Practitioner viewpoint: Navigating the promises and gaps in digital transformation, SME development and job creation in Africa

1. Introduction

Africa is home to an estimated 125 million small and medium enterprises (SMEs), across the entire continent, significantly above the 44 million formal SMEs previously estimated for Sub-Saharan Africa (SSA) alone, excluding North Africa and the informal sector (IFC, 2017). These enterprises are not peripheral to Africa's economy; they are its backbone, representing 90% of all private sector businesses and generating approximately 80% of employment opportunities across SSA markets (Raia, 2024). Yet, most of these enterprises remain poorly connected to digital markets, formal finance and modernised agricultural value chains. The question facing policymakers, development partners and practitioners is no longer whether digital transformation matters for SSA SMEs. It is why the gap between digital potential and actual impact remains so wide and what must urgently change (Madichie *et al*., 2021; Mwaura, 2024). Mobile subscriber penetration across SSA has approached 50%, yet mobile Internet penetration stands at just 27%, with 960 million people unconnected despite living within coverage areas (GSMA, 2024). Fintech adoption is rising and agri-tech platforms are multiplying. Yet the rural smallholder farmer in northern Nigeria, the market trader in Accra or the youth agri-entrepreneur in Kampala still largely operates outside the digital economy. Connectivity without capability, and innovation without institutional support, produces the illusion of transformation without its substance. In this viewpoint article, we argue that digital transformation in Africa will only generate meaningful SME growth and job creation when matched with coherent governance frameworks, targeted ecosystem investment and deliberate policy action. Drawing on practice-based evidence and secondary literature across multiple African contexts, we identify the key challenges constraining digital impact and offer six concrete recommendations for closing the observed gaps.

2. The promise of digital transformation

Across Africa, digital tools are reshaping what is possible for small enterprises. Mobile-based platforms such as M-Farm in Kenya and FarmCrowdy in Nigeria have demonstrated that digital market access can reduce the information asymmetries that have historically disadvantaged smallholder farmers and rural SMEs. Nonetheless, across SSA's media and agri-tech sectors, the promise of digital entrepreneurship remains constrained by persistent infrastructure deficits that limit both reach and impact (Madichie *et al*., 2021; Taura *et al*., 2019). Mobile payment systems have expanded financial inclusion, enabling previously unbanked entrepreneurs to receive payments, access credit and build verifiable transaction histories. Digital advisory platforms are delivering agronomic guidance directly to farmers' phones, reducing their dependence on overstretched extension services.

The intersection of digital technology and agriculture is particularly significant, as the sector remains central to livelihoods across SSA and accounting for most of the employment in the subregion. Digital agriculture initiatives (or AgriTech) offer pathways not only to improved productivity but also to strengthened resilience through access to timely climate information and entrepreneurial innovation (Dey *et al*., 2019). However, adoption remains constrained by infrastructure gaps and digital literacy deficits (Singh *et al*., 2025). For the youth, this is especially important considering that digital agriculture presents an opportunity

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for reconfiguring what farming means – not as a subsistence fallback, but as a commercially viable, technology-enabled enterprise. Platform-based business models have shown promise in resource constrained contexts. For example, Fu *et al*. (2023) demonstrate that such models can empower entrepreneurs at the base of the pyramid by aggregating demand, reducing transaction costs and creating market linkages that were previously inaccessible, offering conceptual frameworks with clear applicability to SSA's SME ecosystem. Information communications technology (ICT) adoption at the enterprise level has been shown to improve performance and expand trade relations even among village-level and/or rural micro enterprises (Soman *et al*., 2024). While the potential is real, the gap remains in realising it consistently and at scale. We highlight four of these in the next section.

3. The gaps – why digital transformation is not delivering at scale

There are four main reasons why digital transformation is not scaling in SSA – notably, and in no particular order, fragmented governance and institutional voids, infrastructure deficits and connectivity gaps, digital literacy and skills gaps and financing barriers and social protection deficits.

3.1 Fragmented governance and institutional voids

The most significant structural barrier to digital SME growth in Africa is not technological but institutional. Webb *et al*. (2020) describe institutional voids as gaps in formal market and governance structures that both hinder and stimulate informal innovation. African digital agriculture initiatives, ranging from mobile extension platforms to digital credit services, often emerge precisely because formal institutions are absent or ineffective; they fill gaps rather than build systems. The consequence is that most digital initiatives remain localised pilots, heavily dependent on external financing and weakly connected to national policy frameworks (GSMA, 2024). Without coherent digital public infrastructure shared identity systems, interoperable payment rails and standardised data governance, individual innovations cannot accumulate into systemic transformation (Carnegie Endowment for International Peace, 2025). Ochi *et al*. (2024) find that governance quality exerts a nonlinear threshold effect on poverty outcomes across SSA. Below a critical threshold of institutional quality, digital interventions simply fail to generate the poverty reduction they promise. Rwanda and Kenya demonstrate what becomes possible when that threshold is crossed. Elsewhere, weak institutional capacity continues to undermine impact.

