WIRED BUT UNREADY: THE STRUCTURAL SKILLS CRISIS UNDERMINING TECH POLICY IN THE GLOBAL SOUTH

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Abstract

Technology policy has increasingly become a core component of national development strategies across the Global South. From digital governance to smart infrastructure, governments are embracing digital transformation as a pathway to modernize economies, improve service delivery, and stimulate innovation. However, amid this push lies a persistent and often under-addressed barrier: the skills gap. This article explores how the lack of alignment between policy ambitions and workforce capabilities undermines the implementation of technology policy. It argues that without robust capacity-building mechanisms and a proactive strategy to address existing and emerging skills gaps, tech policy in developing countries risks becoming aspirational rhetoric rather than actionable reality.

Reframing Technology Policy as a Nation-Building Imperative

The advent of the 4th industrial revolution has made technology policy no longer confined to the realm of economic planning or innovation hubs—it has become integral to nation-building. As noted by the National Informatics Centre[2], information technology plays a central role in shaping policy formulation and implementation, providing tools for strategic planning, public engagement, and evidence-based governance. In countries such as Rwanda, Kenya, Ghana[3] and Bangladesh, strategic investments in information and communication technologies (ICTs) have supported rapid gains in healthcare access, digital governance, and public financial management. These examples

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[2] National Informatics Centre. (2024). Role of Information Technology in Public Policy Formulation and Implementation. Government of India. https://www.nic.in/blog/role-of-information-technology-in-public-policy-formulation-and-implementation/ accessed 13 April 2025.

[3] Open Government Partnership, Financial Management (Ghana). https://www.opengovpartnership.org/members/ghana/commitments/GH0012/ accessed 15 April 2025.

demonstrate the potential of technology to reconfigure how governments engage with citizens and how services are delivered in resource-constrained environments.

Where policies envision AI-enhanced public services or blockchain-secured registries, the practical question remains: who will design, maintain, and oversee these systems? Too often, developing countries adopt high-level digital strategies without the workforce to implement them. As a result, digital systems are outsourced, public sector innovation is shallow, and national sovereignty over data and infrastructure is compromised. The success of technology policy is thus intimately tied to the depth and breadth of local capabilities.

Local Context and the Fallacy of Imported Models

One of the major errors in tech policy planning in the Global South is the uncritical adoption of models that succeed in vastly different contexts. Many developing countries mimic the digital blueprints of Western or East Asian nations, importing frameworks that presuppose high literacy rates, strong regulatory institutions, and mature digital economies. Yet the realities in many parts of the Global South are fundamentally different. Public sector agencies are frequently under-resourced, education systems may be misaligned with market needs, and large swaths of the population remain digitally excluded.

Indeed, digital service delivery in such contexts has been noted to be often undermined by weak uptake and lack of institutional coordination.[4] Projects that look effective on paper fail in practice when they cannot be integrated into existing administrative cultures or when frontline staff lack the digital literacy to operate new platforms. For instance, digital public service systems in countries like Nigeria and Bangladesh have faced underutilization due to a combination of limited digital literacy, inadequate institutional capacity, and weak end-user trust—issues that consistently emerge in the literature on digital service delivery in low-income settings.[5] The lesson

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[4] Oxford Policy Management. (2025). *When and How to Use Digital Tech to Improve Public Service Delivery.*

[5] Aker, J. C. (2017). Using Digital Technology for Public Service Provision in Developing Countries. IMF; Oxford (2025)

here is that digital strategies must be rooted in local institutional, economic, and human resource realities.

Understanding the Skills Gap in Practical Terms

The skills gap, in the context of technology policy, refers to the disconnect between the competencies required to execute a tech-driven vision and the actual skills available in the workforce. As McGuinness and Ortiz argue[6], understanding the nuances of skills mismatches is essential to diagnosing labor market inefficiencies and shaping responsive policy interventions. This gap spans across technical and non-technical domains. It includes deficits in software development, data analysis, and systems integration, as well as project management, user interface design, and regulatory compliance.

According to CompTIA[7], nearly half of organizations surveyed reported growing deficiencies in key IT functions. The consequences are not just technical failures but broader systemic breakdowns—projects stall, maintenance costs increase, and a rise in cybersecurity vulnerabilities. In many developing countries, the challenge is not merely the absence of advanced talent but the lack of foundational digital literacy among a large portion of the population, including public sector workers who are expected to operate or manage these new systems.

The High Costs of an Under-Skilled Ecosystem

The consequences of the skills gap are far-reaching. At an economic level, they result in inflated project costs, dependency on foreign consultants, and missed opportunities for local value creation. At an institutional level, they erode public trust, reduce service quality, and demoralize staff. It has also been identified to increased stress on existing employees, longer project timelines, and elevated security risks as common outcomes of persistent skills deficits.[8] In India, implementation of digital components in large social protection schemes such as the Mahatma Gandhi National

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[6] McGuinness, S., & Ortiz, L. (2016). Is the Skills Mismatch a Useful Concept? IZA.

