



13.3 Alignment with Regional and Global Frameworks

The Strategy is aligned with internationally recognised education and digital development frameworks while remaining grounded in Nigeria's national priorities.

Table 13.2 — Regional and Global Alignment

Framework	Strategic Contribution
Sustainable Development Goals	Quality education, innovation, clean energy and partnerships
African Union CESA	Digital transformation and skills development
UNESCO Digital Learning Agenda & ICT-CFT	Teacher competency, digital pedagogy and inclusion
World Bank Human Capital Project	Learning, teacher effectiveness and system performance
OECD Digital Education Frameworks	Evidence-based policy and digital education quality

Rather than replicating international models, the Strategy adapts global good practice to Nigeria's education system, institutional arrangements and development priorities.

13.4 Regional Leadership

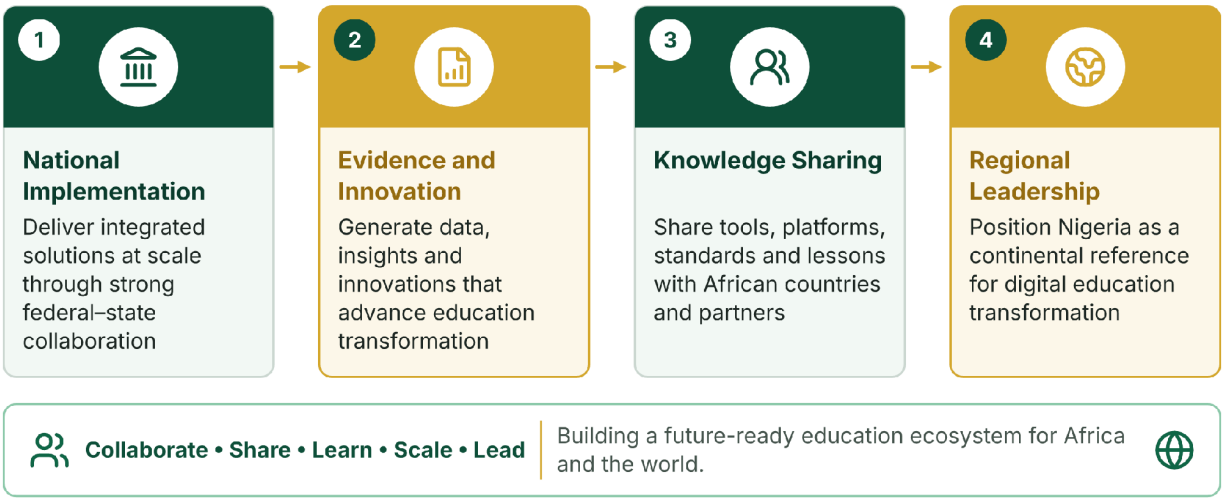
Effective implementation can position Nigeria as an African reference for integrated digital education, supported by documented results and shared implementation experience.

Key areas of leadership include:

- interoperable national education data systems (NEDI);
- digitally empowered teachers through NTDCF;
- Federal–State coordination at scale;
- sustainable public–private partnership models;
- integrated digital infrastructure; and
- evidence-based education planning and governance.

The Strategy also supports regional collaboration through knowledge sharing, South–South cooperation and participation in continental digital transformation initiatives.

Figure 13.3 — Nigeria's Regional Leadership Pathway



13.5 Expected Outcome

Through alignment with national, regional and global frameworks, the Strategy will:

- strengthen coherence across government policies;
- improve coordination of public and private investment;
- accelerate implementation of national education priorities.

Implementation Reference

National, regional and global policy alignment is described in Sections 13.2–13.4. Supporting source references are listed in Annex 2: Technical Implementation Guide, Section A2.13.

14 Next Steps: From Strategy to Action

14.1 Introduction

Publication begins a coordinated national effort to transform education through digital innovation. Delivery requires sustained leadership and partnerships across government, the private sector and development partners.

Implementation will follow a phased approach, with priority given to establishing the core systems, governance arrangements and institutional capacity required for long-term success.

Detailed implementation activities, timelines and responsibilities are provided in **Annex 1**.

14.2 Immediate Priorities

The initial phase of implementation will focus on establishing the essential foundations required for national delivery.

Table 14.1 — Immediate National Priorities

Strategic Area	Priority Action
Governance	Implement the recommended governance arrangements in Section 6.3 through existing institutions, preserving statutory responsibilities.
Data (NEDI)	Strengthen the already-deployed NEDI and ongoing education data collection; extend priority interfaces and reporting
Infrastructure	Compile existing school infrastructure records, identify gaps and begin integrated priority deployments with funded maintenance.
Teacher Development	Launch NTDCF implementation and teacher professional development pathways
Federal–State Coordination	Formalise implementation arrangements with participating States
Partnerships	Mobilise development partners and private sector participation
Communications	Launch a national awareness and stakeholder engagement programme

These actions will establish the institutional, technical and operational foundations required for successful implementation.

Figure 14.1 — Immediate Actions: Next 90 Days *— NEDI is already deployed and collecting data; immediate NEDI actions strengthen operations and priority integration rather than initiate deployment.*

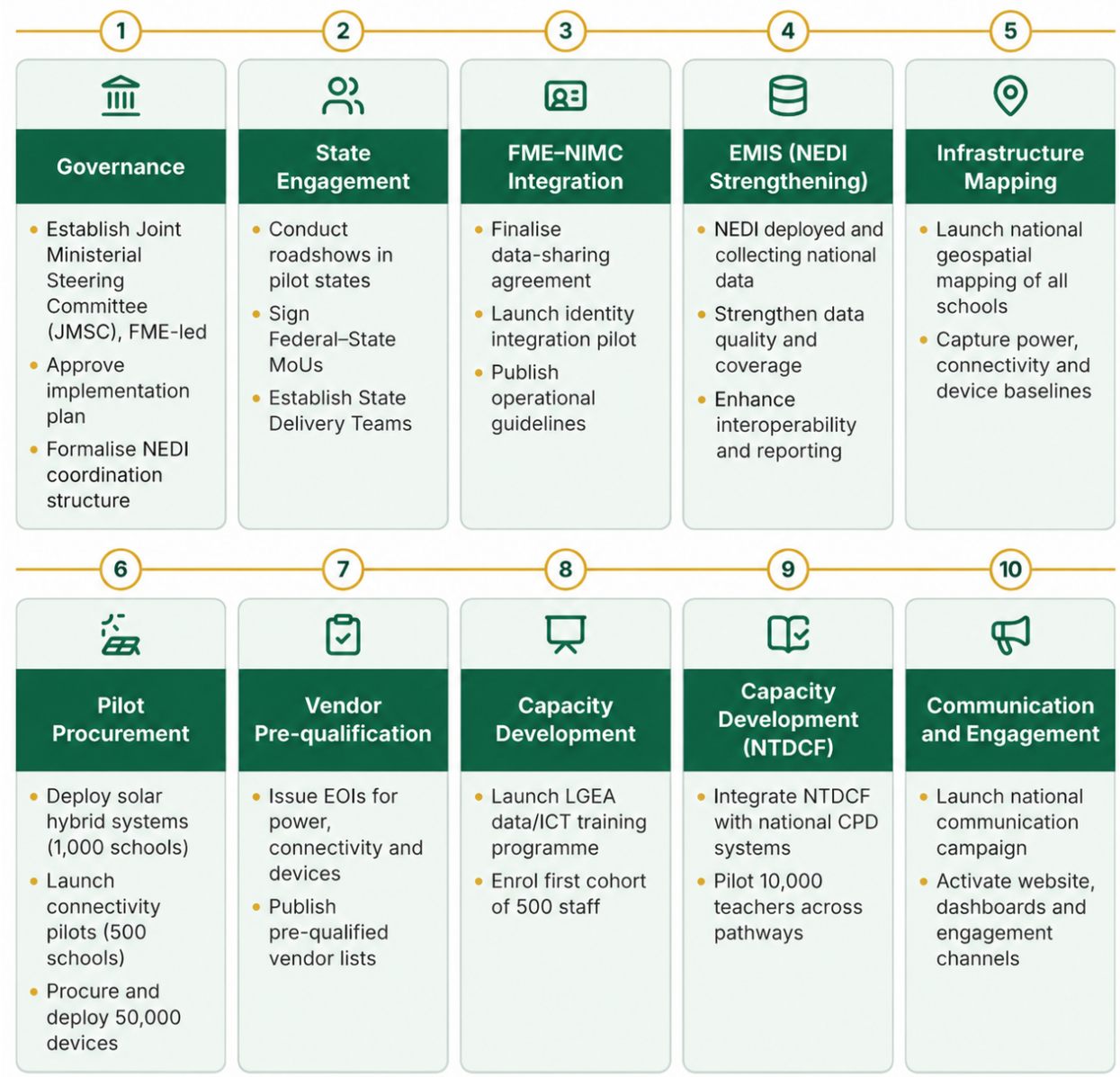
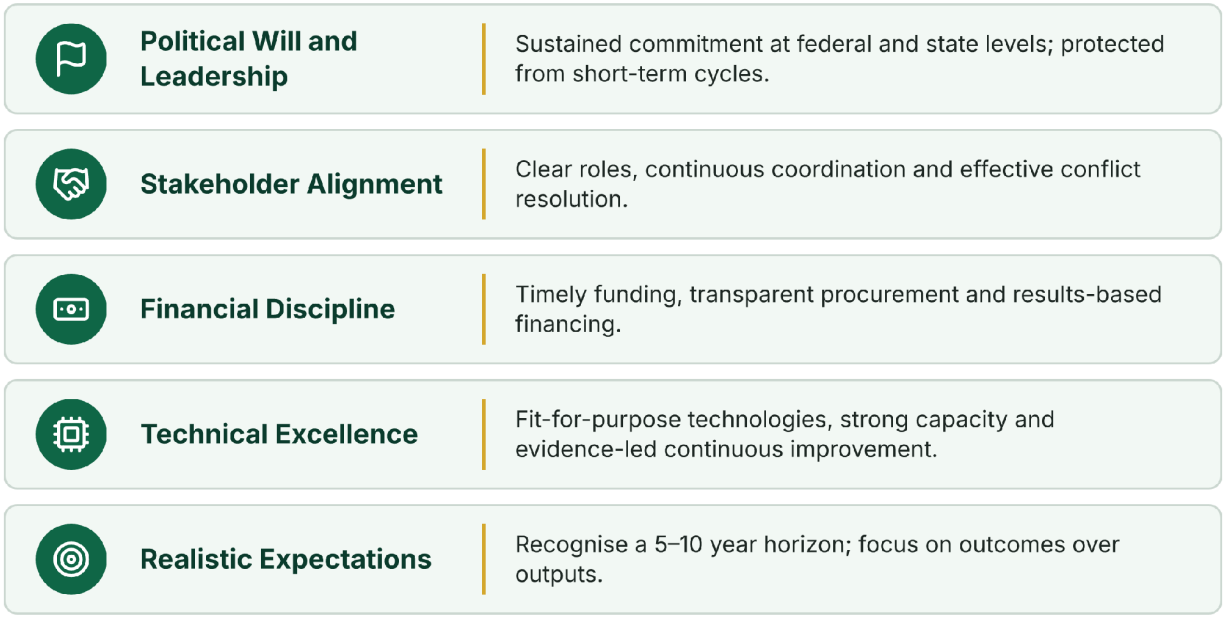


Figure 14.2 — Critical Success Factors



14.3 Critical Success Factors

Successful implementation will depend on several enabling conditions.

Political Leadership

Strong national and State leadership will provide the policy direction and institutional commitment required to sustain implementation.

Partnership and Coordination

Effective collaboration among government, development partners, the private sector and education stakeholders will be essential for coordinated delivery.

Sustainable Financing

Implementation will require predictable financing, transparent procurement and efficient resource utilisation supported by performance-based accountability.

Institutional Capacity

Strong technical capability, continuous learning and effective change management will ensure successful implementation across all levels of government.

14.4 Communication and Stakeholder Engagement

Communications and stakeholder engagement will position the Strategy as the national reference framework for coordinating EdTech investment and implementation. The Programme Office will support transparent progress reporting, partner alignment, accessible communication and feedback from institutions and communities without transferring public-sector mandates.

A sustained communication programme will support implementation by building public confidence and encouraging collaboration across the education ecosystem.

Key audiences include:

- Federal and State Governments

- Education institutions
- Teachers and school leaders
- Learners, parents and communities
- Private sector
- Development partners
- Civil society and the media

The Strategy will be supported through national communication campaigns, stakeholder forums, public performance dashboards and regular implementation updates.

14.5 Looking Ahead

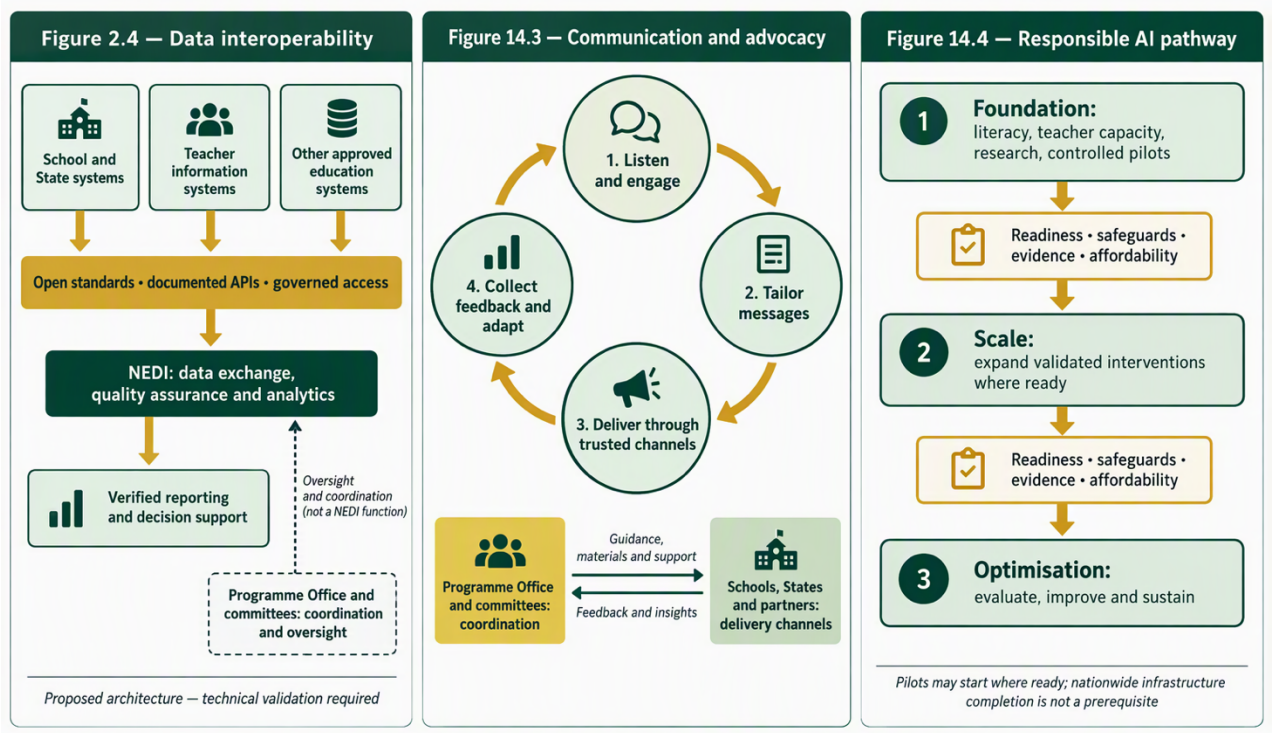
As implementation progresses and foundational systems mature, Nigeria will be well positioned to responsibly adopt emerging technologies, including AI and advanced analytics.

Future adoption will be guided by system readiness, trusted data and secure governance, ensuring technology enhances teaching, learning and education management.

Detailed guidance on responsible adoption of emerging technologies is provided in **Annex 2**.

Figure 14.3 — Communication and Advocacy

Combined illustration — data interoperability, communication and advocacy, and responsible AI adoption (left to right). Related guidance appears in Sections 1.12 and 14.4 and Chapter 8.



15 Conclusion: A Transformational Opportunity

Nigeria can improve education through well-governed technology investment, trusted data and coordinated partnerships.

The Strategy connects five mutually reinforcing pillars: data and interoperability; infrastructure; technology and procurement; teacher transformation; and governance and system coordination.

Success depends on sustained leadership, effective classroom support, predictable financing and clear accountability across government, education institutions, partners, the private sector and communities.

Phased delivery, equitable access and continuous evaluation will determine whether these investments improve learning and strengthen a resilient education system.

The Strategy is a national commitment to that implementation task: improving education while preparing learners to participate confidently and responsibly in a digital society.

16 Annex 1: Detailed Implementation Plan

A1.1 Purpose

This Annex translates the Strategy's priorities into phased actions, institutional responsibilities, indicative financing requirements and delivery milestones.

Implementation prioritises foundational services, progressive delivery across participating States and long-term sustainability. Four principles guide delivery:

- Build on existing national systems rather than create parallel structures.
- Deliver through coordinated Federal–State partnerships.
- Leverage public–private partnerships (PPPs) for sustainable service delivery.
- Use NEDI evidence for timely reporting, with quarterly consolidation coordinated by the Programme Office.

A1.2 Implementation Approach

Implementation follows late 2026–2027: mobilisation and foundation; 2028: scale-up; and 2029–2030: optimisation and sustainability. Phases may overlap according to readiness. AI literacy, teacher development, research and controlled use can accompany foundational delivery under Chapter 8 safeguards.

Figure A1.1 — National Implementation Framework

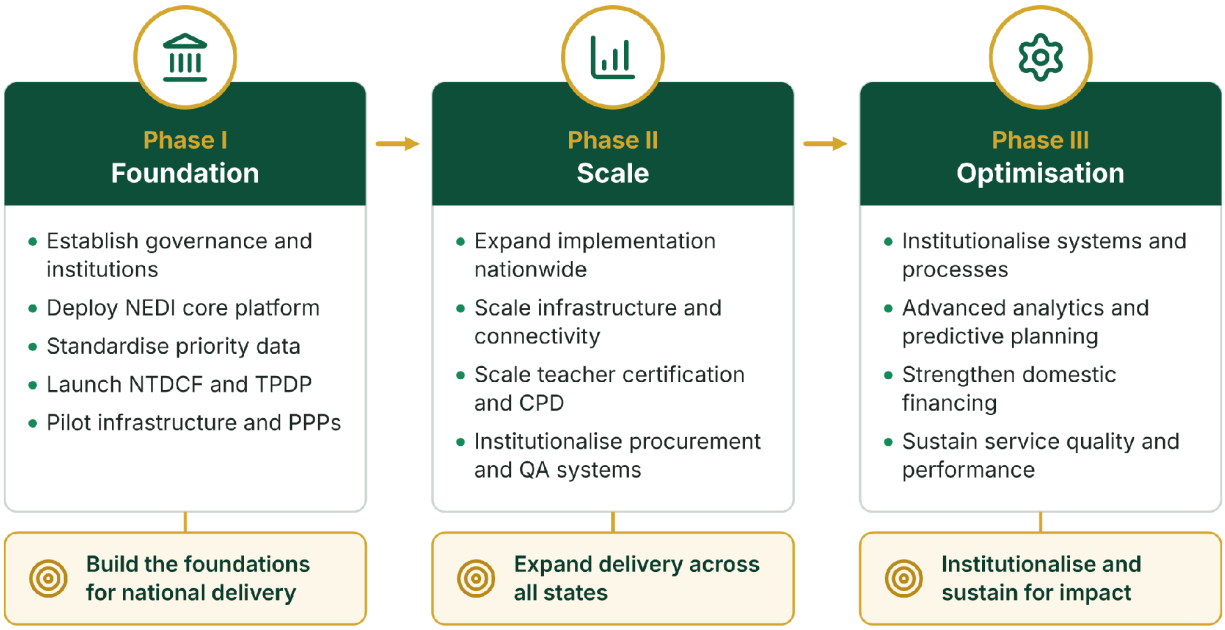


Table A1.1 — Implementation Phases

Implementation Phase	Purpose	Priority Deliverables
Late 2026–2027: mobilisation and foundation	Operate integrated demonstrations within participating cohorts and available resources.	Recommended by end-2027: six integrated State plans in operation; scheduled foundation interfaces functioning; supported teacher competency assessment and mentoring underway.

2028: scale-up	Expand delivery across participating States using readiness and first-school-year evidence.	Extend priority interfaces, supported teacher development and funded infrastructure services; adapt procurement and quality assurance to delivery evidence.
2029–2030: optimisation and sustainability	Sustain services and embed evidence-based improvement in routine delivery.	Fund lifecycle needs, refresh assets according to condition and use governed analytics where educational value and readiness justify adoption.

A1.3 Phase-by-Phase Implementation Actions

Table A1.2 — Implementation Actions

Strategic Area	Foundation	Scale	Optimisation
Governance	Use the recommended governance model and seven-role Programme Office in Section 6.3; preserve existing institutional responsibilities.	Strengthen Federal–State performance reviews and benchmarking	Institutionalise governance as routine government business
Data and Interoperability (NEDI)	Strengthen the deployed NEDI core platform and ongoing data collection; extend priority APIs, dashboards and datasets	Expand interoperability across Federal and State systems	Introduce advanced analytics and predictive planning
Infrastructure	Complete school mapping, electrification and connectivity pilots	Scale power, broadband and devices through PPPs	Sustain infrastructure through lifecycle management
Technology and Procurement	Develop national standards and procurement framework	Use pooled procurement, leasing or managed services where they offer better lifecycle value; consider Device-as-a-Service as one option.	Refresh technologies through lifecycle procurement
Teacher Transformation	Launch NTDCF and Teacher Professional Development Portal (TPDP)	Scale certification and continuous professional development	Institutionalise competency progression and professional learning

Table A1.2 — Implementation Actions (continued)

Cross-cutting future capability: AI and emerging technologies (Chapter 8)	Develop guidance, AI literacy, NTDCF-aligned capacity, indigenous research and controlled pilots where safeguards and readiness permit.	Expand interventions with demonstrated feasibility, educational value, affordability and effective safeguards.	Strengthen advanced applications, independent evaluation, continuous improvement and sustainable national capacity.

A1.3.1 Integrated Demonstration Actions

*Table A1.2a — Integrated State **Demonstration Delivery Actions***

Period	Action and responsible institutions	Planning milestone and evidence

Late 2026–2027	FME/Programme Office and State authorities organise a recommended six-State cohort, one per zone; combine readiness and equity criteria and provide targeted lower-capacity support. State Teams prepare one integrated plan through existing institutions.	Recommended by end-2027: six integrated State plans in operation, scheduled foundation interfaces functioning, and supported teacher competency assessment and mentoring underway for participating cohorts within available resources. Record cohort frames, services, financing and safeguards.
First full school year	State Teams, LGEAs, schools and responsible agencies deliver the integrated package and maintain the six-indicator dashboard. FME and State assessment functions examine adoption, learning, inclusion, workload, reliability and cost.	Quarterly delivery evidence; termly participation; comparable starting and end-year learning observations with cohort disclosure.
After first full school year; 2028 onwards	Programme Office consolidates the national playbook with States, technical and education institutions. Use lessons to adapt wider rollout within annual plans and available resources.	Playbook documents unit and recurrent costs, delivery models, lessons and adaptations; annual updates accompany implementation planning.

