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Artificial Intelligence and the Transformation of Communication in Nigeria: Progress, Policies, and Persistent Challenges

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Abstract		Review Article

This paper interrogates the nexus between artificial intelligence (AI) and communication processes in Nigeria's emerging digital terrain. Drawing from a systematic review of prevailing projects, academic research and industry projects, the study shows that Nigeria is rapidly adopting AI enablers in journalism, marketing and strategic communication. The country has taken significant strides with government-led efforts such as the National AI Strategy and the Nigeria Artificial Intelligence Research Scheme (NAIRS) that have sparked local research and applied uses. Yet, this metamorphosis is greatly challenged with infrastructural constraints, regulatory disintegration and shortage of skills. The paper contends that Nigeria's AI-communication landscape is characterized by a series of technology adoption, policy formulation and cultural adaptation demands from multiple actors that demand a fair consideration to be given to local talent as well as the dismantling of systemic barriers. The results show that with improved policy environments and strategic investments, Nigeria can leverage on AI not for just revolutionizing practices in the communications sector, but also tackling immediate social-economic problems peculiar to its system.

Keywords: Artificial intelligence, Communication processes, Digital media, Policy and regulation.

1. Introduction

In global communication ecosystems, the rise of artificial intelligence is a revolutionary force that is changing the ways in which information is produced, shared, and used. This technological change is especially important in Nigeria, a country with one of Africa's largest digital economies and a thriving media landscape. Strong traditional media, quickly expanding digital platforms, and rising internet penetration have historically defined the nation's communication sector, creating an ideal environment for AI integration. According to academic studies, the idea of the "global village," which was first put forth by Marshall McLuhan more than 50 years ago, has advanced beyond expectations with AI systems now able to mimic human intelligence and change communication methods (7). This development raises important questions about how Nigeria is navigating the AI revolution in communication given its distinct sociocultural dynamics and developmental obstacles.

AI integration in communication faces unique challenges as well as remarkable opportunities in the Nigerian context. Nigeria presents a sizable market and testing ground for AI-driven communication tools due to its population of over 200 million, considerable linguistic diversity, and a young population that is more interested in digital technologies. AI has become a strategic priority for national development thanks to recent initiatives spearheaded by Dr. Bosun Tijani's Ministry of Communications, Innovation, and Digital Economy. The minister was recently named one of TIME's 100 Most Influential People in AI for 2025 (1) (9). This acknowledgement highlights the government's dedication to using AI for economic transformation and reflects Nigeria's rising prominence in international AI discourse. However, as this paper will show, Nigeria's technological landscape is characterized by persistent infrastructural, regulatory, and skill-based constraints that must be addressed if this potential is to be realized.

This study uses a multi-dimensional analysis to look at Nigeria's AI-communication relationship from a number of angles. It looks into the real-world uses of AI in important communication domains like marketing, journalism, and strategic communication. Nigeria's AI trajectory is being shaped by research projects and policy frameworks, with a focus on the National AI Strategy and its implementation mechanisms. Additionally, using comparative viewpoints from throughout Africa, the paper critically evaluates the ethical and governance issues that come with AI adoption in communication. By taking this all-encompassing approach, the research hopes to offer a nuanced understanding of how AI is changing communication in Nigeria while pointing out ways to integrate it responsibly and contextually.

2. Methodology

This research uses a systematic review method to examine the relationship between AI and communication in Nigeria. It relies on various data sources to ensure a thorough understanding of the topic. This approach follows established research practices for looking at new technology trends in specific national settings (7). The study includes three main areas: reviewing academic research, analyzing policy documents and government projects, and evaluating industry applications and survey data. This combination helps create a complete picture of how AI is changing communication in Nigeria from theoretical, policy, and practical standpoints.

The primary data sources for this research are peer-reviewed publications, government policy documents, industry reports, and trusted media analyses published between 2023 and 2025. Special focus was placed on Nigeria-specific sources. This includes outputs from the Nigeria Artificial Intelligence Research Scheme (NAIRS), the National AI Strategy document, and sector-specific surveys such as the Pandora Agency's report on the "State of AI in Marketing in Nigeria"(2)(3). Moreover, analyses from international research firms like PwC Nigeria and ResearchAndMarkets.com offered important market insights and comparative information (6)(8). These sources were assessed for credibility and relevance, with a preference for reports that are based on empirical data from recognized institutions.

