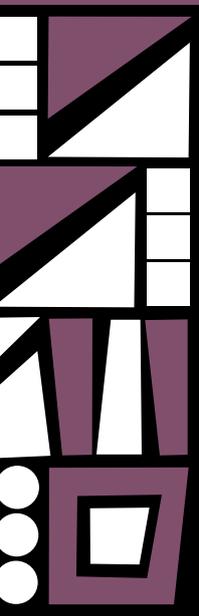




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NIGERIA'S TECHNOLOGICAL TRANSFORMATION: SIXTY YEARS AFTER INDEPENDENCE

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Abstract

This paper explores Nigeria's technological development sixty years after independence, highlighting major transformations, achievements, and persistent challenges in the nation's quest for advancement. It examines the evolution of the technology sector through the emergence of tech clusters, innovative enterprises, and government-led initiatives that have stimulated growth and expanded digital inclusion. The rapid spread of mobile telephony and internet connectivity has revolutionised communication and redefined business and social interactions across the country. Yet, Nigeria's technological progress continues to face formidable barriers, including inadequate infrastructure, limited funding, weak research and development culture, and growing cybersecurity threats. Nonetheless, Nigeria possesses immense potential for sustained technological growth, driven by its youthful and expanding population, an increasingly vibrant tech ecosystem, and policy commitments to innovation and entrepreneurship. The study identifies key opportunities in fintech, e-governance, digital services, and educational technology, arguing that strategic investment and coherent policy implementation can position Nigeria as a leading technology hub in Africa. It concludes that while the challenges are significant, Nigeria's technology sector holds transformative potential to drive inclusive economic growth, create employment, and improve quality of life, thereby consolidating the country's place as a central actor in Africa's ongoing digital revolution.

Keywords: Nigeria; Technological Advancement; Innovation; Digital Transformation; Independence.

Introduction

When Nigeria gained independence in 1960, it inherited a relatively good educational system.¹ However, it was generally uneven, as Southern Nigeria dominated the educational academic system, accounting for more than 68 percent of primary, secondary, and postsecondary institutions.² Over time, this disparity gradually narrowed as the country witnessed an exponential increase in enrolment and the number of graduates.³ Unfortunately, this massive rise in school building and enrolment had detrimental implications due to an overemphasis on quantity rather than quality.⁴ This expansion took place amid inconsistent education policies—such as the shifts from the 6-6-4 to the 6-3-3-4 system—with little or no attention to curriculum design, the quality of teachers, or the technological relevance of education.⁵ Thus, although post-independence

¹ A. B. Fafunwa, *History of Education in Nigeria* (London: George Allen & Unwin, 1974), 12.

² N. A. Nwagwu, *Primary School Administration in Nigeria* (Lagos: Macmillan Nigeria, 1976).

³ *Oil and Gas Journal*, "Nigeria's Oil Industry: A Review of Progress," *Oil and Gas Journal* 73, no. 34 (1975): 44–50.

⁴ World Bank, *Nigeria: Economic Development and Prospects* (Washington, DC: World Bank, 1980), 15.

⁵ S. Adesina, *The Development of Modern Education in Nigeria* (Lagos: Heinemann Educational Books, 1988), 30.

⁵ *National Policy on Education* (Lagos: Federal Ministry of Education, 1981), 10.

Nigeria demonstrated aspirations for national progress, technological advancement in Nigeria can largely be described as being in “partial stagnation.” Yet, it would be fair to acknowledge that from 1960 through the early 1980s, Nigeria appeared to be on a path toward building a self-sustaining technological base anchored in education, industrialization, and national planning.

At the heart of this challenge lies the relationship between education and technology. Education is directly proportional to a nation's sustainable advancement in technology, but modern systems of technological progress—especially those embedded in Science, Technology, Engineering, and Mathematics (STEM)—have increasingly relied on informal and innovation-driven learning networks. As Roco and Bainbridge argue, sciences have reached a tipping point where they must collaborate to progress.⁶ The National Science Foundation similarly observes that the “New Renaissance” must be grounded in an integrative vision of science and technology that focuses not only on tools but also on human-centered development.⁷ Nigeria's struggle, therefore, is not simply about acquiring scientific knowledge but about integrating this knowledge into a functional innovation system that bridges academia, industry, and society. To gain faster and more credible mileage in technological advancement, Nigeria must unify science and technology through deliberate policies that emphasize material unity at the nanoscale, the transformation of tools, hierarchical systems, and the enhancement of human performance in creative thinking. These principles—if consistently implemented—would form the foundation for adopting and localizing information and communication technology (ICT) as a catalyst for national growth.