A1.4 Pillar-Based Implementation Matrix

Table A1.3 — Pillar-Based Priority Actions

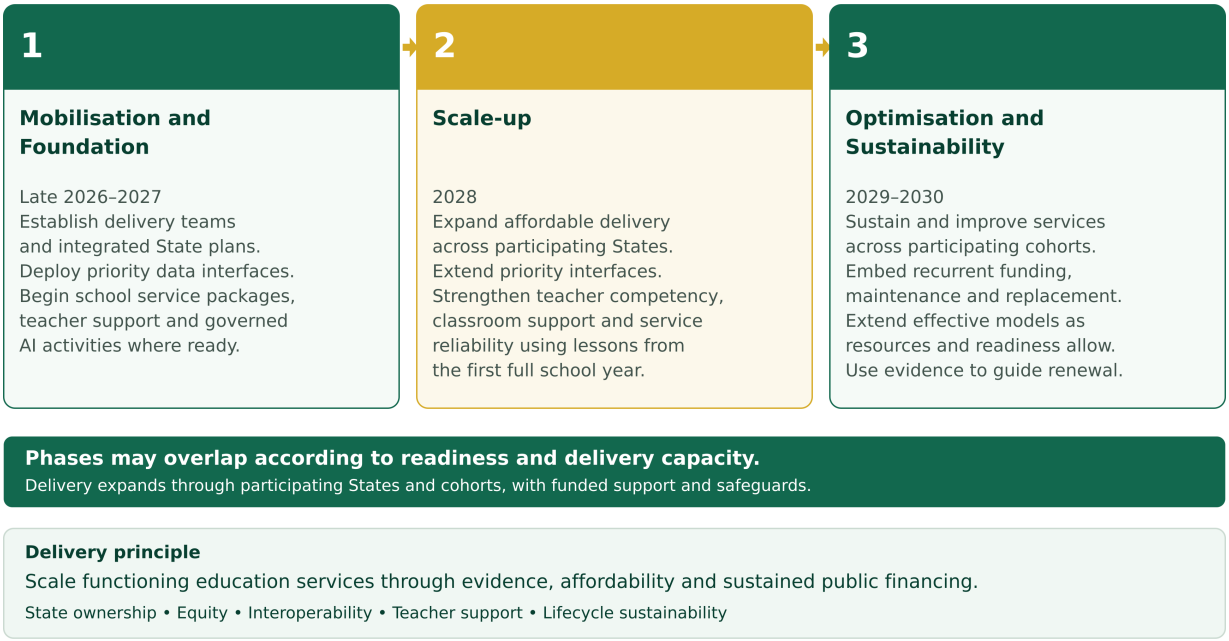
Strategic Pillar	Priority Actions	Expected Outcomes
Pillar 1 – Data and Interoperability (NEDI)	Strengthen the deployed NEDI and ongoing data collection; establish national data standards; integrate DNEMIS, State EMIS, TMIS, NIMC and priority education datasets; implement secure APIs and governance frameworks.	Trusted, interoperable national education data ecosystem supporting evidence-based planning, financing and accountability.
Pillar 2 – Infrastructure Ecosystem	Expand reliable electricity, broadband connectivity and shared device access through coordinated public investment and PPPs; integrate infrastructure monitoring into NEDI.	Connected schools with reliable digital infrastructure enabling teaching, learning and education management.
Pillar 3 – Technology and Procurement	Implement national technology standards; pooled procurement; Technology Evaluation Framework (Section A2.4.5); lifecycle management; strengthen local EdTech markets.	Transparent, interoperable and value-for-money technology ecosystem supporting sustainable digital education.
Pillar 4 – Teacher Transformation (NTDCF)	Operationalise NTDCF and TPDP; align pre-service and in-service teacher development; expand competency certification; integrate teacher data into NEDI.	Digitally competent teaching workforce applying technology effectively to improve learning outcomes.
Pillar 5 – Governance and System Coordination	Establish national and State governance structures; operationalise NEDI-enabled performance management; strengthen monitoring, coordination and accountability.	Coordinated Federal–State delivery supported by timely reporting and continuous improvement.

A1.5 Phased Delivery Timeline

Table A1.1 provides the phased delivery timeline and recommended milestones; phases may overlap according to readiness.

Figure A1.2 — National Delivery Timeline

Figure A1.2 National Delivery Timeline



A1.6 National Delivery Architecture

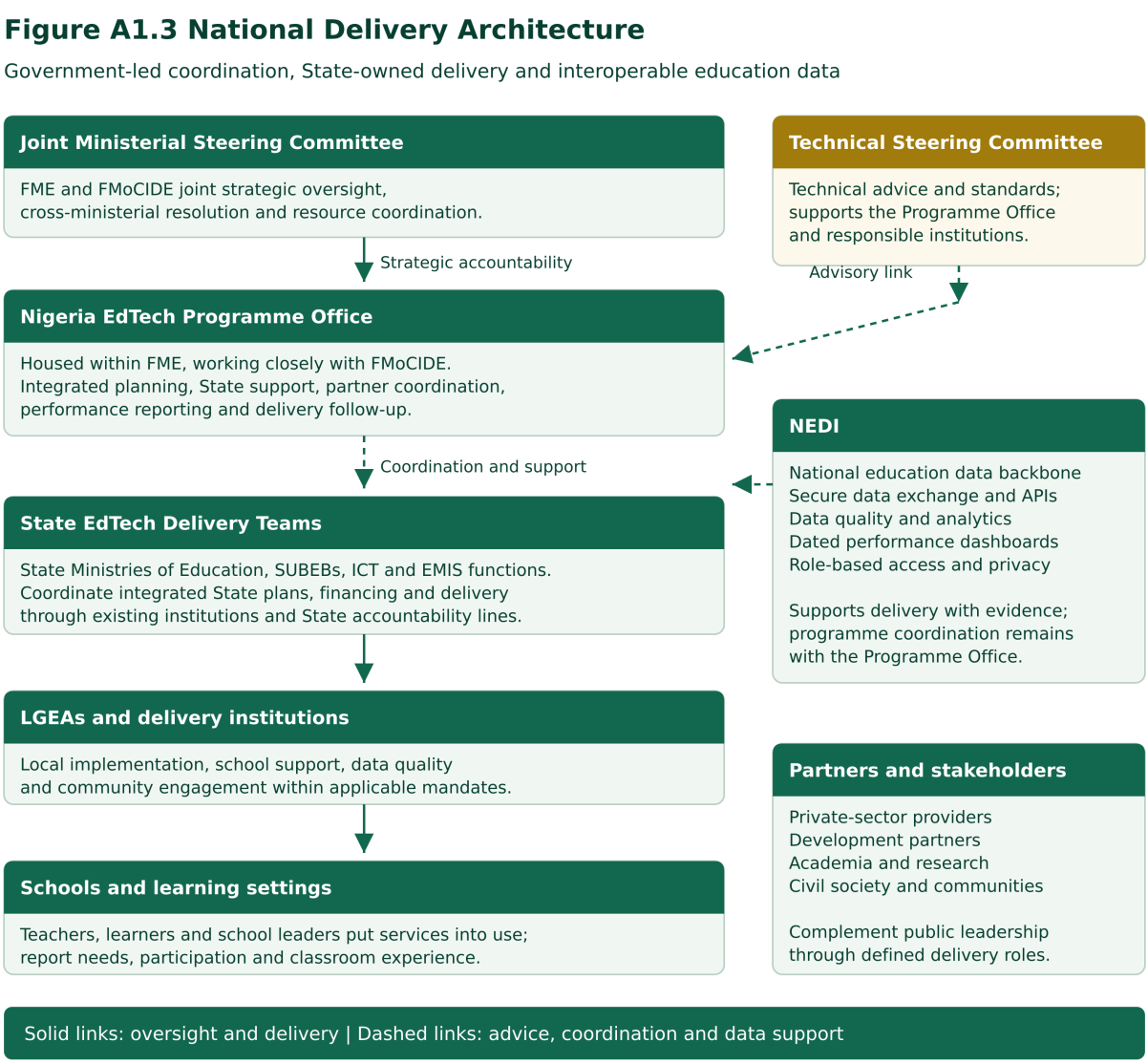
Chapter 6, Section 6.3 is the authoritative governance model, including the recommended seven-role Programme Office, reporting lines and operating cadence. This Annex applies that model through State institutions, LGEAs and schools rather than creating additional layers.

NEDI supports the delivery architecture through trusted data exchange, analytics and performance reporting, enabling:

reporting on the agreed schedule;

- Federal–State benchmarking;
- implementation dashboards;
- integrated reporting;
- evidence-based decision-making; and
- accountability across all strategic pillars.

Figure A1.3 — National Delivery Architecture



A1.7 Indicative Financing Framework

Table 10.1 provides the authoritative component and financing-period allocations for the US$225 million indicative priority investment envelope.

Refer to Table 10.1 for all seven component allocations and the US$95 million, US$81 million and US$49 million financing-period totals. Lifecycle and recurrent costs remain within the relevant allocations, including Programme Office operations within governance.

Financing Sources

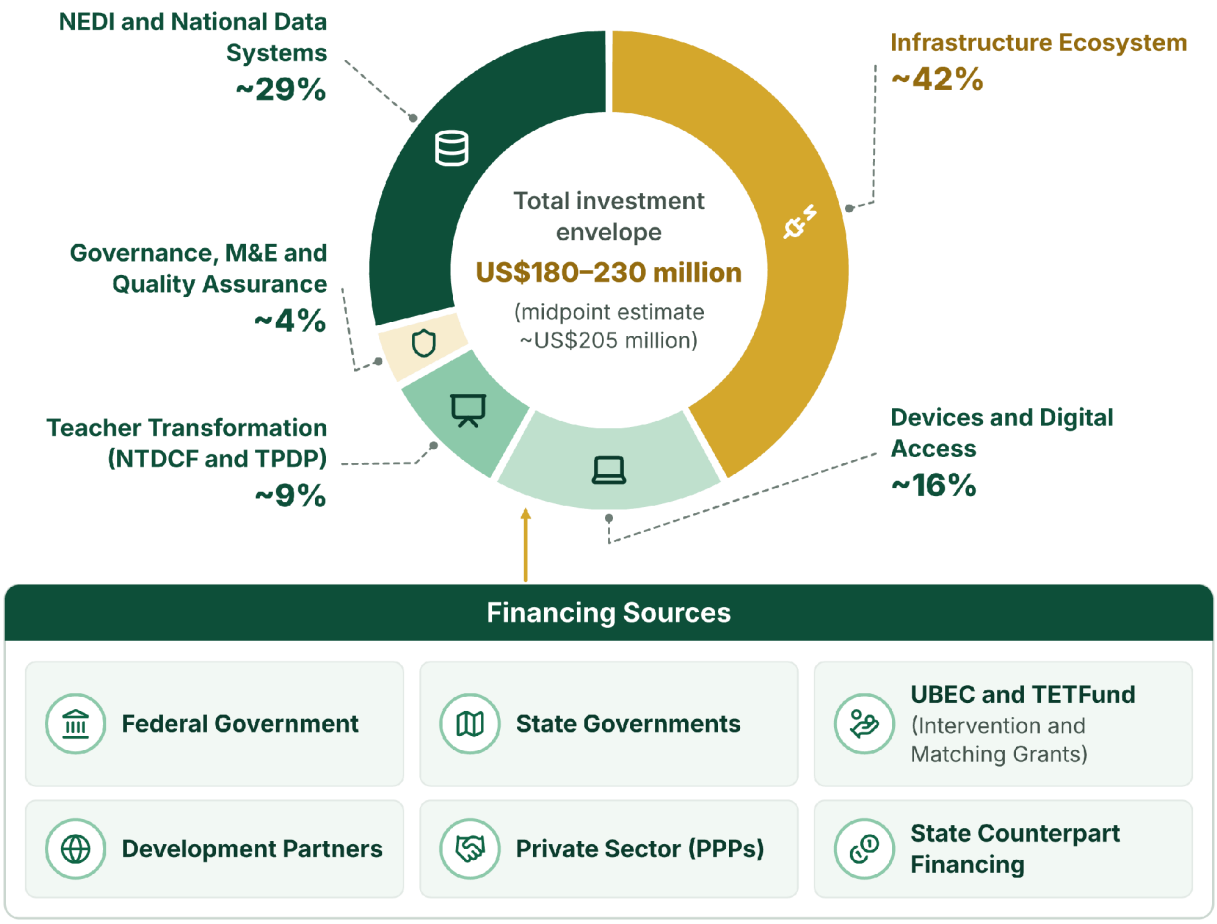
Implementation will utilise a blended financing model comprising:

- Federal Government
- State Governments
- Universal Basic Education Commission (UBEC)
- Tertiary Education Trust Fund (TETFund)

- Development Partners
- Private Sector through PPPs
- State counterpart financing

Align complementary contributions with the public-financing principle in Section 10.1.

Figure A1.4 — Investment and Financing Framework



A1.8 Institutional Roles and Responsibilities

Table A1.4 — National Implementation Responsibilities

Institution	Primary Responsibilities
Federal Ministry of Education (FME)	Overall policy leadership, coordination, standards, monitoring and reporting
Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)	Digital infrastructure, innovation, interoperability, connectivity and digital economy alignment
UBEC	Digital transformation of basic education, State implementation support, school infrastructure, teacher development and monitoring

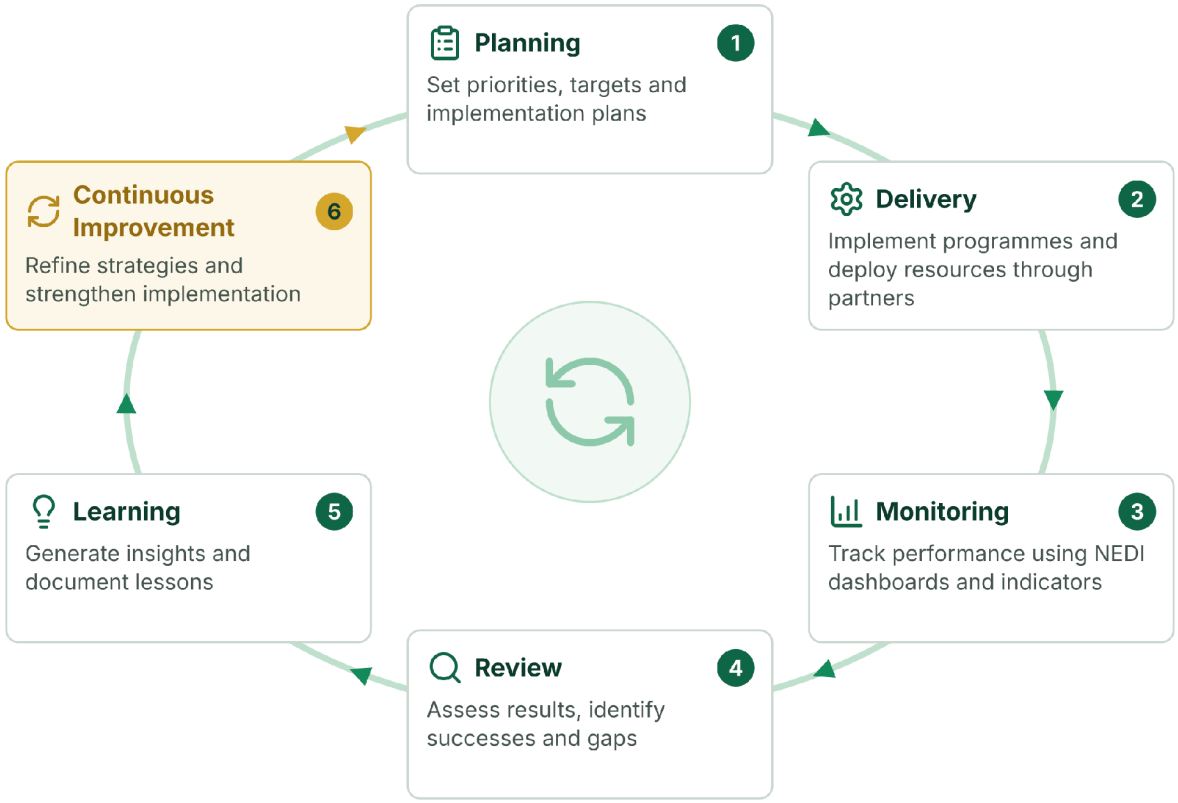
Institution	Primary Responsibilities
TETFund	Supplementary support within its public tertiary education, research and institutional development remit, including eligible teacher education institutions; not whole-Strategy or basic education financing.
NERDC	Curriculum development, digital learning standards, content quality assurance and curriculum alignment
TRCN	Teacher licensing, professional standards and NTDCF implementation
NTI	Teacher professional development, certification delivery and TPDP implementation
NCCE, NUC and NBTE	Integration of digital competencies into pre-service teacher education and higher education programmes
NITDA	Digital literacy standards, technology standards, cybersecurity and innovation support
NIMC	Digital identity integration and learner authentication
NCC and USPF	Broadband expansion and school connectivity programmes
Galaxy Backbone	Government digital infrastructure and secure hosting services
NASENI	Research, innovation and local technology development
REA	School electrification through renewable energy solutions
State Ministries of Education	State implementation, planning, budgeting and monitoring
SUBEBs	Delivery within basic education, school supervision and State coordination
LGEAs	School-level implementation, data collection and operational support
Development Partners	Technical assistance, catalytic financing, capacity building and knowledge exchange
Private Sector	Connectivity, devices, digital platforms, renewable energy and managed services through PPPs
Nigeria Data Protection Commission (NDPC)	Data protection oversight and compliance with the Nigeria Data Protection Act.
West African Examinations Council (WAEC) and National Examinations Council (NECO)	Progressive digitisation of assessment and examination systems aligned with national digital standards.
Joint Admissions and Matriculation Board (JAMB)	Digital examination systems, learner identity verification and admissions data integration.
National Board for Arabic and Islamic Studies (NBAIS)	Alignment of digital education within Arabic and Islamic education programmes.

Institution	Primary Responsibilities
Academic and Research Institutions	Research, innovation, evaluation and evidence generation.
Civil Society Organisations (CSOs)	Advocacy, social accountability and community mobilisation.
Professional Associations and Teacher Unions	Teacher engagement, professional support and policy dialogue.
School Leaders	Institutional leadership, school improvement planning and technology adoption.
Parents, PTAs, SBMCs and Communities	Learner support, community oversight and local ownership of digital education investments.

A1.9 Critical Success Factors

The enabling conditions in Section 14.3 apply to implementation across all pillars.

Figure A1.5 — Implementation Performance Cycle



A1.10 Implementation References

This Annex should be read together with:

- **Chapter 2** – Data and Interoperability (NEDI)
- **Chapter 3** – Infrastructure Ecosystem
- **Chapter 4** – Technology and Procurement
- **Chapter 5** – Teacher Transformation (NTDCF)
- **Chapter 6** – Governance and System Coordination
- **Chapter 7** – Monitoring, Evaluation and Learning

- **Chapter 9** – Implementation Roadmap
- **Chapter 10** – Financing Strategy
- **Annex 2** – Technical Implementation Guide

A1.11 Detailed Risk Register

The five tables below provide the full risk register underpinning the summary in Chapter 11 (Risk Management and Mitigation) of the main Strategy, including likelihood and impact ratings and detailed mitigation actions for each risk.

Table A1.5 — Strategic risks and mitigation measures (1 of 5)

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Political and Governance				
Political transitions disrupt implementation.	Changes in Federal/State leadership slow progress or shift priorities	Medium	High	FME, FMoCIDE, UBEC and States should align policy priorities and institutionalise implementation through formal governance arrangements and legally recognised protocols.
Federal–State coordination breakdowns	Conflicting priorities, slow MoU signing, inadequate State commitment	High	High	Use financial incentives, technical assistance and peer benchmarking, with escalation through the Strategy's governance arrangements and evidence from approved performance dashboards.
Political and Governance	Uneven State readiness and institutional capacity delay implementation	High	High	Balance State readiness and equity through phased integrated delivery, targeted lower-capacity support and transparent performance evidence; do not systematically exclude underserved States.

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Bureaucratic bottlenecks	Slow procurement, administrative decision-making and fund releases delay implementation	High	Medium	Use pre-qualified vendor lists where permitted, clear delegated decision rights and quarterly bottleneck reviews to streamline delivery within applicable procurement rules.

Table A1.5 — Strategic risks and mitigation measures (2 of 5)

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Technical and Operational				
NIMC integration stalls	Legal, technical, or institutional barriers prevent education-NIMC data sharing	Medium	Medium	Finalise MoUs early, begin in States with high NIN coverage, and maintain contingency options for interim identifiers pending future NIN linkage.
Data quality remains poor	States submit incomplete/inaccurate data despite infrastructure improvements	High	High	Validate data at collection and exchange, publish dated data quality evidence and apply lawful, disclosed financing conditions where relevant.
Infrastructure deployment delays	Supply chain issues, contractor failures, security challenges slow rollout	Medium	High	Maintain multiple vendor relationships, require performance bonds, and sequence rollout by readiness and security conditions.
Technology obsolescence	Rapid tech changes make procured systems outdated	Medium	Medium	Use open standards, modular procurement and annual refresh cycles to avoid vendor lock-in.

Table A1.5 — Strategic risks and mitigation measures (3 of 5)

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Capacity and Human Resources				

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Insufficiently skilled personnel	Shortage of trained staff at Federal, State and LGEA levels limits implementation	High	High	Invest in capacity-building and technical career pathways, partnering with NITDA, NTI, TRCN and teacher-training institutions.
Teacher resistance to technology	Low adoption of digital tools despite training and infrastructure	Medium	Medium	Focus on pedagogical value through teacher champions, school-based mentoring and recognition systems aligned with NTDCF, while engaging school leaders as adoption gatekeepers.
Brain drain	Trained staff leave for private sector opportunities	Medium	Low	Strengthen professional recognition, certification and career incentives, and expand local technical labour markets to retain skills.

Table A1.5 — Strategic risks and mitigation measures (4 of 5)

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Financial and Sustainability				
Public funding and complementary partner shortfalls	Delayed releases or unfunded recurrent commitments disrupt services	Medium	High	Anchor implementation and recurrent costs in Federal and State resources from inception; phase commitments within budgets, reconcile releases and expenditure, and keep partner contributions complementary.

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Private sector hesitancy	Companies reluctant to invest due to perceived risks	Medium	Medium	Use transparent competitive procurement and affordable delivery options; assess government payments, guarantees and contingent liabilities before contractual commitments.
Cost overruns	Implementation costs exceed estimates, creating funding gaps	Medium	Medium	Use phased deployment, dated lifecycle unit costs and inflation and exchange-rate reviews. Count contingency once within relevant component allocations and adjust affordable quantities within available budgets.

Table A1.5 — Strategic risks and mitigation measures (5 of 5)

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
External and Environmental				
Security challenges	Insurgency, banditry or conflict in some regions prevents implementation	Medium	High	Undertake security risk assessments, prioritise accessible areas, and use remote-capable delivery models.
Natural disasters	Flooding and extreme weather damage infrastructure	Low	Medium	Adopt climate-resilient infrastructure standards and diversified deployment models, including solar-hybrid systems.
Pandemic or health crisis	COVID-like event disrupts schools and implementation	Low	High	Maintain digital-first continuity capabilities and school-level preparedness measures.

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy
Macroeconomic and Financial	Naira depreciation increases costs of imported equipment	Medium	Medium	Use multi-year contracts, local assembly requirements and staggered procurement to reduce import dependence.

17 Annex 2: Technical Implementation Guide

A2.1 Purpose of the Annex

A2.1.1 Purpose and Scope

This Annex provides technical guidance for institutions implementing the Strategy. It covers standards, architecture, operational arrangements, financing controls, monitoring and practical delivery tools.

Read this Annex with the main Strategy and Annex 1. The main Strategy defines policy direction; Annex 1 sets out phased actions and responsibilities; this Annex supports technical execution.

A2.1.2 Relationship to the Strategy

The policy and implementation framework comprises three complementary parts.

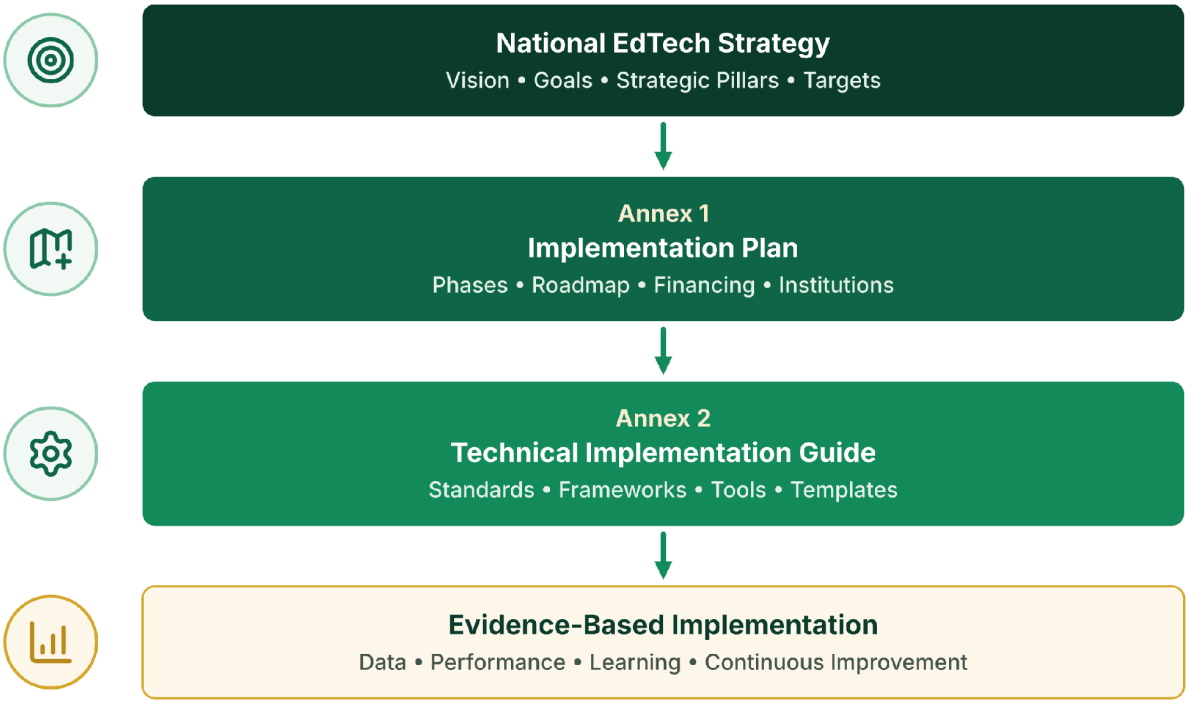
The Main Strategy sets out the national vision, strategic pillars, policy direction and expected outcomes.

