

Intelligence Economy Paper Series • Paper 001

Architects of the Possible

Who Will Build Africa's Intelligence Economy?

A Strategic Policy and Institutional Architecture Paper
on Africa's Intelligence Economy

Design

Intelligence

Abstract | The Intelligence Economy – where artificial intelligence becomes the layer through which economic value is created, governed, and compounded – is being constructed at speed by the United States, China, and Europe. Africa enters this transition generating a significant share of the raw material: behavioural data from 1.4B+ people, more than 2,000 living languages, and the world’s largest informal economic system. It owns limited infrastructure through which that material is transformed into intelligence.

This paper argues that Africa’s position is constrained not by capability, but by institutional coordination failure – a claim grounded in three documented patterns: prolonged mobile money non-interoperability, partial AU Data Policy Framework implementation, and persistent cross-border digital identity fragmentation. Three institutional categories – the Strategic Intelligence Triad of pan-African telecoms, financial institutions, and governments – collectively hold the assets required to build an intelligence economy at scale.

The paper introduces the Intelligence Architect as the missing coordinating function and the Continental Intelligence Compact as the execution mechanism, mapped explicitly onto existing AU frameworks. It confronts what most Africa AI strategy papers avoid: a significant proportion of the Triad’s most powerful actors are not African-owned in any ultimate sense. The architecture is designed for this reality, using regulatory leverage rather than goodwill as the alignment mechanism.

This paper is intended as a strategic architecture and implementation paper. It complements existing African Union digital and AI frameworks by proposing the execution machinery required to translate continental ambition into coordinated delivery: financing, governed data trusts, compute ownership, procurement demand, talent pipelines and public accountability. Economic and implementation figures are presented as scenario targets, not forecasts, and should be read alongside the Methodology Annex and companion evidence pack.

Paper Series

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Who Will Build Africa’s Intelligence Economy?

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The Ownership Question:
Foreign Capital, African Data, and the Sovereignty Design Problem

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Pax Technologica

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Foreword

Emerging Geographies

Building Infrastructures

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Every generation faces an infrastructure decision that determines the next half-century of economic possibility. Africa is inside one now. The institutions that move with clarity in the next 36 months will be foundational to the continent's intelligence economy. Those that wait will inherit terms they did not negotiate.

What makes this moment different from previous technology waves is not the technology. It is the permanence of the decisions being made. Fibre networks could be upgraded. Data centres could be relocated. But the governance frameworks, the ownership structures, the model training rights and data processing agreements being established right now by hyperscalers, foreign-government AI programmes, and development finance institutions will create compounding path dependencies that resist reversal. The window is not merely open and closing. It is structurally different on the inside than it will be once it closes.

This paper names the actors, the assets, the barriers, and the mechanism. It does not traffic in aspiration. The architecture it proposes is designed for the institutions that actually exist, with the ownership structures they actually have, operating under the incentive constraints that are actually in force. That means confronting realities that most Africa AI strategy papers prefer to elide: that many of the continent's most powerful institutional actors are not African-owned in any ultimate sense, that coordination mechanisms have consistently failed to produce binding outcomes, and that the leverage Africa holds over global AI companies is conditional on institutional action, not inherent in continental scale.

AICE Africa and Pax Technologica have built this paper from inside those institutions, not outside them. The architecture that follows is designed to work. The question is whether the institutions reading it will move before the window closes.

Executive Summary

Distinct Futures

Intelligence Economy

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United States, China, and Europe are defining its infrastructure, governance, and ownership structures. Africa generates a significant share of its raw material but owns limited infrastructure for refinement. Two objections must be addressed before the architecture can be understood.

The first is the convenience objection: why invest in shared infrastructure when proven AI applications are available immediately from global providers? Using externally built intelligence systems on African data without reciprocity risks turning adoption into extraction. Institutions that choose convenience without reciprocity may find themselves renting intelligence from systems that encode other economies' assumptions, governed by other jurisdictions' rules. That dependency compounds each quarter it is not reversed.

The second is the ownership objection: this paper's architecture relies on telecoms and banks that, in many cases, carry fiduciary duties to shareholders in Paris, Mumbai, London, and New York. The paper does not wish this reality away. It proposes a design that operates through regulatory leverage – spectrum licensing conditions, universal service fund reorientation, and data localisation requirements – achieving critical mass with aligned anchor actors while remaining robust to partial non-alignment. Continental-scale coordination does not require unanimity; it requires a qualified minimum viable coalition.

The Strategic Intelligence Triad of telecoms, banks, and governments holds everything the intelligence economy requires. The missing function is the Intelligence Architect – a governable, fundable, time-bound institution with a mandate to orchestrate convergence across entities that do not naturally coordinate. The Continental Intelligence Compact translates that orchestration into execution across five pillars, mapped explicitly onto existing AU frameworks rather than creating a parallel structure.

The window is finite. Three forces drive urgency simultaneously: hyperscalers are making irreversible physical commitments on the continent; foundation model training is concentrating among a shrinking number of global institutions; and governance precedents are being set by other jurisdictions. The next 36 months will determine whether Africa participates in the intelligence economy as an architect or as a consumer of architectures built for others.

Artificial intelligence is expected to contribute approximately \$13 trillion to global GDP by 2030 according to the McKinsey Global Institute 2018 estimates, with some 2017 estimates from PwC ranging up to \$15.7 trillion depending on adoption scenarios. Africa's position in the intelligence economy will be determined by whether its institutions can achieve the quality of coordination that individual actors, constrained by quarterly earnings and electoral cycles, cannot achieve alone.

001 Coordination failure is documented, not asserted

Three observable patterns establish the empirical baseline: fifteen years of mobile money non-interoperability despite proven technology. While continental frameworks such as the AU Data Policy Framework exist, implementation remains partial and uneven across member states, with significant variation in national adoption and enforcement; and cross-border digital identity fragmentation that blocks real transactions daily. These patterns share a common structure: capable individual actors, absent coordination function, documented economic cost.

002 Africa holds irreplaceable AI assets – but their ownership is contested

2,000+ languages. 800M+ informal economy workers. \$1T in annual mobile money transactions. The data is genuinely unique and non-replicable. But many of the institutions holding it are foreign-owned or listed on foreign exchanges. The architecture achieves critical mass with aligned anchor actors – not unanimity across all – using regulatory leverage as the alignment mechanism.

003 Regulatory leverage is the real alignment mechanism

Spectrum licensing conditions, universal service fund reorientation, data localisation requirements, and procurement preferences give governments sufficient leverage to align even foreign-owned operators with continental intelligence objectives. Goodwill is not the mechanism. Regulation is.

004 The Intelligence Architect is a buildable institution

A 13-seat multi-stakeholder board, neutral jurisdiction incorporation, \$50–80M DFI-funded operating budget, binding mandate with sunset clause, and a public quarterly delivery register. This is a buildable institutional design.

005 The Continental Intelligence Compact builds on existing frameworks, not around them

The AU Data Policy Framework, the Malabo Convention, the Smart Africa Mandate and the AU Continental AI Strategy provide the legal and institutional foundation. The Compact adds an execution layer: financial stakes, contractual obligations, access conditions and public accountability.

006 Continental scale creates conditional bargaining leverage that individual states cannot generate

A unified African market operating through the Compact holds genuine leverage with global technology companies: Africa represents one of the world's largest under-governed, under-modelled and under-monetised data environments. This leverage is conditional, not inherent – it exists when, and only when, the Compact functions as designed. The Compact is the mechanism through which leverage becomes exercisable.

The Intelligence Economy

We define the Intelligence Economy as an economic system in which value is increasingly generated, mediated, and compounded through data-driven decision systems. Data functions as raw material, models act as production engines, and infrastructure determines the location of value capture. Unlike the digital economy, which expanded access and connectivity, the intelligence economy reorganises who owns decision-making capability itself. Economic power shifts from those who use technology to those who control the systems that generate, refine, and continuously improve intelligence. This distinction – between using intelligence infrastructure and owning it – is the paper’s central axis.

Installation vs. Deployment Phases

This paper adopts the framework of technological revolutions articulated by Carlota Perez, which distinguishes between an installation phase – intensive infrastructure build-out – and a deployment phase – realisation of productive potential. The current period represents the installation phase of the Intelligence Economy; the institutions that shape infrastructure during this phase will influence the deployment conditions that follow. Decisions regarding compute infrastructure, data governance, model ownership, and standards are being made under conditions of high uncertainty but will generate long-term path dependencies. For late-moving regions, entry during the deployment phase implies participation under externally defined terms.