The analysis in this study emphasizes understanding Nigeria's AI-communication landscape in context. Instead of a purely technological viewpoint, the study recognizes how technology interacts with social practices. It acknowledges that AI's impact on communication is influenced by Nigeria's specific institutional settings, regulations, cultural values, and development goals. The findings discussed in later sections stem from this methodological base and provide both solid evidence and theoretical insights into the potential changes and challenges posed by AI in Nigeria's communication systems.

3. AI in Communication Practice

3.1 Journalism and Media Transformation

The use of AI in Nigerian journalism marks a major change in how news is produced, distributed, and consumed. Recent studies show that journalism is the most researched area of the AI-communication relationship in Nigerian academia. This reflects the sector's significance and rapid technological change (7). Practically, AI tools are used in newsrooms for various tasks such as automated content creation,

analyzing audience engagement, and real-time fact-checking to fight misinformation, a critical issue in Nigeria's media (5)(7). According to Yushau A. Shuaib, publisher of PRNigeria, AI is already transforming journalism and crisis communication. Tools like ChatGPT, Meta AI, Google Gemini, and Copilot are now central to digital content creation for many young writers and journalists (5).

However, this technological change brings both advantages and challenges. On the upside, AI tools provide Nigerian journalists with better ways to handle large amounts of information, spot new trends, and customize content for different audiences. These improvements are particularly useful in newsrooms with limited resources where journalists often juggle multiple roles. Yet research also highlights significant ethical issues, such as algorithmic bias, the rise of deepfakes, and a potential decline in journalism standards when reliance on AI tools undermines human editorial judgment (5). A notable finding reveals that over 51% of communication professionals view AI-generated crisis alerts as untrustworthy due to manipulated content, illustrating the credibility issues that come with AI use in journalism (5).

3.2 Marketing and Consumer Engagement

The marketing industry in Nigeria has seen a rapid uptake of AI technologies, with recent surveys finding that 83% of marketers use AI tools in their work—a rate that matches global trends (3). This widespread adoption shows how the sector is responding to technological advances and recognizing the benefits AI brings to consumer engagement in Africa's largest economy. Common uses of AI include virtual assistants for customer service, AI-generated content platforms for marketing materials, and social media sentiment analysis tools that offer real-time insights into consumer preferences and brand perceptions (3). These tools are increasingly seen as essential elements of effective marketing strategies in Nigeria's evolving digital landscape.

The effects of AI in Nigerian marketing are varied. Industry surveys indicate that 75% of marketers feel AI has helped them save time and boost output. Others also mention improvements in decision-making and cutting costs (3). These efficiency gains are especially important in a market known for tight budgets and small marketing teams typical of Nigerian businesses. However, research suggests these advantages are mostly operational rather than strategic. While AI allows faster work, it has not necessarily led to significantly better campaign results or increased customer loyalty for many Nigerian brands (3). This distinction reveals a gap where the tactical use of AI for efficiency comes before its strategic use for larger business impact. Moreover, Nigerian marketers are still worried about data privacy, algorithm transparency, and the high costs of advanced AI tools—issues that may limit deeper adoption despite strong interest in expanding AI use (3).

3.3 Strategic Communication and Public Relations

The field of strategic communication and public relations in Nigeria is quietly transforming through the integration of AI, especially in areas such as sentiment analysis, crisis prediction, and audience segmentation. Organizations are increasingly using AI tools to track brand mentions on digital platforms, assess public opinion on important issues, and create data-driven communication strategies. This shift is particularly relevant in Nigeria's fast-moving social media landscape, where public sentiment can change quickly and digital platforms significantly impact brand reputation (7). For public relations professionals, AI provides real-time monitoring of media coverage, automated reporting of key metrics, and predictive analytics to foresee potential crises before they escalate—a valuable advantage where organizational reputation is often fragile.

