Strategic Communication CREDOS for Disseminating Artificial Intelligence Technology in Nigeria

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***Abstract* - Artificial intelligence (AI) is a branch of computer science which involves developing computer programs to complete tasks which would otherwise require human intelligence. In Nigeria, AI is still disseminated in research and academic. While adopting AI for national development, citizens' access to relevant and reliable information especially in the area of personalized information will be challenged; more so, selective dissemination of information has expanded beyond research and academia into business environments, social media platforms, news gathering and recommender systems. Nigerians deserve a comprehensive knowledge of AI via a strategic dissemination of its speculated potentials and liabilities. The paper agreed with most of the reviewed perspectives on the potentials of AI to stimulate Nigeria's economy sustainable level. However, it is suggested that the negative implications of AI on Nigeria's economy should not be glossed over in the national discourse of AI adoption and subsequently policy development. For responsible national development, the paper equally suggests more research on how AI can be integrated for strategic communication in Nigerian media, politics, academic, corporate communication and social responsibility communication.**

Keywords: Artificial intelligence, strategic communication, responsible development.

I. INTRODUCTION

Technology is increasingly present in every aspect of modern society [1]. Parallel to this trend, Artificial Intelligence (AI) technology in relation to communication is progressively being advocated as an undisputable means of imparting knowledge and getting human activities done with less stress. Academic institutions, agricultural research institutions, financial organizations, governments, environment and city developers, farmers, transporters as well as experts in the health sectors are daily put on a lot of stress on the use of new and progressive technologies to drive growth. Artificial Intelligence technology emerged under the mobile learning as a novel technological accomplishment and trend with much hype of prospects, especially for users and investors in the developing countries such as Nigeria. Artificial Intelligence technology is argued by experts as having the capacity to increase the potential for effective education, knowledge acquisition, knowledge sharing without space or time restrictions, the capability to develop critical thought processes, participatory learning, problem-solving, and the ability to facilitate the development of lifelong communication skills.

In the past four decades, developing countries (Nigeria inclusive) have been significantly integrated into the global chains of technology adoption for development. This process has spurred the emergence of modern manufacturing firms operating with advanced technologies that make intensive use of imported intermediate inputs [2]. There has been much debate, however, about the extent to which technology adoption has been successfully integrated developing countries into the super power economies. Critics typically emphasize two points. First, the rate of modern technology adoption in many low-income countries remains unusually low despite recent episodes of trade liberalization [3] & [4]. Second, the adoption of modern technologies has coincided with a stagnated labor productivity in many countries [5].

Other extant literature has provided few possible explanations for the constraints observed above. Furthermore, some theories of economic development have identified fixed production costs and inadequate market size as the main barrier to modern technology adoption in low-income countries as far back as the late 80s [6] Certain studies have attributed the mismatch between modern technologies and dismal development in low-income countries [7] to possible mis-match and inappropriate adoption of technologies.

Artificial intelligence (AI) is expected to improve and enhance various sectors of Nigeria, with implications and consequences on individuals, organizations and society at large. However, there is huge knowledge gaps and early adoption of the technology, emerging risks can arise. When dealing with emerging risks, communicating is seen as a condition for success. In Europe, the government has strategically informed the public about stakeholder's goals and interests that make sense for its context, role, or mission [38]. In 2022 [39] analyzed European Commission and the Member States's attitude to responsibility in terms of communication regarding the use of AI from a governmental perspective. The authors looked into what has been communicated in various written AI strategies (European and national) by considering directions to underline AI dissemination under a responsible behaviour.

II. Is Nigeria a Society 3.0, 4.0 or 5.0?

In 2016, Japanese government put Society 5.0 as a core concept. The Japanese concept of national development plans emerged from the fact that humans have experienced hunting society tagged the Society 1.0; agricultural society known as Society 2.0; the industrial society called the Society 3.0; and recently the information society branded the Society 4.0. Literature has shown that Japan's productivity growth has slowed since the 2000s, and in 2020 it ranked last among the G7 countries. Some of the assumptions was about the rapid pace of technological change. In 2022, Yoshiki Shoji, in his master's thesis, titled, "Factors affecting technology adoption and productivity in a digital era: A framework based on literature review and future agenda" found that there was no relationship between technology adoption and productivity. Thus, his argument "technology adoption is a necessary but not sufficient condition for productivity growth" [8].