Annex 1 provides the phased implementation roadmap, delivery arrangements, financing approach and institutional responsibilities required for coordinated national implementation.

Annex 2 provides the technical standards, architectures, guidance and tools needed to implement the Strategy.

Together, the Strategy and annexes align policy, implementation planning and technical execution.

Figure A2.1 — Relationship between the Strategy and Annexes



A2.1.3 How to Use this Annex

Use the pillar and cross-cutting sections relevant to each institution's responsibilities, recognising their interdependencies.

Table A2.1 — Intended Users of this Annex

Stakeholder	Primary Use of this Annex
Federal Ministry of Education (FME)	National policy implementation, NEDI oversight, coordination, monitoring and performance management
Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)	Digital infrastructure, interoperability, innovation and digital economy alignment
Universal Basic Education Commission (UBEC)	Basic education implementation, school infrastructure, teacher development and EMIS coordination
Tertiary Education Trust Fund (TETFund)	Digital infrastructure and innovation support for tertiary institutions, research, capacity development and institutional strengthening
Nigerian Educational Research and Development Council (NERDC)	Curriculum alignment, digital learning content standards and quality assurance
Teachers Registration Council of Nigeria (TRCN)	Teacher professional standards, certification and NTDCF implementation
National Teachers' Institute (NTI)	Teacher professional development and delivery of NTDCF programmes
National Information Technology Development Agency (NITDA)	Digital literacy standards, technology standards and cybersecurity guidance
National Identity Management Commission (NIMC)	Identity integration and learner and teacher verification
Nigerian Communications Commission (NCC) / Universal Service Provision Fund (USPF)	School connectivity, broadband expansion and universal access initiatives
Rural Electrification Agency (REA)	School electrification and renewable energy deployment
National Universities Commission (NUC), National Commission for Colleges of Education (NCCE), National Board for Technical Education (NBTE)	Integration of digital competencies into pre-service teacher education and tertiary institutions
WAEC, NECO, JAMB and NABTEB	Assessment integration, learner records and examination digitisation
State Ministries of Education and SUBEBs	State implementation, planning, monitoring and coordination
LGEAs and Schools	School-level implementation, data collection, infrastructure management and teacher support
Development Partners and Private Sector	Technical assistance, financing, innovation and service delivery through Public–Private Partnerships (PPPs)

Sections follow the five pillars and cross-cutting requirements, providing standards, tools, illustrative models and references. Use Annex 1 for phased implementation activities.

A2.2 Pillar 1: Data and Interoperability (NEDI)

A2.2.1 NEDI Technical Architecture

NEDI has already been deployed and is currently collecting education data. This technical architecture describes its operational foundation and intended improvements to secure, standards-based exchange; it does not imply that every component or interface is complete.

Approved systems connect through common definitions, documented APIs and lawful exchange protocols. Institutional owners retain operational responsibility. Interoperability applies across all five pillars and is not limited to NEDI.

The technical layers below support authorised data exchange, interface testing, privacy and cybersecurity. They do not confer governance or programme coordination authority on NEDI.

The modular, cloud-enabled architecture supports scalable hosting, resilient operations, analytics and performance reporting.

Core Architectural Layers

Cloud Infrastructure Layer

The cloud layer provides secure hosting, business continuity, disaster recovery, elastic storage and high availability for education data services across government.

Data Exchange and API Layer

This layer enables secure interoperability between Federal, State, and institutional systems through standardised APIs and national data exchange protocols. It supports integration with:

- Federal Ministry of Education systems
- State EMIS platforms
- UBEC information systems
- Teacher management systems
- National Identity Management Commission (NIMC)
- Assessment bodies (WAEC, NECO, JAMB, NABTEB)
- Approved third-party platforms

The guiding principle is **"integrate rather than replace."**

Identity and Access Management Layer

Identity management enables secure verification of learners, teachers, schools and authorised users through integration with the National Identity Management Commission (NIMC), while supporting role-based access control and secure authentication across connected systems.

Data Quality and Validation Layer

To improve confidence in education data, NEDI incorporates automated quality assurance processes including:

- completeness validation
- duplicate detection
- consistency checks
- anomaly detection
- automated quality scoring
- audit trails

These processes strengthen the reliability of statistics used for planning and resource allocation.

Analytics and Intelligence Layer

NEDI transforms operational data into actionable intelligence through advanced analytics, business intelligence tools and interactive reporting capabilities.

As system maturity develops, institutions should progressively use advanced analytics—including responsible AI-enabled techniques—with appropriate governance safeguards to support:

- predictive planning
- resource optimisation
- infrastructure planning
- teacher deployment
- early warning indicators
- policy simulation

National Dashboard Layer

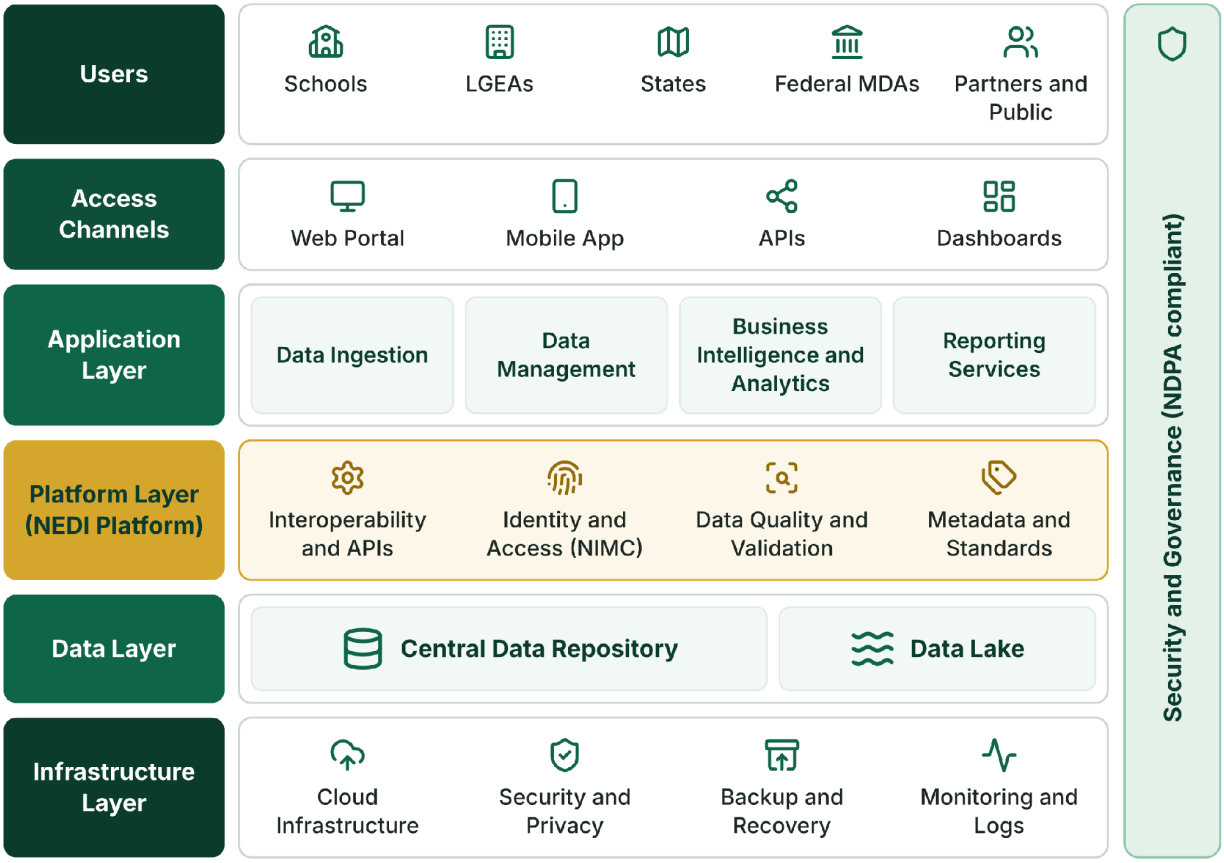
Authorised dashboards present dated performance information on the agreed reporting schedule; continuously monitored services may use real-time operational alerts.

Dashboards support monitoring across key domains including:

- learner enrolment
- teacher deployment
- infrastructure availability
- school performance
- financing
- implementation progress
- national performance indicators

These dashboards form the primary evidence base for strategic decision-making, performance management and accountability.

Figure A2.2 — NEDI Technical Architecture



A2.2.2 NEDI Functional Components

The successful operation of NEDI depends on clearly defined functional components, each with designated institutional leadership and accountability. While implementation is collaborative, responsibility for policy, standards, data quality and technical operations is distributed across relevant Ministries, Departments and Agencies (MDAs) according to their statutory mandates.

Table A2.2 — NEDI Functional Components

Component	Primary Function	Lead Agency	Supporting Institutions
Data Exchange Layer	Secure interoperability between national and State education systems through APIs and common standards	Federal Ministry of Education (FME)	FMoCIDE, NITDA, UBEC, State Ministries of Education
Cloud Infrastructure Layer	National hosting environment, system resilience, storage, disaster recovery and business continuity	FME / Galaxy Backbone*	NITDA, FMoCIDE
Identity Layer	Integration of learner and teacher identity using national identity services	NIMC	FME, UBEC, TRCN
Teacher Data Services	Integration of teacher registration, competency and professional development records	TRCN	NTI, UBEC, States

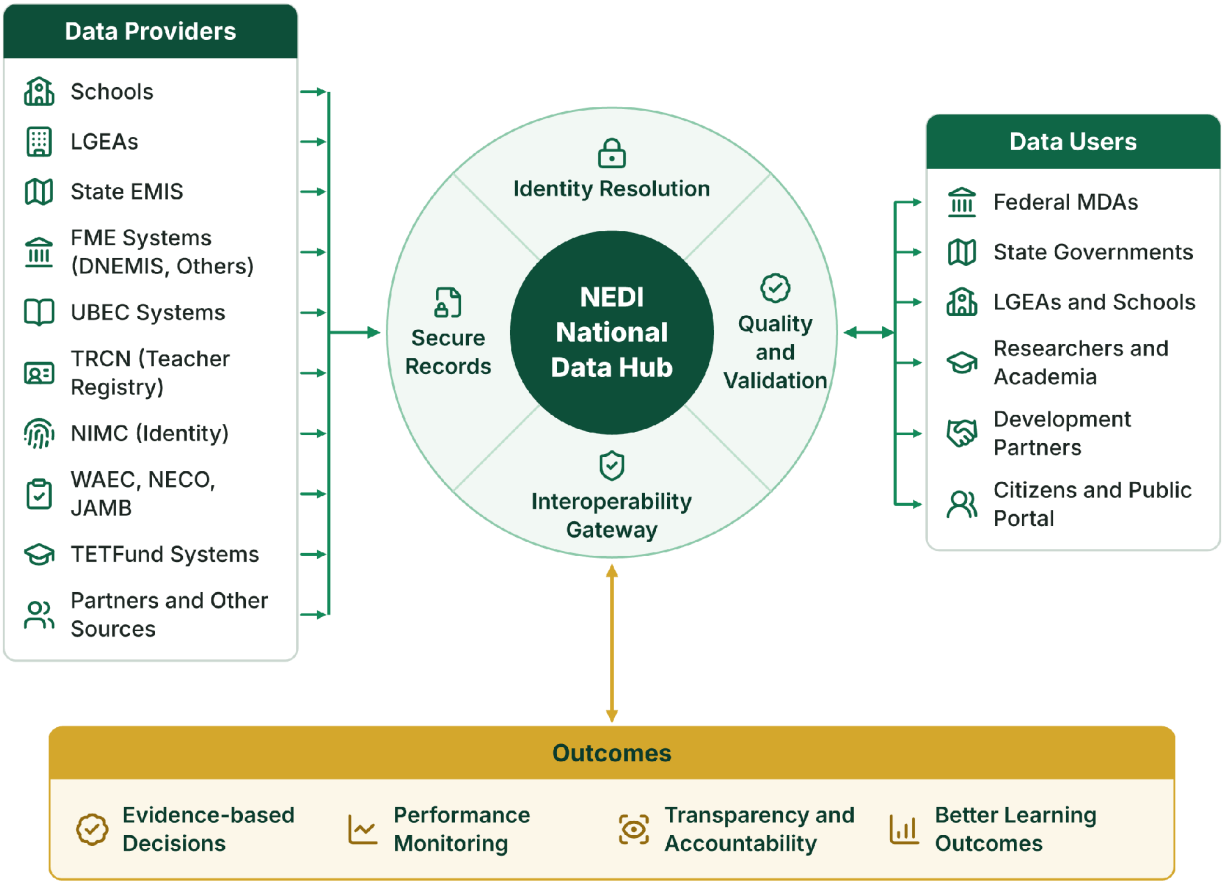
Component	Primary Function	Lead Agency	Supporting Institutions
Curriculum and Learning Content Services	Alignment of digital content with national curriculum and quality standards	NERDC	UBEC, NCCE, NBTE, NUC
Assessment Data Services	Integration of learner assessment and examination data	WAEC, NECO, JAMB, NABTEB	FME
Analytics Layer	National analytics, business intelligence, reporting and decision-support dashboards	FME	UBEC, NITDA
Quality Engine	Automated validation, quality assurance and data governance	UBEC	State EMIS Units, FME
Security Layer	Cybersecurity, privacy, identity protection and regulatory compliance	Nigeria Data Protection Commission (NDPC)	NITDA, NIMC
National Dashboards	National, State and institutional performance reporting	FME	UBEC, States
Research and Innovation Services	Data use for education research, innovation and policy improvement	TETFund	Universities, Research Institutions

A2.2.3 Design Principles

The NEDI architecture is guided by the following national design principles:

- **Interoperability by design** – systems exchange information using common standards rather than operating in isolation.
- **One source of truth** – priority datasets are maintained once and reused across authorised systems.
- **Security and privacy by design** – compliance with the Nigeria Data Protection Act (NDPA), cybersecurity standards and child protection requirements is embedded throughout the architecture.
- **Modularity and scalability** – new applications and services can be integrated without disrupting existing operations.
- **Open standards** – vendor-neutral technologies reduce lock-in and encourage innovation.
- **Federal–State collaboration** – implementation supports decentralised service delivery while enabling national coordination.
- **Evidence-driven decision-making** – trusted data underpins planning, budgeting, monitoring and policy development.

Figure A2.3 — National Data Flow and Interoperability



A2.2.4 Expected Technical Outcomes

Further implementation and strengthening of the existing NEDI architecture will support the following intended technical outcomes:

- a fully interoperable national education data ecosystem;
- secure integration of priority education datasets across Federal and State systems;
- improved data quality, timeliness and reliability;
- stronger accountability through timely reporting;
- enhanced planning, financing and resource allocation based on trusted evidence; and
- a scalable digital public infrastructure capable of supporting future innovations, including advanced analytics and responsible AI applications, as system readiness matures.

A2.3 Pillar 2: Infrastructure Ecosystem

A2.3.1 Introduction

Schools need reliable electricity, usable connectivity, secure local networks, appropriate devices and continuing technical support.

This section defines minimum standards, differentiated deployment models, lifecycle arrangements and service performance requirements.

Plan, finance and manage power, connectivity and devices as integrated services supporting learning, administration and data collection.

A2.3.2 Infrastructure Standards

To promote interoperability, sustainability and equity, all infrastructure deployed under the Strategy should comply with nationally agreed minimum standards. These standards provide a common baseline for procurement, implementation and quality assurance while allowing flexibility to accommodate local contexts.

Minimum Infrastructure Standards

Infrastructure deployed under the Strategy should provide:

- reliable electricity suitable for continuous operation of digital learning systems;
- broadband connectivity sufficient to support digital teaching, learning and school administration;
- secure wired and wireless local area networking within schools;
- safe charging facilities for digital devices;
- cybersecurity and physical security measures appropriate for school environments;
- routine maintenance and technical support;
- accessibility features that enable equitable participation by all learners, including learners with disabilities.

Table A2.3 — Minimum Infrastructure Standards

Component	Minimum Standard	Lead Institutions
Electricity	Reliable power through grid, solar, hybrid or mini-grid solutions with appropriate backup	REA, State Governments, Private Sector
Broadband Connectivity	Broadband services meeting nationally approved minimum bandwidth requirements	NCC, USPF, Licensed Operators
School Wi-Fi	Secure campus-wide wireless coverage for teaching and administration	Schools, Service Providers
Local Area Network (LAN)	Structured internal network supporting devices, servers and learning platforms	Implementing Partners
Device Charging	Safe charging stations with surge protection and power management	Schools, Contractors
Cybersecurity	Secure network configuration, user authentication and endpoint protection	NITDA, NDPC
Maintenance	Preventive and corrective maintenance under defined Service-Level Agreements (SLAs)	PPP Providers
Accessibility	Infrastructure supporting assistive technologies and Universal Design for Learning (UDL) principles	FME, NERDC, UBEC

A2.3.3 School Infrastructure Typologies

Infrastructure requirements differ according to school size, location, education level and connectivity context. The Strategy therefore adopts differentiated infrastructure models rather than a uniform national deployment.

Table A2.4 — School Infrastructure Typologies

School Category	Preferred Power Solution	Connectivity Model	Device Model
Urban Primary School	Grid with solar backup	Fibre or Fixed Wireless	Shared classroom devices
Rural Primary School	Solar or Hybrid	Satellite, Wireless or Community Network	Shared mobile device carts
Urban Secondary School	Grid with hybrid backup	Fibre Broadband	Computer laboratories and classroom devices
Rural Secondary School	Hybrid Solar System	Satellite or Fixed Wireless	Shared laboratories and mobile devices
TVET Institutions	Hybrid Grid/Solar	High-capacity Fibre	Specialist technical laboratories
Colleges of Education	Grid and Backup	Fibre Broadband	Institutional device programmes
Universities	Dedicated Grid and Backup	High-speed Fibre	Institutional digital learning infrastructure

Infrastructure deployment should be informed by school readiness assessments, geospatial mapping and demand analysis undertaken through NEDI.

A2.3.4 Infrastructure Deployment Models

Recognising Nigeria's diverse geographic conditions, the Strategy supports multiple deployment models. Technology selection should be based on technical feasibility, lifecycle cost, environmental sustainability and long-term service reliability.

Power Deployment Models

Solar Energy Systems

Suitable for off-grid and underserved communities with high solar potential. Solar systems should include battery storage, remote monitoring and preventive maintenance arrangements.

Hybrid Energy Systems

Hybrid systems combine grid electricity with renewable energy sources and battery storage, improving resilience while reducing operating costs.

Mini-Grids

Mini-grid solutions are appropriate for clusters of schools or communities where standalone systems provide greater value than individual installations.

National Grid Supply

Where reliable grid electricity exists, schools should leverage existing supply with appropriate backup systems to improve resilience.

Connectivity Deployment Models

Fibre Broadband

Preferred option in urban and peri-urban locations due to higher bandwidth, reliability and scalability.

Fixed Wireless

Suitable where fibre deployment is impractical but sufficient telecommunications infrastructure exists.

Satellite Connectivity

Recommended for remote and difficult-to-reach locations where terrestrial infrastructure is unavailable.

Community Networks

Community-based connectivity models may be deployed in partnership with local governments, communities and telecommunications providers to improve affordability and sustainability.

Figure A2.4 — Connected School Service Model

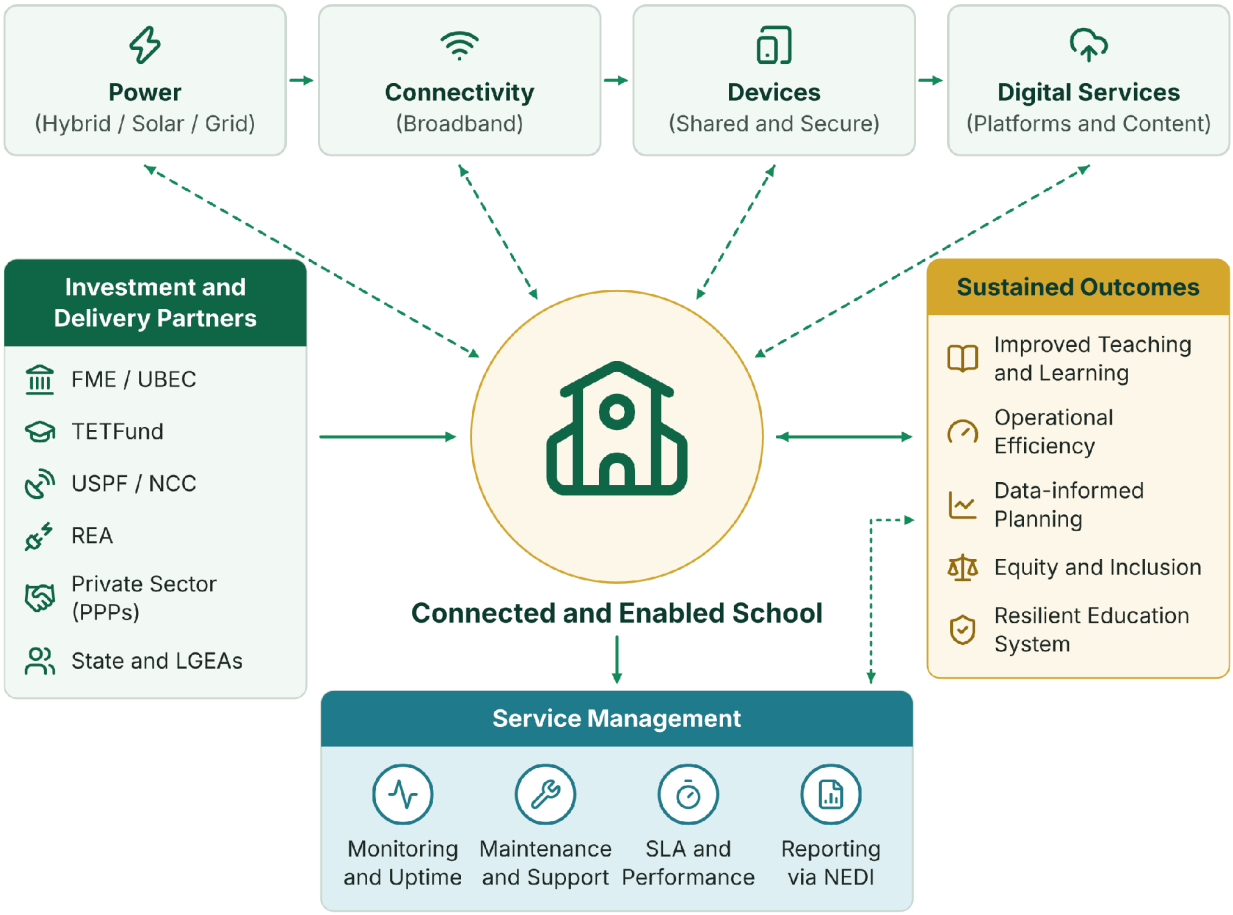
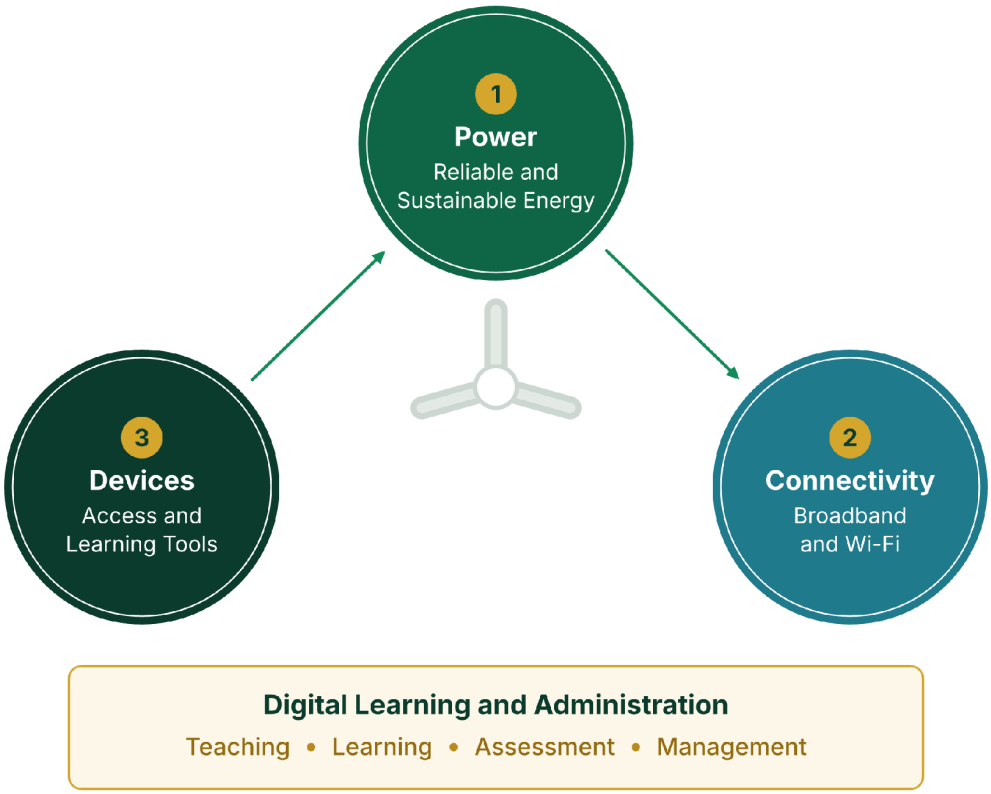


Figure A2.5 — School Connectivity Tripod



A2.3.5 Public–Private Partnership (PPP) Models

Consistent with the Financing Strategy, digital infrastructure will increasingly be delivered through performance-based Public–Private Partnerships (PPPs). The Strategy shifts emphasis from one-time capital procurement towards long-term service delivery models that prioritise quality, reliability and sustainability.