Despite these developments, research shows that AI integration in Nigerian strategic communication is still relatively early compared to marketing and journalism. Academic studies reveal a strong focus on AI in journalism, with much less research on public relations and strategic communication applications (7). This gap suggests that while practical adoption is happening, scholarly analysis and theoretical understanding of these changes are lagging. Furthermore, studies of communication education indicate that most higher education

institutions in Nigeria do not include formal AI training in their programs. As a result, professionals and students are learning through self-exploration rather than organized academic support (5). This educational gap may explain why younger communicators mainly use AI for basic tasks like brainstorming, drafting, and transcription instead of more advanced applications such as predictive analytics or crisis modeling (5). This points to an opportunity for more sophisticated uses of AI as literacy in this area improves within the profession.

4. Policy Frameworks and Research Initiatives

4.1 The National AI Strategy and Government Leadership

Nigeria has taken a more organized approach to AI development through major policy efforts, especially the National AI Strategy (NAIS) launched in April 2025, led by Dr. Bosun Tijani, Minister of Communications, Innovation and Digital Economy (1). This framework marks a key step in Nigeria's technology governance and was created with input from about 150 local experts to guide responsible AI growth (1). The strategy focuses on several main areas: expanding digital infrastructure with a planned 90,000 km fibre-optic network, building a strong AI ecosystem, speeding up AI use in government and industry, encouraging responsible governance and regulation, and growing talent through the 3 Million Technical Talent (3MTT) initiative (4). This broad approach shows that Nigeria sees AI development as needing coordinated work across infrastructure, skills, regulation, and practical use.

The political aspect of Nigeria's AI strategy needs special focus. While the leadership in the ministries has played a key role in shaping the AI agenda, experts believe that lasting progress requires stronger political commitment. Timi Olagunju, a technology lawyer involved in digital policy in Nigeria and overseas, points out that AI cannot rely solely on one ministry or an enthusiastic minister. It must be a priority for political leaders and the presidency (4). This view underscores a significant governance challenge: even though AI has received presidential backing as a national economic priority, legislative action has been sluggish, leaving policies without complete institutional support (4). The experiences of other countries, particularly China's emergence as a global AI leader by achieving a national consensus, present a strong model that Nigeria might consider adapting to its context (4). The political dimension of AI governance will likely be crucial in determining whether Nigeria's strategic vision leads to effective implementation and real results across communication sectors and beyond.

4.2 Research Development and Capacity Building

Alongside policy development, Nigeria has invested heavily in AI research infrastructure and capacity building. The Nigeria Artificial Intelligence Research Scheme (NAIRS), which began in early 2024 through the Ministry of Communications, Innovation, and Digital Economy and funded by the National Information Technology Development Agency (NITDA), stands out as a significant initiative (2). It aims to bridge the gap where Nigerians abroad have produced thousands of AI papers while local institutions received none, resulting in a noteworthy increase in domestic research output. Just 18 months ago, Nigeria had no AI publications; now, it has produced 20 peer-reviewed papers through this program, with several projects already applied in practice (2). This rapid growth shows how targeted funding and institutional support can quickly boost research capabilities in emerging technology areas.

The NAIRS initiative uses a problem-focused approach, directing resources toward five key areas relevant to Nigeria's development challenges: agriculture, healthcare, education, sustainability, and utilities (2). This focus is evident in specific research results, such as computer vision models to identify "tomato Ebola," a disease that threatens harvests, and smart traffic management systems that adjust light cycles based on real-time traffic conditions (2). Beyond generating research papers, the initiative is also building long-term infrastructure through the AI Collective, a network of over 2,000 Nigerian AI practitioners worldwide who share data, provide mentorship to students, and collaborate to commercialize their work (2). This combination of research funding, problem-solving, and community building presents a hopeful model for developing

locally relevant AI solutions while linking Nigerian researchers to global knowledge networks.

