

Digital Economy Policy and National Competitiveness: Nigeria and China in Perspective

¹Abasikponke Sunday Mkpanam, ²Imoh Imoh-Ita, ³Unwana-Abasi S. Udoh

^{1,2,3}Department of Public Administration, Akwa Ibom State University

¹Email: abasikponke2@gmail.com; Phone: 08129343952, 09151849366, ²Email: Imohimohita-ita@aksu.edu.ng; Phone: 08023140869, ³Email: unwanabasi06@gmail.com; Phone: 08023139391.

Abstract

The study compared the digital economy policies of Nigeria and China to examine how differences in policy design influence national competitiveness. Specifically, it analysed Nigeria's National Digital Economy Policy and Strategy (NDEPS 2020–2030) and China's Digital China Construction Overall Layout Plan (2023–2035) with a view to understanding their institutional structures, governance arrangements, and implementation models. Guided by Policy Capacity Theory, the study adopted a qualitative method through a comparative policy analysis, drawing on official policy documents, government reports, and relevant scholarly literature. It was found that Nigeria's digital economy strategy is largely market-driven and relies on private sector participation, public-private partnerships, and external financing. This approach contributed to improvements in digital inclusion, broadband expansion, and fintech development, challenges relating to institutional coordination, infrastructure gaps, and limited public investment constrain competitiveness. China's strategy built around centralised coordination, state-directed financing, and long-term technological planning enabled the country to develop advanced digital infrastructure, strengthen innovation capacity, and position itself as a leading actor in emerging technologies. The study concluded that national competitiveness in the digital economy is shaped not only by the existence of digital policies but also by the coherence of policy design, governance structures, and implementation capacity. It therefore recommended that Nigeria strengthen institutional coordination, improve strategic public investment in digital infrastructure, and develop a more integrated framework for long-term digital transformation.

Keywords: Digital economy policy, national competitiveness, policy capacity, digital governance, Digital China, Nigeria NDEPS.

Introduction

Since the mid-1990s, the global political economy has been progressively influenced by the expansion of the digital economy, which has become a central driver of productivity growth, institutional transformation, and national competitiveness (World Bank, 2016; UNCTAD, 2021). Across both developed and developing contexts, digital technologies are no longer peripheral tools but core instruments of economic restructuring and governance reform. As a result, states are progressively adopting deliberate digital economy policies aimed at building infrastructure, regulating data ecosystems, and strengthening innovation capacity (OECD, 2020a)

Within this global shift, digital economy policy has emerged as a key feature of state-led development strategies. Governments now use such frameworks and models not only to promote technological adoption but also to reposition their economies within global value chains (Hanna, 2020; Bukht & Heeks, 2017). However, these policies depend largely on institutional capacity,

governance structures, and the state's ability to coordinate and implement long-term digital strategies (Fukuyama, 2013). This has created variations across countries in how digital economy policies are designed and executed.

In this context, Nigeria and China serve as useful comparative tools. Nigeria, through its National Digital Economy Policy and Strategy (NDEPS 2020–2030), portrays an emerging digital economy focused on expanding basic infrastructure, improving digital literacy, and strengthening institutional coordination (National Information Technology Development Agency [NITDA], 2020). In contrast, China's Digital China Construction Overall Layout Plan (2023–2035) reflects a more advanced, state-driven digital system characterised by deep integration of data, infrastructure, and governance under a centralised policy framework (UNDESA, n.d.).

Although both countries prioritise digital transformation, they operate under fundamentally different institutional and developmental conditions. Nigeria's model is largely agency-driven and dependent on public-private partnerships, while China's system is highly centralised, state-coordinated, and strategically aligned with long-term national planning objectives (Tjahyono et al., 2025; Zhou, 2021). The comparison is therefore not based on development level alone but on differences in policy architecture, governance structure, and state capacity.

This study therefore compares Nigeria's NDEPS (2020–2030) and China's Digital China strategy (2023–2035), with specific focus on how differences in institutional design influence national competitiveness. Structured around key dimensions including digital infrastructure development, governance and institutional coordination, data governance philosophy, and funding and capital mobilisation, the analysis aims to examine how digital economy policy design and state capacity influence national competitiveness in both countries' long-term economic competitiveness.

Conceptual Framework

Digital Economy Policy

Digital economy as a concept is not limited to a single sector; rather, it is a broad socio-technical system that influences production, exchange, governance, and value creation through digital technologies (Hanna, 2020). According to Tapscott (1997), the digital economy is an economic system enabled by networked intelligence and digital communication technologies. However, while historically useful, this definition is limited in capturing the structural depth of contemporary digital transformation. Going forward, Bukht & Heeks (2018) distinguish the digital economy into three layers, namely the core digital sector, the digital economy proper (platforms and digital services), and the broader digitalised economy, where digital tools reshape all sectors. This typology is widely used because it clarifies the difference between digitisation and full economic transformation.

According to the OECD (2020), the digital economy encompasses all economic and social activities that rely on digital technologies, particularly data and connectivity infrastructure. In a similar but more development-oriented vein, the World Bank (2016) emphasises the role of digital systems in generating “digital dividends,” including growth, efficiency, and improved service delivery. UNCTAD (2019), however, places stronger emphasis on global value creation and capture, emphasising digital platforms, data monetisation, and their restructuring effect on trade and production networks.

Other definitions point to a stronger shift toward data-centric interpretations. Brynjolfsson et al. (2021) argue that the digital economy is increasingly characterised by the integration of

artificial intelligence and data-driven digital systems into production processes, leading to digitally augmented forms of economic organisation and productivity enhancement. Similarly, Sestino et al. (2025) conceptualise the digital economy as a system in which data is collected, processed, and organised through digital infrastructures and subsequently exchanged or monetised to generate economic value. These modern definitions mark a shift from viewing digital technology as a tool to seeing digital data as a central factor of production.