With the rapid development of digital technology, a large amount of data is generated every day by Nigerians, various things are connected in real-time, business operations have been automated, and disruptive businesses are emerging. Followed by the Fourth Industrial Revolution which is driven by innovative digital technologies such as AI, the world is approaching Society 5.0. The Society 5.0 is described as the human-centered society which is expected to balance economic advancement with the resolution of social problems by highly integrative cyberspace and physical space.

Since 2016, the Japanese government was reported to have put Society 5.0 as its core concept of the nation's 5th Science and Technology Basic Plan. Similar concepts are being proposed in different parts of the world. After independence, Nigeria has embarked on series of National Development plans and visions in her endless efforts to search for appropriate development strategy. Nigeria has planned and executed the following development plans:

- First National Development Plan 1962-1968): Immediately after attainment of independence in 1960, the first National Development Plan (1962-1968) was launched.
- The Second National Plan (1970-1974): At the end of 1970, national reconstruction and rehabilitation were the focus of attention of the federal government.
- The Third National Development Plan (1975:1980): The Third National Development Plan had a projected jumbo investment of N30 billion which was later increased to N43.3 billion.
- Fourth National Development Plan (1981-1935): The Fourth National Development Plan (1981-85) came on board in 1981.
- The Fifth National Development Plan: Due to poor implementation of the Fourth National Development Plan, a machinery was put in place for preparation of the Fifth National Development Plan.
- The Perspective Plan and Rolling Plans (1990-1998): The Babangida government had abandoned the previous fixed five-year development plans and replaced it with two types of national plans viz: perspective plan which will cover a period of 15-20 years.
- National Economic Empowerment and Development Strategy (2003-2007): When the Obasanjo's government was re-elected in 2003, it realized the necessity for comprehensive socio-political and economic reform of the country since the previous plans did not put the Nigerian economy on sound footings.
- Vision 20:2020: Nigerian leaders under President Olusegun Obasanjo have added Vision 20:2020 to one of its endless searches for appropriate development strategy. The objective of the Vision 20:2020 is to make Nigeria one of the first 20 economics in the world by the year 2020.

Despite the series of development plans and visions introduced by successive Nigerian governments since independence, the country has failed to produce much needed sustainable development (Iheanacho, 2014). Development plans in Nigeria could be argued to have failed to achieve their desired objectives due to many challenges including poor technology adoption. In December, 2020, the development of successor Plans to both Nigeria Vision 20:2020 and the Economic Recovery and Growth Plan (ERGP), 2017-2020 lapsed. Consequently, in 2023, President Muhammadu Buhari launched a new long-term national development plan, the Nigeria Agenda 2050; the agenda aims to ensure that Nigeria attains a Per Capita GDP of $33,328 per annum, placing her among the top middle-income economies in the world by 2050[8].

Nigeria's Agenda 2050 is formulated to aid the subsisting economic and social challenges facing the country (low, fragile and non-inclusive growth, insecurity, high population growth rate, limited concentric economic diversification and low productivity). Definitely, this new development agenda may not succeed if Nigeria does not adopt the right technologies (necessary) for its implementation. Obviously, Nigeria is still battling to settle down in the Society 4.0; it must strategically utilize new technologies in order to be ready to take on the realities and demands of the Society 5.0.

III. Technology and Development

Emerging technological breakthroughs, including advanced robotics, 3D printing, artificial intelligence, big data analytics, cloud computing, the Internet of things (IoT) and smart sensors, are set to change the way people work and live, in developing countries [9]. This industrial revolution is summed up under the notion of the Fourth Industrial Revolution (4IR). The 4IR is characterized by the integration of new automation technologies with big data analytics and increased interconnectivity through the Internet as a basis for flexible and intelligent manufacturing that can improve enterprise efficiency and competitiveness.