[7] CompTIA. (2017). IT Skills Gap Research Report. CompTIA.org. https://www.comptia.org/content/research/assessing-the-it-skills-gap accessed 19 April 2025.

[8] Rafael Timbó. How to Identify Skill Gaps to Scale for Expansion. Revelo. (2025). https://www.revelo.com/blog/how-to-identify-skill-gaps accessed 19 April 2025.

Rural Employment Guarantee Act (MGNREGA) was hampered by low levels of digital capacity at the district and local levels.[9] Consequently, many intended beneficiaries were either excluded or underserved.

Skills deficits also shape how innovation is understood and pursued. When human capital is lacking, policy choices tend to skew toward simplistic, imported tech fixes rather than contextually adapted solutions. This limits the scope of innovation and perpetuates dependency on external vendors, which in turn constrains national sovereignty over critical data systems and infrastructure, including vendor lock-ins that creates national access risk to these systems. In many ways, the Global South is wired but unready—a reality where digital infrastructure outpaces human infrastructure, and policy ambitions collapse under the weight of unaddressed capacity gaps.
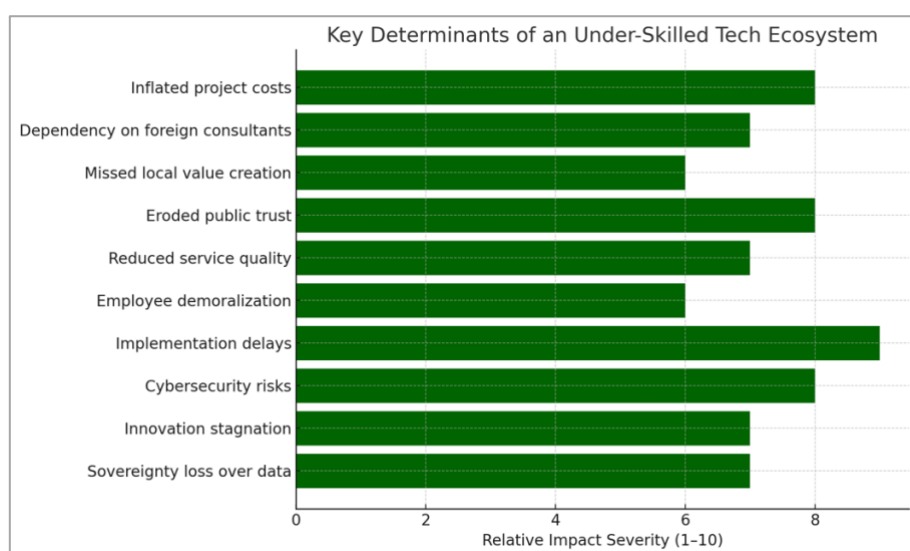
Figure 1: To visually capture the breadth and depth of the consequences associated with underdeveloped digital capacity, the chart above summarizes the most critical issues that arise from an under-skilled ecosystem. It highlights their relative severity and how they collectively undermine the sustainability of national technology policy.

Capacity Building as Strategic Infrastructure

Bridging the skills gap cannot be treated as an afterthought or support activity—it must be embedded at the core of national development planning. Capacity building should be treated as a form of strategic infrastructure, alongside roads, ports, and telecommunications. Governments need to forecast the skills required for their digital futures, identify current and projected gaps, and invest accordingly.

[9] Banerjee, A., Duflo, E., et al. (2016). Addressing Implementation Gaps in India's Social Protection Programs.

This requires systemic action across multiple fronts. First, educational institutions must be reoriented to respond to labor market trends. Curricula in universities and technical institutes need to be updated frequently, with input from industry and government. Second, short-term training and reskilling programs should be designed for public servants and frontline workers involved in digital projects. Third, partnerships with private sector and civil society can help broaden reach, particularly through community tech hubs and online learning platforms.

According to TechnologyAdvice, a structured skills gap analysis is the first step in developing an effective workforce strategy. It involves identifying the competencies needed to achieve specific goals, assessing current employee capabilities, and designing interventions to bridge the shortfall.[10] While simple in principle, this process requires data, coordination, and sustained political will—qualities that are not always present in under-resourced public systems.

Why Measurement Matters

One of the persistent challenges in addressing skills gaps is the lack of robust measurement tools. Traditional methods such as labor surveys and job vacancy audits provide only partial insights. They often ignore skills acquired informally, fail to capture soft competencies, and lack granularity at the sector or regional level. In the context of Industry 4.0, it has been emphasized, that there is the need for more multimodal and context-sensitive methodologies to measure actual skills. These skills gaps are structural, shaped by long-standing misalignments between education systems, industrial needs, and public policy execution.[11]

Innovative approaches such as digital skills observatories, which combine administrative data, employer surveys, and real-time analytics from job platforms, are beginning to offer more nuanced insights. These tools allow governments to map talent pipelines, monitor trends, and adjust policies proactively. Without this data-driven foundation, efforts at reform risk becoming reactive and misaligned.