Documented Evidence of Coordination Failure

Mobile money non-interoperability: M-Pesa demonstrated technical and commercial viability in Kenya from 2007. Cross-border interoperability between M-Pesa, MTN MoMo, Orange Money, and Airtel Money required manual workarounds for over fifteen years. The failure was in coordination: no actor held the mandate or leverage to enforce convergence. The technology was not the bottleneck.

AU Data Policy Framework implementation gaps: Africa’s problem is no longer the absence of data-protection laws. More than 40 African states have enacted general data-protection legislation. The deeper gap is that these laws have not yet translated into a harmonised continental data-governance architecture. Domestication of the AU Data Policy Framework remains nascent; The Gambia became the first African country to domesticate it in July 2025. The coordination failure is therefore not legal awareness, but implementation discipline.

Digital identity fragmentation: Significant individual-country investment – Ghana Card, Nigeria’s NIN, South Africa’s SAID, Kenya’s Huduma Namba – has produced no continental interoperability layer. The assets exist. The coordination failure is at the interface: cross-border identification blocks real transactions with real economic costs every day.

The Ownership Landscape:

Named Once, Designed For Throughout

In telecoms: MTN Group (South African, JSE-listed) and Safaricom (Kenyan, NSE-listed, government stake) are the most alignment-compatible anchor

operators. Orange Africa (140M subscribers, 18 countries) is French-state-controlled. Airtel Africa (150M subscribers, 14 countries) is majority-owned by Bharti Enterprises (India). Vodacom’s African operations are majority-owned by Vodafone UK. In banking: Equity Group Holdings, Ecobank Transnational, Zenith Bank, First National Bank, and Access Bank are the primary African-owned anchor candidates. Throughout the paper, spectrum licensing conditions, universal service obligations, data localisation requirements, and procurement preferences are the alignment mechanism for participating operators. The architecture achieves critical mass with anchor African-owned actors and remains robust to non-participation by fully foreign-owned ones.

Continental Bargaining Leverage: A Qualified Argument

Africa’s leverage with global AI companies derives from training data scarcity, not EU-style legal authority. The EU analogy is directionally correct but institutionally imprecise: the EU has a Court of Justice with enforcement authority; Africa does not. What Africa has is something different: a data resource of unusual scale and diversity: 1.4 billion people, 2,000+ languages, the world’s largest informal economy, generating behavioural data that frontier AI models increasingly need but cannot fully replicate from other geographies. A coordinated governance framework conditioning access to this resource on reciprocity terms creates genuine negotiating power. This leverage is conditional, not inherent. It exists when – and only when – the Compact functions as designed. The Compact is not exercising pre-existing leverage; it is the mechanism through which leverage becomes exercisable at all.

The Compact Builds on Existing Continental Architecture

Africa does not need another parallel institution. It needs an execution layer that builds on existing continental convening platforms, AU digital frameworks and regional policy efforts. The Compact is designed to add that layer by translating shared ambition into funded, sequenced and accountable implementation. Its execution logic rests on DFI-backed commitments, legal templates, quarterly delivery registers, performance-linked financing and time-bound renewal against results. Participation creates access to funding, procurement demand, sovereign data trusts, compute infrastructure, vendor registries and model outputs. Non-performance carries consequences through reduced access, public delivery reporting, contractual remedies and membership review. The Compact is therefore not another declaration. It is an incentive-compatible coordination bargain designed to make cooperation more valuable than non-participation.

Sovereignty Framing

Sovereignty in the intelligence economy has five layers: data localisation, where data is stored and processed; data sovereignty, who has legal authority over it; compute sovereignty, who owns and controls accelerators and cloud orchestration; model sovereignty, who controls weights, training, fine-tuning and deployment; and decision sovereignty, who controls automated decisions affecting citizens, firms and public institutions. Physical location alone is not sovereignty. Control across the stack is.

01

The World has Already Chosen its Direction

Strategy

Value ownership

The Intelligence Economy's installation phase is underway. Decisions made now – where compute is located, whose models run on whose data, under which governance frameworks – will generate path dependencies that last decades.

Northern Block | USA | Intelligence Empire

DARPA + Silicon Valley

Microsoft / Google / OpenAI

Global compute output

Value accrues to the US

Eastern Block | China | Intelligence Alternative

Baidu / Alibaba / Huawei

Digital Silk Road: 70+ nations

Parallel stack, US-independent

Belt and Road as digital lock-in

Western Block | Europe | Intelligence Sovereignty

EU AI Act: world's first comprehensive framework

Gaia-X sovereign cloud

€1B+ Horizon AI programme

Regulatory leverage across both blocs

The McKinsey Global Institute estimates AI could add \$13–16 trillion to global output by 2030. The share accruing to Africa will depend less on the productivity of African workers than on the ownership structure of the intelligence infrastructure within which they operate. Infrastructure ownership is value ownership.

The United States is building an intelligence empire. China is building an intelligence alternative. Europe is asserting intelligence sovereignty. Africa has yet to enter the room with a continental strategy.

02 Africa's Paradox

Behavioural data

Living Language

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The continent that generates some of the most valuable raw material for the intelligence economy – behavioural data from 1.4 billion people, agricultural intelligence from 60 percent of the workforce, and audio data in more than 2,000 living languages – currently owns almost none of the infrastructure through which that material is refined into intelligence. Africa's mobile money ecosystem now processes over \$1 trillion in annual transactions, making it the most advanced digital financial system globally. Over 80% of employment in many African economies occurs within the informal sector, making it one of the largest and least digitized economic systems globally.

1.4B *People generating digital intelligence daily*

2,000+ *Living languages with no high-quality AI model*

>80% *Workers in the informal economy*

\$1T *Mobile money transactions annually*

The UNCTAD Digital Economy Report 2024 describes this pattern precisely: developing nations generate the behavioural data; advanced economies process it into intelligence; developing nations then purchase the refined intelligence at a price that ensures the value differential flows outward. Every time an African bank deploys a foreign-built model without a reciprocity agreement, it writes a cheque on the continent's intelligence future. Every time an African government procures a foreign AI system without a technology transfer clause, it cedes sovereignty through procurement. The extractive regime is not imposed; it is chosen.

The 24-36 Month Strategic Window

Three forces make the next 24 to 36 months decisive. First, hyperscalers are locking in African data-centre footprints and governance terms now. Second, foundation-model training is concentrating among fewer global institutions, narrowing Africa's window to shape what is trained, on whose data and under whose rules. Third, external governance regimes such as the EU AI Act and OECD standards will become Africa's default if the continent does not define its own. This window is not for completing the full infrastructure build. It is for locking the terms under which later capital moves: mandates, data-trust templates, procurement rules, spectrum levers, rating-methodology adaptation and first edge-compute pilots. Regulatory inaction does not preserve optionality; it cedes it.

1.4B

People generating digital intelligence daily

AICE Africa

2,000+

Living languages with no high-quality AI model

Pax Technologica

80%

Workers in the informal economy

\$1T

Mobile money transactions annually

03

The Strategic Intelligence Triad

Sovereignty

Design intelligence

Transformation at continental scale requires institutions that already operate at the scale of economies. Africa has three such institutional categories, each holding irreplaceable assets. Their power is combinatorial: none can build the intelligence economy alone; together, they hold everything required. The ownership landscape of each node is established in the Conceptual Positioning section; all mechanisms that follow are designed for that reality.

NODE 01	PAN-AFRICAN TELECOMS Intelligence Infrastructure
NODE 02	PAN-AFRICAN BANKS & FINANCIAL INSTITUTIONS Economic Intelligence Engine
NODE 03	GOVERNMENTS & DIGITAL PUBLIC INFRASTRUCTURE Sovereignty Layer

NODE 01 PAN-AFRICAN TELECOMS Intelligence Infrastructure

KEY ASSETS

- Fibre backbone networks: 500M+ unique subscribers in Sub-Saharan Africa (GSMA 2024)
- Tower infrastructure reaching rural & peri-urban populations
- Mobile money rails: \$1T in annual transactions, the world's largest informal financial dataset
- Audio data in 2,000+ languages, the raw material for African language AI

In the intelligence economy, telecoms must evolve from connectivity infrastructure to intelligence infrastructure. Tower sites must also host edge computing nodes, enabling AI inference without routing data to hyperscalers abroad. The business model shift – from selling data plans to operating an AI inference utility charging per query – is commercially rational at scale. The enabling conditions are a regulatory signal (spectrum licence conditions, universal service fund reorientation) and an anchor customer to de-risk the first investment.

