

CHALLENGES OF ARTIFICIAL INTELLIGENCE ADOPTION IN AFRICA

Introduction

Historically, there used to be four factors of production like land, Labor, capital and entrepreneurship. That said and done, technology has brought in another fifth factor of production called digital capital. And the digital capital as it is called has introduced us into the world of Artificial Intelligence and cloud computing.

We all talk much about embracing Artificial Intelligence world over, however that impact is not well felt in Africa especially in rural areas where access to electricity is limited. To make sure that Africa as a continent is onboarded entirely, Governments in Africa needs to do more in Technological infrastructure, mores so more focus should be on reliable electricity and internet. Beyond this, high costs and a lack of digital skills create further barriers that prevent these communities from benefiting from AI's potential. While innovative pilots exist, they are far from reaching the scale needed to create a significant continent-wide impact.

The most common challenges bedevilling African countries include:

- i. **Unreliability of Electricity:** In 2025, almost 600 million Africans lacked access to electricity, *International Energy Agency (IEA)* with 85% of them living in Sub-Saharan Africa. Even in areas with some access, power outages are common, making it impossible to run the servers and devices needed for AI.
- ii. **Poor Internet Access:** While mobile internet is growing, only a fraction of rural populations are connected. **In 2024, 57% of urban Africans were online, compared to just 23% in rural areas based on 2023-2024 data from Africa Mistes, corroborated by the Center on Global Energy Policy at Columbia University.** For those with access, the cost of data is prohibitive, with 1 GB costing between **2% and 10% of the average monthly income** in many countries. High latency and unstable connections also make using cloud-based AI tools frustrating and unproductive.

Even where infrastructure exists, other practical issues prevent widespread adoption.

- i. **High Costs and Affordability:** AI technologies, especially sophisticated ones like precision agriculture tools, are often too expensive for smallholder farmers. The cost of smartphones and data remains a "structural barrier" that new cell towers alone cannot fix.
- ii. **Digital Literacy and Language:** Many AI tools fail to account for Africa's linguistic diversity and low literacy levels. For many rural people, using a text-based app in a foreign language is simply not an option.

How can African countries overcome these challenges and bridge the gap?

Developing countries can only overcome these challenges if they adopt an ICT4D strategy. This will ensure that there is accessibility of digital devices across all rural areas in Africa. ICT4D will also help in curbing digital illiteracy challenge.

Governments must also come up with policies that makes it mandatory for all Schools across this communities to have ICT classes down from pre-primary upwards. Having ICT as a compulsory unit will create a culture of tech savvy population as a whole.

Teachers training colleges must also make it mandatory for any teacher graduating from their institutions to have an ICT project that will demonstrate their computing skills.

The Government must also involve NGOs and other partners to ensure the growth and actualization of this initiative.

There should be a strategic plan of how implementations of this initiative should be implemented. Regulatory agencies like Communication Authority of Kenya and Competition Authority of Kenya should avoid coming up punitive policies that scares away telecommunication companies.

Foreign direct investments (FDI) should highly be encouraged to support and sponsor some of the initiatives.

African countries can also adopt a common language and probably a common currency, in addition to many reasons, this can also play a very important role in ensuring that digital literacy gap is bridged. These countries face a similar problem which in the long run, require a common solution.

Conclusion

Africa as a continent need to embrace its technocrats. They are very important entity in the digital space.

Independent institutions that deal with digital capital needs to be supported and allowed to execute their duties independently without interference from state.