Key Government-Led AI Initiatives in Nigeria

1. Nigeria Artificial Intelligence Research Scheme (NAIRS)

· Launch Date: Early 2024

· Implementing Body: Ministry of Communications, Innovation, and Digital Economy / NITDA

· Research Focus Areas: Agriculture, healthcare, education, sustainability, utilities

· Output to Date: 20 peer-reviewed papers (from zero 18 months ago)

· Notable Projects: Computer vision for "tomato Ebola" detection; adaptive traffic management systems

2. National AI Strategy (NAIS)

· Launch Date: April 2025

· Core Pillars: Digital infrastructure expansion; ecosystem development; adoption acceleration; responsible governance; talent development

· Infrastructure Component: 90,000 km fiber-optic network rollout

· Talent Development: 3 Million Technical Talent (3MTT) program

3. 3 Million Technical Talent (3MTT) Program

· Objective: Train 3 million Nigerians with technical skills by 2027

· Current Progress: Almost 300,000 trained through digital platforms and 220 in-person learning centers

· Placement Support: Partnerships with organizations like Awarri for graduate employment

5. Challenges and Ethical Considerations

5.1 Regulatory Fragmentation and Governance Gaps

Despite positive policy moves, Nigeria's AI governance still faces significant fragmentation and regulatory gaps, making coherent development difficult. This is especially true in communication areas, where content regulation, data privacy, and ethical standards overlap. Currently, the regulatory environment consists of scattered guidelines from various agencies like the Nigerian Communications Commission (NCC), the National Information Technology Development Agency (NITDA), and specialized bodies like the Advertising Regulatory Council of Nigeria (ARCON), which has limited AI usage in advertising (3)(8). This divided regulatory authority confuses businesses and researchers and hinders the development of cohesive frameworks that address AI's unique challenges. As noted in analyses of Africa's AI landscape, governance frameworks are lagging, with few countries putting comprehensive AI regulations in place (6), which describes Nigeria's condition well.

The legislative side of AI governance shows clear shortcomings. The National Digital Economy and E-Governance Bill (2024) creates a legal framework for electronic transactions and digital service delivery, but it does not specifically mention "artificial intelligence" or offer regulatory mechanisms for AI development, deployment, or oversight (4). This gap means Nigeria lacks laws focused on algorithmic transparency, accountability for AI decisions, and ethical standards for AI use in sensitive areas like journalism and political communication. Furthermore, Timi Olagunju has pointed out that Nigeria's legislature has not effectively involved experts in creating forward-looking AI laws or reviewed outdated laws that could hinder AI progress—unlike approaches seen in more advanced digital economies (4). These governance issues are particularly problematic in communication sectors where AI impacts public discourse, information integrity, and democratic processes.

5.2 Infrastructure and Workforce Readiness Constraints

The successful integration of AI in communication practices faces major infrastructure limitations that hinder both development and deployment. Nigeria's digital infrastructure is improving, but there are still significant gaps in connectivity, reliability, and affordability, especially outside major cities. The planned rollout of 90,000 km of fiber-optic cables,

which would more than triple the country's fiber-optic capacity, is a crucial effort but is still in progress (1). AI development also needs considerable computational resources that can be too expensive in Nigeria. Analysts note that adopting AI requires substantial investment in both computing hardware and data storage infrastructure, with high-performance GPUs being particularly costly (8). These infrastructure challenges create an environment where access to advanced AI tools and development opportunities is mostly available to well-funded organizations, potentially worsening digital divides within the communication sector.

In addition to infrastructure issues, there are significant gaps in workforce readiness that limit Nigeria's ability to fully capitalize on AI in communication fields. Although the country has a large, young population and a growing tech talent pool, there is still a shortage of professionals with skills in machine learning, natural language processing, and data engineering. These skills are essential for developing AI solutions, not just using them (8). Similarly, educational institutions have been slow to incorporate AI into their curricula, and many do not offer formal AI training programs, resulting in students learning independently instead of through structured support (5). This skills gap is worsened by the migration of trained individuals, creating what PwC Nigeria calls a "talent vacuum" in the AI ecosystem (8). However, initiatives like the 3 Million Technical Talent (3MTT) program, which seeks to train 3 million Nigerians with technical skills by 2027, offer promising responses to this challenge. The program has already trained nearly 300,000 Nigerians through digital platforms and 220 in-person learning centers (1).

