

Realising Pakistan's Aspiration to become a Digital Nation

August 2024





The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

For more information, please visit the GSMA corporate website at www.gsma.com

Follow the GSMA: @GSMA

GSMA[™] Intelligence

GSMA Intelligence is the definitive source of global mobile operator data, analysis and forecasts, and publisher of authoritative industry reports and research. Our data covers every operator group, network and MVNO in every country worldwide – from Afghanistan to Zimbabwe. It is the most accurate and complete set of industry metrics available, comprising tens of millions of individual data points, updated daily.

GSMA Intelligence is relied on by leading operators, vendors, regulators, financial institutions and third-party industry players, to support strategic decision-making and long-term investment planning. The data is used as an industry reference point and is frequently cited by the media and by the industry itself.

Our team of analysts and experts produce regular thought-leading research reports across a range of industry topics.

www.gsmaintelligence.com

info@gsmaintelligence.com

Authors

Kenechi Okeleke, Senior Director, GSMA Intelligence

Jeanette Whyte, Head of Public Policy APAC, GSMA

Syed Khairulazrin, APAC Policy Director, GSMA

Saira Faisal Syed, Country Lead Digital Transformation, Pakistan, GSMA

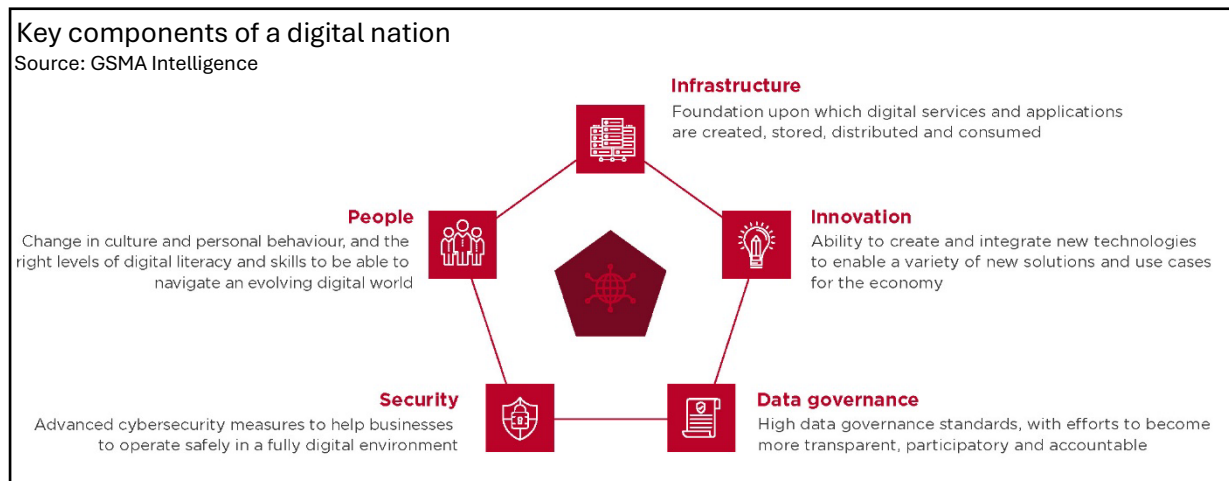
Published August 2024

© 2024 - GSMA



1. Context: what makes a digital nation?

Countries around the world and in Asia Pacific, including Pakistan, have stepped up efforts to become digital nations. This entails integrating digital technologies and services into every sector of the economy as a means of building resilient economies with finite resources and achieving sustainable and inclusive economic growth. GSMA Intelligence has identified five key components that must be in place for countries to realise their digital nation aspirations. These are highlighted in the figure below.



These components are interconnected and must be developed together to avoid potentially costly gaps and delays in the implementation of digitalisation initiatives. For example, a lack of adequate infrastructure could offset efforts to support innovation, while a lack of trust due to poor data governance and security could delay the full use of infrastructure investments. It is important to note that developing the components of a digital nation collectively requires significant investments from both the public and private sectors, particularly for capital intensive projects, such as the deployment of next generation telecoms infrastructure, as well as enabling policies and regulations to ensure the sustainability of those investments.

2. Assessing Pakistan's digital nation aspirations

Digital Pakistan is the flagship initiative of the government of Pakistan to expand the knowledge-based economy and spur socioeconomic growth using digital technologies. Launched in 2018, the overarching goal of the initiative is to promote connectivity, improve digital infrastructure, increase investments in digital skills, and promote innovation and tech entrepreneurship. Over the years, the government of Pakistan has introduced various policies and initiatives to support the realisation of Digital Pakistan and, by extension, set the country on the path to becoming a digital nation. The table below maps the contribution of these policies and initiatives to the development of the components of a digital nation in Pakistan.

