



Building Technology: For Global Security, Economic Transformation, and Development

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Abstract

This paper undertakes a comprehensive assessment of various sectors within the Nigerian economy, examining technological innovations aimed at addressing key development challenges such as poverty, maternal mortality inadequate energy access, and deteriorating physical infrastructure. It identifies opportunities driven by rapid population growth, a substantial potential labor force, and a large youth population. The world is currently confronting unprecedented challenges, including security threats, economic disparities, and developmental inequalities. The study advocates for integrating multidisciplinary strategies in leveraging emerging technologies for global and national development. It also advocates for utilizing the Internet of Things to enhance border security, surveillance, and incident response, providing capacity-building programs to help countries develop their cybersecurity capabilities, and developing smart border systems that integrate technology such as emerging/digital technologies. to enhance security and efficiency.

Keywords: Global Security, Economic Transformation, Development.

Introduction

Technology denotes the application of scientific knowledge for practical purposes, particularly in industry, engineering, and other fields. It entails the utilization of tools, machines, and systems to resolve problems, enhance efficiency, and augment productivity. The Information Technology (IT) sector encompasses the utilization of computers, software, and networks to



manage and process information. The Engineering Technology sector applies scientific and mathematical principles to design, develop, and test technologies.

The Medical Technology sector develops and utilizes medical devices, equipment, and procedures to diagnose and treat diseases. Communication Technology enables the transmission and reception of information through various media, such as phones, the internet, and television. Energy Technology develops and utilizes technologies to generate, transmit, and distribute energy. Today, every field of human endeavor, from industry to medicine, is impacted by and improved with technology. Technology has significantly impacted economic growth, driving economies by enhancing productivity, increasing efficiency, facilitating self-employment among youth, and providing faster and more innovative methods of production. Technology enables global communication, collaboration, and social connectivity through social media, messaging apps, and video conferencing. In education, technology enhances learning by providing access to online resources, virtual classrooms, and personalized learning experiences.

Artificial intelligence (AI) holds great promise in addressing other sustainable development goals (SDGs), particularly those faced by individuals at the 'bottom of the pyramid' by providing. However, AI can also be utilized to address some of the infrastructure issues in the country. Development remains within the framework of the present-day system, serving the interests of a small group of people. This model involves a trend toward technological singularity, comprising AI, biotechnology, and other technologies for managing and manipulating minds. The ultimate aim of this model is to control the world to maximize profits, entailing growing risks for the state, society, and the individual, and preventing a transition to a new socio-economic paradigm.



This model may encourage the emergence of phenomena such as Islamic state ideology, which has its own values and attracts many people, especially young adults. Besides their positive aspects, the digital revolution and 21st-century high technology pose tremendous threats, including a threat to human existence. Most of these threats are well-known and discussed by scientists (Randers, 2012; von Weizsäcker and Wijkman, 2018). This confirms the likelihood of the domination of the second model, which has evolved through philosophical interpretations of social development laws. In the rapidly evolving global landscape, technology has emerged as a cornerstone for addressing critical challenges such as security, economic transformation, and sustainable development.

As nations strive to navigate the complexities of the 21st century, the strategic development and deployment of technology can serve as a catalyst for fostering global security, driving economic growth, and promoting inclusive development. This article explores the multifaceted role of technology in these domains, with a focus on actionable strategies for Nigeria and the broader global community. Below are some of the applications in the various fields:

Technology and Global Security

According to Rosenau J.N (1990) the world would see turbulent changes from the twentieth century. Global security in the 21st century is increasingly defined by cyber threats, terrorism, and geopolitical tensions. Technology plays a dual role in this context: as a tool for enhancing security and as a potential vector for vulnerabilities.

- **Cybersecurity:** The proliferation of digital infrastructure has made cybersecurity a top priority. Nations must invest in advanced cybersecurity technologies, such as artificial



intelligence (AI) and blockchain, to protect critical infrastructure and sensitive data. For Nigeria, this means strengthening its National Cybersecurity Policy and fostering collaboration with international partners.