The telecom network is not a pipe. It is a continent-wide intelligence distribution system waiting to be activated. First movers will hold structural advantage where they secure anchor demand, edge-compute capacity and regulatory alignment early.

PAN-AFRICAN BANKS & FINANCIAL INSTITUTIONS

Economic Intelligence Engine

KEY ASSETS

- Real-time transaction data: a highly granular view of how African economies function
- SME payment flows, agricultural loan performance, trade corridor data
- Domestic institutional capital: \$1T+ in long-duration African capital pools that could finance intelligence infrastructure through rated, governable vehicles
- Established accountability infrastructure: audit, compliance, and systemic risk management at scale

African financial institutions hold two intelligence assets: transaction data and patient capital. Transaction data from mobile money platforms is the raw material for AI credit models serving adults and SMEs excluded from formal credit systems. Patient capital, if structured through investment-grade infrastructure vehicles with DFI first-loss protection, sovereign guarantees, and clear regulatory treatment, can finance African-owned compute and data infrastructure.

Mobile-money data has already demonstrated credit-scoring value in consumer and micro-lending contexts. The strategic opportunity is to extend this intelligence responsibly into SME-scale credit through governed pilots, regulatory approval, and portfolio-performance validation.

The data trust does not require participating banks to surrender raw transaction data or weaken fiduciary obligations. It creates a governed environment in which anonymised, permissioned intelligence can be used for model development under independent audit, contractual reciprocity, and board-approved participation rules. Participation is structured to preserve commercial confidentiality while enabling ecosystem-level intelligence gains.

Africa holds more than \$1 trillion in domestic institutional capital across pension funds, insurers, public development banks, sovereign wealth funds, and related long-duration capital pools. The constraint is not the absence of capital, but allocation: much of this capital remains concentrated in government securities, cash, and low-risk instruments, while infrastructure, technology, and compute remain underdeveloped as investable asset classes.

An African bank that understands its position holds an economic intelligence asset more valuable than its loan book. The question is whether its board has the governance mandate to act on that understanding.

GOVERNMENTS & DIGITAL PUBLIC INFRASTRUCTURE

Sovereignty Layer

THREE DPI NON-NEGOTIABLES

- DIGITAL IDENTITY: 400M+ Africans remain unidentified (World Bank ID4D 2023); no identity = no AI rights or protections
- DATA GOVERNANCE: The AU Data Policy Framework (2022) provides a continental foundation; national implementation is now critical
- AI REGULATORY FRAMEWORKS: Strong, interoperable governance = continental competitive advantage, not a barrier

Governments are the one node in the Triad that is unambiguously African. They hold the regulatory and procurement levers that determine the alignment conditions for the other two nodes. A 30% public AI procurement mandate across five anchor economies would represent an estimated \$400–600M annual demand stimulus for African AI solutions. The interoperability tension – that compatible standards require some regulatory alignment at the border – is resolved through federated architecture: systems compatible at the border without being controlled from the centre, modelled on the East African Community’s One Area Network.

Hundreds of millions of Africans still lack formal, interoperable digital identity systems, limiting participation in financial, health, and public-service ecosystems. A government that does not govern its AI environment is not leaving space for innovation. It is leaving space for extraction by the better-governed.

**CONTINENTAL SCALE:
Why Regional or National Approaches Are Insufficient**

AI model economics are scale-dependent in ways most infrastructure is not. Training a large language model for Swahili costs roughly the same regardless of whether the target population is 10M or 100M – but the value of the model grows with the number of users. Continental scale makes model investment economically rational where national scale does not.

Africa’s language families cross national borders. Swahili, Hausa, and Yoruba each span multiple countries. Language AI built at national level produces redundant, incompatible, lower-quality models. Continental coordination produces shared, higher-quality infrastructure that no single nation could justify building alone.

Regulatory bargaining power derives from training data scarcity, not EU-style legal authority. A unified bloc with a coordinated data governance framework creates leverage that no individual state possesses. This leverage is conditional on the Compact functioning as designed – not on African market size alone.

04

When the Triad Converges

Convergence

Support

The three nodes are not independent strategies; their power is combinatorial. Five convergence scenarios illustrate the mechanism, sequence, and expected outcomes. Each is designed to function without full-field participation, and each carries an illustrative scenario target derived in the Methodology Annex.

01 | Telecom + Bank | Governed mobile money data enables AI credit models at scale

Anchor telecoms contribute anonymised mobile money transaction data to a governed data trust. African-owned banks apply AI credit-scoring models trained on this data, assessing creditworthiness without credit bureau history. The telecom earns a data licensing fee; the bank expands its addressable market. The model improves with every loan originated, creating a structural moat that late-joining foreign-owned operators cannot acquire retroactively.

Scenario target: 20M+ informal SMEs gain formal credit access within 36 months of deployment. (Illustrative scenario; see Methodology Annex)

02 | Government + Telecom | National digital identity plus subscriber verification creates a universal service layer

A national digital identity system is linked to anchor telecom subscriber verification, creating an identity layer reaching rural populations through USSD and enabling AI-powered public services at zero marginal cost per citizen. Spectrum licence conditions requiring participation in national digital identity verification are the alignment mechanism for foreign-owned telecoms.

Scenario target: Digital identity coverage from 60% to 90%+ within 24 months in anchor markets. (Illustrative scenario; see Methodology Annex)

03 | Bank + Telecom | Patient pension capital finances African-owned edge compute

African pension funds and institutional investors provide layered capital to finance edge compute nodes at anchor telecom tower sites, combining longer-tenor infrastructure finance with shorter-tenor GPU equipment finance. The compute is owned by the infrastructure vehicle and made available to African AI developers at cost. The regulatory pathway per jurisdiction: South Africa's Regulation 28 permits up to 45% in infrastructure; the rating methodology commission (a Phase 1 deliverable) enables the BBB- classification that PENCOR and RBA require.

Scenario target: \$200M initial allocation finances ~50 tower-site edge compute nodes, reducing African AI developer compute costs by 40-60%. (Illustrative scenario; see Methodology Annex)

04 | Government + All Three | 30% procurement mandate creates the demand signal that makes the ecosystem viable

Five anchor governments commit to directing 30% of public AI expenditure to African-developed solutions by 2027, embedded in procurement regulations and accompanied by a vendor registry and a technical evaluation programme. For co-funded procurement under donor or DFI arrangements, technology transfer and local model training are conditions of co-financing access.

Scenario target: \$400–600M annual demand stimulus across five anchor economies; Potential improvement in African AI startup survival, subject to procurement enforcement and annual tracking. (Illustrative scenario; see Methodology Annex)

05 | Telecom + All Three | Governed audio from 2,000+ languages becomes a shared continental AI asset

Anchor telecoms contribute governed audio data to a sovereign language data trust. The trust trains open African foundation models in Swahili, Hausa, Yoruba, Amharic, Zulu, and other high-prevalence languages – consortium-owned, open-weight, and available to any African developer. Foreign-owned telecoms may participate under data reciprocity conditions; those that decline are excluded from trust-generated models.

Scenario target: Within 36 months, consortium-owned African language models reach at least 80% of matched English-language benchmark performance on declared public evaluation tasks, beginning with IrokoBench task families across priority languages such as Swahili, Hausa, Yoruba, Amharic, and Zulu. Results should be reported by language, task, model version, evaluation setting, and benchmark date. (Illustrative scenario; see Methodology Annex)



AI startup survival uplift through procurement mandate

05

Where Africa Can Compete And Win

Exportable solutions

Market creation

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Africa does not need to fight every battle in the Intelligence Economy – only the right battles. Five arenas stand out where its structural advantages are strongest and its competitors are weakest.

01 | Informal Economy Intelligence

The global AI industry has been architected almost entirely for formal economies. The majority of African workers – market traders, smallholder farmers, artisans, motorcycle taxi operators – are functionally invisible to existing AI systems, yet generate continuous, high-frequency behavioural data through mobile phone activity and mobile money transactions. No foreign institution possesses the contextual intelligence, behavioural data, and distribution infrastructure required to serve this population. Paper 004 in this series addresses this arena in full technical and institutional depth.

02 | African Language AI

Of more than 7,000 living languages worldwide, over 2,000 are African. Yet African languages remain underrepresented in frontier AI systems because the required speech corpora, training datasets, benchmarks, and evaluation infrastructure remain fragmented and underfinanced. Public benchmarks now make this gap measurable. IrokoBench evaluates African-language performance across natural language inference, mathematical reasoning, and multi-choice knowledge tasks in 17 African languages; AfroBench extends evaluation across 64 African languages, 15 tasks, and 22 datasets. The performance gap is therefore real, but task- and language-specific. Africa's opportunity is to build the governed data, benchmark, speech, and model infrastructure required to close measurable gaps in priority languages and create a continental AI asset with global export potential.