PPP arrangements should clearly define performance standards, service obligations, monitoring requirements and accountability mechanisms.

Table A2.5 — Illustrative PPP Delivery Models

Service Area	Preferred PPP Model	Lead Public Institution
School Electrification	Design-Build-Operate-Maintain (DBOM)	REA / State Governments
Broadband Connectivity	Managed Connectivity Services	NCC / USPF
Digital Devices	Device-as-a-Service (DaaS)	FME / UBEC
School Networks	Managed Network Services	States / Private Providers
Technical Support	Regional Managed Service Contracts	States / LGEAs
Infrastructure Monitoring	Performance-based Operations Contracts	FME

PPP contracts should include clearly defined Service-Level Agreements covering:

- infrastructure availability;
- network uptime;

- maintenance response times;
- asset replacement schedules;
- reporting requirements through NEDI; and
- performance-based payment mechanisms.

A2.3.6 Infrastructure Lifecycle Management

Manage infrastructure through a lifecycle covering acquisition, operation, maintenance, renewal and responsible disposal; initial deployment alone does not ensure sustainability.

Replacement Planning

Infrastructure replacement schedules should be developed during procurement to minimise service disruption and ensure continuity of teaching and learning.

Preventive Maintenance

Routine inspections, software updates, battery replacement, network optimisation and equipment servicing should be undertaken according to agreed maintenance schedules.

Asset Management

All digital infrastructure assets should be uniquely identified and recorded within NEDI-enabled asset management systems to support planning, monitoring and lifecycle costing.

Asset records should include:

- asset identification number;
- location;
- ownership;
- installation date;
- warranty information;
- maintenance history;
- operational status; and
- replacement schedule.

Electronic Waste (e-Waste) Management

Disposal of obsolete digital equipment should comply with national environmental regulations and recognised international good practice.

Implementing institutions should promote:

- responsible recycling;
- refurbishment where appropriate;
- certified disposal providers;
- environmentally sustainable procurement; and
- circular economy principles.

A2.3.7 Infrastructure Performance Management

Infrastructure performance will be monitored through NEDI-enabled dashboards using agreed national indicators.

Key performance measures include:

- electricity availability;
- network uptime;
- bandwidth utilisation;
- device functionality;
- maintenance response times;
- school connectivity status;
- asset utilisation; and
- learner and teacher access.

These indicators will support evidence-based planning, contract management and continuous service improvement.

A2.3.8 Expected Technical Outcomes

Implementation of this infrastructure framework will establish:

- nationally standardised digital learning infrastructure across all education levels;
- equitable access to reliable electricity, connectivity and digital devices;
- sustainable infrastructure services supported through performance-based PPPs;
- improved value for money through lifecycle management;
- enhanced interoperability with NEDI and other national education systems; and
- resilient infrastructure capable of supporting future innovations, including advanced analytics and responsible AI applications as system readiness matures.

Implementation References

This section should be read alongside:

- **Chapter 3 – Pillar 2: Infrastructure Ecosystem**
- **Chapter 9 – Implementation Roadmap**
- **Chapter 10 – Financing Strategy**
- **Annex 1 – Detailed Implementation Plan**
- **Annex 2, Figure A2.4 – Connected School Service Model**
- **Annex 2, Figure A2.5 – School Connectivity Tripod**

A2.4 Pillar 3: Technology and Procurement

A2.4.1 Introduction

Technology selection and procurement must align educational needs with interoperability, transparent competition and sustainable lifecycle provision.

This section defines technology standards, evaluation, vendor qualification, contracts and lifecycle management. It supports secure exchange with authorised systems and NTDCF-aligned teacher development.

Technology procurement under this Strategy shall prioritise service delivery, open standards, accessibility, security and long-term sustainability over one-off acquisition of hardware and software.

A2.4.2 National Technology Standards

Technology deployed under the National EdTech Strategy should conform to nationally approved standards to ensure compatibility, security, accessibility and interoperability across all education systems.

The standards shall be reviewed periodically to accommodate technological advances while preserving backward compatibility with existing investments.

Minimum Technology Requirements

Technology solutions should:

- support secure interoperability with approved systems through documented APIs, including NEDI where relevant;
- comply with national cybersecurity and data protection requirements;
- support inclusive education and Universal Design for Learning (UDL);
- provide offline capability where connectivity is limited;
- enable cloud-based service delivery;
- support future integration of advanced analytics and responsible AI applications; and
- minimise vendor lock-in through open standards.

Table A2.6 — National Technology Standards

Technology Area	Minimum Standard	Lead Institutions
Devices	Education-grade devices with minimum performance specifications	FME, UBEC
Operating Systems	Supported operating systems with regular security updates	FME, NITDA
Cloud Services	Secure cloud-hosted services with disaster recovery	FME, Galaxy Backbone, NITDA
Cybersecurity	NDPA-compliant security controls and endpoint protection	NDPC, NITDA
Accessibility	WCAG compliance and UDL principles	FME, NERDC
Identity Services	NIMC-enabled authentication where applicable	NIMC
Data Exchange	RESTful APIs and national interoperability standards	FME
Learning Platforms	Curriculum-aligned, interoperable and standards-compliant	NERDC, UBEC
AI Readiness	Responsible AI governance and interoperability capability	FME, NITDA

A2.4.3 Technology Standards Framework

Devices

Procured devices should be durable, energy-efficient, repairable and suitable for education. Differentiate specifications by institutional need rather than impose one national model.

Cybersecurity

All technology solutions shall incorporate cybersecurity by design, including:

- encryption of sensitive information;
- secure authentication;
- role-based access control;
- endpoint protection;
- audit logging;
- vulnerability management; and
- incident response procedures.

Accessibility

Digital technologies should be accessible to all learners and teachers, including persons with disabilities.

Technology solutions should support:

- screen readers;
- captioning;
- keyboard navigation;
- assistive technologies;
- multilingual interfaces;
- inclusive digital content.

Cloud Services

Cloud infrastructure should provide:

- high availability;
- automatic backup;
- disaster recovery;
- elastic scalability;
- secure hosting within approved government environments where required.

AI Readiness

Design investments to accommodate responsible AI while retaining human oversight, ethical safeguards and regulatory compliance.

Open Standards

Preference should be given to technologies supporting internationally recognised open standards to promote interoperability, competition and long-term sustainability.

A2.4.4 National Procurement Framework

The National Procurement Framework establishes common procedures for acquiring digital technologies across the education sector.

Procurement shall emphasise:

- transparency;

- competitiveness;
- interoperability;
- lifecycle value;
- quality assurance;
- sustainability; and
- measurable educational outcomes.

Technology procurement should transition progressively from capital expenditure models towards managed service arrangements that improve operational performance and reduce total cost of ownership.

Procurement Principles

Technology procurement shall be guided by the following principles:

- Value for money
- Fair competition
- Open standards
- Interoperability
- Lifecycle management
- Transparency
- Local capacity development
- Environmental sustainability
- Evidence-based evaluation

A2.4.5 Technology Evaluation Framework

Use the common procurement framework below while adapting contract-specific scoring to the service, cohort and delivery setting under applicable procurement rules.

Table A2.7 — National Technology Evaluation Matrix

Evaluation stage	Required framework and evidence
Mandatory eligibility and compliance	Apply pass/fail eligibility, security, privacy, accessibility and interoperability requirements, including lawful data processing, documented interfaces and appropriate assurance evidence. Do not score compliance again as merit.
Educational quality and usability	Assess curriculum alignment, pedagogical quality, teacher and learner usability, Nigerian-language and low-bandwidth/offline delivery, accessibility in practice and credible education evidence.
Delivery and local support capacity	Assess mobilisation, repair and support coverage, service response, knowledge transfer and contract-relevant delivery capability; apply lawful disclosed local-content requirements.
Lifecycle sustainability	Assess maintenance, subscriptions, updates, repairability, replacement, portability, secure exit and disposal; compare procurement, leasing, managed services and DaaS where relevant.
Total cost of ownership	Use a disclosed lifecycle horizon covering acquisition, deployment, power, connectivity, licences, support, maintenance, replacement and exit. Count each cost once and use a contract-specific quality–price method.

Procuring institutions establish contract-specific scoring, evidence requirements, thresholds and quality–price treatment before tender publication under applicable Federal or State procurement rules. The Strategy does not prescribe fixed numerical weights.

Disclose the evaluation method to all bidders before submission and do not alter it during evaluation. Keep mandatory compliance separate from rated educational and delivery merit. If total cost is assessed in the financial evaluation, do not score the same costs again in the technical matrix.

A2.4.6 Vendor Qualification Framework

To improve procurement quality and implementation performance, technology vendors participating in the National EdTech Strategy should satisfy minimum qualification requirements.

Table A2.8 — Vendor Qualification Requirements

Assessment Area	Minimum Requirement
Legal Status	Registered corporate entity
Financial Capacity	Demonstrated financial sustainability
Technical Experience	Relevant education technology experience
Local Presence	Nigerian implementation and support capacity
Cybersecurity	Compliance with national security requirements
Data Protection	NDPA compliance
Quality Assurance	Documented quality management processes
Support Services	Maintenance and helpdesk capability
Environmental Compliance	Responsible e-waste management
References	Proven delivery of comparable projects

Preference should be given to vendors that demonstrate strong local partnerships, knowledge transfer and capacity development.

A2.4.7 Public–Private Partnership (PPP) Contract Framework

PPP arrangements shall define measurable service obligations rather than focusing solely on equipment supply.

Illustrative contract schedules should include:

- service scope;
- performance indicators;
- uptime guarantees;
- maintenance schedules;
- reporting obligations;
- payment milestones;
- dispute resolution procedures;
- knowledge transfer requirements;
- exit arrangements.

Service-Level Agreements should define:

- minimum availability;
- response times;

- restoration times;
- preventive maintenance schedules;
- user support;
- reporting through NEDI dashboards.

A2.4.8 Technology Lifecycle Management

Technology assets should be managed throughout their operational life to maximise educational value and minimise long-term costs.

Lifecycle management should include:

Planning

- needs assessment;
- technology standards;
- budgeting;
- procurement planning.

Acquisition

- competitive procurement;
- quality assurance;
- acceptance testing.

Deployment

- installation;
- configuration;
- integration with approved systems, including NEDI where relevant;
- user orientation.

Operations

- monitoring;
- software updates;
- security management;
- technical support.

Maintenance

- preventive maintenance;
- repairs;
- replacement of defective components;
- performance monitoring.

Refresh and Replacement

Technology refresh cycles should be planned during procurement to avoid technology obsolescence and service disruption.

Responsible Disposal

All obsolete equipment should be disposed of through environmentally responsible recycling and e-waste management processes.

Figure A2.6 — Digital Procurement Lifecycle

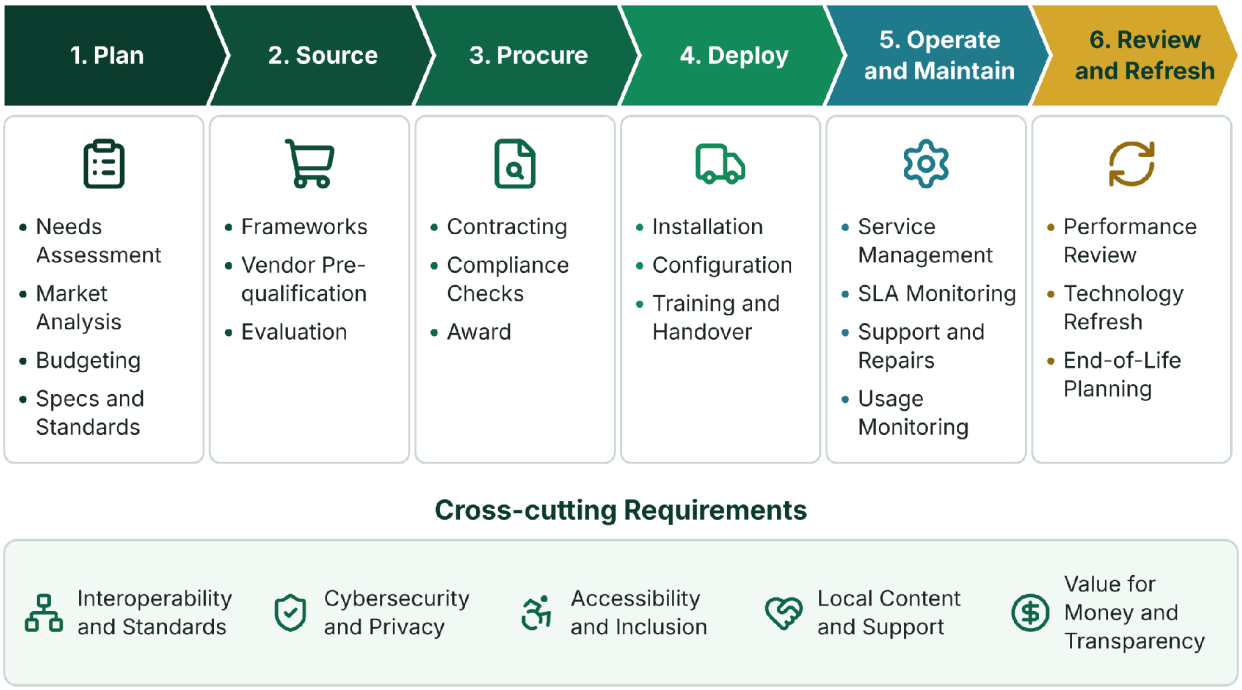
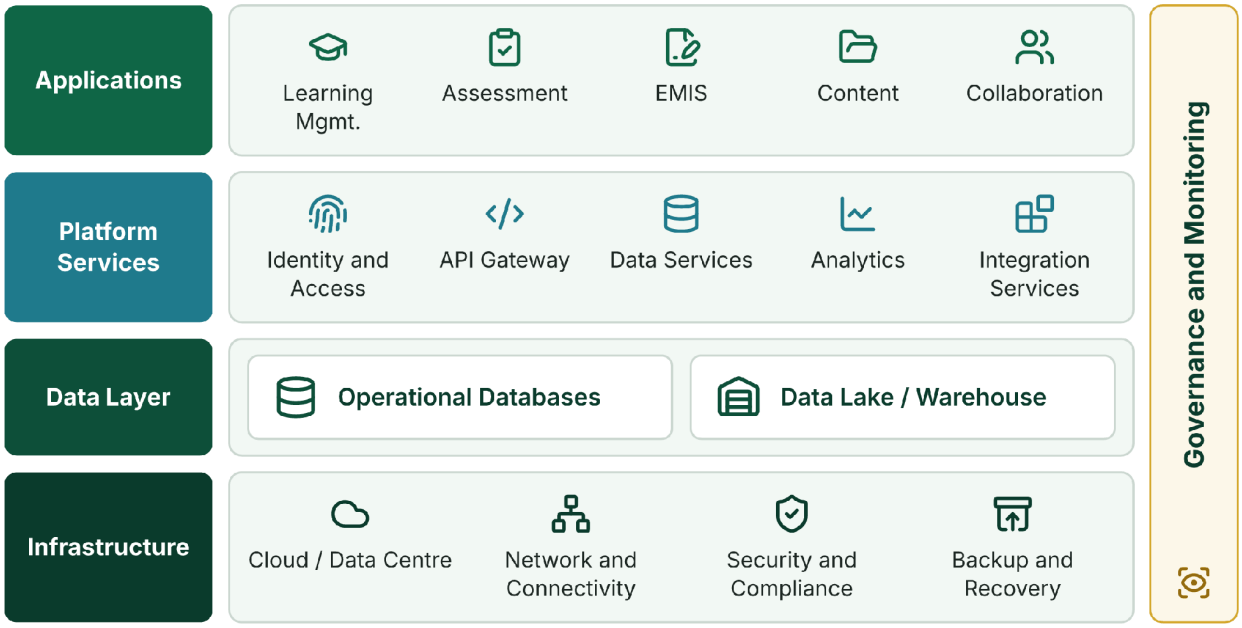


Figure A2.7 — Technology Architecture



A2.4.9 Technology Governance

Technology governance shall ensure that digital investments remain aligned with national education priorities.

Key responsibilities include:

- establishing national technology standards;
- developing and validating interoperability specifications;
- maintaining procurement guidance;
- monitoring vendor performance;
- managing technology risks;
- ensuring cybersecurity compliance;
- promoting continuous innovation.

Lead responsibilities shall be shared across:

- Federal Ministry of Education (FME)
- Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)
- National Information Technology Development Agency (NITDA)
- Universal Basic Education Commission (UBEC)
- Nigerian Educational Research and Development Council (NERDC)
- Tertiary Education Trust Fund (TETFund)
- National Identity Management Commission (NIMC)
- Nigeria Data Protection Commission (NDPC)
- State Governments
- Development Partners
- Private Sector Partners

A2.4.10 Expected Technical Outcomes

Implementation of this framework will deliver:

- nationally standardised education technology infrastructure;
- transparent and efficient procurement processes;
- interoperable digital platforms supporting secure data exchange with approved systems, including NEDI where relevant;
- strengthened local technology and EdTech ecosystems;
- reduced total cost of ownership through lifecycle management;
- improved cybersecurity and data protection;
- greater value for money through performance-based procurement; and
- technology investments that directly improve teaching, learning and system performance.

Implementation References

This section should be read alongside:

- **Chapter 4 – Pillar 3: Technology and Procurement**
- **Chapter 9 – Implementation Roadmap**
- **Chapter 10 – Financing Strategy**
- **Annex 1 – Detailed Implementation Plan**
- **Figure A2.6 – Digital Procurement Lifecycle**

- **Figure A2.7 – Technology Architecture**

A2.5 Pillar 4: Teacher Transformation

A2.5.1 Introduction

Teachers' application of technology in instruction and assessment determines its educational value. Professional development must therefore connect digital capability with classroom practice.

This section sets out **NTDCF** competency standards, certification pathways, professional learning systems, institutional responsibilities and implementation arrangements for a digitally empowered teaching workforce.

Authorised teacher records exchanged through NEDI support needs assessment, professional development monitoring and workforce planning.

A2.5.2 National Teacher Digital Competency Framework (NTDCF)

The NTDCF provides a nationally consistent framework for developing, recognising and strengthening teachers' digital competencies across all levels of education.

It establishes a common national language for digital teaching competencies, professional progression and certification while allowing contextual implementation across Federal, State and institutional levels.

The Framework aligns with:

- National Teacher Policy
- National Digital Literacy Framework
- National Digital Learning Policy
- UNESCO ICT Competency Framework for Teachers
- DigCompEdu Framework
- National Artificial Intelligence Strategy

The Framework supports both pre-service and in-service teacher development and provides structured pathways for continuous professional growth.

A2.5.3 NTDCF Competency Domains

The NTDCF comprises six interconnected competency domains.

Professional Engagement

Teachers effectively use digital technologies for professional collaboration, communication, administration and lifelong learning.

Digital Resources

Teachers identify, create, adapt, manage and responsibly use digital learning resources.

Teaching and Learning

Teachers integrate technology into lesson planning, instructional delivery, classroom interaction and learner engagement.

Assessment

Teachers use digital technologies to conduct formative and summative assessment, analyse learner performance and provide timely feedback.

Learner Empowerment

Teachers use technology to personalise learning, support inclusion and promote learner agency.

Digital Citizenship and Responsible Technology Use

Teachers promote safe, ethical and responsible use of digital technologies, including emerging technologies such as Artificial Intelligence.

Table A2.9 — National Teacher Digital Competency Framework

Competency Domain	Expected Capability
Professional Engagement	Digital communication, collaboration and professional practice
Digital Resources	Creation, adaptation and management of digital content
Teaching and Learning	Technology-enabled pedagogy and classroom practice
Assessment	Digital assessment and learning analytics
Learner Empowerment	Inclusive, learner-centred digital learning
Digital Citizenship and Responsible Technology Use	Safe, ethical and responsible technology use

A2.5.4 Competency Progression Framework

The Framework adopts progressive competency levels that recognise teacher growth over time.

Teachers advance through competency levels based on demonstrated capability rather than participation in isolated training activities.

Table A2.10 — NTDCF Competency Levels

Level	Description	Typical Teacher Profile
Foundational	Basic digital literacy and classroom technology use	Newly trained teachers or teachers beginning digital practice
Intermediate	Confident integration of technology into teaching and assessment	Classroom teachers
Advanced	Data-informed instruction, mentoring and instructional leadership	Lead teachers and instructional coaches
Leader / Innovator	System leadership, innovation and mentoring	Master trainers, teacher educators, digital champions

Progression across competency levels shall be supported through structured professional development, workplace practice, mentoring and evidence-based assessment.

A2.5.5 National Teacher Certification Framework

Digital competency certification provides national recognition of teachers' professional capability and supports career progression.

Certification shall complement existing teacher licensing arrangements and progressively become integrated into teacher professional standards.

Certification pathways should remain flexible and recognise prior learning, workplace evidence and demonstrated classroom competence.

Table A2.11 — National Teacher Certification Requirements

Certification Level	Minimum Requirements	Lead Institutions
Foundational	Digital literacy assessment, introductory professional learning	NTI, NITDA, TRCN
Intermediate	Demonstrated classroom integration, digital assessment practice	NTI, TRCN
Advanced	Evidence of mentoring, instructional leadership and data-informed practice	TRCN, NTI
Leader / Innovator	Innovation portfolio, mentoring record and national contribution	TRCN, FME

Certification shall combine:

- online assessment;
- classroom observation;
- digital portfolios;
- evidence of professional practice;
- continuous professional development records.

A2.5.6 Teacher Professional Development Portal (TPDP)

The Teacher Professional Development Portal serves as the national digital platform supporting teacher learning throughout their professional careers.

The TPDP shall integrate directly with NEDI and enable continuous monitoring of teacher development.

Core capabilities include:

- personalised professional learning pathways;
- competency self-assessment;
- online and blended learning;
- micro-learning modules;
- digital certification;
- digital badges;
- CPD tracking;
- mentoring support;
- professional communities of practice;
- learning analytics.

Each teacher shall maintain a secure digital professional profile linked to TRCN registration and national identity systems where appropriate.

A2.5.7 Continuous Professional Development (CPD)

Continuous Professional Development shall become a structured and ongoing component of teacher professional practice.

CPD activities may include:

- online learning;

- face-to-face training;
- peer learning;
- mentoring;
- professional learning communities;
- action research;
- classroom innovation;
- instructional coaching;
- conferences and seminars;
- self-directed learning.

Professional development should prioritise classroom application rather than attendance alone.

A2.5.8 Digital Badges and Micro-Credentials

The Strategy encourages the use of digital badges and micro-credentials to recognise incremental professional achievement.

Digital badges may recognise competencies such as:

- Digital Classroom Practitioner
- Digital Assessment Practitioner
- Inclusive Digital Educator
- STEM Digital Teacher
- AI-Aware Educator
- Digital Mentor
- School Digital Champion

Accumulated badges may contribute towards formal certification pathways.

A2.5.9 Mentoring and Professional Learning Communities

Mentoring shall become a core mechanism for teacher development.

Each participating school should progressively establish structured mentoring arrangements involving experienced teachers supporting colleagues through:

- classroom coaching;
- lesson observation;
- collaborative planning;
- peer review;
- reflective practice.

Professional Learning Communities (PLCs) should be strengthened at school, LGEA and State levels to promote collaborative learning and innovation.

A2.5.10 Teacher Leadership

Digital transformation requires instructional leadership at every level of the education system.

Teacher leadership programmes should prepare experienced educators to serve as:

- Digital Champions;
- Master Trainers;
- Instructional Coaches;
- Professional Learning Facilitators;
- School Technology Leaders;
- State Teacher Mentors.

Leadership programmes should combine technical expertise with instructional leadership and change management.

A2.5.11 Pre-Service and In-Service Integration

Teacher transformation requires alignment across the entire teacher development continuum.

Pre-Service Education

Teacher education institutions should integrate NTDCF competencies into curricula, teaching practice and graduation requirements.