Consequently, the term is not simply about connectivity or ICT deployment, but about restructuring economic and institutional systems around digital infrastructure, data flows, and platform coordination. As a synthesis, this study conceptualises the digital economy as a multi-layered system of economic and institutional activity built on four interdependent foundations. These include digital infrastructure as the enabling base of connectivity and computation; data-driven production systems where information functions as a key economic resource; platform-based market structures that mediate transactions and innovation; and ICT-enabled governance systems that reshape state regulation and service delivery. This definition is appropriate because it moves beyond narrow sectoral or technology-based interpretations and captures the structural reality of contemporary digital economies. In essence, this makes it useful for this comparative study owing to the fact that differences are not only technological but also institutional and governance-driven.

From the foregoing, it is evident that the realisation of digital transformation depends not only on the availability of digital technologies but also on the policy architecture that guides their development, regulation, financing, and utilisation. Consequently, attention is shifted from the digital economy itself to digital economy policy, which provides the institutional and strategic direction for digital transformation. Although there is no universally accepted definition of digital economy policy, it generally refers to the collection of government policies, institutional arrangements, regulatory frameworks, and strategic interventions designed to promote the development, governance, and application of digital technologies in support of economic and social development (OECD, 2020b). Such policies typically cover areas including digital infrastructure, data governance, innovation, digital skills, cybersecurity, digital trade, and institutional coordination. Drawing from this, this study defines digital economy policy as a coordinated framework of government strategies, institutions, regulations, and investment mechanisms established to develop digital infrastructure, govern data resources, stimulate innovation, strengthen digital industries, and enhance national competitiveness through the effective integration of digital technologies across the economy. This definition recognises that digital transformation extends beyond technology adoption to include the institutional capacity, governance structures, financing arrangements, and implementation mechanisms through which governments influence digital development.

National Competitiveness

National competitiveness is a widely used concept in economics, public policy, and development studies, although there is no universal agreement on its precise meaning. Broadly, it refers to a country's ability to create conditions that enhance productivity, innovation, economic growth, and long-term prosperity. Over time, the concept has evolved from a narrow focus on trade performance and comparative advantage to a broader concern with institutional quality, technological capability, and the overall environment within which economic activities occur.

One of the most influential contributions to the concept is that of Porter (1990), who argues that national competitiveness is rooted in a country's ability to achieve sustained productivity growth through innovation, industrial upgrading, and supportive domestic institutions. This perspective shifted attention away from traditional factor endowments such as natural resources and cheap labour towards the role of innovation and strategic policy in driving economic success. Although Krugman (1996) questioned the tendency to treat nations as competing firms, he acknowledged that productivity remains the fundamental basis of a country's economic performance and living standards.

Subsequently, major global institutions reinforced the centrality of productivity in the definition of national competitiveness. For instance, the World Economic Forum (2018) defines competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. Similarly, the International Institute for Management Development (IMD, 2022) views competitiveness as the ability of a nation to manage its resources and competencies in ways that create long-term value and prosperity. The OECD (1992) also links competitiveness to a country's capacity to produce goods and services that meet international market standards while simultaneously maintaining and improving the real incomes of its citizens. From the foregoing, it is apt to submit that competitiveness is not restricted to the factor of outperforming other countries but is about sustaining productivity and improving societal welfare.

Delgado et al. (2012) in their assessment argue that competitiveness is fundamentally determined by the quality of a country's business environment, institutions, and public policies that facilitate and expand productivity and prosperity. Hamdouna and Khmelyarchuk (2025) aver that technological readiness, innovation ecosystems, digital infrastructure, and state capacity have become increasingly important determinants of competitiveness in the twenty-first century. As economies become more digitalised, the ability of governments to support technological innovation, coordinate digital transformation, and create effective regulatory systems has become a critical source of competitive advantage (Shonubi, 2025).

For the purpose of this article, national competitiveness is defined as the capacity of a state to create and sustain the institutional, technological, and economic conditions that enhance productivity, innovation, and long-term prosperity. Within the context of the digital economy, it refers specifically to a country's ability to leverage digital infrastructure, data resources, governance systems, and technological capabilities to strengthen its economic performance and strategic position in the global economy.

Theoretical Framework: Policy Capacity Theory (PCT)

Policy Capacity Theory (PCT) emerged as an attempt to explain why some governments are able to design and sustain effective public policies while others struggle to do so. The theory gained prominence through the works of Painter and Pierre (2005) and was subsequently developed by Wu, Ramesh, and Howlett, and other policy scholars who sought to identify the capacities required for effective policymaking in increasingly complex governance environments (Painter & Pierre, 2005; Wu et al., 2015). Unlike traditional theories that focus primarily on policy outcomes, PCT directs attention to the knowledge, institutional arrangements, resources, and political support that determine the quality of policy design and implementation.

The central argument of the theory is that the effectiveness of public policy depends on the capacities available to governments during the policy process. The theory maintains that successful policies are not just products of political intentions but are outcomes of adequate analytical,

operational, and political capacities (Wu et al., 2015). Analytical capacity refers to the ability of policymakers to generate, access, interpret, and utilise evidence, technical expertise, and strategic knowledge in policy formulation (Gleeson et al., 2009; Howlett, 2015). It emphasises the importance of evidence-based policymaking and long-term planning in addressing complex development challenges. Operational capacity relates to the institutional and administrative arrangements required to coordinate and implement policy objectives. This includes organisational structures, inter-agency coordination mechanisms, financial resources, and administrative competence necessary for policy execution (Gleeson et al., 2011; Ramesh et al., 2016). Political capacity refers to the ability of governments to secure legitimacy, mobilise support, manage competing interests, and sustain commitment to policy objectives over time (Peters, 2015; Udoms et al., 2017).