- ***Surveillance and Intelligence:*** Technologies like satellite imaging, drones, and AI-driven analytics can enhance border security and counter-terrorism efforts. Nigeria can leverage these tools to address regional security challenges, such as insurgency and cross-border crime.
- ***Global Collaboration:*** Building secure technology requires international cooperation. Initiatives like the Global Cybersecurity Index (GCI) and partnerships with organizations like INTERPOL can help Nigeria enhance its security capabilities.
- ***Smart Cities:*** IoT, AI, and big data technologies can be leveraged to optimize urban planning, transportation, and energy efficiency, resulting in more livable and efficient cities.
- ***Digital Infrastructure:*** Expanding broadband and mobile networks is vital to ensure all regions can participate in the digital economy.

Economic Transformation through Technology

Technology is a powerful driver of economic transformation, enabling nations to transition from resource-dependent economies to knowledge-based ones.

- ***Digital Economy:*** The digital economy, powered by e-commerce, fintech, and digital services, offers immense opportunities for economic growth. Okoyeuzu et al., 2019,



Adamu, 2020, opined that mobile banking has bridged this gap by leveraging the widespread use of mobile phones. Services like Opay, MTN Mobile money, Paga and Paystack, enables Nigeria's to perform financial transactions such as money transfers, bill payments, and savings directly from their mobile devices.

- **Industrial Automation:** Technologies such as robotics, AI, and the Internet of Things (IoT) can revolutionize manufacturing and agriculture. For Nigeria, adopting these technologies can boost productivity, reduce reliance on imports, and enhance global competitiveness.
- **Financial Inclusion:** Mobile banking and digital payment systems can bridge the gap between the unbanked population and formal financial services. Nigeria's success with mobile money platforms like Paga highlights the transformative potential of technology in fostering financial inclusion.
- **Enhancing Productivity:** Automation, artificial intelligence (AI), and advanced manufacturing technologies can streamline processes, reduce costs, and increase efficiency across industries.

Technology for Sustainable Development

The United Nations Sustainable Development Goals (SDGs) underscore the importance of technology in addressing global challenges such as poverty, inequality, and climate change.

- **Renewable Energy:** Technologies like solar panels, wind turbines, and energy storage systems are critical for achieving energy access and combating climate change. Nigeria



can harness its abundant solar resources to expand energy access and reduce carbon emissions.

- **Smart Agriculture:** Precision farming technologies, including drones and IoT sensors, can enhance agricultural productivity and food security. For Nigeria, a predominantly agrarian economy, these technologies can transform rural livelihoods and reduce food imports.
- **Health Technology:** Telemedicine service involving cellphones use, technology-driven diagnostics, and mobile health applications can improve healthcare access and outcomes. Shittu et al 2007 Nigeria's experience with telemedicine during the COVID-19 pandemic illustrates the potential of technology to address healthcare challenges.

Challenges and Barriers

- **Digital Divide:** Bridging the digital divide requires investments in infrastructure, education, and policy frameworks. Nigeria must prioritize expanding broadband access and digital literacy programs to ensure inclusive participation in the digital economy.
- **Ethical Considerations:** The rapid advancement of technologies like AI raises ethical concerns, including data privacy and algorithmic bias e.g., AI bias in hiring, surveillance concerns. Nigeria must establish robust regulatory frameworks to address these issues.
- **Global Partnerships:** Collaboration with international organizations, private sector actors, and academia is essential for leveraging technology effectively. Nigeria can benefit from



initiatives like the African Union's Digital Transformation Strategy and partnerships with global tech giants.

Recommendations for Nigeria

- ✓ Invest in Cybersecurity: Strengthen national cybersecurity frameworks and collaborate with international partners.
- ✓ Promote Digital Literacy: Expand access to digital education and skills training.
- ✓ Leverage Renewable Energy: Harness solar and wind energy to address energy poverty and climate change.
- ✓ Support Tech Startups: Provide funding and policy support for innovative tech startups.
- ✓ Foster Global Collaboration: Engage in international partnerships to access cutting-edge technologies and best practice

Building Technology for Global Security, Economic Transformation and Development is A Complex but Achievable Goal

Building technology for global security, economic transformation, and development is a complex but achievable goal. For Nigeria, the strategic adoption of technology can unlock new opportunities, address pressing challenges, and position the country as a leader in the global digital economy. By fostering innovation, investing in infrastructure, and strengthening global partnerships, Nigeria can harness the transformative power of technology to create a secure, prosperous, and sustainable future.

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