Information technology remains the defining feature of the global information economy. Information and communication technologies (ICT) possess the potential to generate new sources of value, redefine industrial boundaries, and democratize access to knowledge. However, as scholars have warned, ICT can also become a double-edged sword—squandering scarce investment capital when projects are poorly designed or disconnected from real socio-economic contexts. Information adds value to a firm only when it motivates decision-makers to act differently and more effectively. The transformative power of ICTs, notably the Internet, has reshaped industrialized and emerging economies alike. Yet, their impact is neither uniform nor predictable—it is a dynamic, non-linear process that evolves as individuals and institutions reinterpret, resist, or reshape technological systems in diverse ways.

Since 2000, the Federal Government of Nigeria has embarked on an aggressive drive to enhance ICT services through privatization and deregulation policies.⁸ This process culminated in the formulation of the National Telecommunication Policy in December 2001.⁹ These reforms marked a turning point, liberalizing the telecommunications sector, expanding access, and catalysing private sector participation in digital innovation.

⁶ Mihail C. Roco and William S. Bainbridge, “Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology, and Cognitive Science,” *Journal of Nanoparticle Research* 4, no. 4 (2002): 281–95.

⁷ National Science Foundation, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology, and Cognitive Science* (Arlington, VA: National Science Foundation, 2002), 10.

⁸ Nigerian Communication Commission (NCC), *Annual Report 2001* (Abuja: Nigerian Communication Commission, 2001), 12.

⁹ National Information Technology Development Agency (NITDA), *Establishment and Mandate* (Abuja: National Information Technology Development Agency, 2001), 5.

Before the COVID-19 pandemic, Nigeria's economy in 2019 recorded a real GDP growth of 2.55 percent, with the non-oil sector contributing 91.22 percent.¹⁰ Agriculture accounted for 24.4 percent, trade 16 percent, manufacturing 11.64 percent, and ICT 13 percent.¹¹ However, the COVID-19 disruptions threatened to erase these modest gains, as the World Bank projected a 3.5 percent contraction.¹² With a GDP of 397.3 billion USD, Nigeria faced the risk of negative growth.¹³ The Central Bank of Nigeria estimated real GDP growth at ₦71.39 trillion in 2019,¹⁴ with agriculture at ₦10.50 trillion, trade ₦5.94 trillion, and ICT ₦4.66 trillion—all sectors vulnerable to contraction if urgent policy interventions were not implemented.¹⁵ This economic fragility underscores the structural weakness of Nigeria's economy, which remains overdependent on consumption rather than production.

The National Bureau of Statistics (NBS) reported national unemployment at 23.1 percent and underemployment at 16.6 percent in 2019,¹⁶ with inflation at 11.32 percent.¹⁷ The same year, Nigeria had approximately 41.5 million Micro, Small, and Medium Enterprises (MSMEs) contributing 49 percent of national GDP and employing 69 million people—about 86 percent of the workforce.¹⁸ This sector's vitality highlights how entrepreneurship and technology could drive inclusive growth if properly supported. Indeed, the aftermath of the COVID-19 pandemic reinforced the urgency of rethinking models of job creation and economic diversification, as ICT overtook the oil and gas sector as the fastest-growing and most employment-generating industry.¹⁹ The International Monetary Fund (IMF) estimates that the informal sector employs 65 percent of Nigeria's workforce,²⁰ while the World Bank reports that 89.9 million Nigerians live in "extreme poverty," surviving on less than \$2 per day.²¹ These figures paint a sobering picture of an economy where structural inequality and technological exclusion persist. The pandemic merely magnified existing vulnerabilities while spotlighting ICT as a lifeline for economic recovery.

Looking forward, the future of technological advancement lies in what scholars describe as the NBIC convergence—Nanotechnology, Biotechnology, Information Technology, and Cognitive Science. The term "convergent technologies" denotes the synergistic fusion of these four rapidly advancing fields: nanoscience and nanotechnology; biotechnology and genetic engineering; information technology and advanced computing; and cognitive science, including neuroscience. Together, they represent the frontier of innovation capable of redefining human productivity and social systems. Accelerated progress can only emerge from cross-disciplinary integration and research collaboration among these domains. In this context, Nigeria's

¹⁰ National Bureau of Statistics (NBS), *Annual Report 2020* (Abuja: National Bureau of Statistics, 2020), 12.