The theory further submits that these three dimensions are not mutually exclusive. For instance, strong analytical capacity without effective institutions may produce well-designed policies that are difficult to operationalise. Similarly, strong institutional arrangements may yield limited results if policies lack sound analytical foundations or political support. Consequently, effective public policies require a balanced combination of knowledge, institutional capability, and political commitment. The theory further argues that policy coherence, institutional coordination, strategic planning, and resource mobilisation are essential components of policy capacity because they determine whether policy objectives can be translated into meaningful outcomes (Howlett & Ramesh, 2016).

Despite its usefulness, the theory has attracted several criticisms. One criticism concerns the difficulty of measuring policy capacity empirically. Elements such as analytical expertise, institutional effectiveness, and political support are often difficult to quantify, making comparative assessment challenging (Brenton et al., 2023). The theory has also been criticised for overlapping conceptually with related ideas such as governance capacity, administrative capacity, and state capacity, thereby raising questions about its distinctiveness as an analytical and explanatory theory (Peters, 2015; Wu et al., 2015).

As a matter of relevance, the theory enables an assessment of whether the two digital economy policy instruments of Nigeria and China possess the analytical, operational, and political capacities necessary to promote national competitiveness in the digital age. From an analytical perspective, the study examines how each policy conceptualises the digital economy and identifies strategic priorities relating to digital infrastructure, innovation, data governance, and competitiveness. From an operational perspective, attention is given to the institutional structures, coordination mechanisms, and funding arrangements embedded within each framework. Political capacity is assessed through the degree of policy coherence, government commitment, and alignment between digital economy objectives and broader national development goals.

Adopting the theory, the study evaluates the extent to which the Nigerian and Chinese policy architectures are capable of supporting long-term digital transformation. While Nigeria's NDEPS focuses largely on foundational issues such as broadband expansion, digital literacy, entrepreneurship, and regulatory development, China's Digital China strategy adopts a broader and more integrated trajectory that merges digital infrastructure, data governance, technological innovation, and national competitiveness within a unified model. In this light, the theory provides a suitable basis for comparing the strengths and limitations of both policy instruments and identifying lessons that may strengthen Nigeria's digital economy strategy.

Overview of Nigeria's Digital Economy Policy

Nigeria's digital economy policy has evolved from narrow ICT liberalisation to a structured national development strategy. Initially, reforms were anchored on the National Information Technology Policy (2001), which created the National Information Technology Development Agency (NITDA) to regulate ICT adoption and expand basic digital access. At this stage, policy focus was limited to telecommunications expansion and institutionalising basic digital governance structures (The Ministry of Communication Technology, 2012). This trajectory was expanded through the 2012 National ICT Policy, which attempted to integrate telecommunications and digital services into a broader regulatory framework. However, the policy was only sectoral and infrastructure-driven, with limited attention to data governance, platform development, or digital productivity transformation (World Bank, 2019). A major shift occurred in 2019 when the existing ministry was redesignated as the Federal Ministry of Communications and Digital Economy (FMCDE), consolidating previously disaggregated ICT governance structures. This reform led to the introduction of the National Digital Economy Policy and Strategy (NDEPS 2020–2030), marking Nigeria's first coordinated effort to treat the digital economy as a national economic pillar rather than an isolated sectoral issue (Ibanga et al., 2024). However, at the inception of President Bola Ahmed Tinubu's administration in 2023, the ministry's nomenclature was reframed to the Federal Ministry of Communications, Innovation and Digital Economy (FMCIDE, n.d.). The NDEPS provides the overarching pathway for Nigeria's digital transformation agenda, structured around eight policy pillars. Altogether, these pillars project a foundational and capacity-building orientation, not just a high-end digital industrial strategy.

The eight pillars are:

1. Developmental Regulation, which focuses on enabling innovation while maintaining regulatory oversight.
2. Digital Literacy and Skills, aimed at improving human capital and workforce readiness.
3. Solid Infrastructure, centred on broadband expansion and fibre-optic deployment.
4. Service Infrastructure, which covers government platforms, cloud systems, and digital identity architecture.
5. Digital Services Development and Promotion, focused on e-government and digital service delivery.
6. Soft Skills Development, which supports technical and cognitive skill formation.
7. Digital Entrepreneurship, aimed at strengthening startups and innovation ecosystems.
8. Indigenous Content Development, which promotes local participation in ICT production and services (NITDA, 2020).

From the foregoing, it is evident that Nigeria's policy is primarily concerned with building entry-level digital capacity, including connectivity, skills, and regulatory stability, instead of positioning data or advanced computing infrastructure as strategic economic assets.

At the institutional level, the architecture of Nigeria's digital economy policy is multi-agency and segregated. At the top level, the Federal Ministry of Communications and Digital Economy (FMCDE) provides policy direction and strategic coordination, while NITDA functions as the main technology regulatory and implementation agency, particularly in digital skills, standards, and IT governance (The Ministry of Communication Technology, 2012, FMCIDE, n.d.). The Nigerian Communications Commission (NCC) regulates telecommunications infrastructure, spectrum allocation, and private sector participation in connectivity markets (NCC, n.d.).

With regard to implementation, the logic of NDEPS is market-driven and heavily dependent on private sector participation. The state acts mainly as a regulator and facilitator, and not a direct investor in digital infrastructure. Infrastructure expansion is largely delivered through public-private partnerships (PPPs), where private telecom operators finance and build broadband networks under regulatory incentives including licensing and Right-of-Way (RoW) policy adjustments (NBS, 2024). In addition, Nigeria relies on external financing from multilateral institutions and development partners for major digital projects. For instance, programmes such as digital identity systems and digital inclusion initiatives are co-financed by institutions such as the World Bank (World Bank, 2019).