Priority actions include:

- digital pedagogy;
- educational technology;
- assessment using digital tools;
- responsible AI awareness;
- inclusive digital learning.

In-Service Education

Serving teachers should access structured professional learning aligned with NTDCF competency levels and supported through the TPDP.

The transition from pre-service preparation to continuous professional development should be seamless and supported through NEDI-enabled teacher records.

Table A2.12 — Institutional Responsibilities

Institution	Primary Responsibility
Federal Ministry of Education (FME)	National policy leadership, NTDCF governance, NEDI integration, monitoring
Universal Basic Education Commission (UBEC)	Basic education implementation, teacher support programmes, State coordination
Teachers Registration Council of Nigeria (TRCN)	Professional standards, teacher registration, certification and licensing
National Teachers' Institute (NTI)	Professional development delivery, certification programmes, TPDP content
Nigerian Educational Research and Development Council (NERDC)	Curriculum alignment, digital learning resources, pedagogical standards
National Universities Commission (NUC)	Integration into university teacher education programmes

Institution	Primary Responsibility
National Commission for Colleges of Education (NCCE)	Integration into Colleges of Education curricula and teacher preparation
National Board for Technical Education (NBTE)	TVET teacher digital competency integration
Tertiary Education Trust Fund (TETFund)	Capacity development, institutional strengthening, research and innovation funding
Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)	National digital skills alignment, innovation ecosystem, digital inclusion
National Information Technology Development Agency (NITDA)	Digital literacy standards, technical guidance, emerging technology support
State Ministries of Education and SUBEBs	State implementation, teacher mobilisation, monitoring and reporting
LGEAs	Local implementation, mentoring support and school-level monitoring

A2.5.12 Monitoring Teacher Development

Teacher transformation shall be monitored through NEDI-enabled dashboards capturing:

- teacher competency levels;
- certification status;
- CPD participation;
- digital badge attainment;
- classroom technology adoption;
- mentoring participation;
- instructional coaching;
- professional learning activity;
- regional competency gaps.

These data will inform national planning, targeted interventions and performance improvement.

A2.5.13 Expected Implementation Outcomes

Successful implementation of this framework will deliver:

- a nationally standardised teacher competency framework;
- structured professional development across the teacher lifecycle;
- competency-based certification linked to professional progression;
- stronger instructional leadership and mentoring;
- improved classroom integration of digital technologies;
- continuous monitoring of teacher development through NEDI;
- enhanced teaching quality and learner outcomes.

Figure A2.8 — Teacher Professional Development Ecosystem

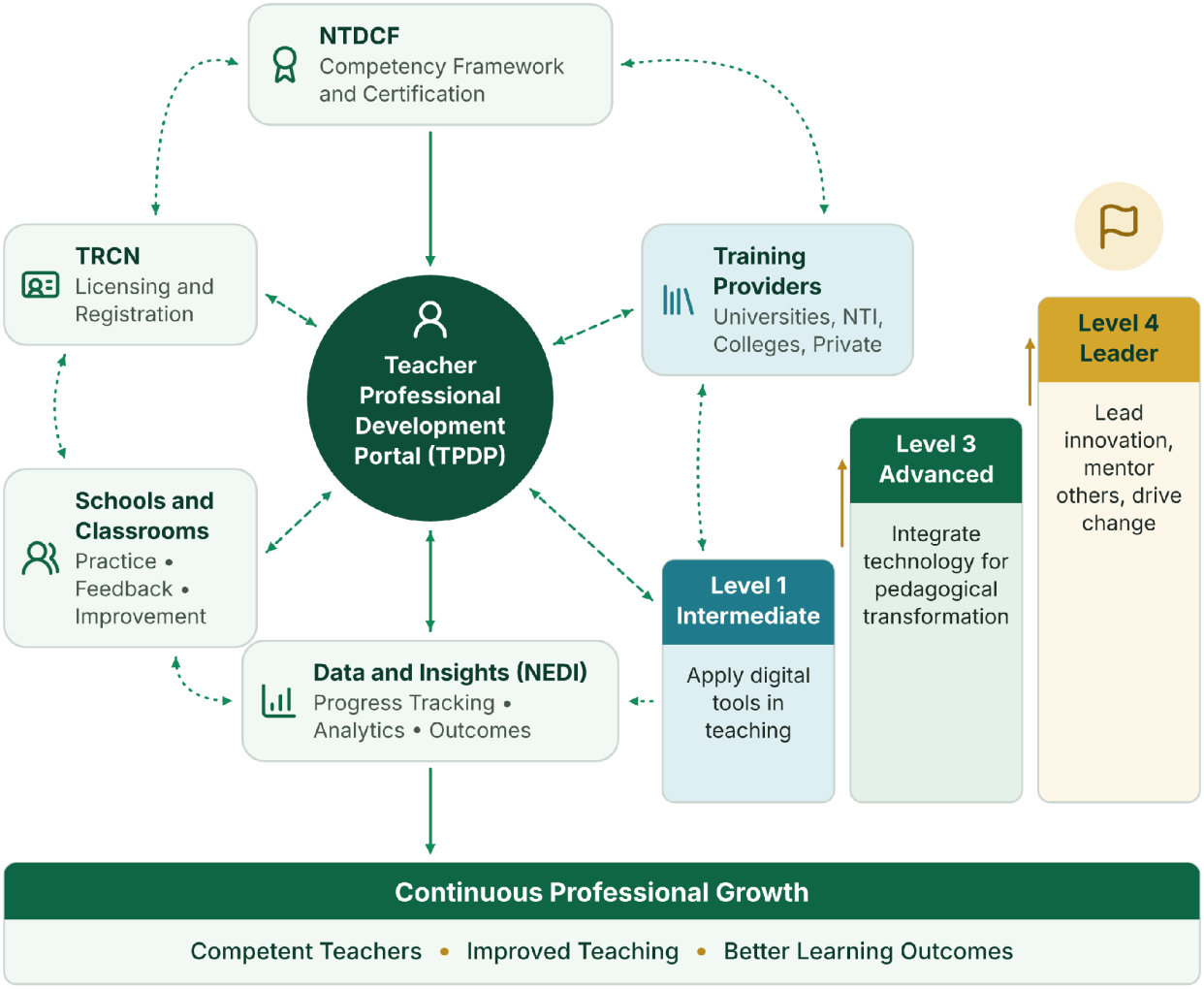
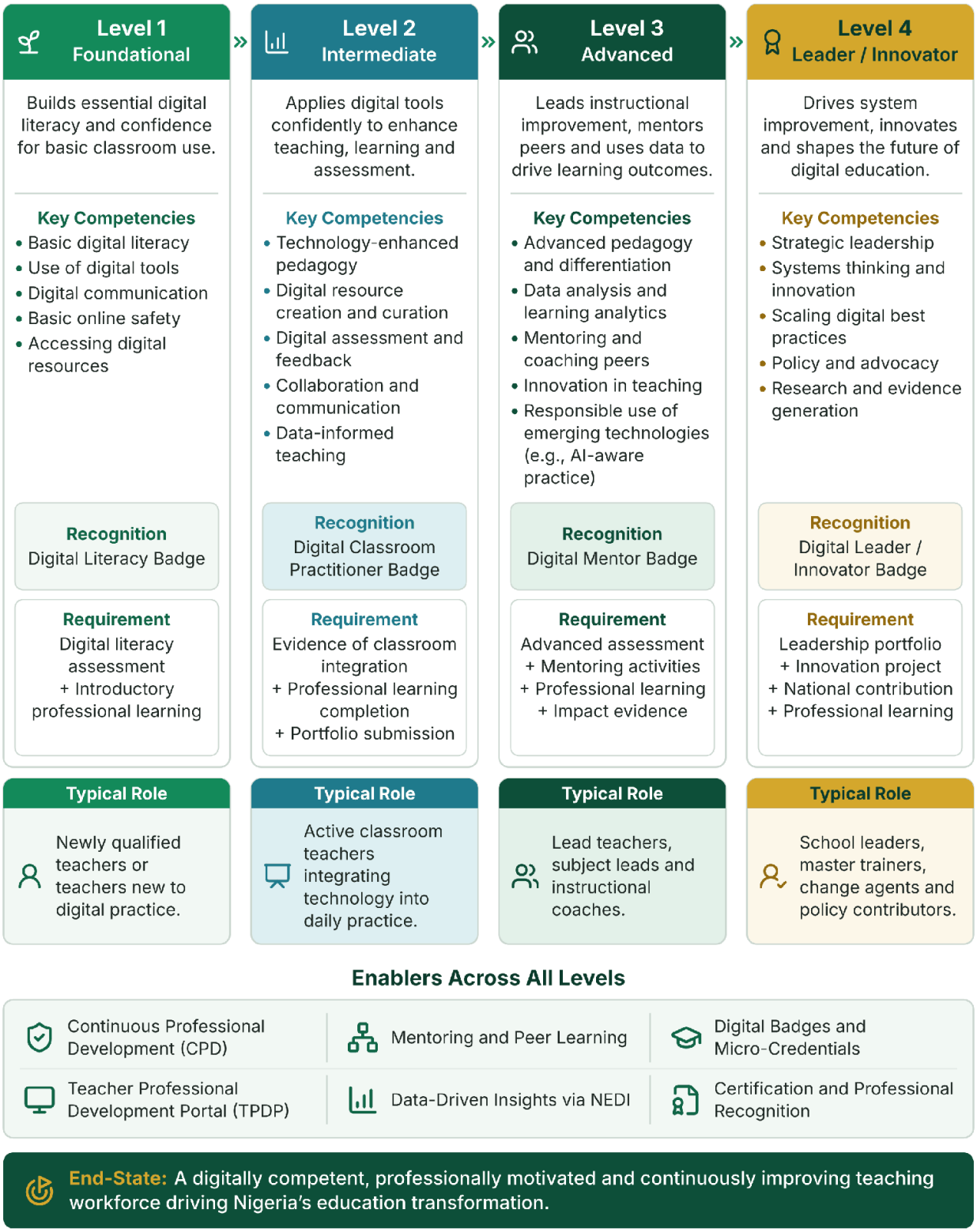


Figure A2.9 — Teacher Competency Progression

Progressive pathway for continuous professional growth, certification and leadership



Abbreviations: NEDI – National Education Data Initiative | TPDP – Teacher Professional Development Portal | AI – Artificial Intelligence | CPD – Continuous Professional Development

NTDCF provides a coherent national pathway for teacher digital competency and continuous development, aligned with national priorities and international good practice.

A2.6 Pillar 5: Governance and System Coordination

A2.6.1 Overview

Governance aligns leadership, institutional mandates, technical delivery, financing and performance management. Apply the model in Section 6.3.

Governance under this Strategy is founded on five principles:

- National leadership with shared ownership
- Federal–State collaboration
- Transparency and accountability
- Data-driven decision-making
- Continuous learning and improvement

NEDI supplies trusted data for monitoring infrastructure, teacher development and learning outcomes. The recommended Nigeria EdTech Programme Office coordinates implementation and reporting with the relevant governance committees.

A2.6.2 National Governance Architecture

Section 6.3, Tables 6.1–6.2 and Figure 6.2 define the recommended model, roles and reporting relationships. Ministerial strategic oversight, FME administrative reporting, technical advice and State coordination are distinct. NEDI supplies the national education data backbone; the Programme Office coordinates delivery.

A2.6.3 Governance Responsibilities

Table A2.13 — Governance Responsibilities

Institution	Primary Responsibility
Federal Ministry of Education (FME)	Overall policy leadership, Strategy implementation, NEDI oversight, national coordination
Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)	Digital infrastructure policy, innovation ecosystem, connectivity coordination
Universal Basic Education Commission (UBEC)	Basic education implementation, school infrastructure, teacher support, EMIS coordination
TETFund	Supplementary support within its public tertiary education, research and institutional development remit, including eligible teacher education institutions; not whole-Strategy or basic education financing.
NERDC	Curriculum development, digital learning content standards, curriculum alignment
NITDA	National digital literacy standards, technology standards, AI guidance, cybersecurity support
National Identity Management Commission (NIMC)	Digital identity integration, learner and teacher identity verification
Nigerian Communications Commission (NCC)	Broadband policy, school connectivity, telecom regulation
Universal Service Provision Fund (USPF)	Connectivity financing for underserved communities

Institution	Primary Responsibility
Rural Electrification Agency (REA)	Solar, mini-grid and hybrid electrification programmes
Teachers Registration Council of Nigeria (TRCN)	Teacher licensing, professional standards, NTDCF certification
National Teachers' Institute (NTI)	Teacher professional development and CPD delivery
National Universities Commission (NUC)	Integration of NTDCF into university teacher education programmes
National Commission for Colleges of Education (NCCE)	Pre-service teacher education standards
National Board for Technical Education (NBTE)	Digital competencies within TVET institutions
Nigeria Data Protection Commission (NDPC)	Data governance, privacy and compliance
State Ministries of Education & SUBEBs	State implementation, budgeting, coordination and reporting
Local Government Education Authorities (LGEAs)	School-level implementation, monitoring and support

A2.6.4 Governance Committees

Apply the operating cadence and role descriptions in Section 6.3. Technical Steering Committee participation should reflect relevant ministries, statutory agencies, States and education, research, civil society and private-sector expertise, with balanced representation and conflicts-of-interest controls. Specialist working groups are time-limited and advisory. State Teams use existing institutions and a designated focal point.

Committees and the Office should maintain mandates, agendas, minutes, decision and action logs, accountable owners and escalation deadlines. Technical matters go to the relevant experts and regulators; strategic or cross-ministerial issues go to the Joint Committee. Administrative, procurement and financial authority remains with the responsible public bodies.

A2.6.5 Decision Rights

Decision-making follows the principle of subsidiarity.

Table A2.14 — Decision Rights

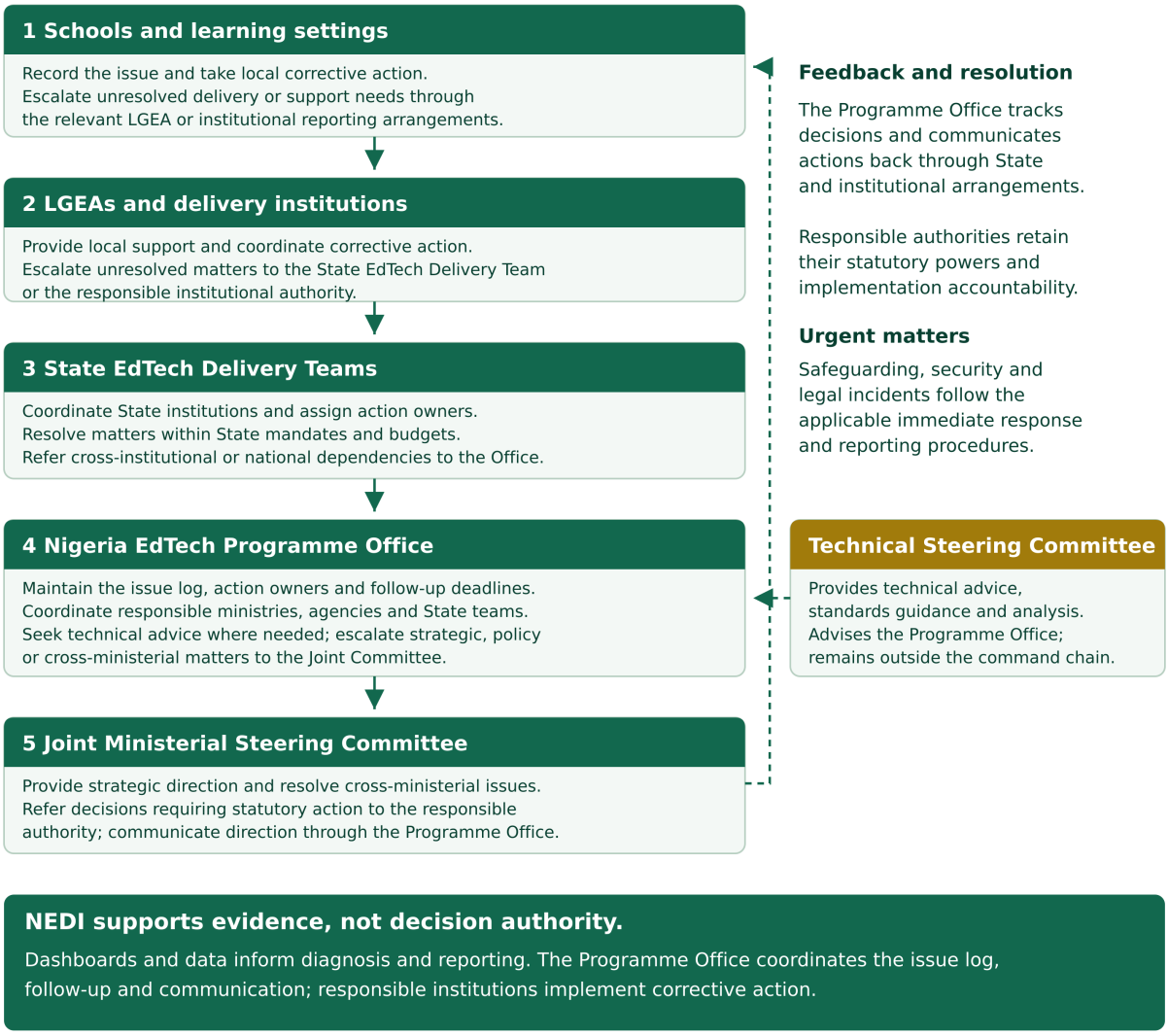
Level	Primary Decisions
Federal	National policy, standards, financing, interoperability
State	Delivery planning, budgeting, implementation
LGEA	Operational coordination
School	Day-to-day implementation

A2.6.6 Escalation Framework

Schools and LGEAs escalate delivery issues through State arrangements to the Programme Office for tracking and coordination. The Technical Steering Committee provides technical advice; strategic and cross-ministerial issues escalate to the Joint Ministerial Steering Committee. Refer statutory matters to the competent public authority.

***Figure A2.10** — Escalation Framework*

Resolve issues at the lowest appropriate level; retain clear institutional accountability.



Joint Ministerial Steering Committee

The Programme Office maintains the issue-tracking and action log, supported by verified data from NEDI and existing systems; dashboards provide evidence, not decision authority.

A2.6.7 Performance Reporting

The Programme Office coordinates consolidated performance reporting using verified data from NEDI and other existing systems under common standards and agreed data-access permissions.

Reporting covers:

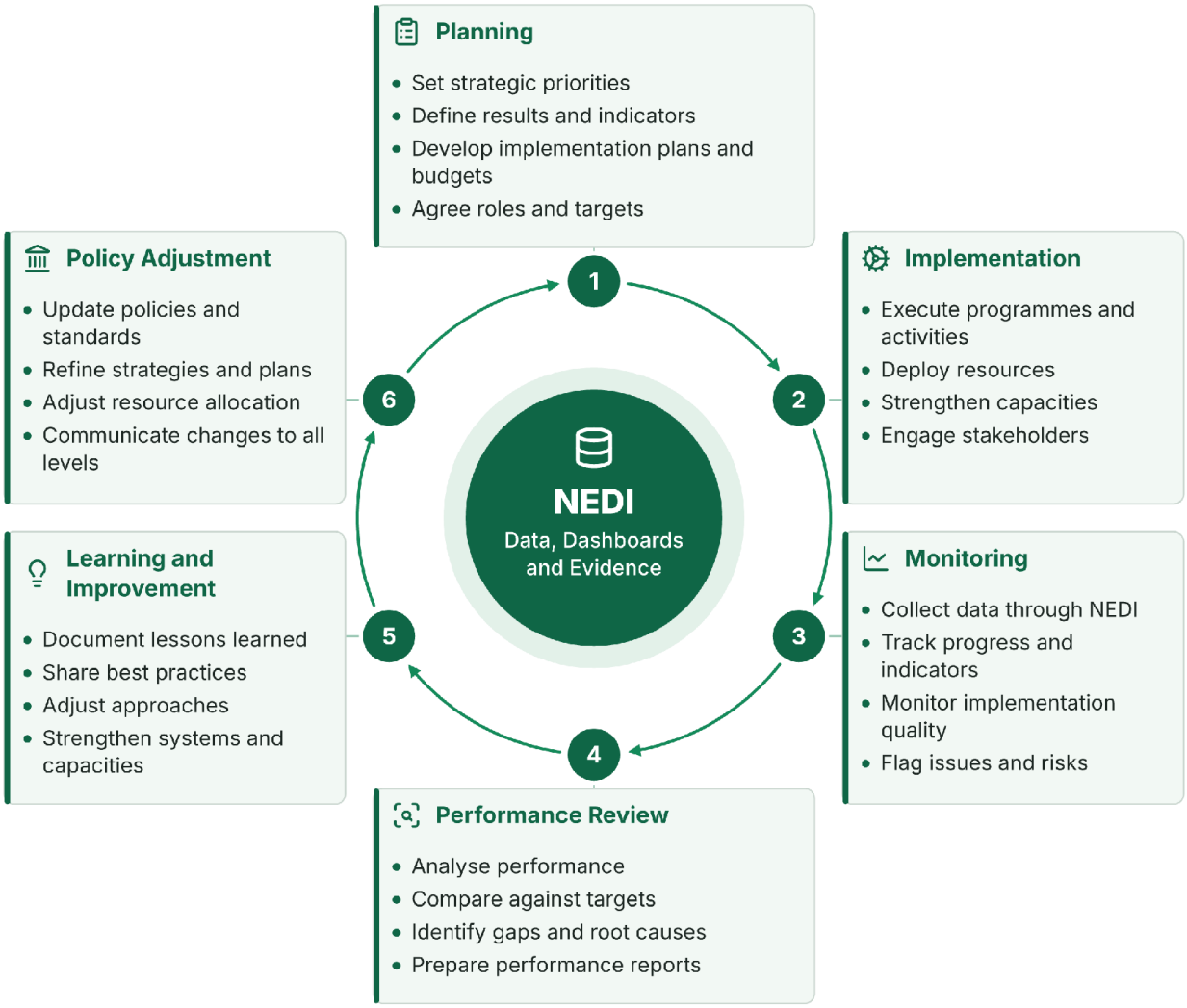
- Infrastructure
- Connectivity
- Teacher development
- Data quality
- Procurement

- Financial performance
- Learning indicators
- Equity indicators

The Programme Office submits quarterly performance reporting, drawing on the national indicator framework in Section 7.7 and Section A2.7, to the Joint Ministerial Steering Committee. The Technical Steering Committee provides technical scrutiny; supporting learning and equity evidence remains available.

Figure A2.11 — Performance Management Cycle

Continuous cycle for planning, monitoring, learning and improving implementation



Enablers throughout the cycle

Governance and Accountability	Data Quality and Integrity	Stakeholder Engagement	Partnerships and Collaboration	Resource Mobilisation	Risk Management and Compliance

Purpose: Use evidence to make informed decisions, improve implementation, and achieve better outcomes for learners.

A2.6.8 Risk Management

Risk management is embedded throughout implementation to support timely identification, mitigation and escalation of strategic, operational and technical risks.

Table A2.15 — Illustrative Risk Management Framework

Risk Category	Illustrative Mitigation Measures
Governance	Clearly defined mandates, regular coordination meetings and escalation protocols
Financing	Multi-source financing, phased implementation and performance-based allocations
Data	Data quality standards, validation rules, NDPA compliance and cybersecurity safeguards
Infrastructure	Service-Level Agreements (SLAs), preventive maintenance and diversified connectivity options
Technology	Open standards, interoperability requirements and vendor quality assurance
Human Capacity	Continuous professional development, technical support and change management
Political & Institutional	Broad stakeholder ownership, institutionalisation of governance structures and alignment with national policies

A2.6.9 Continuous Improvement

Governance is supported by an adaptive management approach that uses evidence generated through NEDI, monitoring and evaluation, stakeholder engagement and independent reviews to strengthen implementation over time.

Continuous improvement mechanisms include:

- Quarterly performance reviews using NEDI dashboards.
- Annual implementation and learning reviews.
- Independent evaluations and technical audits.
- State peer-learning and benchmarking.
- Stakeholder consultations with government, development partners, academia, civil society and the private sector.
- Periodic review of standards, guidance and implementation tools.

This adaptive governance approach ensures that implementation remains responsive to emerging priorities while maintaining alignment with national education objectives and delivering sustainable system improvement.

A2.7 Monitoring, Evaluation and Learning (MEL)

A2.7.1 Purpose

The Monitoring, Evaluation and Learning (MEL) Framework provides the operational arrangements for measuring implementation, performance, learning and continuous improvement across the National EdTech Strategy.

MEL is an integrated management cycle, not reporting alone. NEDI and authorised institutional records supply evidence for planning, accountability and adaptation.

The framework enables Federal and State Governments to monitor implementation consistently while providing timely information for decision-making across all five strategic pillars.