Technology revolution extends beyond the factory gates. Its impacts include the transformation of upstream and downstream value chain relations in development plans and

resources allocation for the implementation. Technology advancement has equally been said have the capacity to increase interconnectivity, with machines and computer systems connected all along the value chain of countries' development activities. Technology, such as the AI promises to increase firms (public and private) to manage real-time supply, production and delivery relations across geographically dispersed citizens.

Therefore, policy makers at the national and international levels have argued that harnessing these new technologies holds out promise for developing nations (including Nigeria) to increase industrial productivity and growth rates, while simultaneously assuring more sustainable production and consumption patterns [10] &[11]. There is general understanding that technological change is now occurring at a more rapid pace than in the past and that the solutions these technologies offer for countries to develop and remain sustainable are better, cheaper and more scalable than what has been available in the past. But in reality, these technologies are not cheap considering the high inflation rate in Nigeria. As at June 2023, the headline inflation rate rose to 22.79% relative to May 2023 headline inflation rate which was 22.41%. [12].

A critical question is, should the Nigerian government subsidize local firms' own innovation or their adoption of foreign technology, and how might this vary at different stages of national development? To answer these questions, this paper advocates that AI technology should be strategically communicated in Nigeria. Technological innovation is neither a single event; it involves rich embroidery of events, many activities, many decisions, and many bits of behavior on the part of individuals and social units, most of whom are not even self-consciously aware of being part of such a process [13].

IV. COMMUNICATING AI FOR RESPONSIBLE DEVELOPMENT

In 2020, Cavallone and Palumbo in a study titled "Debunking the myth of industry 4.0 in health care: insights from a systematic literature review" claimed that artificial intelligence technologies are expected to enhance health services' quality and effectiveness; however, there is a dark side of the technology which involves both management and ethical issues. Therefore, in practice AI technologies in health should be carefully steered at both the policy and management levels [14] for responsible development. In this paper, responsible development is conceptualized as 'sustainable development', which means a development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.

The concept of sustainable development can be interpreted in many different ways, but at its core is an approach to development through critical and strategic communication and actions. The essence of the strategic communication in sustainable development is to balance different, and often competing, needs against an awareness of the environmental, social and economic limitations in society.

The advancement of artificial intelligence has enhanced communication and contributed to the flow of information in recent years. Danso, Annan, Ntem, Baah-Acheamfour and Awudi reviewed attempts to report on the findings of a systematic literature review on artificial intelligence and human communication. The results showed advances in computing platforms, artificial intelligence has become a tool for network operators to automate communication while demonstrating superhuman capabilities in solving some real-world problems [15]. No doubt, technology has been the main engine of an improved standard of living throughout history. Artificial intelligence (AI), and block chain are the rising technologies in recent.

There is sufficient evidence that AI technology offers new opportunities that can lead to notable transformation in the communication industry [16] & [17] which could impact all other sectors. AI can be tracked back to the mid-1950s; it is not a recent thing. Nils John Nilsson, one of the founding researchers of the AI discipline once said that AI is concerned with intelligent behaviours in artifacts, which comprises perception, reasoning, learning, communicating, and acting in complex environments [14]. As a computational agent, AI acts act intelligently, AI machines can reason, learn, gather knowledge, communicate, manipulate and perceive objects; AI focus on intelligence in simple language and computations making it possible to perceive, reason and act [18]. It has also been claimed that AI is increasingly playing a role in the research of human communication; from content creation to chatbots and from evaluation routines to strategy development and crisis management.

One of the most persistent AI applications is the personalized reply suggestions in text-based communication, that is, the "smart replies" [19]. In 2017, algorithmic responses were reported to have constituted 12% of all messages sent through Gmail; representing about 6.7 billion emails written by AI on people's behalf each day [14]. Strategic communicators are worried that such texting capacity of AI machine could predict what a person might type and generate responses that may lead series of legal litigation and interpersonal squabbles. In order to strategically put AI responsibly into national development advance countries are funding various local researches. According to [14], USA and UK are providing funding opportunities for AI research through government agencies, such as the National Science Foundation (NSF) in the USA and the Engineering and Physical Sciences Research Council (EPSRC) in the UK. Additionally, private companies, venture capital firms, and philanthropic organizations in USA and UK are investing heavily in AI research [20]. From countries such as Korea (5%, n= 1), Germany (5%, n=1), Ireland (5%, n=1) and India (5%, n=1) are also instrumental in supporting AI activities [14].