3.2 Infrastructure deficits and connectivity gaps

While digital tools require digital infrastructure, across much of rural Africa Internet connectivity remains unreliable, expensive or absent. Madichie *et al*. (2021) observe that poor Internet access, weak infrastructure and low digital literacy limit rural farmers' ability to benefit from innovations even where there are opportunities. This is primarily because the cost of data remains prohibitive for many SME owners operating at the margins, while electricity access, essential for device charging and digital engagement also remains unevenly distributed across rural communities (GSMA, 2026). Infrastructure is not a background condition for digital transformation but a key foundation, thus prompting the need to interrogate digital literacy concerns in SSA.

3.3 Digital literacy and skills gaps

Technology adoption is not simply a function of access, it requires capability. Geza *et al*. (2022) find that youth participation in African agriculture is constrained not only by land and capital but by limited training and skills development. The same applies to digital tools: without targeted digital literacy programmes, the provision of smartphones or platforms rarely translates into productive use (Dittmer *et al*., 2025). Women entrepreneurs and older farmers

face acute barriers, compounding existing inequalities within the SME sector (Arangurí *et al*., 2025).

3.4 Financing barriers and social protection deficits

Access to finance remains a critical constraint for African SMEs seeking to invest in digital tools or digital business models, with the SME financing gap in SSA estimated at US$331 billion and continuing to expand (Raia, 2024). Zizzamia (2020) demonstrates that employment quality and stability matter as much as employment itself in determining poverty outcomes. Bassier *et al*. (2021) further show that adaptive social protection mechanisms can cushion informal workers during shocks, though such systems remain rare and fragmented across much of SSA (ILO, 2024). Without financing and social protection, the digital economy risks reproducing the very precarity it seeks to transform.

4. Discussions and a call to action

The challenges are structural but far from insurmountable. The six actions below are practical, evidence-based steps aimed at governments, development partners, regional bodies and frontline practitioners across SSA. First, there is a need to build a shared digital infrastructure as a public good. Governments across SSA must move beyond fragmented, donor-driven pilots and invest seriously in the foundational digital layers that SMEs can build upon – national digital identity systems, interoperable payment rails, open agricultural market data platforms and standardised data governance. The African Union's *Digital Transformation Strategy* (2020–2030) provides the policy backbone (African Union, 2020), yet almost five and a half years in, implementation remains uneven and the rural-urban digital divide persists, even as SSA's digital payments economy is projected to reach US$1.5 trillion by 2030. Governments should treat digital infrastructure with the same strategic urgency as roads or power grids, because in today's economy, it is equally foundational.

Second, embedding digital skills in agricultural and enterprise development programmes is needed. Access to a smartphone or Internet is meaningless without the capability to use it productively. Digital literacy must, therefore, become a core, not an optional add-on, component of every SME support scheme, agricultural extension service, national youth service programme and vocational training initiative across SSA. Training in mobile commerce, digital record-keeping and navigation of agri-platforms should be integrated as standard competencies, delivered in local languages through trusted community channels. Attention must be given to women entrepreneurs and rural youth, who face compounding barriers to digital participation.

Third, creating enabling regulatory environments for agri-tech and fintech SMEs is no longer negotiable. Regulatory frameworks across much of SSA remain poorly adapted to the rapid pace of digital innovation. Regulatory sandboxes, controlled environments that allow new digital business models to be tested before full licensing requirements apply, have proven effective in enabling responsible fintech growth in Kenya, Nigeria and South Africa. This successful model should now be extended to agri-tech. Tax incentives for digital SMEs in agriculture, streamlined business registration processes and clear data protection legislation are equally essential to build investor confidence, protect entrepreneurs and attract the investment these sectors urgently need.

Fourth, redirecting youth employment policy toward digital agripreneurship has become more urgent in recent years. With over 60% of SSA's population under 25, the pressure on governments to create meaningful employment is structural, not cyclical. Digital agriculture offers a credible pathway, not as a subsistence fallback, but as a commercially viable enterprise. Governments should design dedicated agripreneurship programmes, building on existing national service models, that combine entrepreneurial skills training, direct links to digital platforms and transitional financial support. Otache (2017), argued that properly resourced

agripreneurship development can simultaneously address unemployment, productivity and food security. The digital dimension makes that case both stronger and more urgent.