¹¹ Central Bank of Nigeria (CBN), *Annual Report 2020* (Abuja: Central Bank of Nigeria, 2020), 15.

¹² World Bank, *World Development Report 2020: Global Value Chains in a Post-COVID-19 World* (Washington, DC: World Bank, 2020), 20.

¹³ International Monetary Fund (IMF), *World Economic Outlook* (Washington, DC: International Monetary Fund, 2020), 10.

¹⁴ Central Bank of Nigeria, *Annual Report 2020*, 18.

¹⁵ Nigerian Communication Commission, *Annual Report 2001*, 12; National Information Technology Development Agency, *Establishment and Mandate*, 5.

¹⁶ National Bureau of Statistics, *Annual Report 2020*, 15.

¹⁷ Central Bank of Nigeria, *Annual Report 2020*, 10.

¹⁸ Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), *Annual Report 2019* (Abuja: SMEDAN, 2019), 12.

¹⁹ Nigerian Communication Commission (NCC), *Annual Report 2020* (Abuja: Nigerian Communication Commission, 2020), 25.

²⁰ International Monetary Fund, *World Economic Outlook*, 12.

²¹ World Bank, *World Development Report 2020*, 15.

development challenge transcends mere investment in technology—it demands a new epistemology of innovation rooted in local needs, ethical considerations, and inclusive governance. The unification of science based on the “unity in nature” principle can enable technological convergence that enhances both national competitiveness and societal wellbeing. With proper attention to ethics, education, and equitable access, these technologies can revolutionize human capability and national development.

It is therefore not only essential but imperative that Nigeria places technology at the heart of its national survival strategy. The post-COVID-19 world has inaugurated a digital civilization, transforming lifestyles, production systems, and global interdependence into a new normal. As the World Bank (2020, p. 10) projects a 50% rise in global food demand by 2030²²—amid shrinking water resources²³ and increasing land scarcity²⁴—technological innovation will become indispensable for sustainable development. Nigeria's response must therefore include critical investments in technological knowledge, infrastructure, and financing. Only by building endogenous capacity in science and technology can Nigeria truly actualize the promise of independence and position itself as a competitive actor in the twenty-first-century knowledge economy.

Conceptualizing Technology

Many intellectuals from numerous fields have expressed an interest in and studied technology. According to Merrill, technology is the application of scientific knowledge to practical ends, particularly in industry.²⁵ This definition emphasises technology's utility in solving real-world problems and improving human life. In a similar vein, Bunge defines technology as “the study, design, creation, and application of machines, equipment, systems, and methods for solving human problems.”²⁶ This definition underscores the applied and instrumental dimensions of technology, situating it within a broader humanistic project of problem-solving and progress. Yet, beyond its instrumental value, technology also embodies social meaning and reflects the values, norms, and priorities of the society that creates and uses it.

According to MacKenzie and Wajcman, technology is a complex system of social, cultural, and material behaviours that both shape and are shaped by society.²⁷ This approach emphasises the interaction between technology and society, specifically how technology is integrated into and influences social connections and cultural norms. In this sense, technology is neither neutral nor autonomous—it is embedded within a social fabric that determines its adoption, use, and effects. Technology thus becomes a mirror of the society that invents it, carrying within it the imprints of power, inequality, and ideology.

²² World Bank, *World Development Report 2020*, 10.

²³ Food and Agriculture Organization (FAO), *The State of Food Security and Nutrition in the World* (Rome: Food and Agriculture Organization, 2019), 15.

²⁴ United Nations Environment Programme (UNEP), *Global Environment Outlook* (Nairobi: UNEP, 2018), 20.

²⁵ R. S. Merrill, “Technology,” in *International Encyclopaedia of the Social Sciences*, ed. D. L. Sills (New York: Macmillan, 2008), 25.

²⁶ M. Bunge, *Treatise on Basic Philosophy: Epistemology & Methodology III* (Dordrecht: Reidel, 1985), 34.

²⁷ Donald MacKenzie and Judy Wajcman, *The Social Shaping of Technology*, 2nd ed. (Buckingham: Open University Press, 1999), 23.

Winner recently stated that technology is more than a tool; it is a way of life that influences our relationships, values, and identities.²⁸ This concept highlights the ontological consequences of technology, suggesting that our tools reconfigure the very conditions of human existence and perception. Similarly, Bijker argues that technology is a social construct that reflects and reinforces power dynamics and cultural norms.²⁹ From this perspective, the development and use of technology are not purely technical matters but moral, cultural, and political ones. The multiple definitions of technology thus illustrate the diverse ways scholars have sought to understand this complex subject.