Though it very difficult to have the record of how much and the degree of Nigeria's investment in AI research to appropriately suit the country's development vision. However, there are records of experts' cautioning the adoption of AI to drive Nigeria's economy. For instance, [21] agreed that AI has the potential to transform Nigeria's economy from a developing to a developed country but warned that the adoption of AI fuel job displacement, exacerbate existing socio-economic

inequalities, increase the violation of privacy and security or perpetuate amplify existing bias and discrimination among Nigerians. Punch online [22] equally praised the potentials of AI in resolving Nigeria's numerous development challenges; however, doubted if Nigeria would be able to mitigate other impacts of AI especially for the effective management of insecurity.

V. THE STRATEGIC COMMUNICATION CREDOS

Strategic communication (SC) is an interdisciplinary academic field in continuous dialogue with happenings in society and organizations. Artificial Intelligence technology is happening in Nigeria; it must be strategically interrogated. In retrospect, SC connects with rhetoric, propaganda, public opinion and mass communications, and academic fields such as public relations, organizational communication, media studies and marketing communication. It has become critically relevant for all contexts where trust, legitimacy, crisis, and new modes of interaction (interpersonal as well as para-social and mediatized) for sustainable development are required. The strategic idea of SC is that communication professionals must align communication goals with the overarching goals and strategy of a country, community or organization in order to gain greater influence and status for responsible communication and the profession.

This understanding of SC is in line with the most common definition of the field, that is, the purposeful use of communication to fulfill organization mission [23]. The question here is what is Nigeria's mission in adopting AI to drive national development? Further, SC constitutes an awareness of the fundamental importance of communication for the existence and performance of an organization [24]. What is the performance of Nigeria's technology drive before its intention to adopt AI? Hence, it is not responsible to communicate AI as a tool with lots of potentials without cautions.

Communication about AI should be more than passing across information; according to [25], it should be the means by which to produce and reproduce organizations (nations, systems etc) since these are not stable constructs. Official statistics are operating in a competitive and challenging environment over the last 20 years [26]. A strategic approach to the communication of AI will ensure its greater impact on the nation's development far beyond existing statistics because Nigerians would have trust in it. The trust would have been built through the consistent strategic dissemination and common understanding of the good, the bad and the ugly stories of AI.

A strategic communication framework for AI will provide four broad strategic approaches to its communication. Two of the approaches will be leaning towards a 'push' strategy, and two towards a 'pull' strategy. The first two focus on 'pushing' information out to target audiences, while the other is about 'pulling' the target audience in, that is, engaging them, involving them and having a relationship with them [27] in a more responsible way. For traditional users of official statistics for communication message design, the value and importance of official statistics are undisputed.

Yet, for the average citizen, strategic communication revolutions mean that more people have instantaneous access to various data sources outside official statistics in order to make good decision about any technology. The 24/7 news cycle is a reality, however, trust in government is decreasing and the "fake news" phenomenon is growing [28]. More than ever, timely and relevant data and stories produced by international development organizations are becoming essential to responsible developing countries; there is the myth that they remain the only independent, impartial, trusted and reliable sources of official statistics for global development. For such 'official statistics' (relating to AI) to be beneficial to Nigeria's policy debate and decision making, they must be known, understood, responsibly communicated and critique in relations to contextual realities.

Strategic communication is a relatively new concept for most organizations (including the media) which have traditionally focused their efforts and resources on dissemination practices and systems. Strategic communication literature has viewed innovation technology as tools that help organizations advance and strengthen their positions in emerging markets and competition [29]. Therefore, organizations or countries that adopts innovation are largely believed to be responsible for their success. Artificial intelligence (AI) has drawn increasing interest from communication scholars such as [30],[31],[32],[33] as well as [34].