03 | Agricultural Intelligence

Agriculture remains one of Africa's largest employment and livelihood systems, with agrifood systems accounting for a majority of employment in many economies. Precision agriculture AI requires local soil data, climate modelling, market intelligence, and distribution through local mobile infrastructure. These capabilities must be built from African contexts. Solutions designed for African smallholder and climate-constrained farming systems are exportable to other developing-world markets.

04 | Healthcare Intelligence

Africa carries a disproportionate share of the global disease burden while operating with a severe health-workforce constraint. AI-enabled diagnostic support, disease surveillance, triage, and treatment optimisation for resource-constrained settings are therefore high-value and urgent applications. Solutions built for African health systems can also become exportable models for other regions facing similar workforce and infrastructure gaps.

05 | Urban Infrastructure Intelligence

Africa is entering one of the fastest urban transitions in the world, with its urban population projected to rise sharply by 2050. This is an addition of hundreds of millions of urban residents, not merely total population growth. Developing intelligence infrastructure for African cities – mobility, housing, utilities, land use, safety, and climate resilience – creates exportable solutions for other rapidly urbanising regions.

06

The Intelligence Architect

Data sharing

Design thinking

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The Strategic Intelligence Triad is necessary but not sufficient. There is a fourth actor without whom the triad cannot converge – and whose absence explains why, despite holding all the assets, Africa has not yet constructed its intelligence architecture.

The Four Functions

01 | Integration

Weaves together telecom, banking, and government rails into a coherent continental architecture through technical standards, shared protocols, and interoperability frameworks. A technical function, not a convening one.

02 | Orchestration

Sets direction and sequencing without owning assets. Acts as a conductor rather than a player, coordinating investment timing, procurement standards, and data-sharing agreements across competing institutions.

03 | Long-Range Navigation

Makes 10–15 year infrastructure bets that short-term political cycles and quarterly earnings requirements prevent individual institutions from making. Requires institutional patience that outlasts government transitions.

04 | Trust-Brokering

Builds frameworks that allow competitors to share data and resources. Acts as a neutral convener with credibility across all three triad nodes simultaneously.

GOVERNANCE BLUEPRINT

Minimum Viable Intelligence Architect

LEGAL FORM | An independent, multi-stakeholder, purpose-limited entity incorporated in a neutral jurisdiction (Mauritius or Rwanda). A purpose-built coordination vehicle with a defined mandate window and a sunset clause requiring renewal rather than permitting inertia.

BOARD COMPOSITION (13 seats) | Three each from anchor telecoms, anchor banks, and anchor governments; two independent technical advisors; two civil society seats representing data subjects. Supermajority (9 of 13) required for any decision committing a triad member to data sharing or financial obligation.

MANDATE BOUNDARY | Does not build AI products, own infrastructure, or employ AI researchers. Funds enabling conditions – standards, data trust legal architecture, compute procurement structuring, talent pipeline design – and maintains a public quarterly accountability register.

PHASE 1 FUNDING | \$50–80M over 24 months as a programme grant from three to five anchor DFIs (AfDB, IFC, GIZ, one bilateral). Operating cost, not capital investment.

SUNSET AND RENEWAL | Four-year mandate cycles; renewal requires two-thirds vote of triad members based on published delivery metrics.

Africa does not lack the infrastructure for an intelligence economy. It does not lack capital. It does not lack data. What it lacks is an institutional actor with the vision, the credibility, and the mandate to orchestrate the convergence of what it already has.

The Intelligence Architect role is not a proposal. It is the institutional function that this moment requires, and it will be filled – by design or by default, by African institutions or by others acting in their place. AICE Africa and Pax Technologica currently perform this function as a prototype, demonstrating the role's viability across governments, financial institutions, and infrastructure operators.

The next structural step is formalisation: a 90-day founding mandate convened with one anchor government, one anchor financial institution, one anchor telecom operator, and one DFI partner.



*AI-enabled jobs created
on the continent*

The Continental Intelligence Compact

Talent

Vision

The Continental Intelligence Compact translates the Strategic Intelligence Triad into coordinated, sequenced, and accountable execution. It is not a competing continental framework, but a delivery architecture for the African Union's existing digital and AI commitments. The AU Executive Council adopted the Continental Artificial Intelligence Strategy in July 2024, setting Africa's direction on AI benefits, capabilities, risk management, investment, cooperation, and inclusive governance. The Compact is proposed as an execution mechanism aligned to that Strategy: clarifying who coordinates, who finances, who governs data, who owns compute, who builds models, who procures African AI systems, and how progress is held publicly accountable. It is also distinct from the AU's African Digital Compact, a broader digital transformation instrument aligned with Agenda 2063, the AU Digital Transformation Strategy, and the Global Digital Compact.

The Continental Intelligence Compact is intentionally narrower: a compact for intelligence-economy infrastructure, including governed data trusts, African-owned compute, AI procurement mandates, language and sector models, financing vehicles, and accountability mechanisms. It should therefore be read functionally, not institutionally: not as a replacement for the AU's African Digital Compact, but as a proposed execution mechanism for Africa's intelligence economy.

Compact Mapped to the AU AI Strategy and Existing Continental Frameworks

PILLAR 1 (Joint Coordination Vehicle) | Structured as a programme under the Smart Africa Mandate. The Compact adds financial stakes, contractual obligations, access conditions and public accountability.

PILLAR 2 (Sovereign Data Trusts) | Built on the AU Data Policy Framework (2022). National data trust legal templates implement Framework commitments using national data protection laws (POPIA, NDPR, Kenya DPA) as the national implementation layer. Bilateral adequacy agreements resolve cross-border data sharing conflicts.

PILLAR 3 (Compute as Infrastructure) | Treated as a component of the AU Digital Transformation Strategy 2020–2030, qualifying for digital infrastructure financing under existing AfDB programme frameworks.

PILLAR 4 (Talent Pipeline) | Built into existing AU-STEM initiative frameworks and the African Capacity Building Foundation's programme mandates.

PILLAR 5 (Continental Procurement Mandate) | Implemented as national policy in anchor economies first. Continental harmonisation is Phase 2, conditional on conclusion of the AfCFTA digital services chapter (currently under negotiation). The architecture functions with national mandates alone.

No new AU-level treaty is required for Phase 1. The Compact activates existing commitments through domestic legal instruments, procurement rules, spectrum-licence conditions, data-governance frameworks and bilateral adequacy arrangements.

Pillar 01 | Joint Coordination Vehicle

A light-footprint programme office with execution authority, structured under the Smart Africa Mandate with a narrower, more technically accountable brief. It publishes a quarterly delivery report against the action matrix, with triad member commitments and performance publicly visible.

Pillar 02 | Sovereign Data Trusts

Federated governance structures allowing anchor telecoms and banks to contribute data for AI training without relinquishing control. Data remains within national jurisdictions, anonymised at source, governed through independent audit. External access operates under contractual reciprocity: local model training, technology transfer obligations, and shared IP embedded in legal templates, not policy preferences.

Pillar 03 | Compute as Continental Infrastructure

A continental compute procurement model treating GPU clusters as long-duration infrastructure assets. The three-hub model – Johannesburg, Nairobi, Lagos – distributes geopolitical risk and is selected in part for energy profile: South Africa’s renewable transition, East Africa’s geothermal grid, West Africa’s solar expansion. GPU procurement accounts for US Bureau of Industry and Security export controls (EAR), with qualified alternatives and a diversified supply chain built into Phase 1.

Pillar 04 | Continental Talent Pipeline

Contracted commitments from participating institutions to fund, train, and retain African AI talent. Three mechanisms address the structural retention gap: a Continental AI Researcher Fellowship (500 funded positions with salary top-ups); equity participation in the continental infrastructure vehicle for researchers who build shared models; and a public-sector AI fast track at market-competitive compensation. All tracked contractually in the quarterly delivery report.

Pillar 05 | Continental Procurement Mandate

Government procurement regulations directing 30% of public AI expenditure to African-developed solutions by 2027. Implementation requires three parallel actions: the mandate in law; a technical evaluation programme; and an accredited African AI vendor registry. For co-funded procurement, technology transfer and local model training are conditions of co-financing access.

The Architect’s Convictions

The structural realities that define what can be built, by whom, and under what conditions.