Nigeria's digital economy policy has recorded some clear but uneven achievements. On the achievement side, in infrastructure, mobile broadband access has expanded mainly through private telecom operators such as MTN and Airtel. This expansion was supported by regulatory actions like reduced Right-of-Way charges in states including Lagos and Kaduna, which lowered the cost of fibre deployment. As a result, internet access has increased over time, although coverage is still stronger in urban than rural areas (NBS, 2024; Adejumoh, 2025). In financial technology, Nigeria has developed one of Africa's strongest digital payment systems. Platforms such as Flutterwave, Paystack, and Interswitch have expanded digital payments and cross-border transactions (World Bank, 2019; Agarwal et al., 2026). This growth was supported by Central Bank reforms, especially the introduction of Payment Service Bank licenses, which enabled companies like MTN and Airtel to provide mobile financial services (African Business, 2021). In public services, the National Identification Number (NIN) system has become a key digital identity tool as it is now linked to SIM registration and banking verification. Also, the Treasury Single Account (TSA) and IPPIS have digitised government payments and payroll systems, thereby improving basic financial control in the public sector (World Bank, 2019; Chukwuka, 2025). In terms of regulation, the Nigeria Startup Act (2022) introduced formal support for startups through incentives and funding arrangements. The Nigeria Data Protection Commission (NDPC), created under the 2023 Data Protection Act, now oversees data privacy and compliance across organisations.

Despite these gains, the policy outcomes are structurally constrained in relation to the general goal of a fully integrated digital economy. First, digital access is still highly uneven across space. While urban states such as Lagos and the Federal Capital Territory record relatively high broadband penetration and stronger network quality, large parts of northern and rural Nigeria still experience weak or inconsistent connectivity, largely caused by low commercial incentives for private telecom expansion and, in some areas, persistent security challenges that discourage infrastructure investment (NBS, 2024). Second, the institutional arrangement is characterised by overlapping authorities across key regulatory agencies, and this is evident in the legal and functional responsibilities assigned to them under Nigeria's digital governance structure. For instance, NITDA is responsible for setting ICT standards, coordinating digital development, and regulating information technology systems across government institutions, while the NCC regulates telecommunications infrastructure, including spectrum management, network licensing, and service provision. More recently, the NDPC, created under the Nigeria Data Protection Act (2023), was established to regulate personal data processing and ensure compliance in both public and private digital systems. In practice, these mandates altogether cut across digital infrastructure, communications networks, and data governance. Specifically, these include broadband deployment, cloud computing regulation, and national digital identity systems, where ICT

standards, telecom infrastructure, and data protection requirements operate within the same policy space.

Third, and more importantly, the constraint of funding and fiscal capacity defines the structural limits of implementation. Nigeria's digital transformation agenda is largely not driven by sustained sovereign capital investment but by a hybrid model that thrives through limited public expenditure and strong reliance on private sector financing and external support. Evidentially, budgetary allocations to the Federal Ministry of Communications, Innovation and Digital Economy have fluctuated significantly in recent years, with figures such as ₦39.47 billion in 2021, ₦159.87 billion in 2022, and ₦47.02 billion in 2023. These figures not only indicate volatility but also the relatively modest fiscal prioritisation of the sector within the national budget (Vanguard, 2026). Across these years, allocations to the digital economy have stayed below 1% of total federal expenditure, showing that the sector is a secondary policy area, not a central pillar of national investment strategy. In the same vein, regulatory agencies such as the NCC are not supported by direct fiscal transfers from the federal budget, but operate largely on internally generated revenue, with substantial annual income derived from spectrum licensing, operator fees, and telecommunications regulation (Nigeria Communications Act [NCA], 2003). It is therefore imperative to submit that while this model enhances regulatory independence, it also creates a structural dependence on private capital for large-scale infrastructure deployment, particularly in broadband expansion and network upgrades, which may be relatively inadequate.

Overview of China's Digital Economy Policy

The foundations of China's digital economy policy were laid during the 1990s through extensive investment in telecommunications infrastructure and information networks (Harwit, 2008). However, the policy direction became more explicit during the Xi Jinping era, when digital development was elevated to a national development priority. Major initiatives were enacted, including the Internet Plus Strategy (2015) and Made in China 2025, which aimed to integrate digital technologies, artificial intelligence, cloud computing, and industrial modernisation into the broader national development agenda (Zenglein & Holzmann, 2019). These initiatives moved China's digital policy beyond connectivity expansion towards the use of digital technologies as instruments of productivity growth, industrial upgrading, and national competitiveness (State Council of the People's Republic of China, 2015a; State Council of the People's Republic of China, 2015b; Naughton, 2021).

Between 2020 and 2023, the introduction of new legal and institutional architecture governing data and digital platforms shifted the country's digital economy trajectory. More explicitly, the enactment of the Data Security Law (2021), the Personal Information Protection Law (2021), and the establishment of the National Data Administration (NDA) in 2023 laid bare China's intention not only to treat data as a commercial asset, but also as a strategic national resource. This transition culminated in the release of the Digital China Construction Overall Layout Plan (2023–2035), which currently serves as the country's main digital development blueprint (Creemers et al., 2022; Fan, 2024; Central Committee of the Communist Party of China & State Council, 2023).

The Digital China Plan is organised around what Chinese authorities describe as the "2522" model. The model is built on two foundational elements, digital infrastructure and data resource systems, which support the integration of digital technologies across five major spheres, namely the economy, politics, culture, society, and ecological governance. It is further supported by two

strategic capabilities, digital innovation and digital security (Central Committee of the Communist Party of China & State Council, 2023).