The topic of innovation such as AI in strategic communication is still significant and an emerging force. Few studies have attempted to examine the areas of strategic communication and artificial intelligence [34]. Despite the fact that many papers have reviewed aspects of AI-based technologies, including analytics and smart grids [35], AI and big data and customer management [36], and AI in health services [15]. A review of the studies indicated that this field of study has been dominated by western scholarship and perspectives, with little scholarship from Nigeria.

Extant studies in this area are also characterized by quantitative and mixed methodological approaches; more qualitative studies are required on AI in Nigeria. Strategically assembling and disseminating the rapidly growing corpus of perspectives on AI and the economic development prospects of developing countries is necessary to establish a sound foundation for innovative strategic communication of AI in Nigeria. There is a paucity of literature on the potential dangers of this phenomenon. Consequently, this paper raises the following strategic questions:

- What is the existing national strategic communication framework for AI in Nigeria?
- What are the emergent researches on the strategic integration of AI into national broadcasting system?
- What are the approaches or theories covered by media, academic, corporate bodies, researchers' communication of AI in Nigeria?
- What are the future directions inferred from media, academic, corporate bodies, researchers and experts'

perspectives/stories that would inform a strategic adoption of AI in Nigeria?

VI. Policy Recommendations

In the case of emerging technologies, if communication is analyzed early in the development stage, it can provide information on potential negative aspects of the technology. For example, extreme fear narratives can have positive outcomes, helping researchers, regulators, and technology implementers take safety concerns into account at an early stage. Even if this analysis did not inform us on a scale regarding the responsibility, the analysis in this paper informed us of elements indicating a responsible communication on emerging technologies that should inform policy formulation and implementation in Nigeria as follows:

- Importance of communicating about the technology, positives and negatives associated with the use of the AI;
- Communicating both positives and negatives is a desired and expected behavior. However, attention should be given ethical behavior; and
- More opportunities and risks should be communicated depending on the context, using sector applicability of a strategic communication model (that apply to both content and process): Confident in the future (scaling from low to overconfident), Balanced (equally confident and fearful), fearful regarding the future (scaling from only fears to mainly fears).

VII. Summary and Conclusion

All too often, development, especially in developing countries (in terms of technology adoption) is driven by one particular need, without fully considering the wider or future impacts. Nigerians, since 2022 are experiencing the damage an irresponsible approach to development can cause, from large-scale financial crises caused by irresponsible banking, to the high prices of fuel after the subsidy removal by the federal government. The longer Nigeria pursues irresponsible communication of technology for national development, the more frequent and severe its consequences are likely to become. Technology adoption must be strategically communicated; responsible development is far broader than just being part of the technology for development trend.

Adopting AI in Nigeria is also about ensuring a strong, healthy and just society. This means meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity. The way countries approach development via AI technology affects everyone. The impacts of government, universities and corporate bodies decisions on AI have real consequences for people's lives. Small actions about the adoption of AI, taken strategically, can add up to real change. However, to strategically communicate AI in Nigeria the governments should take the lead.

The It is the job of universities, information technology experts, corporate bodies, research experts' duty to help make this happen through a mixture of scrutiny, advice and building organizational capacity for strategic communication. More communication of emerging trends in AI and the implications can significantly impact Nigeria's media, corporate communication managers, development communication researchers' agendas. Scholarship is emerging more in this novel area from the western context as affirmed by the vast majority of studies reviewed in this paper.

Research on AI and how it can be strategically communicated and used for strategic national development with focus on Nigeria is scarce. In this position paper, certain claims have been made that can guide future strategic communication research in Nigeria. There is a crucial gap in the general/common understanding of Nigeria's developing field of AI for strategic national development. Furthermore, there is undoubtedly a pressing need to address the adoption of AI for strategic communication by the Nigerian media as well as practical implications for corporate communication and social responsibility where relationship building is essential.

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