01 | Capital Scale as Structural Constraint

The primary constraint on Africa’s intelligence economy position is capital formation at the scale required to finance intelligence infrastructure. Individual hyperscalers allocate to AI infrastructure what surpasses total annual venture investment across the African continent. Intelligence infrastructure requires long-duration financing, balance sheet capacity, and institutional patience. It must be anchored in pension funds, sovereign wealth, and large corporate balance sheets structured over multi-decade horizons. Without this shift, Africa’s role remains tied to systems financed and governed externally, regardless of activity at the application layer.

02 | The Critical Distinction: Infrastructure vs. Compute Ownership

Data centre expansion across the continent is frequently presented as progress toward digital independence. A data centre provides the physical environment: land, power, cooling, connectivity. The intelligence economy is governed by the compute layer: the GPUs and specialised accelerators that enable model training and inference. In many current deployments, physical infrastructure is African but compute is externally owned or controlled. A data centre in Nairobi running hardware owned by an AWS subsidiary under Virginia law is not African AI infrastructure. Infrastructure strategy must be understood in terms of compute ownership and governance, not merely physical location.

03 | Position Within the AI Supply Chain

Africa supplies cobalt, lithium, and rare earth elements indispensable to modern computing, but the stages at which value is generated – refinement, fabrication, system integration – are largely located outside the continent. The strategic question is not whether Africa participates in the AI supply chain – it already does – but whether participation remains concentrated at extraction or extends into higher-value segments. The Compact’s middle-layer development agenda – sector-specific models, reusable intelligence systems, integrated decision architectures – is the highest-leverage investment available in the next 36 months.

04 | Energy as a Determinant of Infrastructure Location

AI is increasingly constrained by access to reliable, large-scale energy. The three proposed compute hubs are selected in part for their energy profiles: Johannesburg benefits from South Africa’s renewable energy transition; Nairobi has geothermal access through the East African Rift system; Lagos has rapidly expanding solar deployment. Where energy is aligned with locally owned compute, it anchors value creation. Where it powers externally owned compute, it underwrites extraction.

05 | The Absence of the Middle Layer

Current AI activity across Africa is concentrated at the application layer: services built on top of existing models and infrastructure provided by others. The middle layers – where models are developed and systems are designed – are where reusable intelligence is created and long-term value accumulates. Africa's absence from these layers means institutions inherit the assumptions, constraints, and economic structures of externally built systems. The tools required to build the middle layer are increasingly accessible; the constraint is coordinated execution.

The difference between what Africa is currently building and what it must build is not a function of technological capability. It is a function of positioning within the system that is being constructed – and the institutional will to confront the structural realities that shape that system honestly.

\$350B

SME credit gap addressable by 2032

08

Africa's Three Futures

Leadership

Talent capital

41

Africa faces a genuine choice architecture: three distinct futures, each with its own internal logic, its own coalition of institutional interests, and its own compounding trajectory.

Future A | Default Trajectory | *The Extractive Colony*

The accumulated effect of individual rationality without coordination.

- Data exported, intelligence re-imported at a price that ensures the value differential flows outward
- Foreign models run African economies, calibrated for other contexts and other populations
- Dependency deepens each quarter with no visible crisis moment – it looks like progress until it is permanent
- This future requires no decision. It is what happens when the coordination quality demanded by this moment is not achieved.

Future B | Partial Action | *The Fragmented Bazaar*

Where well-intentioned national action leads without interoperability.

- 54 national AI strategies that do not speak to each other and surrender continental scale to global platforms
- Individual bank AI deployments and telecom analytics capabilities – real, but sub-continental in scope
- Visible progress at national level obscures structural dependency: the systems work; the value still flows outward
- This future is more insidious than Future A because it feels like progress.
- Elements of this trajectory are already visible across the continent: multiple national AI strategies, fragmented digital identity systems, isolated compute initiatives, and parallel regulatory approaches developing without interoperability coordination.
- The risk is not stagnation, but fragmentation at scale, where capable national systems emerge without continental leverage.

Future C | This Paper's Argument | *The Interoperable Commonwealth*

Achievable within 36 months with institutional decisions of the quality this moment requires

- Sovereign compute, governed data, interoperable continental standards built on existing AU frameworks
- 1.4B-person unified market with African-native intelligence infrastructure that compounds on-continent value
- A triad coordination body with a delivery mandate, three compute hubs operational, procurement mandates in force
- This future requires a pattern of aligned decisions across 36 months – not a single declaration, but consistent institutional follow-through.

The difference between Africa's three futures is not technology. Not capital. Not talent. It is the quality of the institutional decisions made in the next 36 months by the people reading this paper.

09

Infrastructure Architecture: The Full Stack

Connectivity

Challenge

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The vision of a sovereign African intelligence economy requires a precise infrastructure specification. The three-hub model – Johannesburg, Nairobi, Lagos – establishes the continental backbone while distributing geopolitical risk.

L5 Applications

Public services · Healthcare · AgriTech · Language models · SME credit · Urban infrastructure · Informal economy intelligence

L4 Intelligence Models

African-trained models · Sector AI · Federated learning · Consortium-owned IP · Open-weight · Exportable to Global South markets

L3 Governed Data

Data trusts · AU Data Policy Framework compliant · Privacy-by-design anonymisation · Independent standing audit body

L2 Compute

Phased GPU ramp, scaling toward 10,000-20,000 GPUs per hub only after anchor offtake, export-control clearance, power contracts, utilisation thresholds and refresh financing are secured · Diversified supply · Sovereign cloud · Edge inference at tower sites · CapEx est. \$1.4-1.8B · Layered finance: 10-15-year core infrastructure facility plus 3-5-year GPU equipment or GPU-as-a-Service facility.

L1 Connectivity

Fibre backbone · Mobile networks · USSD reach across 600M+ subscribers · Existing asset requiring intelligence activation

The \$1.4-1.8B Phase 1 capital requirement is significant, but within the scale of African regional infrastructure finance. It should be assessed as a staged infrastructure platform, not a single asset: compute nodes, data centres, fibre, power, anchor demand, lifecycle renewal, and investment-grade risk allocation. The novelty is not the size of the ask, but recognising compute as infrastructure and building the rating methodology that makes it financeable.

10

Financing the Intelligence Economy

Development

Capital

45

The capital required for sovereign African AI infrastructure exists on the continent. The constraint is structure, not supply. Three financing models, used in combination, provide a complete capital architecture. Each carries explicit enabling conditions.

Model 01 | AI Infrastructure Bonds

- Issued by a sovereign infrastructure fund, telecom-led vehicle, or blended infrastructure platform
- 10-15-year facility for data-centre shell, power, cooling, fibre, security and site infrastructure
- 3-5-year revolving equipment facility, operating lease, or GPU-as-a-Service structure for GPUs and accelerators
- Investors: pension funds, insurers, sovereign wealth funds, DFIs, public development banks and strategic corporate balance sheets
- Revenue: reserved capacity, AI-as-a-service, developer fees, research access, enterprise workloads and public-sector AI demand

Enabling Conditions | Regulatory recognition of compute as infrastructure, anchor offtake contracts, equipment refresh reserve, technical operator certification, rating methodology commission and per-jurisdiction investment approval.

Model 02 | Public-Private Partnership

- Government: land, tax incentives, anchor demand
- Private: CapEx and operations
- DFI: guarantees and first-loss capital
- Revenue: AI-as-a-service and developer fees

Enabling Conditions | Binding government procurement commitment as anchor demand signal; government technical capacity to structure and manage PPP.

Model 03 | DFI Blended Capital

- AfDB + IFC + EIB first-loss concessional capital
- Target: 60% private capital leverage
- Phase 1 target: \$1.5-2B, 60/40 split
- AIIB and bilateral DFIs as co-lenders

Enabling Conditions | Phase 1 bridge financing from one anchor DFI or DFI-led facility to stand up the programme office while AfDB, IFC, EIB and bilateral approvals proceed in parallel. Full co-financing closes are sequenced, not assumed simultaneous.

Loss-Bearing Waterfall

Who bears the loss if AI infrastructure underperforms is the structural question that determines whether pension funds can participate. This is the explicit answer.