5.3 Ethical Concerns and Social Implications

The ethical aspects of AI integration in Nigerian communication involve complex questions about bias, accountability, and social effect that need careful thought. As AI systems increasingly affect news distribution, content recommendations, and audience targeting in Nigeria, fears about algorithmic bias are particularly urgent. These systems are often trained on datasets that may not adequately reflect Nigeria's cultural and linguistic

diversity, risking the perpetuation or worsening of existing social inequalities (8). In communication contexts, such biases might show up as biased news coverage, unfair content moderation, or exclusionary language processing that marginalizes minority voices. This issue is critical in Nigeria's diverse society, which includes many ethnic groups and languages. The aim of developing AI systems that capture Nigeria's cultural and social diversity has been recognized as a key priority. Efforts include digitizing indigenous languages and data (4), but progress is slow.

Beyond bias, the rise of AI in communication raises significant issues about information integrity and professional standards. The advancement of deepfakes and synthetic media offers particular challenges for Nigeria's information ecosystem, where misinformation is already a serious issue. Discussions about AI in journalism stress that "AI must not undermine the credibility that communication relies upon" (5), a caution that applies across all communication sectors. Additionally, AI's potential to automate raises concerns about job losses in these fields; this worry must be balanced against AI's ability to enhance human skills and create new opportunities. Ethical guidelines for AI in Nigerian communication must address these various concerns while also recognizing the technology's benefits. A thoughtful approach is necessary—one that neither blindly embraces nor automatically rejects AI's transformative potential.

6. Conclusion and Recommendations

Integrating artificial intelligence into Nigeria's communication landscape marks a significant development with wide-ranging effects on media, marketing, public relations, and societal discussion. This research has shown that Nigeria has made important strides in building policy frameworks, research capacity, and practical applications at the intersection of AI and communication. Strategic initiatives like the National AI Strategy and the Nigeria Artificial Intelligence Research Scheme have laid the groundwork for sustainable growth, while practical adoption—especially in marketing and journalism—has advanced quickly, with 83% of

Nigerian marketers already utilizing AI tools in their work (3). These developments position Nigeria as a rising leader in AI application within Africa, with the potential to create models of technological integration that address local challenges while contributing to global knowledge.

However, this analysis has also pointed out ongoing challenges that could limit the full realization of AI's potential in Nigeria's communication sectors. Governance gaps, infrastructure limitations, skills shortages, and ethical issues are significant barriers that need focused interventions. The current regulatory fragmentation among various agencies, the absence of AI-specific legislation, and the need for political commitment beyond ministerial initiatives indicate that governance is a particularly critical area for growth (4)(8). Moreover, the concentration of research on journalism, with less attention to other communication subfields, as well as educational institutions' slow adoption of AI in their curricula, highlights the need for a more balanced and thorough approach to capacity building across the communication ecosystem (5)(7).

Considering these findings, several strategic recommendations arise for stakeholders looking to promote responsible AI integration in Nigerian communication:

• Governance Improvement: Create a centralized AI governance authority with a cross-sector mandate, develop AI-specific laws to address transparency and accountability, and elevate AI to a presidential priority to maintain political commitment beyond election cycles.

• Capacity Building: Speed up the integration of AI literacy in educational programs, expand vocational training like the 3MTT with communication-focused modules, and create incentives for bringing back skills from the diaspora to tackle skill gaps.

• Infrastructure Investment: Prioritize completing digital infrastructure projects like fiber-optic expansion, set up shared computing resources for AI development, and establish innovation clusters that link communication professionals with tech tools and expertise.

• Ethical Frameworks: Create specific ethical guidelines for AI in communication, invest in research regarding algorithmic bias in Nigeria, and form multi-stakeholder forums for ongoing discussions about AI's social implications in media and public dialogue.

• Research Diversification: Encourage research beyond journalism in communication fields, promote partnerships between industry and academia for applied research, and develop funding options for AI-communication innovations that address Nigeria's developmental needs.

The future of AI in Nigerian communication will greatly shape not just the country's technological growth but also its democratic discourse, economic innovation, and cultural expression. By tackling the current challenges while building on its existing strengths, Nigeria can leverage AI to create communication ecosystems that are technologically advanced, ethically sound, and responsive to local realities—an achievement that would provide valuable lessons for similar contexts across the Global South.

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