Institutionally, China's digital governance structure is highly centralised as overall political direction is provided by the Communist Party and the State Council, while implementation responsibilities are distributed across specialised agencies. The Ministry of Industry and Information Technology (MIIT) oversees telecommunications infrastructure, industrial digitalisation, and technology standards. The Cyberspace Administration of China (CAC) regulates cyberspace governance, online platforms, and data security. In 2023, the National Data Administration (NDA) was established to coordinate data resource development, data circulation, and digital infrastructure planning across government agencies. The creation of the NDA addressed previous coordination challenges by concentrating major data governance responsibilities within a single institution (UNDESA, n.d.).

With respect to implementation, China's digital economy strategy is driven largely through state coordination and public investment. State-owned enterprises such as China Mobile, China Telecom, and China Unicom play central roles in broadband expansion, 5G deployment, cloud infrastructure, and data centre development (Central Committee of the Communist Party of China & State Council, 2023). In addition, state policy banks and government-guided investment funds provide financing for strategic digital projects, enabling the government to undertake large-scale infrastructure projects even where immediate commercial returns may be uncertain (State Council of the People's Republic of China, 2021). One example is the "East-West Computing Power" initiative, which aims to connect data centres and computing resources across different regions of the country to improve national computing capacity and support artificial intelligence development (Ministry of Foreign Affairs of the People's Republic of China, 2023; State Council of the People's Republic of China, 2021).

In terms of achievement, the policy has produced several notable outcomes. Amongst others, China has built one of the world's largest digital infrastructures, with over 4.8 million 5G base stations by the end of 2025 and 5G coverage extending to virtually all towns and more than 95% of administrative villages. The country has also developed extensive computing and data infrastructure, while the digital economy's core industries accounted for approximately 10.5% of GDP in 2024 (Xinhua News Agency, 2026; National Bureau of Statistics of China, 2025). Furthermore, digital technologies have been integrated into manufacturing, finance, logistics, public administration, and e-commerce on a large scale. Platforms such as Alipay and WeChat Pay have facilitated digital payments, while industrial digitalisation programmes have expanded the use of artificial intelligence, cloud computing, and industrial internet technologies across key sectors of the economy (Hao et al., 2026).

Despite holding the second-largest digital economy in the world by sheer scale and volume, consistently ranking right behind the United States, several constraints limit these policies' effectiveness. First, concerns have been raised about the growing concentration of state authority over data governance and digital platforms. Simply put, the enactment of the Data Security Law (2021), the Personal Information Protection Law (2021), and subsequent regulations on cross-border data transfers have expanded the state's oversight of digital activities (Northrop, 2025). While these measures are intended to enhance security and data protection, it is argued that they increase government control over data flows and online activities, especially through extensive monitoring and content regulation mechanisms, which has recently become concerning in relation to surveillance, privacy, and censorship in the digital space (Chen et al., 2026).

Second, although China has made remarkable progress in digital infrastructure development, regional disparities are evident. For instance, coastal provinces such as Guangdong, Zhejiang, Jiangsu, and Shanghai dominate digital innovation, data centre investments, and high-end digital services, while several western and less-developed provinces lag in digital industrialisation and advanced technology adoption. This uneven development has prompted the government to introduce initiatives such as the East-West Computing Power Project to redistribute digital infrastructure and computing resources across regions (Zhang & Gao, 2025).

Third, China's pursuit of technological self-reliance still faces external pressures, particularly in the semiconductor sector. Since 2022, the United States and its allies have imposed a series of export controls on advanced semiconductors, chip-design software, and semiconductor manufacturing equipment (Reuters, 2025a). These restrictions have limited China's access to some of the most advanced technologies required for artificial intelligence and high-performance computing. In response, China has increased investment in domestic chip production and encouraged the use of locally produced technologies, but the country still faces challenges in achieving full self-sufficiency in advanced semiconductor manufacturing (Reuters, 2025b). This is closely followed by stricter regulatory interventions in major technology firms, which have generated concerns about innovation and private sector dynamism. Beginning with the suspension of Ant Group's IPO in 2020, Chinese authorities introduced a series of antitrust, financial, and data-security measures affecting leading digital firms such as Alibaba, Tencent, and Didi. Although these reforms were justified as efforts to improve market regulation and data security, they contributed to a decline in investor confidence and erased over US\$1 trillion in market value from major Chinese technology companies during the peak of the regulatory crackdown between 2020 and 2022 (Zeng & Kim, 2025).

Comparative Analysis of Nigeria's National Digital Economy Policy and Strategy (NDEPS 2020–2030) and China's Digital China Construction Overall Layout Plan (2023–2035): Implications for National Competitiveness

1. Comparative Analysis of Policy Architecture and Governance Capacity

Table 1 compares the policy structures and governance capacity of Nigeria and China, with attention to their institutions, policy coordination, financing arrangements, and state capacity. It also shows how these differences affect the implementation of their digital strategies and their ability to achieve greater digital competitiveness.