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[10] TechnologyAdvice. (2024). How to Conduct a Skills Gap Analysis. https://technologyadvice.com/blog/human-resources/skills-gap-analysis/

[11] ScienceDirect. (2024). Understanding and Measuring Skill Gaps in Industry 4.0. Technological Forecasting and Social Change. https://doi.org/10.1016/j.techfore.2024.123206 accessed 19 April 2025.

Adopting a Skills-First Approach

To overcome existing structural limitations, countries in the Global South must begin to prioritize a skills-first approach. This means shifting focus from formal qualifications to demonstrable competencies. Global firms like IBM and Google have already moved in this direction, hiring based on skills demonstrated through portfolios, online assessments, and bootcamps. Google's Career Certificates and IBM's New Collar Jobs initiative exemplify this shift, emphasizing practical experience and verified competencies over traditional degrees.[12]

 Governments can adopt similar principles in public sector hiring, training, and promotion.
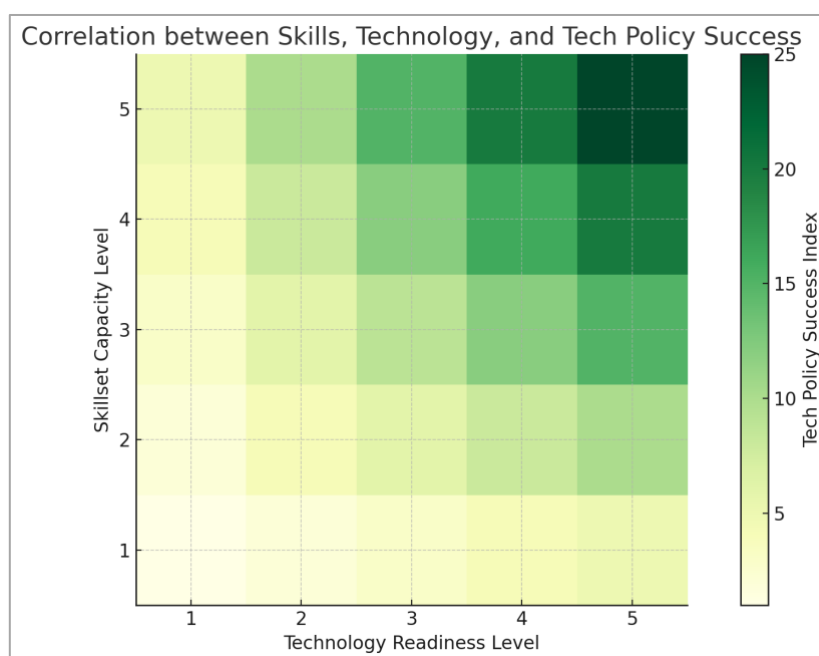
Figure 2: To illustrate the interaction between key factors, the chart above visualizes how the intersection of skillset capacity and technology readiness correlates with tech policy success. It demonstrates that high levels in both dimensions are essential for policy effectiveness, validating the argument that digital transformation cannot rely on infrastructure alone.

Such an approach also supports greater inclusivity. By lowering barriers tied to degrees or institutional prestige, a skills-first model can open doors to underrepresented groups—women, rural youth, and informal sector workers—who may have relevant

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[12] Google Career Certificates, 2025; IBM SkillsBuild, 2025

competencies but lack formal credentials. This aligns with broader development goals around equity and inclusive growth.

Institutionalizing Workforce Readiness in Tech Policy

For technology policy to fulfill its promise, the principle of workforce readiness must be institutionalized across the policy lifecycle. This involves more than just pre-implementation training. Skills development should be integrated into planning, budgeting, procurement, and evaluation processes. For instance, procurement contracts for digital systems should include provisions for local training and knowledge transfer. Evaluation metrics should track not only system performance but also human capacity gains.

A coherent national strategy would also include the establishment of digital skills observatories, national frameworks for digital literacy, and coordinated plans across ministries for intersectoral training. The International Telecommunication Union (ITU) emphasizes[13] these elements as key pillars in building an inclusive and future-ready digital ecosystem. In Rwanda, such efforts have been made through the Smart Rwanda Master Plan, which links national ICT strategy to education, agriculture, and finance sectors. The result is a more coherent and resilient digital ecosystem.

Conclusion: The Human Infrastructure of Tech Policy

In the pursuit of digital transformation, the Global South must recognize that the foundation of any technology policy is not silicon, fiber, or code—it is people. Without skilled professionals to build, run, and regulate the digital infrastructure of the future, even the most ambitious plans will falter. The skills gap is not just a technical deficit; it is a structural barrier that shapes the scope, speed, and sustainability of national development. Addressing it requires political commitment, institutional innovation, and a deep rethinking of how we conceive human capital. As this article has argued, treating the skills gap as a central challenge rather than a peripheral concern is essential to converting technology policy from promise to practice.

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[13] International Telecommunication Union, Digital Skills Toolkit (ITU 2020) https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/Digital-Skills-Toolkit.aspx accessed 20 April 2025.