Mapping government policies and initiatives to the components of a digital nation

Infrastructure	<p>Pakistan is taking strides towards digital transformation with the approval of the Digital Nation Pakistan Act 2024. This legislation lays the groundwork for a digitally empowered nation by establishing two crucial bodies:</p> <ul style="list-style-type: none"> • National Digital Commission: As the policy-making hub, this commission, chaired by the Prime Minister and comprising federal and provincial representatives • Pakistan Digital Authority: This operational arm will be responsible for translating the commission's policies into action. <p>While the potential benefits of this digital transformation are immense, challenges in infrastructure development must be addressed to ensure a successful transition.¹</p>
Innovation	<p>The government has been a driving force behind Pakistan’s startup ecosystem, with initiatives such as the Pakistan Startup Act and the establishment of incubators and accelerators across the country, providing an enabling environment for startups.</p>
Data Governance	<p>The Prevention of Electronic Crimes Act 2016 is currently the primary legislation that provides a legal framework in relation to various kinds of electronic crimes and extends to unauthorized access to personal data.</p> <p>After a four-year consultation period, the government is in the final stages of developing the Personal Data Protection Bill (introduced in 2021). The bill is anticipated to be presented to the cabinet for approval soon.</p>
Security	<p>The National Cyber Crime Policy 2021 was approved by parliament in July 2021. It provides objectives aimed at addressing cybersecurity challenges and risk factors prevalent in Pakistan.</p> <p>Computer Emergency Response Teams (CERTs)² have been established to address the emerging needs of security and safety with increased digitalisation</p>
People	<p>Much of the government’s focus is on eliminating the digital skills barrier for unconnected populations. There is an opportunity to drive skills trainings at both the academic and professional development levels to create a digital-ready workforce.</p>

Despite these developments, current realities on the ground suggest that that the vision of Digital Pakistan may not be achieved, thereby slowing the country’s progress towards becoming a digital nation. For example, Pakistan has witnessed rapid expansion in mobile broadband networks over the last decade, with 81% of the adult population now residing in areas covered by 3G or 4G networks, compared to just 15% in 2010, however, only 23% of the population currently subscribe to mobile internet services.³ This indicates a gap in actual usage versus availability and underlines the scale of the challenge to bring unconnected people online.

¹ <https://www.pakistantoday.com.pk/2024/06/11/cabinet-thumbs-up-legislation-to-set-up-digital-commission-pakistan-digital-authority/>

² <https://pkcert.gov.pk/>

³ The Mobile Economy Asia Pacific 2024, GSMA, 2024; Making Digital Pakistan a Reality, GSMAi, 2022

This challenge is further exacerbated by recent macroeconomic trends. Pakistan experienced an annual inflation rate exceeding 27% in August 2022⁴, the highest in 47 years, driven by flood-induced disruptions to food supply chains and challenging global monetary conditions. This inflation negatively affects consumer spending, including on telecom services, and increases operating costs due to currency depreciation and higher energy prices, impacting the industry's economic health.

As the primary providers of connectivity in Pakistan, the mobile industry plays a crucial role in driving digital transformation and accelerating progress on the Digital Pakistan vision. To this end, the financial sustainability of the telecom industry is critical the realisation of Pakistan's digital nation aspirations. With the average revenue per user (ARPU) in Pakistan's mobile sector one of the lowest globally at below \$1, compared to the global average of \$8, there is urgent need for policy reforms to ensure continuous growth, stability, and long-term sustainability of the mobile industry.