A2.7.2 Monitoring Framework

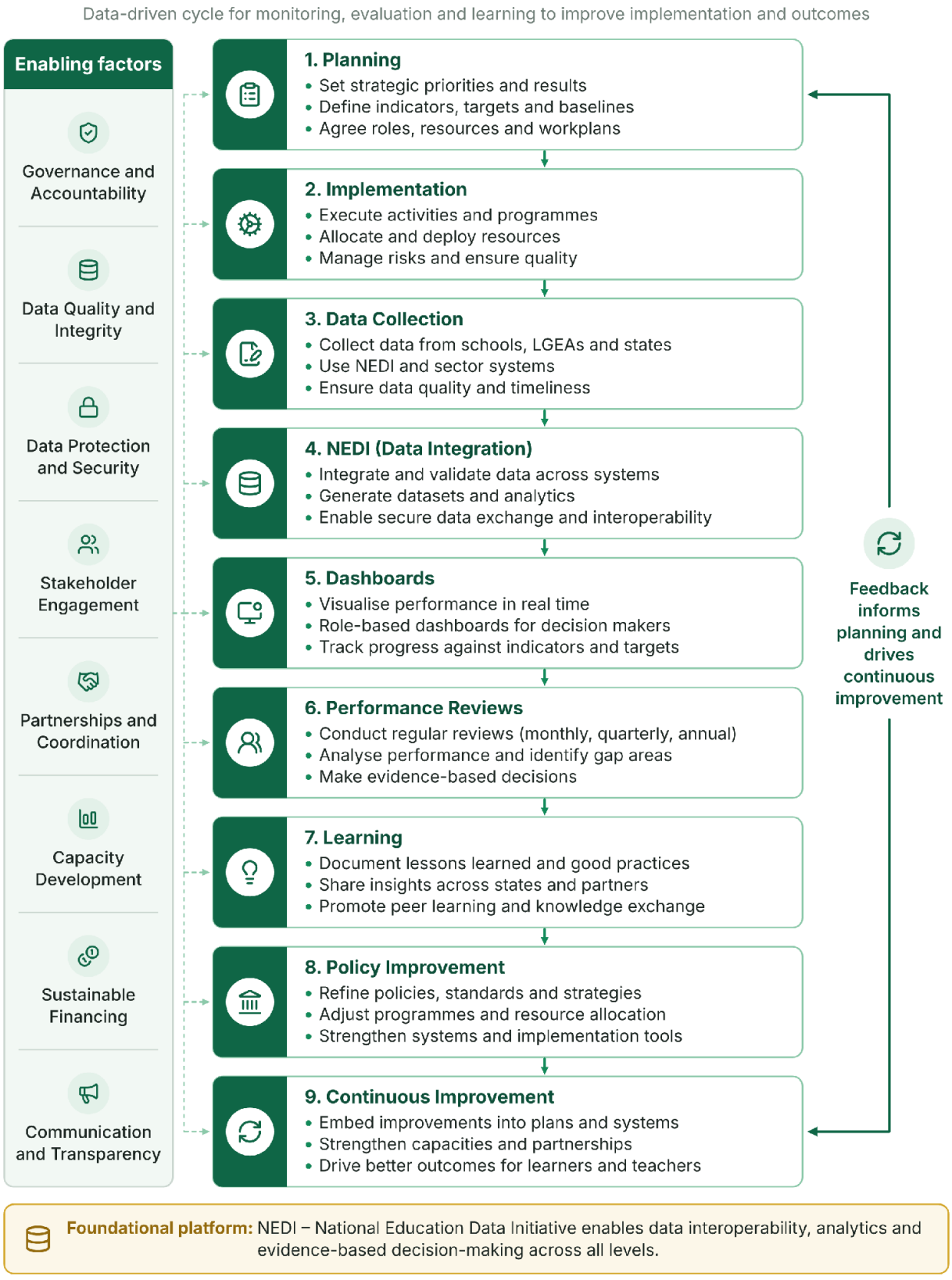
Monitor routine delivery through the six indicators in Table 7.1 and supporting operational measures, using NEDI and other authorised institutional records.

Monitoring covers:

- implementation progress
- infrastructure deployment
- teacher transformation
- financial performance
- procurement
- governance
- learning outcomes
- equity and inclusion
- system performance

Use automated operational evidence where available, with reporting on the agreed schedule.

Figure A2.12 — National MEL Framework



A2.7.3 Results Framework

The Strategy adopts a results chain linking investments to national outcomes.

Table A2.16 — Results Chain

Level	Purpose	Example
Inputs	Resources invested	Funding, infrastructure, systems
Activities	Implementation	Teacher training, connectivity rollout
Outputs	Immediate products	Connected schools, trained teachers
Outcomes	System improvements	Better planning, improved teaching
Impact	National transformation	Improved learning outcomes

A2.7.4 Key Performance Indicators

The Strategy monitors performance through a balanced national indicator framework.

Indicators are grouped into:

- Governance
- Data
- Infrastructure
- Technology
- Teachers
- Learners
- Procurement
- Finance
- Equity
- System Performance

Table A2.17 — National KPI Categories

Category	Typical Indicators
Governance	Committee functionality, reporting compliance
Data	ASC completion, interoperability, data quality
Infrastructure	Electricity, connectivity, device availability
Technology	Platform uptime, interoperability compliance
Teachers	NTDCF progression, CPD completion
Learners	Digital access, participation, assessment
Procurement	SLA compliance, vendor performance
Finance	Budget execution, PPP performance
Equity	Rural coverage, disability inclusion, gender
Outcomes	Learning improvements, efficiency gains

A2.7.5 Expanded National Indicator Matrix

Table 7.1 is the authoritative headline dashboard. Supporting measures below diagnose delivery and equity; they do not create additional headline indicators or automatic national target trajectories. Use

disclosed annual implementation cohorts and existing records. Record missing baselines as “not measured”, retain source dates and report changes to denominators.

Supporting operational measures: governance and data

Track completed actions and review cycles against those scheduled, school census completeness and timeliness, registry quality, data error rates and lawful identity linkage. Data owners retain responsibility for accuracy, permissions and corrections. Learners without a NIN remain eligible for education services through appropriate interim education identifiers.

Supporting operational measures: infrastructure, teachers and learners

Retain separate power, connectivity and device rates alongside combined readiness. Track service uptime, repair response, usable shared-device access, content accessibility and subscriptions. Track NTDCF levels, assessment coverage, professional learning completion and classroom support separately. Report learner activity mode and intensity, attendance and assessment participation without treating platform logins or teacher training attendance as learning outcomes.

Supporting measures: procurement, finance, inclusion and outcomes

Monitor mandatory contract compliance, SLA delivery, maintenance and secure disposal. Compare lifecycle unit costs in constant prices for equivalent service standards; do not assume automatic annual cost reductions. Report private funding disbursed separately from commitments and public payments. Track subgroup access and participation gaps for underserved learners using lawful, minimised aggregate records and suppress identifying small cells. Examine teacher workload, reliability, educational quality and comparable learning assessments without guaranteed gains or unsupported causal claims.

Recommended delivery milestones: by end-2027, six integrated State plans in operation, scheduled foundation interfaces functioning, and supported NTDCF competency assessment and mentoring underway for participating cohorts within available resources. In 2028, expand delivery across participating States and extend priority interfaces using first-school-year evidence. In 2029–2030, sustain services, fund lifecycle needs and adapt routine delivery. Mandatory legal and contractual standards remain implementation requirements.

A2.7.6 Data Sources

Performance information will be generated through integrated national systems.

Table A2.18 — Data Sources

Source	Lead Agency
NEDI	FME
DNEMIS	FME / UBEC
State EMIS	States
ASC	UBEC
TPDP	NTI / TRCN
TRCN Register	TRCN
NIMC	NIMC
School Infrastructure Registry	REA / NCC / States
Financial Systems	FME / States
Learning Assessments	FME / NERDC

A2.7.7 Reporting Arrangements

Reporting follows a common national cycle.

Table A2.19 — Reporting Frequency

Report	Frequency
School Reports	Monthly
LGEA Reports	Monthly
State Reports	Quarterly
National Dashboard	Quarterly consolidation; latest annual or termly observations where appropriate
National Performance Review	Quarterly
Annual Implementation Report	Annual

A2.7.8 Performance Dashboards

NEDI supports the six-indicator dashboard in Table 7.1. Consolidate quarterly, carrying the latest available annual or termly observations with dates and coverage labels. Detailed operational modules support diagnosis, not additional headline indicators.

Dashboard modules include:

- Governance
- Infrastructure
- Connectivity
- Teachers
- Learners
- Procurement
- Finance
- Equity
- Risks

Role-based dashboards are available for:

- Ministers
- Commissioners
- UBEC
- SUBEBs
- LGEAs
- Schools
- Development Partners

A2.7.9 Evaluation Framework

Evaluation complements routine monitoring through periodic independent assessments.

Three evaluation levels are envisaged:

- Implementation Review
- Mid-term Evaluation

- End-line Evaluation

Evaluations examine:

- relevance
- effectiveness
- efficiency
- sustainability
- impact
- value for money

Mixed methods combining quantitative and qualitative evidence are encouraged.

A2.7.10 Verification

Performance information is verified through:

- automated validation
- field verification
- independent audits
- procurement audits
- financial audits
- third-party assessments

A2.7.11 Institutional Responsibilities

Table A2.20 — MEL Responsibilities

Institution	Responsibility
FME	National MEL leadership
UBEC	Basic education monitoring
States	State reporting
LGEAs	School supervision
TRCN	Teacher indicators
NTI	CPD reporting
NERDC	Curriculum implementation indicators
TETFund	Higher education digital transformation monitoring
NITDA	Digital capability indicators
NCC	Connectivity indicators
REA	Electrification monitoring
NDPC	Data protection compliance

A2.7.12 Learning Reviews

The Strategy institutionalises continuous learning through:

- Quarterly implementation reviews

- Annual learning forums
- Peer-learning exchanges
- Independent evaluations
- Technical working groups
- State benchmarking

Learning findings are incorporated into annual implementation planning.

A2.7.13 Knowledge Management

Knowledge generated during implementation is treated as a national public good.

Knowledge products include:

- Annual State of Digital Education Report
- Good Practice Notes
- Implementation Toolkits
- Case Studies
- Research Papers
- Technical Guidance Notes
- Policy Briefs
- Open Dashboards

The Programme Office coordinates knowledge management with responsible institutions; NEDI supplies approved data and analytical evidence rather than serving as the programme's knowledge repository.

A2.8 Responsible AI and Emerging Technologies

A2.8.1 Purpose

Artificial Intelligence (AI) is recognised as an enabling capability that can strengthen teaching, learning, planning and system management when deployed responsibly and in accordance with national policy, applicable laws and ethical principles.

Consistent with Chapter 8 and applicable national AI policy, adoption shall be progressive, evidence-based and human-centred. AI complements teachers and education leaders. Literacy, professional development, research and controlled pilots may begin during Foundation where appropriate safeguards and institutional readiness exist; advanced and scaled deployment require verified readiness for the intended use. Nationwide infrastructure completion is not a precondition for every AI activity.

A2.8.2 AI Governance Principles

Responsible AI implementation shall be guided by the following principles:

- Human oversight and accountability.
- Educational value and learner-centred design.
- Fairness, equity and non-discrimination.
- Privacy and data protection.
- Transparency and explainability.
- Security and resilience.

- Inclusion and accessibility.
- Compliance with national laws and standards.

AI governance shall align with the **Nigeria Data Protection Act (NDPA)**, the **National Artificial Intelligence Strategy**, and other applicable regulatory frameworks.

A2.8.3 AI Risk Categories

Table A2.21 — AI Risk Classification

Risk Category	Illustrative Risks	Mitigation Measures
Privacy	Unauthorised access to learner or teacher data	Data minimisation, encryption, NDPA compliance
Bias & Fairness	Algorithmic discrimination by gender, disability or geography	Bias testing, representative datasets, human review
Safety	Harmful or inappropriate AI outputs	Safety filters, content moderation, age-appropriate controls
Security	Cybersecurity threats or system compromise	Secure architecture, penetration testing, incident response
Reliability	Inaccurate or inconsistent outputs	Independent validation, continuous monitoring
Governance	Lack of accountability or oversight	Defined governance structures, audit trails, human decision authority

A2.8.4 AI Readiness Assessment

Deployment should proceed only where readiness conditions proportionate to the intended use and risk have been met. Assessments shall consider data requirements, infrastructure, teacher capacity, governance, legal compliance and technical support. Literacy activities and controlled pilots need not meet the same requirements as advanced data-intensive services.

Table A2.22 — AI Readiness Assessment Framework

Dimension	Assessment Criteria	Lead Institution
Data Readiness	Trusted datasets, interoperability, data quality	FME / NEDI
Infrastructure	Reliable power, connectivity and devices	REA, NCC, States
Teacher Readiness	NTDCF foundational competencies achieved	TRCN, NTI
Governance	Policies, standards and oversight in place	FME, FMoCIDE
Legal & Regulatory	NDPA compliance and procurement safeguards	NDPC
Technical Capacity	Skilled personnel and support arrangements	NITDA

A2.8.5 Recommended AI Assurance and Deployment Process

All AI-enabled solutions should undergo a structured assurance process before deployment.

The recommended assurance pathway comprises:

1. Business need identification.
2. Educational impact assessment.
3. Privacy and data protection impact assessment.
4. Ethical and bias assessment.
5. Technical and cybersecurity review.
6. Pilot implementation.
7. Independent evaluation.
8. The designated governance authority should guide scaled deployment using documented assurance evidence and applicable statutory requirements.

A2.8.6 Human Oversight

Human judgement remains central to all high-impact educational decisions.

AI systems shall support, but not replace, professional decision-making in relation to:

- learner assessment;
- teacher performance management;
- school accountability;
- disciplinary actions; and
- resource allocation.

Appropriate review mechanisms shall be maintained to enable challenge, correction and appeal where AI-assisted recommendations influence decisions.

A2.8.7 Child Protection and Data Protection

AI applications involving children must use age-appropriate design, lawful processing, data minimisation and safeguarding. Independent reasoning and teacher professional judgement remain central. Education data must not be reused for advertising or commercial model training outside explicitly governed, lawful arrangements.

Key requirements include:

- age-appropriate design;
- parental or guardian consent where required by law;
- protection against harmful or inappropriate content;
- secure handling of learner data;
- data minimisation; and
- regular privacy and security audits.

A2.8.8 Use of Generative AI

Generative AI may be used to support teaching, learning and administrative efficiency where appropriate governance arrangements are in place.

Potential applications include:

- lesson planning;
- curriculum-aligned content generation;

- formative assessment support;
- translation and accessibility services;
- administrative drafting; and
- data summarisation.

Teachers should check accuracy, curriculum relevance and appropriateness before classroom use. Apply the safeguards in Section 8.3.6: do not enter identifiable learner data into public AI tools or permit advertising or commercial training reuse outside explicitly governed, lawful arrangements. Consequential decisions retain accountable human responsibility and accessible challenge and correction routes.

A2.8.9 Guidance for Teachers

Teachers should:

- use AI to enhance planning and instruction rather than replace professional judgement;
- verify AI-generated content before classroom use;
- protect learner privacy;
- model ethical and responsible AI use; and
- participate in ongoing professional learning on emerging technologies.

A2.8.10 Guidance for Learners

Learners should be supported to:

- understand appropriate AI use;
- think critically about AI-generated information;
- respect academic integrity;
- protect personal information; and
- use AI safely, ethically and responsibly.

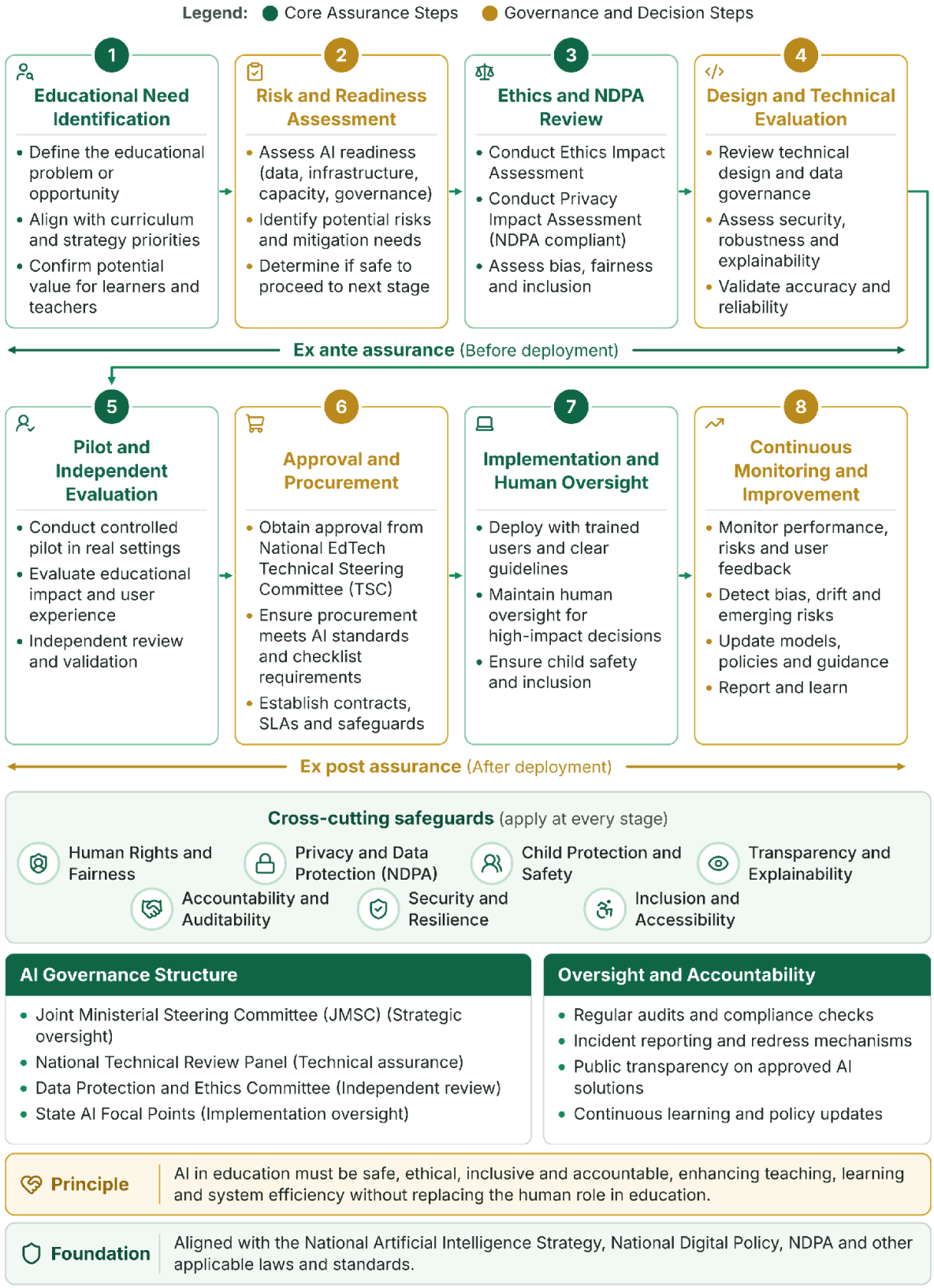
A2.8.11 AI Procurement Checklist

Prior to procurement, AI-enabled solutions should be assessed against:

- educational relevance;
- alignment with curriculum;
- Strategy-wide interoperability with approved systems, including NEDI where relevant;
- security and privacy requirements;
- accessibility;
- bias and fairness;
- explainability;
- lifecycle support;
- vendor capability; and
- compliance with applicable laws and national standards.

Figure A2.13 — Responsible AI Assurance Framework

A human-centred, risk-based and accountable approach to the development, procurement and use of AI in education



This figure reinforces the Strategy's principle that responsible AI adoption is progressive, evidence-based and governed throughout the system lifecycle.

A2.8.12 Research, Benchmarking and Pilot Evaluation

Indigenous research and multilingual educational AI models shall follow the priorities in Chapter 8. A Nigerian Education AI Benchmark may be considered; any resulting framework shall evaluate curriculum accuracy, subject competence, language relevance, accessibility, safety and instructional usefulness. Models shall undergo technical, educational, legal and financial evaluation before wider adoption.

Pilots shall define objectives, institutional responsibilities, safeguards, monitoring and evaluation criteria before implementation. Foundation activities may include AI literacy and mathematics learning, NTDCF-aligned teacher development and responsible data analytics. Scale decisions shall rely on demonstrated educational benefit, affordability and readiness. Optimisation shall prioritise independent evaluation, continuous improvement and sustainable national capacity. Detailed activities and indicators shall be incorporated into Annex 1 through existing planning arrangements.

A2.9 Financial Implementation Guide

A2.9.1 Purpose

This section applies Chapter 10 through investment sequencing, institutional financing responsibilities, budget and procurement controls, financial assurance and performance monitoring.

The implementation approach is guided by five principles:

- Shared financing responsibility;
- Value for money;
- Performance-based financing;
- Long-term sustainability; and
- Transparency and accountability.

A2.9.2 Strategic Financing Framework

Federal and State government resources should anchor implementation and recurrent costs from inception, including Programme Office operations. Development partner support and private investment should complement public financing through technical assistance, innovation and appropriate service delivery arrangements.

Investment is deliberately sequenced to establish national systems before expanding infrastructure and institutionalising sustainable service delivery.

Figure A2.14 — National Financing Framework



A2.9.3 Indicative Investment Profile

The indicative priority investment envelope is:

Table A2.23 — Indicative Investment Envelope

Item	Value
Indicative investment envelope	US$225 million (late 2026–2030)

The period profile reflects phased deployment and recurring support, not an assumed automatic fall in cost. Maintain public provision for recurrent services from inception.

Table 10.1 is the authoritative component and period allocation; Section A1.7 applies it without additional funding allocations.

A2.9.4 Investment Profile by Period

Apply the financing-period allocations in Table 10.1. Delivery phases may overlap according to readiness.

Table 10.1 sets out late 2026–2027: US$95 million; 2028: US$81 million; and 2029–2030: US$49 million, totalling US$225 million. Use these allocations in annual planning without duplicating component or recurrent costs.

Mobilisation and foundation extend across late 2026–2027. Keep recurrent support visible as coverage expands during 2028 and is sustained in 2029–2030.

A2.9.5 Funding Sources

Financing will be mobilised through complementary funding streams.

Table A2.24 — Funding Sources

Funding Source	Primary Purpose
Federal Government	National systems, policy implementation, governance, standards
State Governments	School implementation, operations, co-financing
UBEC	Basic education infrastructure and programme support
TETFund	Supplementary support within its public tertiary education, research and institutional development remit, including eligible teacher education institutions; not whole-Strategy or basic education financing.
Development Partners	Technical assistance, catalytic investments, capacity development
Private Sector (PPPs)	Connectivity, power, devices and managed services
Philanthropic Foundations	Innovation, pilots, research and inclusion initiatives
Corporate Social Responsibility (CSR)	Community access, digital inclusion, school support

A2.9.6 Institutional Financing Responsibilities

Implementation requires coordinated financing responsibilities across Ministries, Departments and Agencies.

Table A2.25 — Institutional Financing Responsibilities

Institution	Financial Responsibility
FME	National programme leadership; NEDI funding; coordination; performance oversight
FMoCIDE	Digital infrastructure policy; innovation programmes; interoperability support
Federal Ministry of Finance	Fiscal oversight; timely funding releases within applicable public finance rules
Budget Office of the Federation	Budget preparation and expenditure monitoring
UBEC	Basic education financing; school infrastructure; State implementation support
TETFund	Supplementary support within its public tertiary education, research and institutional development remit, including eligible teacher education institutions; not whole-Strategy or basic education financing.
NERDC	Digital curriculum, digital content standards and quality assurance
NITDA	Digital literacy standards; technology standards; cybersecurity support
NCC / USPF	Broadband expansion and universal access funding
REA	School electrification and renewable energy deployment
NIMC	Digital identity integration
Bureau of Public Procurement (BPP)	Procurement compliance and oversight
State Governments	Co-financing, implementation and recurrent expenditure
Development Partners	Catalytic financing and technical assistance

A2.9.7 Public–Private Partnership Models

PPPs are one delivery option. Compare them with procurement, leasing and managed services on lifecycle value, affordability and fiscal exposure; public service payments and contingent liabilities remain visible.

Table A2.26 — PPP Delivery Models

Area	PPP Model
Electricity	Solar-as-a-Service; Mini-grid PPPs
Connectivity	Managed broadband services; Satellite connectivity
Devices	Device-as-a-Service (DaaS)
Learning Platforms	Software-as-a-Service
Maintenance	Performance-based maintenance contracts
Data Centres	Managed cloud hosting

Payments should be linked to agreed Service-Level Agreements (SLAs), including uptime, maintenance response times, user satisfaction and service availability.

A2.9.8 Budget Responsibilities

Budget responsibilities should be aligned across all tiers of government.