Fifth, there is a need to strengthen regional coordination on digital governance and data standards on the continent. Digital ecosystems do not respect national borders, yet most regulatory frameworks in SSA remain confined to the national level. This fragmentation in agricultural market data, payment systems and data rules limits SME scalability in cross-border trade. Regional bodies, particularly the African Continental Free Trade Area (AfCFTA) *Digital Trade Protocol* and its 2025 annexes on payments, digital ID and data governance, should prioritise harmonising digital standards, enabling interoperable cross-border payments and establishing shared data frameworks. Only coordinated regional action can transform SSA's fragmented digital pilots into integrated economies. The challenge extends from the Economic Community of West African States (ECOWAS) to the East African Community (EAC) and more broadly (Igwe *et al*., 2021).

Sixth, and lastly, the deployment of development finance to de-risk digital SME investment cannot be placed on a back burner. Commercial capital flows to proven markets, leaving many African digital SMEs in structurally challenging environments, thin margins, unreliable infrastructure and limited collateral underserved. Development finance institutions, bilateral donors and philanthropies must therefore deploy blended finance instruments: credit guarantees, first-loss capital facilities and patient equity to absorb early-stage risk and crowd in private investment. Microfinance institutions, when paired with digital platforms, have shown strong potential to expand credit access for agricultural entrepreneurs across SSA (Mapanje *et al*., 2023; Madichie and Nkamnebe, 2010). Scaling this impact requires deliberate resource mobilisation and effective coordination among development partners.

5. Conclusions and recommendations

Digital transformation holds genuine transformative potential for SSA SMEs and the millions of jobs and livelihoods that depend on them. Mobile technology, digital platforms and agri-tech innovations are already demonstrating what is possible in Kenya, Ghana and Nigeria and beyond. Still the gap between what digital tools promise and what they deliver at scale remains a concern. This viewpoint has argued that the gap is not primarily technological but institutional, infrastructural and political. Closing the gap requires not more apps or pilots but better governance – not more enthusiasm, but greater policy coherence and deliberate investment in the foundational systems that allow digital innovation to accumulate into systemic transformation. SSA's progress towards achievement of the Sustainable Development Goals (SDGs) – particularly SDG 1 (no poverty), SDG 2 (zero hunger), SDG 8 (decent work and economic growth) and SDG 9 (industry, innovation and infrastructure) – depends significantly on getting digital transformation right. When properly governed and equitably deployed, it can become a powerful engine for SME growth and job creation across the continent.

Going forward, several research gaps deserve attention. First, longitudinal studies on the long-term impact of digital agricultural interventions on poverty and employment quality remain scarce; nevertheless, they are essential for evidence-based policy. Second, comparative research across SSA examining why digital governance reforms have advanced faster in Rwanda and Kenya could yield valuable lessons for peer learning across the continent. Third, the gendered dimensions of digital SME participation also require deeper investigation, as evidence on effective support for women entrepreneurs in digital agriculture is still limited. Finally, the environmental implications of large-scale agricultural digitalisation need urgent scrutiny to ensure sustainability.

6. Implications for policy and practice

In a market on the streets of Lagos (Nigeria), Nairobi (Kenya) or Kigali (Rwanda), a small business owner accepts mobile payments, manages inventory through a digital platform and

reaches customers through social media (Jang, 2025; Adetoyinbo *et al*., 2026). This scene, once exceptional, is now increasingly common across Africa. It reflects a profound shift. Over the past decade, countries like Kenya have demonstrated how digital innovation, anchored by platforms such as M-Pesa can expand financial inclusion and unlock new market access for SMEs. According to the Global System of Mobile (GSMA), mobile money accounts in SSA have more than doubled in recent years, making the region a global leader in digital financial services adoption (GSMA, 2026). A similar momentum is visible across the continent, from fintech ecosystems in Lagos to platform-driven economies in South Africa. The GSMA estimates that mobile technologies and services contributed over US$170 billion to SSA's GDP in recent years, underscoring the scale of digital's economic footprint (Borole *et al*., 2025). Yet a more fundamental question remains: *Is Africa's digital transformation translating into sustainable job creation and inclusive economic growth – or simply expanding access without transforming outcomes?*