Table 1: Comparison of Policy Architecture and Governance Capacity

S/N	Item of Comparison	Nigeria (NDEPS 2020–2030)	China (Digital China Plan 2023–2035)	Remarks/Implications
1	Structural Design & Strategic Orientation	Broad, developmental, and foundational focus organised around eight distinct pillars (digital literacy, broadband, entrepreneurship, local content, etc.) aimed at driving digital inclusion and expanding market access.	Integrated "2522" layout linking two foundations (infrastructure and data) to five development spheres, supported by innovation and security within a unified national strategy.	Nigeria's model builds baseline inclusion, service expansion, and fintech growth, but limits high-value tech development due to fragmented governance and private reliance. China treats data as a core factor of production, embedding infrastructure, innovation, and security to secure long-term competitiveness in AI, advanced computing, and global standard-setting.
2	Governance Structure & Coordination Mechanisms	Multi-agency, segregated governance structure (FMCIDE, NITDA, NCC, NDPC, NIMC, CBN) requiring multi-regulator alignment across overlapping domains.	Highly centralised, state-led model (NDA, CAC, MIIT) operating under unified direction from the Communist Party and State Council.	Shared governance in Nigeria provides institutional specialisation but introduces administrative bottlenecks and slower execution. China's centralised model minimises inter-agency friction, granting high capacity to mobilise resources and execute large-scale, tech-intensive projects rapidly.
3	Policy Coherence & Integration Capacity	High dependency on external market actors, private telecom operators, and international funding bodies (e.g., World Bank) to achieve core policy targets.	Direct structural alignment connecting national priorities directly to state agencies, state-owned enterprises (SOEs), policy banks, and long-term economic blueprints.	Nigeria's reliance on market incentives leaves policy outcomes vulnerable to fiscal volatility, investor confidence, and uneven regional rollout. China's tight integration of funding, state institutions, and execution mechanisms creates a strong platform for sustained, long-term

4	State Capacity & Implementation Efficiency	Corrective analytical focus on existing domestic gaps; market-driven implementation via PPPs; federal structure with subnational policy variations.	Forward-looking strategic orientation targeting frontier competition (AI, semiconductors); state-directed funding via SOEs/policy banks; centralised subnational targets.	strategic investments like the East-West Computing Resource Transfer. Nigeria achieves effective horizontal competitiveness (broad access, mobile money, digital banking) but struggles to convert gains into deep technological capabilities. China leverages state capacity to achieve vertical competitiveness, scaling high-value digital manufacturing, computing grids, and industrial AI coordination.
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Source: Author's Compilation

2. Comparative Analysis of Competitiveness Drivers

The differences between Nigeria and China's digital economy policy are visible through the main drivers of digital competitiveness, including infrastructure development, data governance, funding structures, and innovation systems. Across these drivers, the major issue is not policy intention, but how each country's institutional design influences achievements over time. In practical terms, both countries are building digital economies, but they are not building the same kind of competitiveness. These are summarised in Table 2 below:

Table 2: Comparison of Digital Competitiveness Drivers

S/N	Item of Comparison	Nigeria (NDEPS 2020–2030)	China (Digital China Plan 2023–2035)	Remarks/Implications
1	Infrastructure Development	Market-driven expansion reliant on private telecom firms and PPPs. Focused on basic urban broadband access via regulatory incentives like Right-of-Way fee reductions.	Treated as a strategic public asset deployed ahead of market demand via state-owned enterprises and initiatives like the East-West Computing Power Project.	Nigeria's model broadens basic connectivity but fosters a dual-speed digital economy between urban and rural areas. China's strategy builds deep system capacity, enabling advanced industrial automation, AI integration, and high-performance computing.
2	Data Governance Philosophy	Protection- and compliance-oriented, focused on privacy	Formally handles data as a core factor of production	Nigeria treats data as a sensitive entity to be protected, dispersing it across platforms. China aggregates and mobilises

		safeguarding, risk control, and user trust via the NDPC.	integrated into national economic planning, data pricing, and public aggregation.	unified datasets at scale to drive predictive governance, large AI model training, and industrial optimisation.
3	Funding & Capital Mobilisation	Mixed financing model reliant on private capital, commercial viability, PPPs, and foreign development loans (e.g., World Bank).	State-integrated model deploying patient capital through policy banks, sovereign wealth funds, and SOE balance sheets.	Nigeria's capital relies on market returns and macroeconomic stability, making non-commercial or long-gestation projects slow to deploy. China funds foundational technologies (semiconductors, computing grids) regardless of short-term profitability.
4	Innovation & Industry Development	Application-layer, service-oriented ecosystem strongest in fintech, e-commerce, and platform startups (e.g., Lagos hub).	Vertically integrated ecosystem combining state guidance with domestic tech giants across hardware, software, and industrial tech.	Nigeria creates dynamic consumer platforms but remains structurally dependent on imported hardware and foreign cloud infrastructure. China controls the domestic production base, enabling high-value supply chain dominance in AI, robotics, and advanced tech.

Source: Author's Compilation

3. National Competitiveness Outcomes and Policy Effectiveness

(A) Nigeria: Competitiveness Outcome

Nigeria's digital policy architecture has produced a specific type of national competitiveness focused on service-layer optimisation, digital inclusion, and consumption-led growth. By choosing a market-dependent policy design that relies on private capital and decentralised regulatory oversight, the state has successfully facilitated a flexible domestic service economy. This structural arrangement excels at adapting foreign technology platforms to solve local transaction problems, creating an exceptionally active commercial interface for retail commerce and consumer financial services. As observed by Oloyede (2023), this consumption-led orientation creates distinct structural limitations that define Nigeria's position in the global hierarchy. Because the policy framework lacks state-directed mechanisms to accumulate capital or build domestic hardware industries, the economy is locked into the lower-value segments of the digital value chain (Oloyede, 2023). This connotes that the domestic market generates profound transaction velocity but is dependent on foreign-manufactured microchips, external cloud storage infrastructures, and international software protocols.

Though critics have viewed FDI resulting from this dynamic as an instrument of capitalist and imperialist domination, Udofa & Ekeuwei (2023) argue that countries such as India, Canada,

Singapore, and the United States have well-managed FDI to support their economic growth, industrial expansion, and development. They further argued that, in contrast, many African countries have struggled to attract and benefit from such dependency due to political instability, weak infrastructure, inconsistent policies, high production costs, and unfavourable business environments, resulting in relatively low shares of global investment inflows despite the continent's abundant natural resources.

