Photo © ILO Pakistan/Shahlaan GL

FACTSHEET

DIGITAL
TRANSFORMATION

SITUATION OVERVIEW

Digital transformation means the integration of technological innovation in development to address socio-economic challenges. If aligned with human rights, digital transformation has the potential to advance human development, innovation, entrepreneurship, efficient public services, and social inclusion.

Over the last two decades, Pakistan has made progress on its digital transformation journey, with the rapid expansion of the mobile broadband network, and the introduction of the Digital Skills programme, tech start-ups, and digital service exports. It has developed legislative and policy measures to advance the Digital Pakistan Agenda and promote the information and communication technology (ICT) industry. These include the Digital Pakistan Policy 2018, the National Broadband Policy 2021, and the National Freelancing Facilitation Policy. Digitalization is underway in key sectors, including e-Health, e-Commerce, e-Justice, e-Agriculture, e-Energy, e-Education, FinTech, and the governance of data systems and registration.[1] If fully leveraged by 2030,

---

[1] Including the digital population census 2023, CRVS, and the Documentation Renewal and Information Verification Exercise (DRIVE) for the verification of Afghan refugees, the Global Anti-Money Laundering (goAML) system, the Human Trafficking Management Information System (HTMIS), the Case Management

KEY MESSAGES

The Government should be the steward of the digital agenda, leading cross-sectoral investment, coordination and regulation.

To accelerate digital transformation, a whole-of-society approach is needed to build ownership, support inclusive design, and mitigate risks.

Digital access should be prioritized by extending the coverage of fibre-optic cables. Leaving no one behind also means leaving no one offline.

Supportive fiscal policies are needed, and sector-specific fee burdens need to be removed to ensure the information technology (IT) sector's financial sustainability.

Integrated, coherent national digitalization strategies should be developed through social dialogue to address skills development in the demand and supply sides of the labour market.

Pakistan needs a national policy on data governance. Civil registration and vital statistics (CRVS) modules, particularly on birth and death registration, should be integrated into existing digital health systems. They may also be linked with NADRA's system through application programming interfaces (APIs).

---

and Monitoring System (CMMS), and the Database Management Information System (DBMIS)' for Balochistan's Rule of Law Roadmap.

digital technologies could create up to PKR9.7 trillion (US$59.7 billion) in economic value. This is equivalent to 19% of Pakistan's gross domestic product (GDP) in 2020.[2]

Pakistan's digital ecosystem faces challenges that prevent it from fully leveraging technology for development. Its rankings on digital evolution and readiness have improved very little in the past 20 years, resulting in a widening gulf with the rest of the world. It also lags behind the region on digital infrastructure and connectivity.[3] Despite rapid growth in mobile technology, Pakistan is held back by inadequate infrastructure, slow connectivity, a lack of skills, and a digital divide. Disparities exist between rural and urban areas, genders, and within cities depending on socio-economic profiles. While digital transformation brings opportunities for social inclusion, it also risks increasing the *exclusion* of people who are not digitally connected. Nearly half of Pakistan's population is disconnected from any kind of digital resource.[4] Only 24% of adults are capable of browsing the internet. Women are 33% less likely to own mobile phones and 38% less likely to use mobile internet services than men.[5] While digital financial services are emerging, fewer than 5% of merchants accept digital payments.

Digital connectivity requires seamless links between cyberspace and the physical parts of networks. Internet penetration has risen to 49%, but almost half the market relies on 2G network with an average download speed of 14.9 Mbps – below the South Asian average of 17.3 Mbps. This is the root cause of slow, limited internet in Pakistan. Only 9% of cell towers are connected to fibre-optic cables,

compared to the global benchmark of 40% and regional comparisons of 80% in Malaysia and 90% in Thailand. Pakistani ICT service exports and tech start-up funding are growing, but there is an increasingly noticeable human resource gap in the sector.

