

The Barriers of Digital Transformation of State-Owned Enterprises in Pakistan

Introduction

State-Owned Enterprises (SOEs) are business entities wholly or partially owned or controlled by national or local governments. They perform commercial functions as well as provide essential public services. According to the Annual Aggregate Report on SOEs (2025), published by the Finance Division, Pakistani SOEs operate across eight core sectors: financial services; oil and gas; power; infrastructure and transport, including ICT; manufacturing; mining and engineering; industrial estate development; and trading, marketing and miscellaneous activities.

The report also highlights the limited adoption of digital technologies across several SOEs. Continued reliance on manual systems contributes to delays in decision-making, reporting errors and inadequate risk monitoring. These weaknesses undermine operational efficiency, productivity and transparency across the SOE sector.

The Pakistan Digital Authority (PDA) projects that digital transformation could generate economic value of up to USD 80 billion by 2030. However, achieving this potential will depend on timely implementation, effective coordination among government departments and the integration of existing digital platforms.

Digital Transformation Challenges Faced by SOEs in Pakistan

Digital transformation offers significant benefits, including paperless operations, faster processing, improved information management and reduced manual intervention. However, several institutional, financial and technical barriers continue to impede its adoption across Pakistan's SOEs.

Resistance to Change and Organisational Culture

Digital transformation involves more than introducing new software or automating existing processes; it requires fundamental changes in organisational practices and working methods. Many public sector employees remain accustomed to paper-based documentation, manual data entry and extensive administrative procedures.

Consequently, the introduction of digital systems can disrupt established practices and create resistance to change. Greater transparency, accountability and traceability may also be perceived as challenges to existing work cultures, making employees reluctant to adopt technology-driven processes.



Faraz Memon, FCMA
Director, Risk Management & Costing
Patel Hospital, Karachi

Limited Availability of Funds

As government-owned entities, many SOEs must follow formal approval procedures to secure funding for digital transformation initiatives. Lengthy administrative processes and delays in fund allocation can hinder project execution and implementation.

Furthermore, funds are not always released according to predetermined schedules. This creates difficulties for technology partners and vendors in meeting project timelines, maintaining resources and ensuring continuity of service.

Lack of Digital Literacy

Limited digital skills among employees remain a significant obstacle to technology adoption. Many SOE employees lack the competencies required to operate modern digital systems, while insufficient training and professional development further widen the skills gap.

The challenge also extends to senior management, where limited understanding of digital technologies can affect project evaluation, planning and decision-making. Without sustained investment in capacity building, employees may continue relying on traditional practices, while outdated IT systems remain unaddressed.

Frequent Changes in Leadership

Frequent changes in senior management can disrupt the continuity of digital transformation projects. In Pakistan, institutional initiatives are sometimes delayed, revised or abandoned following changes in leadership, resulting in the loss of resources and progress.

Successful implementation requires consistent leadership commitment, clear project ownership and regular performance monitoring.

Management must oversee the entire process, from planning through implementation and evaluation. Without defined milestones and performance indicators, projects risk losing direction and may be discontinued before delivering their intended benefits.

Outdated Infrastructure and Energy Constraints

Digital transformation depends on reliable IT infrastructure and an uninterrupted power supply. However, outdated hardware, inadequate storage capacity, unsupported operating systems and limited network capabilities continue to constrain the technological readiness of several SOEs.

Frequent power outages and load-shedding further disrupt digital operations, reduce productivity and delay automation. Upgrading existing infrastructure and ensuring reliable energy supplies are therefore essential prerequisites for large-scale digital transformation.

Inadequate Post-Implementation Maintenance and Support

Digital transformation does not end with the installation of software or the launch of a digital platform. Systems require regular maintenance, security updates, technical support and continuous improvements to remain effective.

However, many implemented projects face difficulties in securing adequate post-deployment support. Procurement and contracting procedures may not sufficiently distinguish software development and maintenance from conventional service contracts, creating challenges in retaining specialised technical expertise.

Software maintenance also requires specialised skills and an understanding of the systems' underlying architecture. Without dedicated support arrangements and clearly defined service standards, technical issues can remain unresolved and undermine the long-term value of digital investments.