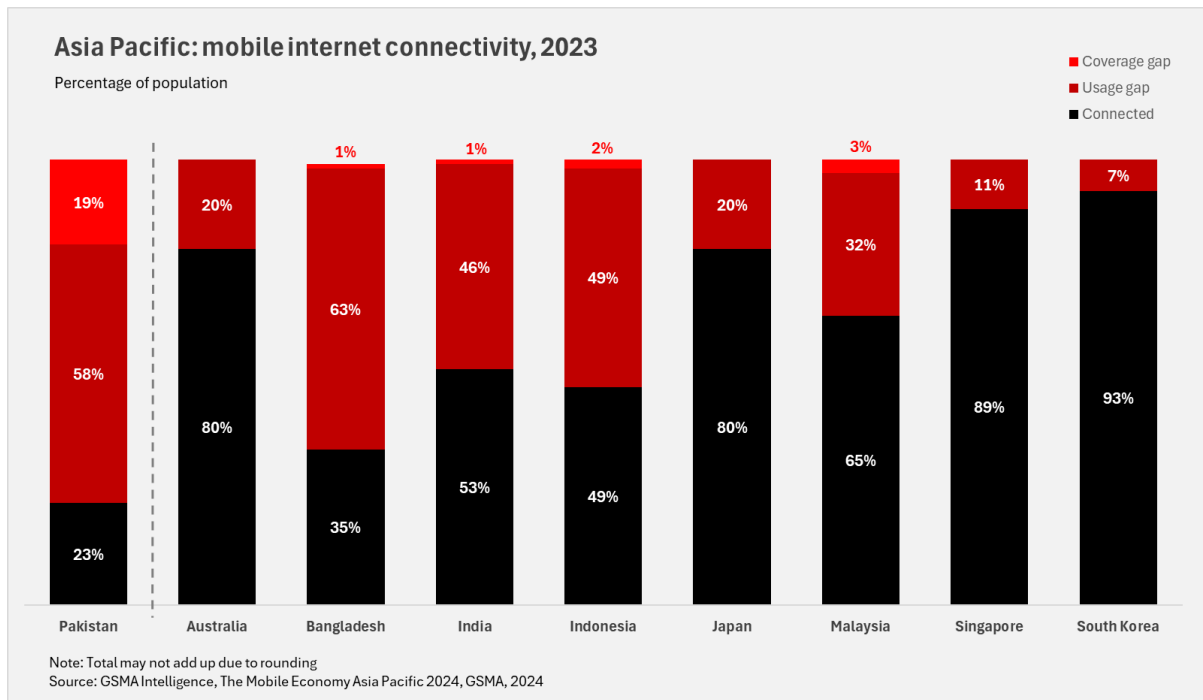
3. Accelerating progress towards a digital nation: spotlight on Infrastructure

Digital infrastructure is the bedrock of Pakistan's digital nation and the foundation upon which other components are built. Connectivity is at the centre of digital infrastructure, with high-performance fixed and mobile networks connecting people and a growing number of 'things.'

Pakistan has witnessed rapid expansion in mobile broadband networks. Around 81% of the adult population now reside in areas covered by 3G or 4G networks, a substantial increase from just 15% in 2010. Smartphone adoption has also risen significantly, with 63% of the population owning smartphones by the end of 2023. However, only 23% of the population subscribe to mobile internet services, leaving a high usage gap⁵ of 58% (see figure below). Key adoption barriers include lack of affordability, particularly for devices, and lack of digital skills, particularly among older citizens.

⁴ Inflation is 12.57% in June 2024 (year on year) based on press release by Pakistan Bureau of Statistics.

⁵ Proportion of the population that are covered by mobile internet networks but have not yet subscribed to the service.



In Pakistan today, 4G is dominant technology, accounting for two-thirds of the total number of mobile connections. However, with around a third of mobile users still on legacy networks, predominantly 2G (~30% of mobile connections as of June 2024), the immediate priority for the government and the mobile industry should be on transitioning existing legacy users as well as connecting new users to 4G networks. This involves improving the business case for the expansion of 4G networks to underserved areas and improving the affordability of 4G-enabled devices for consumers across all income brackets.

Beyond that, moving towards 5G will require further improvements and investments to ensure high-quality services and meet sophisticated specifications, especially in remote areas. This will also require clear and transparent regulations which are crucial for the successful deployment of 5G services. In addition, right of way policy was also launched to facilitate deployment of fibre networks that can later support adoption of 5G services but faces issues with its implementation.

A potential approach to fostering 5G expansion involves targeted rollouts accompanied by incentives like tax breaks and spectrum fee waivers for a defined and mutually agreed-upon number of years determined through stakeholder engagement. Policymakers in Pakistan have an opportunity to accelerate progress with Digital Pakistan by taking action to support further development of 4G and lay the foundation for the 5G era. This can be done by implementing vital reforms to improve the financial health of the overall telecoms sector and the ability of industry players to invest and innovate. Below are key areas that require urgent attention in Pakistan.

Call to action: steps to accelerate the development of digital infrastructure in Pakistan

Review taxation on telecoms providers and services - Taxes on service providers, consumer devices and services in Pakistan are among the highest in the world. These taxes, some of which are sector-specific, often impact network investment affordability and have a disproportionate impact on the most vulnerable. Policymakers should gradually eliminate the 15% Advance Income Tax (AIT or withholding tax) on essential telecoms services and the 19.5% sales tax on mobile services, which create additional barriers to digital inclusion for low-income households.