Table A2.27 — Budget Responsibilities

Budget item	Public responsibility	Delivery options
NEDI and national platforms	Federal budgets and responsible institutions	Public procurement or suitable managed services
School infrastructure and connectivity	Federal and State budgets within mandates	Procurement, leasing, managed services or affordable PPPs
Teacher development and classroom support	Federal and State education budgets	Existing teacher institutions and contracted support
Operations, maintenance and replacement	Federal and State recurrent budgets	Lifecycle contracts or institutional provision
Programme Office, monitoring and evaluation	Federal coordination budget and State implementation budgets	Secondments, shared services and specialist assignments

A2.9.9 Procurement Thresholds

Technology procurement should comply with the Public Procurement Act, Bureau of Public Procurement (BPP) guidelines and relevant State procurement legislation.

Illustrative procurement methods by value category include:

Table A2.28a — Illustrative Procurement Methods by Value Category

Procurement Value	Procurement Method
Low value	Request for Quotations
Medium value	Competitive Tender
High value	International Competitive Procurement
National Digital Platforms	Open Competitive Procurement with technical evaluation
PPP Projects	Competitive PPP procurement in accordance with national regulations

All procurements shall incorporate:

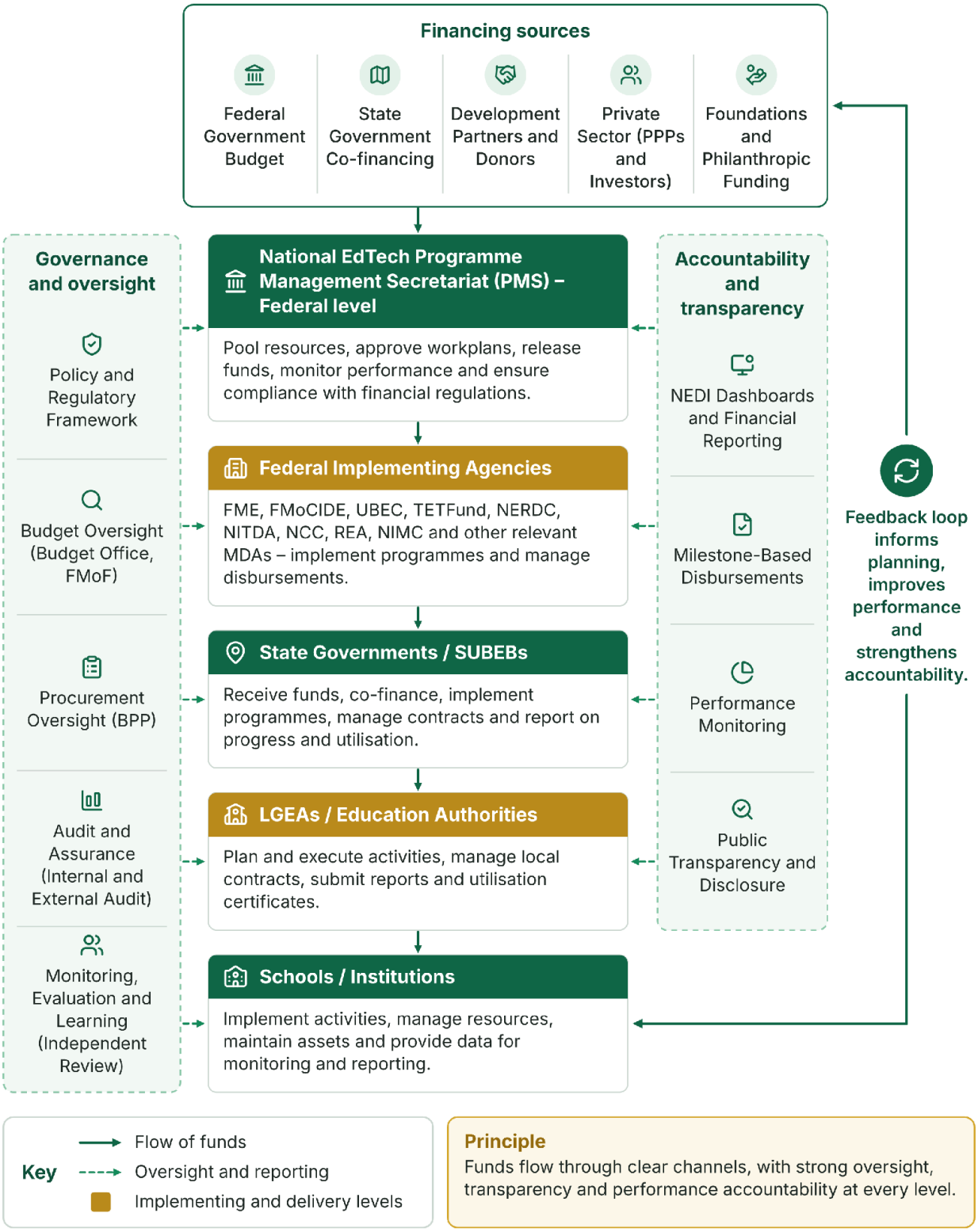
- interoperability requirements;
- cybersecurity standards;
- accessibility requirements;
- lifecycle costing;
- local content considerations;
- sustainability requirements; and
- NDPA compliance.

A2.9.10 Cash Flow Management

Funding should be released against documented implementation milestones, within applicable public finance rules.

Figure A2.15 — Financial Flow Framework

From national financing sources to schools through accountable, transparent and performance-based flows



A2.9.11 Financial Governance

Financial governance shall be based on:

- annual workplans with clearly assigned institutional responsibilities;
- milestone-based disbursement;
- segregation of financial responsibilities;
- digital financial reporting;
- transparent procurement;
- periodic financial reviews; and
- independent audit.

NEDI dashboards should progressively integrate financial performance information to support evidence-based decision-making.

A2.9.12 Disbursement Framework

Disbursement should follow verified implementation milestones.

Table A2.28 — Indicative Disbursement Triggers

Milestone	Disbursement Trigger
Governance established	Initial mobilisation
NEDI operational (already deployed and collecting data)	Platform funding
Infrastructure deployment verified	Infrastructure payment
Teacher training completed	Capacity development payment
Service performance achieved	PPP performance payment
Annual review completed	Subsequent funding release

A2.9.13 Financial Risk Management

Major financial risks include:

- delayed budget releases;
- exchange-rate volatility;
- procurement delays;
- contract underperformance;
- inflation;
- weak State co-financing;
- inadequate operations and maintenance funding.

Mitigation measures include:

- phased procurement;
- performance-based contracts;
- contingency reserves;
- diversified financing;
- periodic financial reviews;

- strengthened financial management systems.

A2.9.14 Financial Audit and Assurance

Financial assurance shall include:

- internal audit;
- external independent audit;
- procurement audit;
- value-for-money assessment;
- performance audit;
- compliance review;
- PPP contract audit; and
- development partner fiduciary reviews where applicable.

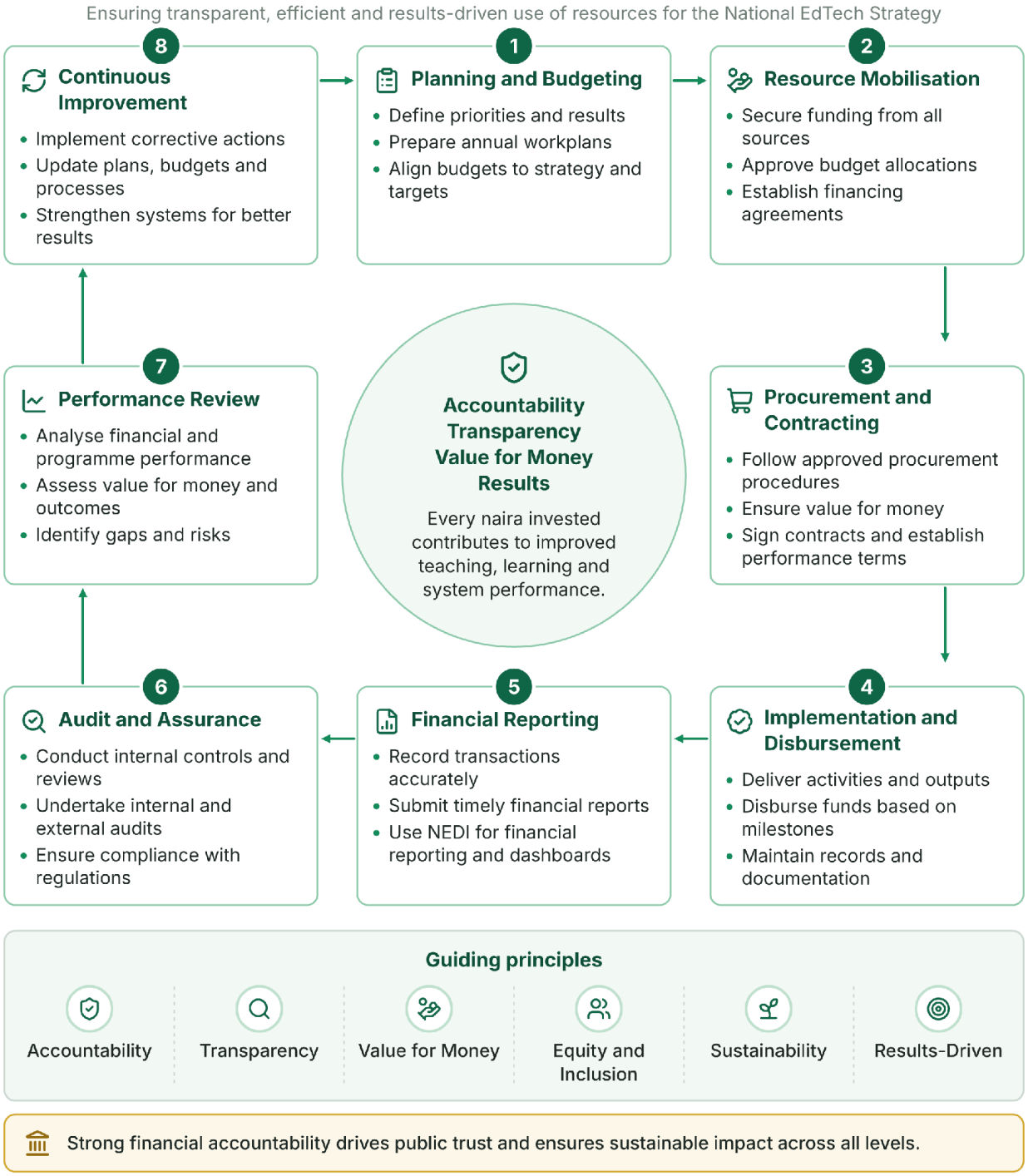
Audit findings should inform annual implementation reviews and continuous improvement.

A2.9.15 Financial Performance Monitoring

Financial performance should be monitored through NEDI-enabled dashboards using indicators such as:

- budget utilisation;
- procurement cycle time;
- cost per connected school;
- cost per trained teacher;
- infrastructure uptime;
- PPP performance;
- operations and maintenance expenditure;
- State co-financing;
- disbursement rates; and
- value-for-money indicators.

Figure A2.16 — Financial Accountability Cycle



A2.9.16 Strategic Outcome

Transparent, coordinated and performance-driven financial management will combine domestic resources with complementary partner and private support to sustain delivery and improve teaching, learning and system performance.

A2.10 Risk Management Framework

A2.10.1 Purpose

This framework provides a systematic approach to identifying, assessing, mitigating, monitoring and reporting implementation risks across all five pillars.

Risk management is integrated into governance and performance management through **NEDI** evidence, periodic reviews and timely corrective action across Federal, State and local levels.

A2.10.2 Risk Management Principles

Implementation shall be guided by the following principles:

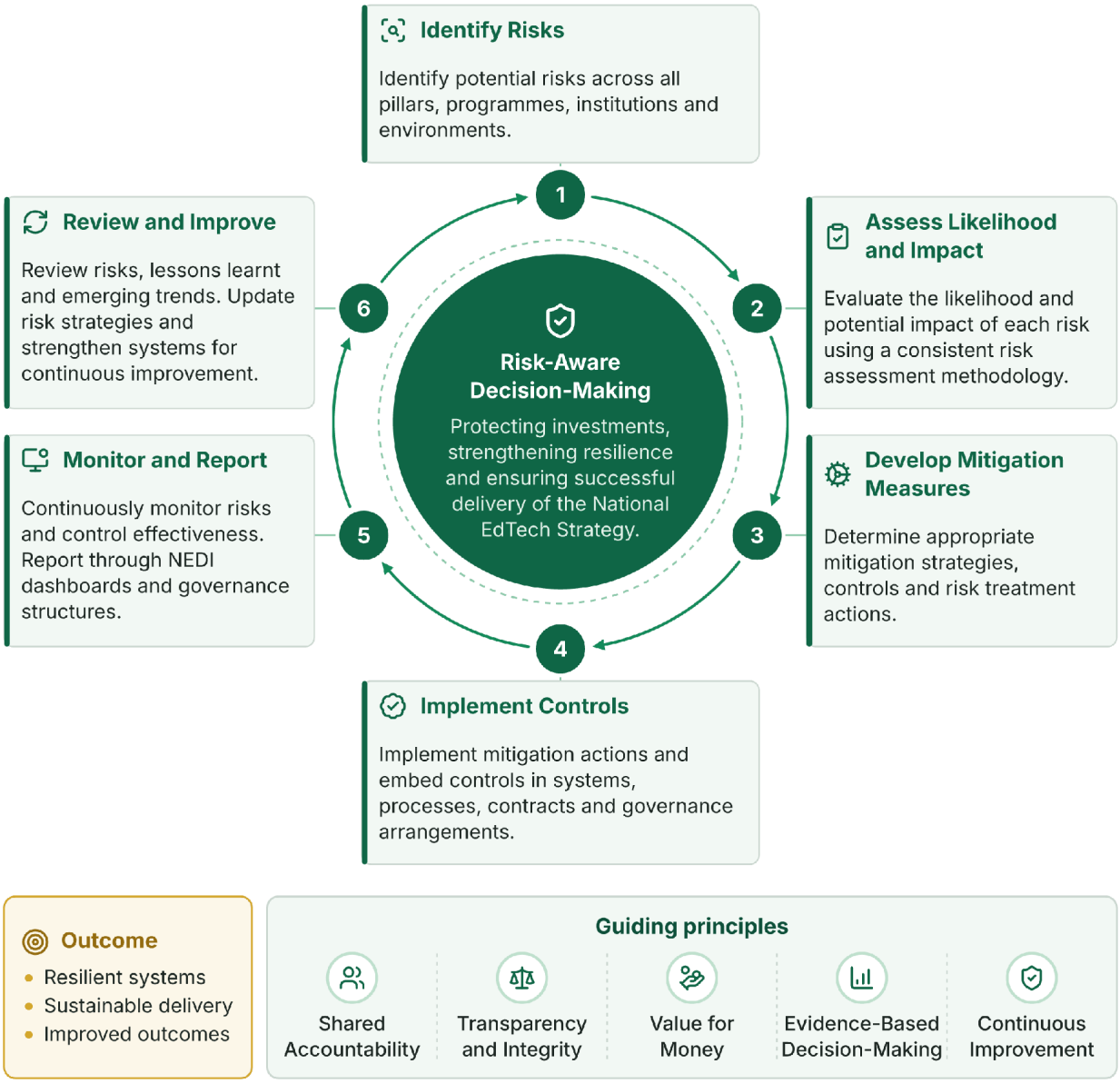
- **Proactive risk identification** rather than reactive crisis management.
- **Shared accountability** across all implementing institutions.
- **Continuous monitoring** through NEDI dashboards and performance reviews.
- **Evidence-based mitigation** supported by data and independent verification.
- **Adaptive management** to respond to emerging risks and changing implementation contexts.
- **Integration with governance**, procurement, financial management and monitoring and evaluation processes.

A2.10.3 Enterprise Risk Management Process

Risk management shall follow a continuous improvement cycle that supports planning, implementation and performance management.

Figure A2.17 — Enterprise Risk Management Cycle

A continuous cycle for identifying, managing and mitigating risks to achieve successful and sustainable implementation of the National EdTech Strategy



The cycle is continuous and adaptive, ensuring risks are managed proactively throughout the strategy implementation lifecycle.

A2.10.4 Risk Governance

Risk oversight shall be embedded within the Strategy's governance architecture.

Table A2.29 — Governance Responsibilities for Risk Management

Institution	Primary Responsibility
Federal Ministry of Education (FME)	Overall enterprise risk oversight and strategic coordination
Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)	Digital infrastructure and technology risks
UBEC	Basic education implementation risks and State coordination

Institution	Primary Responsibility
TETFund	Risks relating to tertiary digital infrastructure, innovation and research
NERDC	Curriculum, digital content and learning resource risks
NITDA	Technology standards, cybersecurity and digital capacity risks
NIMC	Digital identity integration and identity assurance
NCC / USPF	Connectivity risks and telecommunications resilience
REA	School electrification and energy infrastructure risks
TRCN	Teacher professional standards and certification risks
NTI	Teacher development implementation risks
NDPC	Data protection and privacy compliance
BPP	Procurement integrity and contract compliance
Federal Ministry of Finance / Budget Office	Fiscal risks and budget execution
State Governments / SUBEBs	State implementation and operational risks
LGEAs	School-level implementation and operational risk monitoring
Development Partners	Technical and fiduciary assurance
Private Sector Partners	Contractual, operational and service delivery risks

A2.10.5 Enterprise Risk Categories

Risks are monitored across ten strategic categories.

Political and Governance Risks

Changes in leadership, policy direction or institutional priorities may affect implementation continuity.

Mitigation includes:

- institutionalised governance structures;
- Federal–State MoUs;
- annual implementation plans;
- bipartisan stakeholder engagement;
- regular performance reviews.

Technical Risks

Technology solutions may fail to achieve interoperability, scalability or performance requirements.

Mitigation includes:

- open standards;
- interoperability testing;
- phased implementation;

- independent quality assurance;
- architecture reviews.

Financial Risks

Budget constraints, delayed releases and inflationary pressures may affect implementation.

Mitigation includes:

- blended financing;
- milestone-based disbursement;
- contingency planning;
- PPP financing;
- annual financial reviews.

Cybersecurity Risks

Cyber threats may compromise education platforms or critical data.

Mitigation includes:

- zero-trust security architecture;
- multi-factor authentication;
- continuous vulnerability assessments;
- encryption;
- incident response plans.

Infrastructure Risks

Power interruptions, poor connectivity and equipment failures may reduce service availability.

Mitigation includes:

- hybrid power solutions;
- redundant connectivity;
- service-level agreements;
- preventive maintenance;
- regional maintenance hubs.

Procurement Risks

Poor procurement practices may reduce value for money.

Mitigation includes:

- National Procurement Framework (Section A2.4.4);
- BPP oversight;
- competitive procurement;
- lifecycle costing;
- contract performance monitoring.

Data Risks

Poor data quality may undermine planning and decision-making.

Mitigation includes:

- automated validation;
- data quality rules;
- NEDI interoperability standards;
- routine data audits;
- NDPA compliance.

Capacity Risks

Insufficient technical and institutional capacity may delay implementation.

Mitigation includes:

- structured capacity development;
- NTDCF implementation;
- technical assistance;
- peer learning;
- knowledge management.

Climate and Environmental Risks

Climate events may affect infrastructure availability and continuity.

Mitigation includes:

- resilient infrastructure standards;
- renewable energy deployment;
- disaster recovery planning;
- climate-resilient school infrastructure.

PPP Risks

Poor vendor performance or contract failure may affect service delivery.

Mitigation includes:

- performance-based contracts;
- service-level agreements;
- independent verification;
- performance bonds;
- regular contract reviews.

A2.10.6 Enterprise Risk Register

Table A2.30 — Enterprise Risk Register

Risk Category	Likelihood	Impact	Principal Mitigation	Lead Owner
Political commitment weakens	Medium	High	Institutional governance; Federal–State agreements; annual implementation plans	FME
Federal–State coordination delays	Medium	High	Governance committees; quarterly reviews; escalation framework	FME / States
Delayed funding releases	Medium	High	Milestone-based financing; contingency planning	Ministry of Finance / Budget Office
Inflation and exchange-rate volatility	High	Medium	Phased procurement; framework agreements	FME
Technology interoperability failure	Low	High	Open standards; API compliance; independent testing	NITDA / FME
Cybersecurity breach	Medium	High	Security standards; penetration testing; incident response	NITDA / NDPC
Poor data quality	Medium	High	Automated validation; data quality audits; UBEC support	UBEC / States
Identity integration challenges	Medium	Medium	Joint FME–NIMC implementation plan	NIMC
Connectivity failure	Medium	High	SLA-based contracts; multiple providers; USPF support	NCC / USPF
School electrification delays	Medium	Medium	REA coordination; phased deployment	REA
Weak teacher adoption	Medium	High	NTDCF implementation; mentoring; incentives	TRCN / NTI
Procurement disputes	Low	High	BPP oversight; transparent procurement	BPP
Vendor underperformance	Medium	Medium	Performance bonds; SLA monitoring	FME
Climate events	Medium	Medium	Resilient infrastructure; disaster recovery plans	REA / States
PPP contract failure	Low	High	Independent contract management; periodic reviews	FME

A2.10.7 Risk Monitoring and Reporting

Risk monitoring shall be integrated into NEDI-enabled performance management.

Key monitoring mechanisms include:

- Monthly operational risk reporting;
- Quarterly implementation risk reviews;
- Annual enterprise risk assessment;
- Independent risk audits;
- Cybersecurity assessments;
- Procurement compliance reviews;
- Financial risk reporting;
- PPP performance reviews.

High-impact risks shall be escalated through the governance framework defined in **Section A2.6**.

A2.10.8 Early Warning Indicators

Illustrative early warning indicators include:

- decline in data quality scores;
- reduced infrastructure uptime;
- delayed procurement milestones;
- low teacher participation in NTDCF programmes;
- cybersecurity incidents;
- declining budget execution;
- increasing PPP contract defaults;
- delayed State reporting.

These indicators should be monitored through NEDI dashboards and reviewed during quarterly performance meetings.

A2.10.9 Business Continuity and Resilience

Business continuity arrangements shall include:

- cloud-based system redundancy;
- backup data centres;
- disaster recovery plans;
- cybersecurity response procedures;
- alternative connectivity arrangements;
- emergency procurement procedures;
- continuity of teacher professional development;
- periodic resilience testing.

A2.10.10 Strategic Outcome

Embedding risk management in governance, finance, procurement and MEL will strengthen resilience, accountability and long-term sustainability.

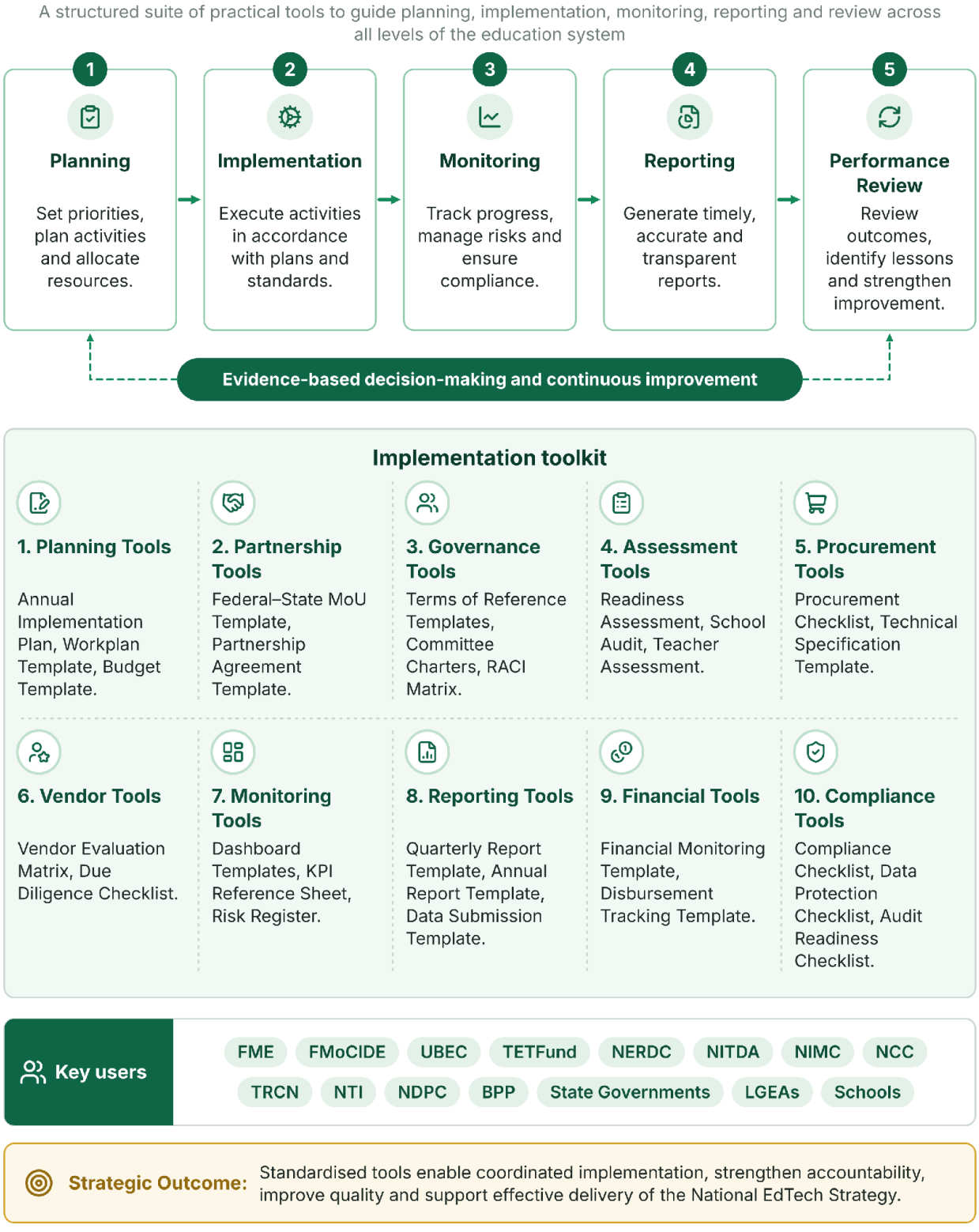
A2.11 Implementation Tools

A2.11.1 Purpose

The tools in this section standardise implementation planning, governance, procurement, reporting and quality assurance across Federal, State and Local Government levels.