(B) China: Competitiveness Outcome

China's hyper-centralised, integrated policy model produces a competitiveness outcome centred on technological sovereignty, frontier capability accumulation, and global value chain dominance. Since it considers data an explicit factor of production and backs its policy priorities with deep public capital, China's system operates as a powerful engine for structural industrial upgrading. The structural result is an economy that occupies a high-value, commanding position within the global digital hierarchy, acting as a primary developer and exporter of original technology. This structural design enables China to accumulate deep technological capabilities over time, shifting its domestic industries away from simple consumer software applications toward advanced industrial hardware and systemic infrastructure control. Hence, China's competitive profile is defined by absolute structural autonomy, enabling the state to set international technical standards, control critical infrastructure links, and insulate its domestic economy from external technology blockades.

(C) Comparative Policy Effectiveness

The effectiveness of each nation's digital strategy is directly linked to its underlying policy capacity design, yielding different structural results in terms of value chain movement, systemic sustainability, and administrative efficiency.

Nigeria's pattern shows structural effectiveness through a logic of diffusion and digital inclusion. Given severe fiscal constraints and a lack of direct state funding, the policy design successfully uses regulatory liberalisation to mobilise private capital and expand digital access across diverse urban populations (NBS, 2024). This strategy is notably effective for rapid consumer onboarding and service-sector modernisation. However, its institutional efficiency in converting policy directives into advanced technical capability is low because regulatory authority is split across separate agencies; hence, the model lacks the operational capacity to independently guide long-term technology development or move the domestic economy up into high-value manufacturing segments.

In contrast, China's model portrays policy effectiveness through a logic of capability accumulation and global positioning. Its centralised, vertically integrated command system converts state policy into deep structural capability with exceptional speed and institutional efficiency. It links official career promotions directly to technocratic performance indicators, thereby forcing rapid alignment between long-term strategic plans and regional resource allocation (Landry, 2008). This arrangement is uniquely effective for scaling frontier technology ecosystems and moving up the global value chain (UNCTAD, 2019). However, this top-down efficiency comes with sustainability trade-offs, as heavy state direction may introduce high regulatory pressures on domestic platform conglomerates and risks creating overcapacity in state-supported sectors (Boullenois et al., 2026).

The workability of either digital policy model is therefore contingent upon a nation's specific development objectives and structural constraints. Nigeria's model represents a workable approach for developing nations seeking inclusive digital expansion under tight fiscal limitations. Since the country shifts the burden of infrastructure capital onto private operators and international donors, it provides a more realistic path to upgrade baseline services and boost local entrepreneurial agility without draining public state budgets. The primary beneficiaries of this trajectory are local service startups, fintech platforms, and urban consumers who gain access to efficient transaction networks (World Bank, 2019). However, as argued by Ekeuwei & Akpan (2024), models taking such resemblance lock the country into a long-term trajectory of technological dependency, leaving its digital economy reliant on foreign technology platforms.

China's situation, however, signifies an exceptionally practicable framework for long-term technological catch-up, geopolitical competition, and absolute digital autonomy (Zhang & Gao, 2025). For states possessing deep public financial reserves and strong institutional control, this model provides the strategic foresight required to bypass immediate market demands and build the technical foundations necessary for advanced industrial leadership. The beneficiaries of this model are state-owned industrial conglomerates, advanced hardware manufacturers, and the state itself, which gains a powerful mechanism for national security and geopolitical leverage. Looking forward, this model positions China to lead high-value digital segments over the next two decades, though it requires continuous administrative effort to manage international trade restrictions and handle domestic regulatory pressures.

4. Policy Lessons for Nigeria

Evidentially, the findings of the study point to a number of practical reforms that can bolster Nigeria's digital economy policy and improve its contribution to long-term national competitiveness. These are briefly explored as follows:

(A) Institutional Coordination Reforms

The comparative analysis indicates that the primary structural bottleneck within Nigeria's digital ecosystem is not the absence of strategic vision, but the operational friction caused by decentralised regulatory architecture. While China's response to this challenge was the creation of a centralised, powerful entity in the National Data Administration, a direct policy copy is neither politically workable nor constitutionally compatible with Nigeria's pluralistic, democratic federalism. Instead, the practical lesson for Nigeria is the urgent need to establish a legally empowered, statutory coordinating body situated directly within the presidency or the cabinet secretariat. This entity should possess the definitive political authority to harmonise the overlapping mandates currently cutting across the NITDA, the NCC, the NIMC, and the NDPC. Instead of merging these bodies, Nigeria should institutionalise clear jurisdictional boundaries through updated legal frameworks. Policy capacity can be enhanced by separating macroeconomic policy planning, market regulation, and digital identity management into distinct, non-competing lines of authority. The proposed coordinating body should enforce a unified data-sharing standard across these agencies, ensuring that biometric registries, telecommunications databases, and tax platforms operate on a single interoperable grid.

(B) Infrastructure Scaling Strategies

A critical point emerging from China's digital trajectory is that long-term national competitiveness cannot be sustained by broadband penetration and consumer connectivity alone. While Nigeria's private-sector-led infrastructure model has been effective at expanding baseline 4G mobile access, it leaves the country structurally dependent on foreign technology architectures. As global industries transition toward automated manufacturing, cloud computing, and artificial intelligence, the technical depth of a nation's infrastructure determines its position in the international division of labour. Nigeria must therefore update its infrastructure priorities, shifting its policy focus from basic connection metrics toward building higher-value, localised computing capacities.

To bridge persistent regional disparities without straining the public treasury, the state should recalibrate its regulatory incentives. Instead of allowing private investment to concentrate solely on urban telecommunications towers, Nigeria's policy design should provide targeted fiscal incentives, such as tax credits and zero-rated equipment tariffs, specifically for private operators who deploy localised cloud data centres and edge-computing nodes in secondary economic zones. Through this, Nigeria can lower latencies for local tech firms, reduce capital flight spent on international hosting servers, and build the physical computational foundation necessary to host high-value, data-intensive industries within its borders.