From a philosophical standpoint, technology can be viewed as both a means and a worldview—a dual role in which it simultaneously serves practical ends and shapes human consciousness. Technology is therefore not a static category but a dynamic and evolving system that both transforms and is transformed by human civilisation. In the Nigerian context, such a conceptualisation is particularly significant, as it compels us to interrogate how inherited colonial technologies, local innovations, and global digital infrastructures intersect to shape the nation's modern trajectory. Technology, in this light, becomes not merely a tool of progress but a site of cultural negotiation and national identity formation.

Theoretical Framework

This research focuses on the Social Construction of Technology (SCOT) theory and the Large Technical System (LTS) theory—two complementary frameworks that illuminate the social embeddedness of technological change and its systemic evolution.

Pinch and Bijker created the Social Construction of Technology (SCOT) hypothesis, which describes how social, cultural, and economic variables influence technology.³⁰ According to SCOT, technology is a social construct that reflects the interests, values, and power dynamics of the people engaged in its development.³¹ The SCOT method emphasises the significance of comprehending the social environment in which technology is generated and applied. It contends that technology is not only the result of scientific and technical knowledge but also of social, cultural, and economic elements.³²

The SCOT approach outlines four fundamental components that influence technological development: relevant social groups, interpretative flexibility, design flexibility, and closure mechanisms.³³ Relevant social groups are individuals and organisations involved in the development and application of technology—engineers, designers, manufacturers, users, and policymakers.³⁴ Interpretive flexibility refers to the diverse meanings and interpretations that

²⁸ Langdon Winner, "Technologies as Forms of Life," in *Philosophy of Technology: The Technological Condition*, 2nd ed., ed. Robert C. Scharff and Val Dusek (Oxford: Blackwell, 2017), 45.

²⁹ W. E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge, MA: MIT Press, 1995).

³⁰ Trevor J. Pinch and Wiebe E. Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other," *Social Studies of Science* 17, no. 3 (1987): 399–441.

³¹ *Ibid.*, 409.

³² Donald MacKenzie and Judy Wajcman, *The Social Shaping of Technology*, 2nd ed. (Buckingham: Open University Press, 1999), 23.

³³ Pinch and Bijker, "The Social Construction of Facts and Artifacts," 414.

³⁴ Bijker, *Of Bicycles, Bakelites, and Bulbs*, 45.

different social groups place on technology.³⁵ Design flexibility relates to how technology can be built and redesigned to satisfy the demands and interests of various social groups,³⁶ while closure mechanisms denote the processes through which technologies stabilise and controversies are resolved.³⁷

The SCOT approach argues that technology is not a fixed or determinate entity, but a dynamic and evolving system shaped by negotiation, adaptation, and contestation among social actors.³⁸ It has been effectively applied to various technologies—bicycles,³⁹ bakelite,⁴⁰ and nuclear power⁴¹—each revealing how meanings, interests, and power relations drive technological outcomes. In the Nigerian setting, this approach is crucial for analysing how social groups—such as telecom corporations, regulators, entrepreneurs, and consumers—co-create the technological landscape. The development of mobile phone technology in Nigeria, for instance, emerged not merely from technical innovation but from the interplay of regulatory frameworks, market forces, and social demand.⁴²

Also considered is Thomas P. Hughes' Large Technical System (LTS) theory, which provides a macro-analytical lens for understanding the infrastructural and institutional dimensions of technological evolution. Hughes defines an LTS as a complex network of technological, social, and economic components that operate together to deliver a service or product.⁴³ Nigeria's telecommunications sector exemplifies such a system—from the establishment of Nigerian Telecommunications Limited (NITEL) in 1962 to the liberalisation of the sector in the 1990s.⁴⁴ The introduction of mobile telephony in the late 1990s and the subsequent digital expansion mark pivotal moments in this system's maturation.⁴⁵

According to Hughes, LTSs exhibit “technological momentum,” a process through which systems, once established, develop self-reinforcing dynamics that make them increasingly difficult to alter.⁴⁶ Nigeria's telecommunications sector reflects this trajectory—its rapid growth has fostered investment, innovation, and institutional inertia. Yet, as LTS theory reminds us, such systems are also shaped by social and political forces, including policy frameworks, international partnerships, and economic pressures.⁴⁷

By combining SCOT's micro-level social analysis with LTS's macro-level systemic view, we gain a fuller understanding of Nigeria's technological transformation. This dual theoretical lens

³⁵ Pinch and Bijker, “The Social Construction of Facts and Artifacts,” 421.