The templates are designed for use by the Federal Ministry of Education (FME), Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE), Universal Basic Education Commission (UBEC), TETFund, Nigerian Educational Research and Development Council (NERDC), National Information Technology Development Agency (NITDA), National Identity Management Commission (NIMC), National Universities Commission (NUC), National Commission for Colleges of Education (NCCE), National Board for Technical Education (NBTE), Teachers Registration Council of Nigeria (TRCN), National Teachers' Institute (NTI), Nigerian Communications Commission (NCC), Rural Electrification Agency (REA), Nigeria Data Protection Commission (NDPC), Budget Office of the Federation, Bureau of Public Procurement (BPP), State Ministries of Education, SUBEBs, LGEAs, development partners and private-sector implementing partners.

Figure A2.18 — Implementation Tool Framework



A2.11.2 Implementation Tool Framework

Table A2.31 — Implementation Toolkit

Tool	Primary Users	Purpose
Annual Implementation Plan	FME, States, UBEC	Annual work planning

Tool	Primary Users	Purpose
Federal–State MoU	FME, States	Partnership framework
Committee Terms of Reference	Governance Committees	Governance clarity
Readiness Assessment	FME, States	Implementation readiness
School Digital Readiness Audit	LGEAs, Schools	Infrastructure assessment
Teacher Digital Competency Assessment	TRCN, NTI	NTDCF implementation
Procurement Checklist	Procurement Teams	Procurement compliance
Vendor Evaluation Matrix	Evaluation Committees	Supplier selection
Quarterly Performance Report	All Implementers	Monitoring progress
Dashboard Templates	NEDI Team	Performance monitoring
Risk Register	Programme Managers	Risk management
Financial Monitoring Template	Finance Teams	Financial oversight

A2.11.3 Annual Implementation Planning Template

Each implementing institution should prepare an Annual Implementation Plan aligned with the Strategy.

Table A2.32 — Annual Implementation Planning Template

Strategic Objective	Activity	Lead Agency	Supporting Agencies	Timeline	Budget (USD)	KPI	Status
Illustrative example only	Deploy NEDI APIs	FME	UBEC, NITDA	Within the relevant annual plan	Not costed in this illustration	APIs operational	Illustrative; no commitment

The implementation plan should include:

- strategic objectives;
- annual priorities;
- implementation activities;
- responsible institutions;
- implementation timeline;
- budget;
- performance indicators;
- reporting arrangements.

A2.11.4 Federal–State Memorandum of Understanding (MoU) Template

Every participating State should execute an implementation agreement with the Federal Government.

Minimum MoU Contents

- Purpose
- Scope

- Roles and responsibilities
- Financing commitments
- Data sharing arrangements
- NEDI interoperability requirements
- Reporting obligations
- Procurement compliance
- Monitoring arrangements
- Dispute resolution
- Duration
- Review mechanism

A2.11.5 Governance Committee Terms of Reference

Each governance committee should adopt standard Terms of Reference.

Standard Contents

- Mandate
- Membership
- Decision-making authority
- Programme Office committee support
- Meeting schedule
- Quorum
- Reporting obligations
- Escalation procedures
- Performance monitoring
- Conflict resolution

Table A2.33 — Recommended Meeting Frequency

Committee	Frequency
Joint Ministerial Steering Committee	Twice yearly
National EdTech Technical Steering Committee	Quarterly
Pillar Working Groups	Time-limited technical work as needed; no additional governance layer
State EdTech Delivery Teams	Monthly delivery follow-up and quarterly State review
LGEA Coordination Meetings	Monthly
Existing school leadership and management arrangements	Monthly

A2.11.6 Implementation Readiness Assessment

Prior to implementation, each State should complete a readiness assessment.

Table A2.34 — State Readiness Assessment

Area	Assessment Questions	Rating
Governance	Committee established?	Yes/No
Policy	State implementation plan prepared with institutional responsibilities agreed?	Yes/No
Budget	Budget allocated?	Yes/No
Data	EMIS operational?	Yes/No
Infrastructure	School mapping completed?	Yes/No
Teachers	NTDCF implementation commenced?	Yes/No
Procurement	Procurement plan prepared in line with applicable rules?	Yes/No
Monitoring	Reporting arrangements established?	Yes/No

Overall readiness score:

- Emerging
- Developing
- Ready
- Advanced

A2.11.7 School Digital Readiness Audit

Use existing school records and a proportionate service audit to establish the participating-school frame and assess the combined minimum package in Table 7.1. Record missing observations explicitly.

Table A2.35 — School Readiness Audit

Domain	Assessment
Electricity availability	Power source and reliability during scheduled learning sessions
Broadband connectivity	Usable curriculum access and synchronisation against the disclosed minimum service
Wi-Fi coverage	Full / Partial / None
Device availability	Functioning learning devices available for scheduled use; shared access and repair status
LAN infrastructure	Available / Not Available
Cybersecurity	Basic / Intermediate / Advanced
Accessibility	Inclusive design present
Teacher readiness	NTDCF level
Digital learning resources	Available
Maintenance arrangements	Yes / No

A2.11.8 Teacher Digital Competency Assessment

Assess demonstrated NTDCF competency through practical tasks, portfolios and classroom application. Offer supported offline assessment and reasonable accessibility arrangements; record assessed teachers and the full eligible cohort separately.

Table A2.36 — Teacher Competency Assessment

Domain	Assessment Method
Digital Literacy	Online assessment
Digital Pedagogy	Classroom observation
Assessment Practices	Portfolio
Digital Resources	Practical demonstration
Professional Engagement	Supervisor assessment
AI Literacy	Knowledge assessment
Digital Citizenship	Compliance assessment

TRCN and authorised teacher development institutions retain responsibility for competency and certification records; TPDP may exchange authorised records through approved interfaces. Training attendance is not evidence of competency.

A2.11.9 Procurement Compliance Checklist

All procurements should comply with the National Procurement Framework (Section A2.4.4).

Table A2.37 — Procurement Checklist

Requirement	Status
Budget provision confirmed	☐
Needs assessment completed	☐
Technical specifications validated	☐
Open standards compliant	☐
Interoperability verified	☐
Cybersecurity requirements met	☐
NDPA compliance confirmed	☐
Accessibility requirements included	☐
Lifecycle costs assessed	☐
Environmental requirements included	☐
Vendor due diligence completed	☐
Contract management plan prepared	☐

A2.11.10 Vendor Evaluation Matrix

Table A2.38 — Vendor Evaluation Matrix

Evaluation stage	Required framework and evidence

Mandatory eligibility and compliance	Apply pass/fail eligibility, security, privacy, accessibility and interoperability requirements, including lawful data processing, documented interfaces and appropriate assurance evidence. Do not score compliance again as merit.
Educational quality and usability	Assess curriculum alignment, pedagogical quality, teacher and learner usability, Nigerian-language and low-bandwidth/offline delivery, accessibility in practice and credible education evidence.
Delivery and local support capacity	Assess mobilisation, repair and support coverage, service response, knowledge transfer and contract-relevant delivery capability; apply lawful disclosed local-content requirements.
Lifecycle sustainability	Assess maintenance, subscriptions, updates, repairability, replacement, portability, secure exit and disposal; compare procurement, leasing, managed services and DaaS where relevant.
Total cost of ownership	Use a disclosed lifecycle horizon covering acquisition, deployment, power, connectivity, licences, support, maintenance, replacement and exit. Count each cost once and use a contract-specific quality–price method.

Apply the framework in Table A2.7, using contract-specific criteria and scoring published before tender submission. Mandatory compliance is pass/fail; score additional educational and delivery value separately and evaluate lifecycle costs once.

A2.11.11 Quarterly Performance Reporting Template

Apply the definitions, institutional responsibilities, sources and observation frequencies in Table 7.1. Report national and participating-cohort results separately; carry dated annual or termly observations into the quarterly report.

Table A2.39 — Quarterly Progress Report

Headline indicator	Observation, cohort, source and responsible institution	Recommended delivery milestone	Current result and denominator	Variance and action
School digital service readiness	FME/UBEC and State Ministries of Education/SUBEBs; ASC/EMIS returns, school asset registers, power and connectivity service logs. Record cohort, source date and observation period; quarterly consolidation using Table 7.1 frequencies.	Quarterly consolidation; annual ASC and dated service observations. End-2027: integrated school services in operation for funded demonstration cohorts, with maintenance. 2028: resource-based expansion.	Combined rate; power, connectivity and devices separately	State and institution action owner

Teacher digital competency	TRCN with FME, NTI and State education authorities; existing certification, assessment and professional development records where available. Record cohort, source date and observation period; quarterly consolidation using Table 7.1 frequencies.	Annual or termly observations; quarterly consolidation with assessment dates. End-2027: supported competency assessment and mentoring underway for participating teachers. 2028: extend supported delivery.	Demonstrated NTDCF level and assessment coverage	Support and assessment action
Active learner participation	State education authorities, LGEAs and schools; enrolment and attendance registers, classroom activity records and available platform logs. Record cohort, source date and observation period; quarterly consolidation using Table 7.1 frequencies.	Termly observations; quarterly consolidation with term dates. First full school year: curriculum-aligned activities underway for participating learners, with digital/offline participation and exclusion gaps recorded.	Unique learners and eligible cohort; digital/offline modes	Inclusion and participation action
Priority-system interoperability	FME/NEDI with FMoCIDE and responsible system owners; annual plans, interface registers, acceptance tests and exchange logs. Record cohort, source date and observation period; quarterly consolidation using Table 7.1 frequencies.	Quarterly operational evidence. End-2027: scheduled foundation interfaces functioning within funded plans. 2028: extend priority interfaces across participating systems.	Functioning/scheduled interfaces	Technical owner and deadline

Budget execution	FME and State accounting/finance authorities; existing budget schedules, release warrants, ledgers and reconciled financial returns. Record cohort, source date and observation period; quarterly consolidation using Table 7.1 frequencies.	Quarterly, year-to-date. From mobilisation: funded delivery and quarterly reconciliation under public finance rules; explain variances against the full annual budget.	Expenditure/budget; releases separately	Finance action and variance reason
Learning improvement	FME and State assessment authorities with NERDC and relevant assessment bodies; existing comparable assessment files and school assessment records where suitable. Record cohort, source date and observation period; quarterly consolidation using Table 7.1 frequencies.	Annual or termly assessment; quarterly consolidation with observation dates. First full school year: comparable starting and end-year observations for participating cohorts. No predetermined gain.	Score/proficiency change; cohort and uncertainty	Learning response; no automatic attribution

A2.11.12 NEDI Dashboard Template

Use the same six indicators and measurement rules as Table 7.1 and Table A2.39. National coverage and participating-cohort results appear separately, with source dates, missing data and denominator changes visible.

Executive Dashboard

- School digital service readiness; teacher digital competency; active learner participation; priority-system interoperability; budget execution; learning improvement.

Pillar Dashboards

- Data and Interoperability
- Infrastructure
- Technology and Procurement
- Teacher Transformation
- Governance

State Dashboard

- Use the same six headline indicators for the participating State cohort, with dates and denominators. Show supporting financial, reliability, inclusion and risk evidence separately; avoid misleading State rankings where coverage differs.

A2.11.13 Financial Monitoring Template

Table A2.40 — Financial Monitoring Dashboard

Budget Category	Budget	Expenditure	Balance	Variance
NEDI				
Infrastructure				
Devices				
Teacher Development				
Governance				
Monitoring and Evaluation				

Financial reports should be reconciled quarterly and integrated into NEDI-enabled dashboards.

A2.11.14 Risk Register Template

Table A2.41 — Project Risk Register

Risk	Likelihood	Impact	Mitigation	Owner	Status

The risk register should be reviewed during quarterly governance meetings.

A2.11.15 Document Control Template

All implementation documents should include:

- Document title
- Version number
- Date issued
- Author
- Responsible institutional authority
- Review date
- Distribution list
- Revision history

A2.11.16 Strategic Outcome

The toolkit provides common operating instruments for coordinated delivery. Institutions should adapt templates to their responsibilities while retaining shared standards and reporting definitions.

A2.12 Glossary

Purpose

This glossary provides definitions of key terms used throughout the National EdTech Strategy. It is intended to promote a common understanding among policymakers, implementers, development partners, education institutions and private-sector stakeholders.

Table A2.42 — Glossary of Terms

Term	Definition
Accessibility	The design of digital technologies, platforms and content to ensure equitable access for all learners, including persons with disabilities, in accordance with national policy and international good practice.
Adaptive Learning	Technology-enabled learning that adjusts instructional content and pathways according to learner performance and needs.
Advanced Analytics	The application of statistical, predictive and machine-learning techniques to support education planning and decision-making.
Annual School Census (ASC)	Nigeria's annual collection of school-level education data used for planning, budgeting and performance monitoring.
API (Application Programming Interface)	A set of protocols enabling secure communication and data exchange between software systems.
Artificial Intelligence (AI)	Computer systems capable of performing tasks that normally require human intelligence, including pattern recognition, prediction and natural language processing.
Blended Financing	A financing approach combining public resources, development partner support and private-sector investment.
Broadband Connectivity	High-speed internet access capable of supporting digital teaching, learning and education management services.
Business Continuity	Measures that ensure critical education systems remain operational during disruptions.
Cloud Computing	The delivery of computing services—including servers, storage and applications—over the internet.
Community Network	Locally managed communications infrastructure providing connectivity in underserved areas.
Continuous Professional Development (CPD)	Ongoing learning activities that strengthen teachers' professional knowledge and competencies throughout their careers.
Cybersecurity	Policies, technologies and practices that protect digital systems, networks and information from cyber threats.
Dashboard	A visual interface presenting dated performance information on the agreed reporting schedule.
Data Governance	The policies, standards and institutional arrangements that ensure education data are accurate, secure, interoperable and responsibly managed.
Data Interoperability	The ability of different information systems to exchange and use data seamlessly.
Data Quality	The completeness, accuracy, consistency, timeliness and reliability of data.

Term	Definition
Device-as-a-Service (DaaS)	An optional managed device service covering provision, maintenance, replacement and support. Compare it with procurement, leasing and other services on lifecycle value and fiscal obligations.
Digital Assessment	The use of technology to administer, score and analyse learner assessments.
Digital Citizenship	The responsible, ethical and safe use of digital technologies.
Digital Learning	The use of digital technologies to support teaching, learning, assessment and learner engagement.
Digital Literacy	The knowledge, skills and attitudes required to use digital technologies safely, effectively and responsibly.
DNEMIS	The Digital Nigeria Education Management Information System supporting national education data collection and management.
EdTech	The use of digital technologies to improve teaching, learning, assessment and education system management.
EMIS	Education Management Information System.
Evidence-Based Decision-Making	The use of reliable data and research evidence to inform policy and implementation decisions.
Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)	Federal ministry responsible for national digital economy policy, innovation and digital infrastructure.
Federal Ministry of Education (FME)	Lead ministry responsible for education policy, coordination and implementation of the National EdTech Strategy.
Formative Assessment	Continuous assessment used to improve teaching and support learner progress.
Generative AI	Artificial intelligence capable of generating text, images, code or other digital content.
Geospatial Mapping	Mapping of schools and infrastructure using geographic information systems (GIS).
Governance	The institutional arrangements, decision-making structures and accountability mechanisms that guide implementation.
Identity Management	The secure verification and management of learner and teacher identities through NIMC integration.
Interoperability	The ability of systems to exchange data using agreed standards and protocols.
Key Performance Indicator (KPI)	A measurable indicator used to assess implementation progress and performance.
Learning Analytics	The measurement and analysis of learner data to improve teaching and learning outcomes.
LGEA	Local Government Education Authority.

Term	Definition
Lifecycle Management	Management of technology assets from acquisition to disposal, including maintenance and replacement.
Local Content	Nigerian-developed technologies, services or digital learning resources.
NCC	Nigerian Communications Commission.
NCCE	National Commission for Colleges of Education.
NDLF	National Digital Literacy Framework.
NDPA	Nigeria Data Protection Act, 2023.
NDPC	Nigeria Data Protection Commission.
NEDI	Nigeria Digital Education Initiative—the already-deployed national education data backbone, currently collecting education data, for data exchange, analytics and performance reporting; not a sole-platform interoperability requirement or programme coordination office.
NERDC	Nigerian Educational Research and Development Council.
NIMC	National Identity Management Commission.
NIN	National Identification Number.
NITDA	National Information Technology Development Agency.
NTDCF	National Teacher Digital Competency Framework.
NTI	National Teachers' Institute.
NUC	National Universities Commission.
Open Standards	Publicly available technical standards that promote interoperability and avoid vendor lock-in.
Performance Dashboard	A digital interface presenting implementation indicators and progress.
Performance-Based Financing	Financing linked to verified implementation results.
PPP	Public–Private Partnership.
Procurement Lifecycle	The complete process from planning and procurement to maintenance and disposal.
Quality Assurance	Processes that ensure compliance with agreed standards and continuous improvement.
REA	Rural Electrification Agency.
Real-Time Data	Data that are collected, transmitted and made available with minimal delay.
Responsible AI	The development and use of AI in ways that are ethical, transparent, accountable and aligned with human rights and national laws.

Term	Definition
School Connectivity Tripod	The integrated provision of electricity, broadband connectivity and appropriate digital devices.
Service-Level Agreement (SLA)	A contractual agreement specifying service standards and performance obligations.
State EMIS	Education Management Information System operated by a State Government.
SUBEB	State Universal Basic Education Board.
Teacher Professional Development Portal (TPDP)	National digital platform supporting teacher learning, certification and professional development.
TETFund	Tertiary Education Trust Fund.
TRCN	Teachers Registration Council of Nigeria.
UBEC	Universal Basic Education Commission.
USPF	Universal Service Provision Fund.
Vendor Lock-In	Dependence on a single technology supplier that limits interoperability and competition.
Wi-Fi	Wireless networking technology providing internet access within schools.

A2.13 References

Purpose

Publications and legislation are listed separately from supporting operational standards. References inform educational quality, responsible AI and implementation responsibilities.

A2.13.1 National Policies, Strategies and Legislation

Education

- Federal Ministry of Education (2023). National Digital Learning Policy.

Digital Economy and Technology

- Federal Republic of Nigeria (2023). Nigeria Data Protection Act, 2023.

Institutional mandate

- Tertiary Education Trust Fund. Mandate. Official institutional statement.

Public Finance and Procurement

- Federal Republic of Nigeria (2007). Public Procurement Act, 2007 (Act No. 14).
- Federal Republic of Nigeria (2011). Tertiary Education Trust Fund (Establishment, etc.) Act, 2011.

A2.13.2 International Publications

UNESCO

- UNESCO (2023). Global Education Monitoring Report 2023: Technology in education – A tool on whose terms? Paris: UNESCO.
- Miao, F. and Holmes, W. (2023). Guidance for generative AI in education and research. Paris: UNESCO.

- UNESCO (2018). UNESCO ICT Competency Framework for Teachers, Version 3. Paris: UNESCO.

United Nations

- United Nations (2015). Transforming our world: the 2030 Agenda for Sustainable Development.

World Bank

- World Bank (2018). World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank.

OECD

- OECD (2023). OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem. OECD Publishing.

A2.13.3 International Standards

Supporting standards are separate from cited publications. Procurement specifications should identify the relevant edition and conformance evidence for each contract. Applicable Nigerian education, curriculum, digital literacy, broadband, energy and public finance policies remain implementation references; NTDCF and NEDI specifications are operational instruments under this Strategy.

- **ISO/IEC 27001** – Information Security Management.
- **ISO/IEC 27701** – Privacy Information Management.
- **ISO 22301** – Business Continuity Management.
- **ISO 31000** – Risk Management.
- **ISO 9001** – Quality Management Systems.
- **ISO/IEC 20000** – IT Service Management.
- **WCAG 2.2** – Web Content Accessibility Guidelines.
- **OpenAPI Specification** – API interoperability.
- **IMS Global Learning Consortium Standards** (where applicable).
- **Learning Tools Interoperability (LTI)** standards.
- **SCORM/xAPI** standards for digital learning content.

18 Annex 3: Contributors to the Nigeria National EdTech Strategy

A. National EdTech Strategy Taskforce (Leadership)

Table A3.1 — National EdTech Strategy Taskforce Members

S/N	First Name	Last Name	Organisation	Title
1. Federal Ministry of Education (FME)				
1	Abubakar	Isah	FME	NEDI Vice Chairman
2	Adebayo	Onigbanjo	FME	National Coordinator (Special Projects)
3	Lanre	Lamina	FME	EA to HM, FME
4	Zainab	Abubakar	FME	Director ICT
5	Layi	Olatawura	FME	EPCU Coordinator
6	Mojoyin	Adebajo	FME	SA to HME
2. Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)				
7	Francis	Sani	FMoCIDE	TA to HM, FMoCIDE
8	Michael	Adeniji	FMoCIDE	Partnerships Lead
3. Mastercard Foundation				
9	Suraj	Shah	Mastercard Foundation	Head, Strategic Partnerships & Thought Leadership
10	Joy	Biira	Mastercard Foundation	Head, Program Communications – Integrated Education Programs
4. World Bank Group				
11	Malek	Abu-Jawdeh	World Bank Group	Education Specialist
12	Wuraola	Jinadu	World Bank Group	Education Specialist/Consultant (Lead Technical Consultant; National EdTech Strategy)
13	Ese	Adeluyi	World Bank Group	Education Specialist

B. Technical Working Group (TWG) Members

Table A3.2 — Technical Working Group (TWG) Members

S/N	Institution / Organisation
Federal and State Government Institutions	
1	Federal Ministry of Education (FME)
2	Federal Ministry of Communications, Innovation and Digital Economy (FMoCIDE)
3	Federal Ministry of Innovation, Science and Technology
4	Federal Ministry of Women Affairs

5	Universal Basic Education Commission (UBEC)
6	Tertiary Education Trust Fund (TETFund)
7	National Information Technology Development Agency (NITDA)
8	Universal Service Provision Fund (USPF)
9	Nigerian Educational Research and Development Council (NERDC)
10	National Board for Technical Education (NBTE)
11	National Commission for Colleges of Education (NCCE)
12	Teachers Registration Council of Nigeria (TRCN)
13	National Teachers' Institute (NTI)
14	Joint Admissions and Matriculation Board (JAMB)
15	Nigerian Governors' Forum (NGF)
State Ministries of Education	
16	Abia
17	Akwa Ibom
18	Ekiti
19	Gombe
20	Jigawa
21	Katsina
22	Kwara
Development Partners and International Organisations	
23	Mastercard Foundation
24	World Bank Group
25	Foreign, Commonwealth & Development Office (FCDO)
26	EdTech Hub
27	UNICEF
28	UNESCO
Academic and Research Institutions	
29	Federal University of Technology, Minna (FUT Minna)
Private Sector and EdTech Ecosystem	
30	Airtel
31	MTN
32	Globacom (Glo)
33	Google
34	IHS Towers
35	CcHUB (Co-Creation Hub)

36	AfriLabs
37	Semicolon
38	Gradely
39	EduTAMS Limited
40	Imperial Education Technology Limited
41	GOMTECH
42	ERIT
43	LeadPath Consulting
44	Nobelova Gradani Psychoeducational Services
45	Women in ICT

C. Broader Stakeholder Contributions

In addition to the above, valuable inputs were received from:

Table A3.3 — Broader Stakeholder Contributions

Stakeholder / Contributor
The General Public
Nigerian Diaspora Stakeholders
Education Practitioners and Civil Society Actors
EdTech Mondays

These contributions were gathered through structured consultations and a dedicated national digital feedback platform.