(C) Data Governance Recalibration

Nigeria's current data governance model operates on a defensive, compliance-oriented model designed primarily to protect user privacy and manage market risk. While maintaining these consumer rights protections is non-negotiable for a democratic state, the comparison with China's factor-of-production paradigm indicates that a purely protectionist trajectory limits technological innovation. Nigeria does not need to abandon its privacy standards; rather, it needs to balance data protection with productive utilisation, transforming public data from an administrative liability into an active economic resource.

To achieve this, the NDPC and NITDA should design secure, anonymised data sandboxes that host aggregated public sector information, including agricultural output records, public transit patterns, and national health demographics. If the country provides local tech hubs, researchers, and software developers with legal access to these large, anonymised datasets, it may foster a domestic ecosystem focused on predictive analytics and localised machine learning models. This arrangement changes the state's role from a passive data monitor into an active facilitator of data-driven industrial upgrading, which would enable Nigeria to generate real economic value from its digital footprint while preserving consumer safety.

(D) Financing Model Strengthening

The structural exposure of Nigeria's digital strategy to international financial shocks stems from its heavy dependence on foreign venture capital, international development loans, and private telecom investments. Lacking the vast sovereign wealth funds and policy bank reserves of the Chinese state, Nigeria cannot deploy massive public capital to finance infrastructure ahead of commercial demand. However, the country can strengthen its domestic public investment capacity by making use of existing financial structures more strategically. Therefore, Nigeria should establish a dedicated National Digital Development Fund, financed through a structural reform of the existing Universal Service Provision Fund (USPF) and a small, strategic percentage of telecommunications sector tax revenues. This domestic fund should not be used to replace private

capital, but should act as a de-risking mechanism or first-loss capital provider for high-risk, long-term digital infrastructure projects. This mixed-up public-private financing model improves the country's risk absorption capacity, secures long-term digital investments against external currency shocks, and ensures steady infrastructure progress independent of foreign direct investment cycles.

(E) Strategic State Capacity Improvements

Ultimately, the analysis has shown that a national strategy is only as effective as the state capacity backing its formulation and evaluation. To convert digital policy into lasting national competitiveness, Nigeria should urgently upgrade its internal analytical and operational capabilities. Explicitly, the state needs to move away from relying on external international donors for basic diagnostic data, and instead invest heavily in building its own internal technocratic expertise. This requires establishing specialised policy intelligence units within NITDA and the FMCIDE, staffed by meritocratically recruited data scientists, public economists, and software engineers. Capacity.

Furthermore, the state should implement a rigorous, data-driven monitoring and evaluation (M&E) system to ensure long-term policy continuity. Currently, Nigeria's digital policies suffer from political administrative cycle disruptions, where incoming leadership often sets aside the strategic projects of previous regimes (Udofa & Ekeuwei, 2023). To prevent this institutional weakness, digital economy targets should be codified into long-term career civil service performance metrics, isolating key operational tasks from political appointments. Through this act of building institutional memory and prioritising continuous learning, Nigeria would ensure that its administrative institutions possess the specialised knowledge, analytical capacity, and organisational stability required to manage a highly competitive global digital landscape.

Conclusion

The comparative analysis of Nigeria and China establishes that a country's digital economy trajectory is influenced directly by how its policy framework is designed, financed, and institutionally coordinated. Nigeria has used a flexible, market-led strategy to successfully drive consumer tech adoption, broadband expansion, and financial inclusion. However, relying on private financing, external development capital, and fragmented regulatory bodies keeps the economy locked into the lower-value segments of the digital hierarchy, focused primarily on tech consumption, consumer fintech, and service-layer updates. China, on the other hand, views and handles data as a national production asset integrated into broader economic and national security planning. Using centralised governance, state-directed patient capital, and deep state funding, it has built an independent technical engine optimised for high-value manufacturing, frontier computing, and global tech sovereignty.

Hence, while Nigeria excels at horizontal competitiveness by expanding baseline digital access and service participation, China converts state capacity into vertical competitiveness by dominating core digital production base and standard-setting frameworks. For Nigeria and other developing nations, the key takeaway is not to directly copy China's centralised structure, but to intentionally upgrade internal policy capacity within a democratic federal context. Therefore, long-term competitiveness is less dependent on strategic intentions and more on the alignment of analytical foresight, operational capacity, and political commitment.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. The Federal Government of Nigeria should establish a legally empowered coordinating body within the Presidency or Cabinet Secretariat to coordinate FMCIDE, NITDA, NCC, NDPC, and NIMC. The body should clarify the responsibilities of these agencies, reduce overlapping mandates, and establish common data-sharing standards for digital identity, telecommunications, and data protection.
2. The Federal Government of Nigeria should restructure part of the Universal Service Provision Fund (USPF) and dedicate a portion of telecommunications tax revenue to a National Digital Development Fund. The fund should provide first-loss or de-risking finance to attract private investment in long-term digital infrastructure, specifically in rural and secondary economic areas.
3. NITDA and the NDPC should establish secure and anonymised data platforms through which researchers and Nigerian technology firms can access selected public data on areas such as agriculture, health, and transportation. Access should be subject to clear privacy and security requirements and should support the development of local AI and data-driven applications.
4. The Federal Government of Nigeria, through the relevant ministries and agencies, should provide tax credits and zero-rated import duties on servers and other computing equipment for firms that establish data centres and edge-computing facilities in underserved regions.
5. The Federal Government of Nigeria should require foreign technology companies involved in public-sector projects, where appropriate, to partner with Nigerian firms and research institutions. Such partnerships should provide opportunities for local assembly, technical training, technology transfer, and the development of domestic hardware and software capabilities.

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