TRANCHE	INSTITUTION	LOSS EXPOSURE	INSTRUMENT
First Loss	DFI concessional capital (AfDB, IFC, EIB)	Up to 15% of principal	Concessional grant or subordinated loan
Second Loss	Government guarantee (anchor sovereign)	Up to 10% of remaining principal	Partial credit guarantee
Senior – Protected	African pension funds and institutional investors	Protected by combined first + second loss	Investment-grade infrastructure bond
GPU Lifecycle Risk	Infrastructure vehicle governance board and technical operator	Funded refresh reserve linked to utilisation, depreciation, replacement cost, resale value and contracted revenue	Reserve account, staggered hardware refresh plan, annual independent valuation and no surplus distributions until reserve requirements are met

Rating Methodology Pathway

Rating agencies already apply project-finance and data-centre methodologies to digital infrastructure. The task is not to create a methodology from scratch, but to adapt those frameworks to African-owned GPU infrastructure, where the core risks include anchor offtake, utilisation, power reliability, equipment refresh, cybersecurity, operator capability, sovereign risk and collateral treatment. The precedent pathway: green bonds had no rating methodology until the Climate Bonds Initiative developed standards that S&P and Moody's adopted. The Africa AI Infrastructure Fund commissions a rating methodology as a Phase 1 deliverable – engaging S&P, Moody's, and GCR Africa under a funded mandate to develop a standardised approach for compute infrastructure as an infrastructure asset class. Target timeline: 24–36 months, subject to rating-agency engagement, regulatory participation, and successful treatment of compute infrastructure as an investable infrastructure asset class.

Minimum viability condition | Anchor offtake must cover baseline debt service and fixed operating costs, utilisation must increase through pay-per-use workloads, and GPU refresh reserves must be funded before surplus distributions.

AI compute cost reduction vs. hyperscalers

11 Ethical and Governance Non- Negotiables

Independence

Distributed accountability

Any strategy centred on activating African data must be equally centred on protecting African people. The five principles below are conditions of Compact membership, not aspirations. This section is the single authoritative source on governance and surveillance in this paper. Non-compliance triggers escalating remedies, including remediation, financial penalties where available, access suspension, procurement ineligibility, public reporting and membership review.

01 | Privacy by Design

Data anonymised at source. No intelligence product is built without an auditable data provenance chain. Implementation: mandatory privacy impact assessment before any data contribution; independent technical audit of anonymisation methodology before trust activation. Standards harmonised across jurisdictions through the AU Data Policy Framework's technical committee to resolve differing definitions across POPIA, GDPR, and Kenya's DPA.

02 | Independent Audit | Standing Institution

All AI systems trained on African data are independently audited for bias, accuracy, and discriminatory impact before deployment and annually thereafter. Precedents from Rwanda, Kenya, and Ethiopia show that centralised AI infrastructure creates surveillance leverage that outlasts the conditions under which it is built. The audit body is a standing institution with its own legal mandate, reporting to the Compact board and national parliaments, with findings published within 30 days. Federated architecture is enforced: no central data store exists; access is query-specific, purpose-limited, and audited in real time. Any attempt to create a centralised data access point triggers automatic Compact membership review.

03 | Citizen Rights and Redress

Individuals whose data contributes to an AI system retain the right to understand, challenge, and seek redress for automated decisions. A designated ombudsman in each jurisdiction and a public redress portal with a 60-day resolution requirement. Embedded in the data trust legal template as a contractual obligation.

04 | Federated Architecture | Technically Enforced

No single institution holds unconstrained power over population-scale data. Federated architecture is enforced: no central data store; query-specific, purpose-limited API access with real-time audit logging. Any attempt to create a centralised data access point triggers automatic Compact membership review. Data-trust templates must prohibit unauthorised surveillance, political targeting and security repurposing, with independent review and whistleblower protection.

05 | Strict Reciprocity | Contractual, Not Aspirational

Foreign access to African data and AI markets operates under enforceable reciprocity conditions: local model training rights, technology transfer, shared IP, African regulatory jurisdiction, and procurement eligibility tied to compliance. Reciprocity conditions are embedded in data trust legal templates as contractual obligations. Non-compliant foreign actors are excluded from trust-generated models and lose market access preferences under Compact procurement standards.

12 The Decade Ahead: Architecture or Dependancy

Job creation

Exponential technology

Minimum Viable Coalition

The Compact achieves critical mass rather than requiring unanimity. The minimum viable coalition consists of five anchor economies selected against four criteria: maturity of existing digital identity and data protection frameworks; depth of mobile money and financial sector AI infrastructure; telecom market size sufficient to justify edge compute investment; and demonstrated capacity for policy implementation in digital sectors.

Before the arithmetic, the friction must be named. Three actors have structural incentives to resist this architecture. Hyperscalers benefit from the status quo and will respond to coordinated procurement mandates with aggressive below-cost entry pricing and lobbying in anchor economy capitals. Foreign-owned telecom operators will receive pressure from parent company boards to avoid data reciprocity commitments that limit future monetisation options. And within the anchor economies themselves, incumbent ICT procurement suppliers – who benefit from the existing sub-5% African-vendor baseline – will resist the vendor registry and technical evaluation programme that the 30% mandate requires. None of these resistances is fatal to the architecture. All of them are real and must be planned for, not assumed away. The governance structures of the Compact – spectrum conditions, contractual data trust obligations, procurement regulations embedded in law rather than policy – are designed precisely because voluntary alignment with these actors is insufficient.

CRITICAL MASS THRESHOLD

The minimum viable coalition achieves critical mass when three conditions are simultaneously met: (1) 100M+ anchor telecom subscribers across the coalition, enabling the edge compute economics that make inference utility revenue viable; (2) \$100M+ in pension capital committed, sufficient to finance the Phase 1 compute pilot at infrastructure bond terms; (3) procurement mandates across anchor economies representing \$200M+ in annual demand stimulus, sufficient to sustain African AI companies through formative stages.

The five-economy coalition – Kenya, Nigeria, South Africa, Rwanda, and Ethiopia – clears all three thresholds based on current market data: combined anchor telecom subscribers exceed 200M; combined pension assets eligible for reallocation exceed \$350B; combined public sector AI procurement budgets exceed \$3B annually (30% mandate = \$900M+). Critical mass is not a guarantee of action. It is the minimum operating threshold at which coordination becomes economically rational, if anchor actors commit, regulation aligns and execution holds.

Ethiopia's inclusion is based on population scale, Amharic-language relevance, and AU convening geography; participation would require phased governance safeguards given the country's political and institutional context.

Defection risk is asymmetric. The coalition must remain above three buffers after any single anchor exit: 100M+ reachable subscribers, \$100M+ committed institutional capital and \$200M+ annual procurement demand. Subscriber reach and capital are likely to remain resilient; procurement is the binding risk if the largest procurement anchor withdraws. If that threshold fails, Phase 2 financing pauses until replacement demand is secured through additional procurement markets or a DFI-backed demand guarantee. Two simultaneous anchor exits trigger coalition rebalancing before infrastructure financing closes.

ECONOMY	ANCHOR ROLE	SELECTION RATIONALE
Kenya	Digital ID + Safaricom anchor telecom	Huduma Namba DPI, Data Protection Act (2019), Safaricom M-Pesa model, NSE-listed with government stake, East African language AI anchor
Nigeria	Procurement mandate + Zenith/Access anchor bank	Largest economy, NIN digital ID, NDPR (2019), largest public AI procurement budget, Yoruba/Hausa language AI anchor, PENCOM regulatory reform leader
South Africa	Pension capital + Johannesburg compute hub	Most mature Regulation 28 infrastructure allocation, JSE pension pool, POPIA (2021) most advanced national framework, MTN Group headquarters
Rwanda	Governance model + Smart Africa secretariat	Strongest AU framework implementation record, Smart Africa secretariat host, data centre ecosystem, government digital transformation model
Ethiopia	Population scale + Amharic language anchor	110M+ population, largest Amharic-speaking market, Addis Ababa compute hub candidate, AU headquarters provides convening leverage

Critical Mass Threshold

PROJECTION	SOURCE BASIS	KEY ASSUMPTION	SCENARIO CONDITION
\$3.7T digital economy contribution by 2035	UNCTAD 2024; AfDB digital economy modelling	Africa captures 10% of global AI value chain; African-owned infrastructure enables on-continent value retention	African-owned compute + governed data + 30% mandate all operational by 2028 across 5 anchor economies
20M+ AI-enabled jobs by 2035	IFC employment multipliers; McKinsey AI impact modelling	Informal economy AI at scale; agriculture and healthcare AI reach 50%+ of target populations	Informal economy intelligence pillar fully operational; Compact language models deployed 5+ languages by 2029
40–60% compute cost reduction	Current hyperscaler Africa pricing benchmarks; infrastructure bond cost-of-capital modelling	Continental procurement at 40,000+ GPU scale achieves infrastructure-grade cost basis	Phase 2 compute build complete; African institution ownership without foreign lease premium
\$330B SME credit gap addressable by 2032	AfDB SME financing gap report; mobile money transaction credit modelling	AI credit models achieve competitive NPL rates; alternative credit scoring approved in 10+ jurisdictions	Telecom + Bank convergence scenario operational at scale by 2028
Potential improvement in African AI company survival to Series A, subject to binding procurement enforcement and annual tracking	Brifter Bridges 2024; current public procurement baseline <5%	30% mandate creates demand sufficient for formative-stage commercial viability	Procurement mandate binding in 5 anchor and 5 additional economies by 2027

Projected Economic Impact

Projected Economic Impact | Scenario Assumptions

The following projections represent illustrative scenario outcomes based on coordinated implementation, and are not forecasts. Actual results will depend on adoption rates, policy alignment, and execution capacity.