³⁶ Bijker, *Of Bicycles, Bakelites, and Bulbs*, 50.

³⁷ Pinch and Bijker, “The Social Construction of Facts and Artifacts,” 426.

³⁸ MacKenzie and Wajcman, *The Social Shaping of Technology*, 25.

³⁹ Bijker, *Of Bicycles, Bakelites, and Bulbs*.

⁴⁰ Ibid.

⁴¹ Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, MA: MIT Press, 1990).

⁴² A. Adeyemi, “Telecommunications Development in Nigeria: A Historical Perspective,” *Journal of Telecommunications and Information Technology* 1, no. 1 (2010): 1–12.

⁴³ Thomas P. Hughes, *Networks of Power: Electrification in Western Society, 1880–1930* (Baltimore: Johns Hopkins University Press, 1983), 5.

⁴⁴ Adeyemi, “Telecommunications Development in Nigeria,” 12.

⁴⁵ Nigerian Communication Commission (NCC), *Annual Report 2015* (Abuja: Nigerian Communication Commission, 2015), 10.

⁴⁶ Hughes, *Networks of Power*, 53.

⁴⁷ Adeyemi, “Telecommunications Development in Nigeria,” 15.

reveals that technological change in Nigeria is neither spontaneous nor purely technical—it is a negotiated process embedded in broader political, economic, and cultural systems. Understanding this interdependence is vital for envisioning sustainable technological advancement in postcolonial African societies.

Technological Development in the Early Years of Independence (1960s–1980s)

Nigeria experienced substantial technological growth during its early years of independence, spanning the 1960s to the 1980s. The establishment of the Nigerian Telecommunications Limited (NITEL) in 1962 marked a major milestone in the country's communication history.⁴⁸ By the 1970s, telephone services had expanded to include manual exchanges in major cities such as Lagos and Ibadan, significantly improving communication infrastructure.⁴⁹

Similarly, the Nigerian Railway Corporation—originally founded during the colonial period—expanded and modernised its operations throughout the 1960s and 1970s, enhancing national transport networks.⁵⁰ Nigeria Airways, established in 1958, became the national carrier, offering domestic and international flights that promoted air travel.⁵¹ The completion of the Kainji Dam in 1968 represented the country's first major hydroelectric project, supplying electricity to the national grid.⁵²

The discovery of oil in the Niger Delta in the 1950s and 1960s further stimulated economic expansion and industrial activity.⁵³ The textile industry grew rapidly, with firms such as Kaduna Textiles Limited and United Nigerian Textiles Limited becoming key players.⁵⁴ The creation of the Nigerian Steel Development Authority in 1971 marked the beginning of the steel industry.⁵⁵ Meanwhile, institutions such as the International Institute of Tropical Agriculture (IITA) and the National Root Crops Research Institute advanced agricultural research and mechanisation, boosting food production.⁵⁶

However, progress was hindered by the Nigerian Civil War (1967–1970), which disrupted technological development and infrastructure. Limited investment in research and technological innovation further constrained growth.⁵⁷ Despite these challenges, the early decades of independence laid the foundation for Nigeria's subsequent technological advancement. Progress in telecommunications, transportation, energy, industry, and agriculture demonstrated the nation's capacity for innovation and development, even amid political and economic instability.⁵⁸

⁴⁸ Nigerian Telecommunications Limited (NITEL), *A History of Telecommunications in Nigeria* (Lagos: NITEL, 1985).

⁴⁹ Adeyemi, "Telecommunications Development in Nigeria."

⁵⁰ Nigerian Railway Corporation, *A History of the Railway System* (Lagos: Nigerian Railway Corporation, 1975).

⁵¹ Nigeria Airways, *A History of the National Carrier* (Lagos: Nigeria Airways, 1980).

⁵² Kainji Dam Authority, *Kainji Dam: A Hydroelectric Power Project* (Lagos: Kainji Dam Authority, 1970).

⁵³ *Oil and Gas Journal*, "Nigeria's Oil Industry: A Review of Progress," *Oil and Gas Journal* 73, no. 34 (1975): 44–50.