6.1 From adoption to impact

Africa's digital economy is scaling rapidly. SMEs are adopting digital payments, e-commerce and cloud-based tools at unprecedented rates. However, policy and investment narratives remain heavily focused on inputs from connectivity, platforms and capital flows, rather than outcomes, such as productivity, resilience and employment. This creates a critical gap. The International Finance Corporation (2017) estimates that Africa's SME financing gap exceeds US$330 billion, highlighting that access to digital tools alone does not resolve deeper structural constraints (IFC, 2022, March 21). In many countries, digital adoption is outpacing the systems required to support it. While urban centres benefit from relatively strong infrastructure, rural and peri-urban areas continue to face high data costs, unreliable connectivity and limited access to interoperable financial and identity systems. The *Alliance for Affordable Internet* consistently finds that data costs in several African markets remain above the affordability threshold of 2% of monthly income (Alliance for Affordable Internet, n.d). Without addressing these constraints, digitalisation risks becoming additive rather than transformative, increasing participation without materially improving economic outcomes.

6.2 Diagnosing readiness before scaling

To move from access to impact, policymakers must adopt a more disciplined approach to scaling digital SME programmes. A national "Digital SME Readiness Diagnostic" would enable governments to assess whether foundational enablers are in place before expanding digital initiatives. This includes:

(1) Infrastructure readiness – affordability, reliability and effective spectrum use;

(2) Digital identity systems – enabling seamless and trusted SME onboarding;

(3) Interoperability – integration across payments, platforms and public services and

(4) Cost structures – particularly the burden of data pricing and platform fees on SMEs.

The importance of digital ID systems is well established. The World Bank notes that robust identification systems are a key enabler of financial inclusion, yet millions of Africans still lack access to formal ID, limiting their ability to participate fully in digital economies (The World Bank, 2022). This diagnostic approach ensures that digital transformation is built on systems that enable SMEs to compete and grow, not struggle under new layers of cost and complexity.

6.3 Measuring what matters

Despite rapid digital adoption, there is limited publicly available evidence linking these efforts to tangible SME outcomes. Metrics such as transaction volumes or platform growth provide

only a partial picture. They do not answer the most critical questions: Are SMEs becoming more productive? Are they creating jobs? Or are they absorbing rising costs without corresponding gains? To address this, governments should mandate an annual Digital SME Impact Review, co-led with private sector actors, including telecom operators and independently validated. This review should track job creation linked to digital adoption; SME revenue growth and survival rates; cost of participation, including data and platform fees, and inclusion across gender, geography and firm size. The Organisation for Economic Co-operation and Development (OECD) emphasises that effective digital policy must be grounded in measurable outcomes and transparent data reporting principles that remain underdeveloped in many emerging digital economies (OECD, 2020). Embedding such transparency would shift the focus from activity to impact, enabling more effective and adaptive policymaking.

6.4 Designing for inclusion from the start

Digital transformation also carries a significant risk: reinforcing existing inequalities if inclusion is not deliberately designed. Women entrepreneurs, who represent a substantial share of Africa's SME sector, continue to face structural barriers to digital adoption, including limited access to devices, lower digital literacy and restricted financial access. The United Nations highlight that women in low- and middle-income countries are significantly less likely than men to use mobile Internet, creating a persistent gender digital divide. Yet inclusion is often treated as an afterthought. A gender-inclusive design protocol, applied to all publicly supported digital platforms, would help address this gap by making inclusion a core requirement rather than an optional feature. Key elements should include offline access channels, such as USSD and agent networks; flexible financial products, aligned with informal income patterns and female agent networks (e.g. MTN Momo across most parts of Rwanda), which improve trust, accessibility and adoption. Evidence from mobile money ecosystems, including those supported by the GSMA, shows that adoption accelerates when solutions are human-centred and locally grounded.

6.5 From momentum to transformation

Africa stands at a pivotal moment in its digital journey. The foundations for transformation are already in place: a dynamic SME sector, expanding connectivity and a rapidly evolving innovation ecosystem. However, the next phase will require a shift in focus: from scaling access to delivering measurable economic impact. This means (1) diagnosing readiness before implementation; (2) institutionalising accountability mechanisms and (3) embedding inclusion as a non-negotiable standard. The objective is not simply to digitise SMEs but to enable them to drive productivity, create jobs and build resilience at scale.

Africa's digital transformation has already demonstrated what is possible (Madichie *et al*., 2021; Taura *et al*., 2019). The question now is whether it can deliver what is needed. With the right governance frameworks, accountability mechanisms and inclusive design principles, digitalisation can become a powerful engine for job creation and shared prosperity. Without them, it risks entrenching new forms of inequality within rapidly expanding digital ecosystems. The distinction is critical because ultimately, digital transformation will not be defined by the technologies deployed but by the outcomes achieved – and for SSA, those outcomes must be measured not in connectivity or adoption rates, but in jobs created, businesses sustained and livelihoods improved.

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