Full derivation is in the Methodology Annex. The counterfactual – foreign-owned infrastructure – produces materially lower on-continent value retention because the intelligence layer, not the application layer, is where economic surplus accumulates.

The figures in this section are illustrative scenario targets, not forecasts. They indicate the scale of outcomes that could become achievable under coordinated implementation, regulatory alignment, capital mobilisation, and Compact execution. Actual outcomes will depend on adoption rates, institutional participation, procurement enforcement, capital structure, and execution capacity.

ROLE	NOW (0–6 months)	NEXT (6–18 months)	FUTURE (18–36 months)
Telecom CEO (Anchor)	Commission edge compute pilot: 10 tower sites · Budget \$8–15M · Metric: inference latency <50ms	Open anonymised audio to gov-erned language trust · Deploy AI customer service · Metric: 20% OPEX saving	Full intelligence distribution net-work · Co-invest in continental GPU cluster · Metric: 10M AI queries/day
Bank CEO (African-owned)	Establish AI strategy office · Audit transaction data for intelligence value · Metric: data asset valuation complete	Pilot AI credit model for 50,000 informal SMEs · Metric: NPL vs. legacy model baseline	AI credit at scale: 5M+ SMEs · Structure GPU infrastructure bond · Metric: \$500M raised
Minister ICT / Finance	Pass national data governance framework · Digital ID drive · Metric: 10M IDs issued	Issue 30% AI procurement mandate · Pilot AI-powered public service · Metric: cost per delivery -25%	Sign continental interoperability treaty · Full DPI operational · Metric: cross-border AI services live
Pension Fund Chair	Engage board on AI infrastructure as asset class · Commission a 12-week feasibility study covering: infrastructure-asset classification; compute-infrastructure rating pathways; regulatory treatment; and benchmarking against comparable infrastructure allocations. · Metric: board resolution passed	Allocate 3–5% AUM to AI infra-structure bond tranche · Metric: \$200M committed	Full portfolio deployed · ESG AI impact reporting live · Metric: \$1B+ in continental AI assets
DFI Executive	Develop first-loss tranche structure · Fund rating methodology commis-sion · Metric: term sheet published	Align approval timelines across AfDB, IFC, EIB · Fund pension regulatory reform · Metric: joint mandate signed	First \$1.5B Africa AI Infrastructure Fund close · Metric: private capital at 60% of total raise

Decision-Maker Action Matrix

RISK AREA	LEVEL	DESCRIPTION	STRUCTURAL MITIGATION
Surveillance & Authoritarian Misuse	HIGH	Centralised AI infrastructure creates surveillance leverage. Documented: Rwanda, Kenya, Ethiopia.	See Section 11 for full governance architec-ture. Summary: standing independent audit institution; federated architecture technically enforced; citizen redress ombudsman; Compact suspension for non-compliance.
Foreign Ownership Non-Align-ment	HIGH	Foreign-owned telecoms and banks may decline participation per parent company fiduciary obligations.	Architecture designed for critical mass, not unanimity. Spectrum licence conditions for telecoms; data localisation for banks. Func-tions with 2–3 anchor telecoms and African-owned bank anchors.
Smart Africa Precedent	HIGH	Smart Africa: 12 years, 54-country membership, limited binding outcomes.	Compact is structurally different: financial stakes, binding legal obligations, public quarterly delivery register, DFI-backed accountability.
GPU Supply Chain & Export Controls	HIGH	US BIS/EAR export controls may apply. NVIDIA lead times 12–18 months.	Diversified supply chain: AMD Instinct, Intel Gaudi 3, Huawei Ascend 910B. Export control legal review as Phase 1 deliverable. Procurement planning 24 months ahead.
Pension Regulatory Barriers	MED	FSCA, PENCOT, RBA each require multi-year regulatory reform.	Per-jurisdiction pathway mapped. Rating methodology commission funds the BBB-classification PENCOT requires. Timeline: 18–24 months per jurisdiction.
DFI Timeline Misalignment	MED	AfDB: 24–36 months; IFC: 12–18 months. No unified programme office precedent at this scale in Africa.	Unified programme office as explicit Phase 1 deliverable. Modelled on PIDG infrastructure precedent.
AfCFTA Digital Services	MED	Digital services chapter still under negotiation; continental procurement harmonisation cannot rely on it.	Procurement mandate as national policy first. Continental harmonisation in Phase 2 once AfCFTA services provisions are concluded.
Talent Retention	MED	African AI researchers earn 5–10x more abroad.	Continental AI Researcher Fellowship (500 funded positions, salary top-ups, equity in infrastructure vehicle). Contractually tracked.

Risk Register

Phase 01 | Installation | *Architecture Established* | 2026-2027

- Governance frameworks published across 5 anchor economies
- 3 compute pilots operational (JHB, NBO, LOS)
- Data trust legal templates deployed under AU DPF
- Rating methodology commissioned
- GPU export control legal review completed
- Triad coordination body incorporated under Smart Africa
- Intelligence Architect Phase 1 funding secured (\$50-80M DFI grant)
- DFI unified approval mechanism established

Phase 02 | Deployment | *Infrastructure Operational* | 2027-2030

- Continental compute network live at 3 hubs
- African foundation models released: 5+ languages
- AI credit deployed for 20M+ informal SMEs
- Procurement mandates binding in 10+ governments
- Rating methodology published; first AI infrastructure bonds issued
- Per-jurisdiction pension regulatory reform completed
- Continental AI Researcher Fellowship fully staffed

Phase 03 | Compounding | *Economy Compounding* | 2030-2035

- Intelligence economy at continental scale
- \$3.7T+ digital economy contribution on trajectory
- African AI export capability to Global South markets
- 20M+ AI-enabled livelihoods on trajectory
- AfCFTA digital services chapter concluded; procurement harmonised
- Continental bargaining leverage exercised in global AI governance forums

\$3.7T
Digital economy contribution by 2035

Closing

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The architecture is complete. The strategic doctrine is established. The actors are identified, the barriers are named, including those who will resist, the mechanisms are specified, and the minimum viable coalition is defined and its critical mass threshold is satisfied by arithmetic.

Paper 001's work is to establish the doctrine. That work is now complete. The Institutional Engagement Guide and Policy Brief, published separately as companion documents, provide the differentiated entry points and the decision-memo format for each stakeholder category. The forthcoming papers in this series deliver the sector-specific and ownership-specific analyses that this paper scopes as next steps.

What follows is execution. The window is open. The architecture is clear. The resistance is named. The only remaining question is who acts first, with whom, and in what coordination.

Africa generates intelligence every second of every day. The question has never been whether it is capable of building its own intelligence economy. The question is whether its institutions will organise to retain what they already produce – before that choice is made for them by others who will.

Application

Creativity

Illustrative scenario targets | *Derivation basis, key assumptions, and limiting conditions* | All headline figures in this paper are illustrative scenario targets, not forecasts. They indicate what could become achievable if the Continental Intelligence Compact is implemented across anchor economies with sufficient regulatory alignment, capital mobilisation, institutional participation, and execution discipline.

The paper uses three scenario levels. The low case reflects AI adoption without sovereignty: compute, models, and data-processing economics remain largely externally owned, and Africa captures mainly application-layer productivity gains. The base case reflects coordinated adoption across anchor economies: governed data trusts, procurement mandates, AI vendor registries, limited compute ownership, and sector-specific deployment in finance, agriculture, health, language, and public services. The high case is a sovereign-stack upper-bound scenario: African-owned compute, governed data trusts, binding procurement mandates, African language and sector models, institutional capital vehicles, and exportable intelligence systems are substantially operational by 2030.

M-01 | Digital economy contribution by 2035

Headline range: \$1.3T–\$3.7T.

Basis: projected African GDP, digital economy share of GDP, AI productivity uplift, and sovereign-stack value retention. The lower bound reflects AI adoption without meaningful ownership of compute, models, or data infrastructure. The upper bound assumes African ownership across compute, data governance, models, procurement, and exportable sector intelligence. The \$3.7T figure is this paper's upper-bound scenario, not a direct forecast from AfDB, UNCTAD, or any single source.