A whole-of-government approach to digital services is missing in Pakistan. This is a major challenge, because a national digital transformation agenda is vital for a successful digital transformation journey. It allows the Government to mandate its agencies to develop digital expertise, invest in and deliver a whole-of-government approach, and engage actors from across society. There is also a lack of understanding of the opportunities digital transformation offers, resulting in ineffective policy formulation. A whole-of-society approach is missing, which would incorporate viewpoints from a range of actors on how digital technologies and initiatives should be procured, implemented and governed.[6]

Pakistan does not have a national policy on data governance. This causes unnecessary procedural delays, both in public policy formulation and service delivery.[7] While the 2023 population census was digital, the use of technology in other data sources – like regular household surveys and registration systems – is needed. Digitalization is especially important for civil registration. Pakistan has among the highest number of unregistered children in South Asia and globally, making it difficult to achieve Sustainable Development Goal (SDG) target 16.9. There is confusion about the division of roles between local governments and the National Database and Registration Authority (NADRA) on civil registration. There is also a lack of willingness, and potentially of feasibility, to link databases across institutions.

[2] Access Partnership, "Unlocking Pakistan's PKR9.7-trillion digital potential by 2030", 29 October 2021.
[3] Portulans Institute, "Network Readiness Index: Pakistan", 2022; UN, "E-Government Development Index (EGDI)", 2022; Huawei, "Global Connectivity Index 2020", 2020.
[4] Digital Rights Monitor, "Nearly Half of Pakistan's Population Lacks Internet Access: Study", 8 June 2022.
[5] GSMA, *The Mobile Gender Gap Report 2022*, 2022.

[6] Digital Impact Alliance (DIAL), "Accelerating National Digital Transformation", *Leadership Series Brief No. 1*, 2020.
[7] **Rasool**, B. and **A. Malik, "**The 8 Challenges in Pakistan's Digital Transformation Journey", *The Lakshmi Mittal and Family, South Asia Institute, Harvard University*, 9 September 2020.

POLICY OPTIONS

The following actions can help accelerate digital transformation in Pakistan.

The Government of Pakistan should be the steward of the digital agenda, leading cross-sectoral investment and coordination. This involves a whole-of-government approach to digital services. Given the cross-cutting nature of digitalization, and the coordination required, the highest government offices should lead the digitalization agenda across the federal and provincial levels, and aspects beyond internal government operations.

Adopt a whole-of-society approach. The Government should support and invest in this approach, paired with capacity building, to enable civil society, the media, academia, the private sector, and citizens to participate in priority-setting, stakeholder selection, and the implementation strategy of the Digital Pakistan Agenda. The whole-of-society approach should be used beyond digital transformation as a way to achieve the 2030 Agenda for Sustainable Development. One option is following the example of Bangladesh, where civil society has created The Citizen's Platform for SDGs. This generates knowledge to support SDG implementation and has engaged the Government and private sector on sustainable development issues, leading to collaboration.[8]

Improve digital connectivity and digital infrastructure. Better infrastructure-related services are as important as building infrastructure. The Government should work to install, utilize and expand existing infrastructure to provide broadband services in disconnected areas.[9] To increase the affordability of these services, market growth

should be encouraged at the policy level.[10] Digital access should be prioritized by extending fibre-optic cables and replacing backhaul radios – that predominate in Pakistan as they are inexpensive, but have limited information-carrying capacity – with them.[11]

Bridge digital divides and reduce inequalities. A framework is needed to bridge the digital divide and promote the digital inclusion of disadvantaged groups, including rural residents, women, girls, persons with disabilities, refugees, asylum seekers, stateless persons and those at risk of statelessness. The four key dimensions of such a framework are access, affordability, skills, and awareness/relevance of online content.[12] This should be developed with stakeholders and universally agreed. Targeted measures are also needed to address the barriers that vulnerable groups face in overcoming the digital divide.

Improve public service delivery. Since technology can disrupt the status quo, it triggers opposition and can be ineffectively executed. Thus, digital transformation needs careful management.[13] The Government should take advantage of modern technologies – like machine learning, data analytics and artificial intelligence – to improve the competence of public departments, facilitate economic documentation and increase tax revenues. These changes will require developing staff skills and redesigning roles. The Philippines is a good example where public service delivery was digitized under the e-Government Master Plan.