⁵⁴ Textile Institute, "Textile Industry in Nigeria: A Review of Progress," *Journal of the Textile Institute* 71, no. 2 (1980): 55–65.

⁵⁵ Nigerian Steel Development Authority, "A Review of Progress," *Journal of Steel and Metallurgy* 1, no. 1 (1975): 1–10.

⁵⁶ Federal Ministry of Agriculture, "Agricultural Development in Nigeria: A Review of Progress," *Journal of Agricultural Economics* 1, no. 1 (1980): 1–15.

⁵⁷ World Bank, *Nigeria*.

⁵⁸ Adeyemi, "Telecommunications Development in Nigeria."

Technological Advancements in the Modern Era (1990s–2020s)

The 1990s marked a new phase in Nigeria's technological evolution with the introduction of mobile telephony and internet connectivity. These innovations revolutionised communication, business, and governance.⁵⁹ Mobile Telephone Networks (MTN), Nigeria's first mobile operator, began operations in 2001, followed by Globacom and Airtel. Internet service providers such as NITEL and CyberSpace improved digital access, while the growth of e-commerce, e-governance, and digital services transformed the national economy.⁶⁰ The establishment of the National Information Technology Development Agency (NITDA) in 2001 further promoted ICT development.

During the 2000s, technology hubs such as Yaba and Lekki in Lagos became centres of innovation and entrepreneurship, giving rise to startups like Andela, Flutterwave, and Paystack.⁶¹ Initiatives by the Nigerian Communication Commission⁶² and the Lagos State Government⁶³ strengthened the country's digital ecosystem. E-governance projects, including the National Identity Management Commission's (NIMC) digital ID initiative, enhanced public service delivery.⁶⁴ The fintech sector flourished with digital payment platforms such as Paga and Interswitch, while the rollout of 4G LTE services further improved internet penetration.⁶⁵

Nonetheless, Nigeria continues to face critical challenges—irregular power supply, inadequate infrastructure, limited funding, cybersecurity threats, and the digital divide, especially in rural areas. The high cost of internet access and inconsistent ICT education further impede progress. The discontinuation of robust technology curricula in schools, alongside cultural barriers and limited digital literacy, has also slowed innovation. To realise its full potential, Nigeria must adopt deliberate policies to expand public and private investment in ICT, address energy and infrastructure deficits, and strengthen cybersecurity. Technology, when effectively harnessed, can drive productivity, improve governance, reduce poverty, and create employment—objectives consistent with national development goals.

Conclusion

In conclusion, Nigeria's technological journey since independence has undergone significant transformation, evolving from modest beginnings in infrastructure and industry to the dynamic digital innovations of the present day. The growth of the technology sector has been driven by the establishment of tech clusters, the rise of innovative enterprises, and government-led initiatives. The advent of mobile telecommunications and internet connectivity revolutionised communication, business operations, and social interactions, thereby expanding opportunities for economic growth, employment, and social advancement.

⁵⁹ Nigerian Communication Commission (NCC), *Annual Report 2020*.

⁶⁰ National Information Technology Development Agency, *Establishment and Mandate*.

⁶¹ *Forbes Africa*, "Nigeria's Top 10 Tech Startups to Watch in 2020," *Forbes Africa* 10, no. 1 (2020): 12–15.

⁶² Nigerian Communication Commission, *Annual Report 2015*.

⁶³ Lagos State Government, *Lagos State Innovation Program: Call for Applications* (Lagos: Lagos State Government, 2017).

⁶⁴ National Identity Management Commission (NIMC), *Digital ID Project* (Abuja: National Identity Management Commission, 2019).

⁶⁵ Nigerian Communication Commission (NCC), *Annual Report 2020*.

Despite these achievements, persistent challenges continue to constrain the sector. Inadequate infrastructure, limited investment, irregular power supply, and cybersecurity vulnerabilities hinder the full realisation of Nigeria's technological potential. Yet, the nation's prospects remain considerable, supported by a large and youthful population, a vibrant entrepreneurial ecosystem, and increasing policy attention to innovation and digital transformation.

To sustain progress, Nigeria must intensify investments in digital infrastructure, foster public-private partnerships, and strengthen policies that promote innovation, skills development, and entrepreneurship. With the right strategies and consistent implementation, the country is well-positioned to emerge as a leading African digital hub. A thriving technology sector can serve as a catalyst for inclusive economic development, improved governance, and enhanced quality of life, positioning Nigeria as a key player in Africa's ongoing digital transformation.