M-02 | AI-enabled jobs and livelihoods

Headline range: 8M–20M by 2035.

Basis: sector adoption across agriculture, health, finance, informal economy systems, language AI, and public services. The upper bound requires local vendor growth, public procurement demand, talent pipelines, and deployment in labour-intensive sectors. This is not a direct jobs forecast.

M-03 | SME credit access and financing gap

Headline target: 20M+ informal SMEs gaining access to formal credit within 36 months of scaled deployment, with a broader addressable SME financing gap estimated at up to \$330B.

Basis: mobile-money transaction history, alternative credit scoring, SME financing-gap estimates, and addressable-market assumptions. This refers to credit-access potential and addressable market size, not guaranteed lending volume.

M-04 | Digital identity coverage

Headline target: 90%+ coverage in anchor markets within 24 months.

Basis: existing national ID systems, telecom subscriber verification, USSD reach, KYC data, and government DPI integration. Coverage must be paired with privacy, appeal, inclusion, and offline-access safeguards.

M-05 | Compute infrastructure and cost reduction

Headline target: \$200M initial allocation financing approximately 50 tower-site edge compute nodes, with potential 40%–60% compute cost reduction for African AI developers.

Basis: pooled procurement, infrastructure-grade financing, anchor demand, local hosting, and higher utilisation of African-owned compute. The target depends on power reliability, lifecycle refresh reserves, technical operators, cybersecurity, and regulatory recognition of compute as infrastructure.

M-06 | Public AI procurement demand

Headline target: \$400M–\$600M annual demand stimulus across five anchor economies.

Basis: public-sector ICT expenditure, AI-addressable procurement, local vendor participation, and a 30% African-developed AI procurement mandate. The scenario requires funded, binding, transparent, and enforceable procurement rules.

M-07 | African AI company survival

Headline target: potential improvement in African AI company survival to Series A.

Basis: procurement demand, accredited vendor registries, public-sector contract flow, follow-on investment, and revenue growth. No direct African precedent validates a precise 10x outcome; the claim should therefore be treated as an improvement scenario requiring annual tracking, not a forecast.

M-08 | African language AI performance

Headline target: at least 80% of matched English-language benchmark performance on declared public evaluation tasks.

Basis: IrokoBench, AfroBench, model version, language coverage, task family, benchmark date, and evaluation setting. This is not a universal fluency claim.

M-09 | Domestic institutional capital

Headline basis: \$1T+ in long-duration African capital pools.

Basis: pension funds, insurers, public development banks, sovereign wealth funds, and related institutional pools. Capital availability is not investability; compute infrastructure requires rated vehicles, DFI risk layers, anchor offtake, regulatory permission, technical operators, and refresh reserves.

M-10 | Key sensitivity variables

The scenario outputs are most sensitive to: number of participating anchor economies; procurement enforcement; cost of capital; compute utilisation; regulatory approval for data trusts; AI vendor capacity; talent retention; and African ownership across compute, data, models, and procurement channels.

Counterfactual

Under a foreign-owned infrastructure scenario, Africa may still gain productivity from AI adoption, but much of the compute, model, platform, and data-processing surplus accrues offshore. The central economic claim of this paper is therefore not that AI adoption alone creates the upper-bound value, but that ownership and governance determine how much value Africa retains.

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Strategic advice

African talent

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AICE Africa

About AICE Africa

Artificial Intelligence Centre of Excellence Africa

AICE Africa is a pan-African institution focused on architecting the foundational systems of Africa's intelligence economy. Operating at the intersection of technology, institutional capability, and policy, AICE works with governments, enterprises, financial institutions, and infrastructure providers to design and deploy sovereign AI capability at continental scale.

Its mandate extends beyond adoption to ownership; ensuring that Africa does not merely consume intelligence systems, but actively participates in their creation, governance, and economic value. Through executive capacity building, institutional advisory, and AI systems architecting, AICE translates artificial intelligence from a technical tool into a strategic infrastructure layer for economic transformation.

AICE Africa operates across multiple African markets, advancing a long-term thesis: that Africa's future competitiveness will be determined by who owns, governs, and compounds intelligence on the continent.

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IRENE PHOEBE KIWIA | **Co-Founder & Chief Growth Officer, Adanian Labs and AICE Africa**

Irene Phoebe Kiwia is a strategist focused on building the frameworks and institutional capabilities required for African organizations to operate as intelligent enterprises.

Her work spans governments, financial institutions, and enterprises, where she designs and leads AI transformation initiatives that move institutions from fragmented technology adoption toward integrated, intelligence-driven operating models. She focuses on enabling leadership teams to understand, govern, and operationalize AI as a core layer of decision-making, performance, and growth.

Operating at the intersection of strategy, policy, and execution, she develops practical frameworks for AI readiness, decision intelligence, and institutional transformation—ensuring that organizations are not only equipped to adopt AI, but to embed it into how they operate, allocate resources, and deliver outcomes at scale.

She has contributed to national AI strategies, advised executive leadership across sectors, and led programmes that translate artificial intelligence into measurable institutional performance.

Her work is grounded in a clear thesis: the next generation of competitive institutions will be defined by their ability to operate as intelligent enterprises.

JOHN KAMARA | **Founder & Chief Executive Officer, AICE Africa · Chief AI Futurist, Equity Group Holdings**

John Kamara is a technologist, futurist, and systems architect focused on designing the technical foundations of intelligent enterprises and next-generation institutional infrastructure.

With over two decades of experience across artificial intelligence, data systems, and emerging technologies, his work centers on architecting platforms and frameworks that enable institutions to operate as adaptive, intelligence-driven systems. He works across governments, financial institutions, and enterprises to build the underlying architectures that translate data into real-time reasoning, automation, and scalable operational intelligence.

His approach combines deep technical design with long-range systems thinking—developing frameworks such as dynamic cybersecurity architectures, decision intelligence systems, and unified reasoning models that integrate data, time, and context into continuous institutional learning and performance.

As a futurist, he explores how artificial intelligence can be re-architected across disciplines—not as isolated tools, but as interconnected systems that redefine how institutions are structured, how workflows are executed, and how value is created at scale.

His work is grounded in a clear perspective: intelligence is not implemented in parts—it is engineered as a system that enables institutions to sense, decide, and evolve in real time.

Pax Technologica

About Pax Technologica

Technology Governance & Strategic Advisory

Pax Technologica works at the intersection of AI, sovereignty, and institutional transformation. Pax Technologica partners with governments, development institutions, and private sector actors to build the governance frameworks and strategic architectures required for responsible, sovereign AI deployment in the Global South.

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THOMAS ERMACORA | **Founder of Studio Ermacora & Pax Technologica**

Thomas Ermacora is a futurist and technologist with over two decades at the intersection of artificial intelligence, exponential technology, and civilisational futures. As the founding resident futurist of the XPRIZE Foundation, Global Futures Council member at the World Economic Forum, MIT fellow, and G7 futurist on AI adoption and national competitiveness, he has worked at the frontier of global technology governance.

He is the founder of Pax Technologica, dedicated to the sovereign adoption of exponential technologies in the Global South, and of Studio Ermacora, a strategic consultancy with two decades of technology-driven impact across institutional, governmental, and cultural contexts.

His work is shaped by three converging forces: the geopolitical dynamics reshaping global power, the acceleration of intelligence systems, and the emergence of distributive infrastructures redefining how societies organise and evolve. He has given keynotes at over 500 venues worldwide, including the UN General Assembly, EU task forces, and Tomorrowland festival, where he addressed the convergence of natural and artificial intelligence.

PAUL HUGHES | **Co-founder of Studio Ermacora & Pax Technologica**

Paul Hughes is a systems thinker and narrative designer, co-founder of Studio Ermacora and Pax Technologica, and the strategic partner to Thomas Ermacora's technological vision. Trained in design in Dublin and grounded in Dutch Design principles in Amsterdam, he led a strategic design company to the European Design Agency of the Year award in 2010, before directing his practice toward systemic and strategic impact.

At Pax Technologica, his work centres on building the coalitions, frameworks, and narratives that give the sovereign adoption of exponential technologies in the Global South institutional momentum and communicative force. With three decades of experience in narrative design and systems thinking, he has worked with governments, enterprises, and institutions including Yale University, Carnegie Mellon Qatar, and the European Union. An award-winning keynote speaker, his work is grounded in the conviction that finding simplicity on the other side of complexity is the highest form of design and the essential skill of the intelligence age.