Integrate digital skills. There is a need to develop integrated national digitalization strategies through social dialogue to address

[8] Digital Impact Alliance (DIAL), "Accelerating National Digital Transformation", *Leadership Series Brief No. 1*, 2020.
[9] Rana, S., H. Kamran and S. Khan, *Towards Meaningful Connectivity*, Media Matters for Democracy, 2021.

[10] Digital Rights Monitor, "Nearly Half of Pakistan's Population Lacks Internet Access: Study", 8 June 2022.
[11] Iftikhar, P., "Pakistan's digital infrastructure must get better", *The Express Tribune*, 9 August 2020.
[12] UNDESA, "Leveraging digital technologies for social inclusion", Policy Brief No. 92, February 2021.
[13] Rasool, B. and A. Malik, "The 8 Challenges in Pakistan's Digital Transformation Journey", 9 September 2020.

skills development on the demand and supply sides of the labour market.[14] Digital skills need to be built for employment and inclusion.

Improve the registration system and governance of existing data sources. Pakistan needs a national policy on data governance. This requires data collection, analysis and tracking on the digital transformation to inform policy, including gender-disaggregated data. CRVS modules – particularly birth and death registration – should be integrated into existing digital health systems and linked with NADRA's system through application programming interfaces (APIs). A model set of regulations should be developed to guide the provinces on ensuring consistency and standardization in CRVS processes. This will lay the foundation for a unified CRVS system . All databases should be synchronized.

Enhance the export of digital services.[15] This requires bridging the human resource gap in the sector, creating an enabling environment for investment in local start-ups, addressing the availability and affordability of ICT services, and providing cross-cutting technology and ancillary frameworks. Sectoral policies should be aligned with the digitalization agenda.[16] Digitalization needs to be expanded to all registries and linked with NADRA, while ensuring interoperability, security, and other features of efficient system integration. Technology clusters and platforms should be formed so that ICT stakeholders can interact, especially in smaller cities.

Promote supportive fiscal policies and digital financial services. Policy and regulatory predictability are needed to attract foreign direct investment to the ICT sector, and reduce risks and uncertainty. The Government should promote digital payment methods and encourage international e-commerce companies to set up offices in Pakistan. Indonesia did so, and now its e-commerce market size has grown to US$30 billion.

STAKEHOLDERS & CHANGE-MAKERS

Three categories need to be engaged:[17]

1. **Affected parties** (the Board of Investment, Ministry of Information Technology and Telecommunications, National Information Technology Board, provincial IT Departments/Boards and line departments, NADRA, local governments, Universal Service Fund, *E-Khidmat* Centres in Punjab and Citizen Facilitation Centres in Khyber Pakhtunkhwa).

2. **Other interested parties** (Council of Common Interests, Pakistan Telecommunication Authority, Punjab Safe Cities Authority, National Commission for Personal Data Protection, NGOs (like Bolo Bhi, Beti, Aurat Foundation, AGAHI, Digital Rights Foundation, Rozan, Media Matters for Democracy, NRSP, SRSP, PRSP, etc.), academia (especially university computer science or engineering departments), Chambers of Commerce, Ministry of Commerce, Federal Investigation Agency, Prime Minister's IT and Telecom Task Force, Pakistan Software Association, International Telecommunication Union, the private sector, and the media).

3. **Disadvantaged/vulnerable individuals or groups** (people with low e-literacy levels, persons with disabilities, women and girls (especially those with low or no literacy), people in remote or rural areas, older persons, children, religious and ethnic minorities, transgender people, low-income communities, migrants, refugees, asylum seekers, stateless persons and those at risk of statelessness).

---

[14] ILO, "Digitalization of TVET and skills development", Policy Brief, November 2021.
[15] The State Bank of Pakistan addresses this in its recent report.
[16] State Bank of Pakistan, "Special Section: Pakistan's Growing IT Exports and Tech Startups: Opportunities and Challenges", in *State Bank of Pakistan Half Year Report 2022–23*, 2023.

[17] As identified by the Ministry of Information Technology and Telecommunication under World Bank-financed projects. See: World Bank, *Stakeholder Engagement Plan (SEP)*, DEEP: Digital Economy Enhancement Project, P173663, 26 August 2022.