Absence of a Comprehensive Data Governance Framework

Effective digital transformation requires reliable data management and coordination across departments. However, limited data sharing and inconsistent information management within SOEs can result in duplication, miscommunication and delays in administrative processes.

The absence of clearly defined data governance arrangements also creates uncertainty regarding data storage, backup, access, sharing and anonymisation. A comprehensive framework is essential to ensure data security, consistency and interoperability across government institutions.



Limited Integration of Digital Public Services

Although numerous digital platforms operate in Pakistan, many public services remain fragmented across separate applications and systems. Citizens often have to access multiple platforms to complete different transactions, while disconnected databases restrict the smooth exchange of information between institutions.

This fragmentation creates inconvenience for users and limits the effectiveness of digital public services. Greater integration is required to provide seamless access to government services through interoperable platforms.

Digital Transformation Objectives for SOEs under the Digital Pakistan Policy

The Government of Pakistan introduced the Digital Pakistan Policy to expand access to affordable, reliable and accessible ICT services. It promotes the adoption of emerging technologies to support socio-economic development, strengthen public service delivery and transform economic activities.

The policy's vision is:

> **"To become a strategic enabler for an accelerated digitisation ecosystem to expand the knowledge-based economy and spur socio-economic growth."**

The policy identifies several priorities relevant to the digital transformation of SOEs.

- **E-Governance Enablement**

The policy encourages SOEs to adopt ICT solutions to improve public service delivery, operational efficiency and transparency.



Key priorities include developing digital platforms, standardising operating procedures and integrating electronic documentation and e-procurement systems into institutional processes.

- **Integrated Enterprise Architecture**

The policy promotes an integrated enterprise architecture through the alignment of national databases, digital platforms and institutional software systems. This approach is intended to facilitate seamless data sharing, strengthen knowledge management and improve coordination across public sector organisations.

- **Digital Skills and Change Management**

Recognising the importance of human capital, the policy emphasises the development of digital skills and effective change management.

It encourages the placement of qualified IT professionals across SOEs, alongside structured training and capacity-building programmes.

These initiatives aim to equip employees with the skills required to operate digital systems, adapt to technological developments and support a more innovative organisational culture.

- **Transparency and Accountability**

The policy emphasises the use of digital tools to establish transparent, traceable and accountable institutional processes. Key measures include digital audit trails, performance dashboards and online reporting systems.

These mechanisms can strengthen monitoring, clarify responsibility for assigned tasks and improve public access to institutional performance information, thereby reinforcing trust in government institutions.

Conclusion

Digital transformation presents a significant opportunity to improve the efficiency, productivity and transparency of Pakistan's SOEs. However, its success depends on addressing persistent barriers, including resistance to change, funding delays, limited digital skills, leadership discontinuity, outdated infrastructure and inadequate maintenance arrangements. Fragmented digital platforms and weak data governance further restrict progress.

The Digital Pakistan Policy provides a framework for addressing these challenges through integrated enterprise systems, workforce development, e-governance and stronger accountability mechanisms. Nevertheless, policy objectives must translate into sustained institutional action. Given the strategic importance of SOEs to Pakistan's economy, a coordinated and adequately funded digital transformation strategy is essential to modernise their operations, strengthen public service delivery and realise the potential economic gains from digitalisation.

References

- https://www.pda.gov.pk/
- https://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY%2822-05-2018%29.pdf
- https://www.phoneworld.com.pk/pakistan-80-billion-digital-transformation-economic-gains-2030/
- https://mittalsouthasiainstitute.harvard.edu/2020/09/8-challenges-pakistans-digital-transformation-journey/

About the Author: *The writer is a Fellow Member of ICMA currently serves as Director Risk Management & Costing at Patel Hospital, Karachi. He is also acting as a Member Finance Committee of Patel Hospital. He possesses over 24 years of experience across diverse industries like hospital and healthcare, food and retail, and the garment sector. His areas of expertise include business transformation and automation, risk management, internal controls, performance analysis, financial management, management accounting, budgeting and costing, etc. He is pursuing an MBA (Healthcare) from the Institute of Business & Health at the Dow University of Health Sciences.*