The recently introduced Pakistan Finance Bill imposes a sales tax on low-cost mobile handsets and a steep advance tax on telecom services for specific taxpayers. Additionally, it mandates mobile network operators to disconnect services for non-compliant users.

To mitigate the potential harm to digital inclusion and broader access, it is suggested that the sales tax on affordable mobile phones be removed. Furthermore, reducing the advance tax on telecom services could encourage wider usage. By implementing incentives and educational programs, the government can foster voluntary tax compliance. Finally, exploring alternative revenue sources can support the digital economy's growth without compromising essential services.

Implement optimal spectrum licensing and roadmap - Pakistan is planning a 5G spectrum auction scheduled to be completed by early 2025. Mobile operators in Pakistan currently have around 270 MHz of licensed spectrum and the potential addition of new spectrum bands such as 700 MHz, 2.3 GHz, 2.6 GHz, and 3.5 GHz are necessary to support the expansion of network capacity and the deployment of 5G. Yet spectrum cost in Pakistan is already high and ARPU have been declining. Thus, it is imperative that a rational approach to pricing is adopted for the upcoming auction so that the total cost of spectrum is sustainable and operators have the right incentives to invest in network rollout which delivers affordable connectivity to more consumers and lower the broadband usage gap and the digital divide.

Additionally, denominating spectrum costs in US dollars exposes the operators to significant currency devaluation risk, given that the depreciation of the local currency adds to higher spectrum fees paid in US dollars. The unpredictable currency value impacts business plans and eventually affects company revenues and the retail price for consumers. As a result, policymakers should consider denominating spectrum payments in local currency, which would provide greater certainty for operators, given that revenue is also earned in local currency.

Adopt a framework for financing smartphones for all - Smartphone uptake across and within regions and markets is uneven, which risks leaving large population groups without the means to get online. Smartphones are one of the most used devices to access the internet but are not affordable to everyone. Beyond income levels, several supply and demand factors can influence smartphone affordability, including manufacturing costs influenced by factors such as import duties, taxes and transportation charges, and inadequate distribution channels in rural areas.

In Pakistan, the government has introduced a smartphone financing policy (yet to be approved from cabinet) to improve access to smartphones, particularly for lower-income groups. The policy supports instalment-based financing options from operators and third parties, with protections against defaults, to make smartphones more affordable and accessible. These

initiatives aim to increase smartphone penetration and digital inclusion, especially for those at the lower end of the socioeconomic spectrum. However, much more needs to be done to further increase adoption and affordability across all regions and demographics.

Consider the impact of service restrictions order - Service restrictions order (SRO) has negative impact on citizens and businesses in Pakistan. The imposition of these restrictions violates individuals' rights, as outlined in international human rights conventions, including those integral to democratic processes and elections such as freedom of expression, access to information and privacy. Prolonged restrictions can also have far-reaching negative effects on citizens' health, education social and economic welfare, and damage trust. In addition to the harm imposed on businesses, restrictions can disrupt credit and investment plans, damaging the country's reputation for managing the economy and foreign investment.

The government should instead support initiatives like "Always-on Network Service"(AONS), which enables accessibility for business-critical mobile applications such as financial and payment applications and emergency services in data-restricted geographical areas. This initiative, which was developed by GSMA and mobile operators in Pakistan, has undergone several successful trials in controlled settings for regulatory authorities. Recently, Jazz demonstrated the AONS project during a network shutdown for Moharram. Even with voice and data services blocked, JazzCash continued to operate, enabling over 5,000 users to complete transactions.

Take measures to ease short-term pressures - In view of the challenging operational environment, including forex and inflationary headwinds, policymakers should consider the following measures to mitigate economic pressures and spur long-term planning:

- Review and freeze the forex rate for license-fee payment to mitigate currency risk and remove uncertainty in business planning.
- Stagger license-fee instalments over 10 years to provide the much-needed fiscal space and ease cash-flow pressures.
- Review policy-mandated levies, such as universal service funds (USFs) and research and development (R&D) contributions and consider a moratorium on rollout and quality-of-service obligations.

4. Taking a whole-of government approach to accelerate progress

A whole-of-government approach (WGA) brings together multiple stakeholders and diverse resources to provide a common solution to a particular issue. This principle is especially important in a digital nation, given the increasing integration of digital technologies across all industries and verticals, and the need for holistic and cohesive planning and implementation of digitalisation initiatives. The alternative is a disjointed and fragmented approach that will at best be ineffective and costly, and at worst dangerous on numerous grounds, including national security and social cohesion.

As Pakistan reviews its Digital Pakistan Vision and the country welcomes new leadership, the need for a WGA in efforts to build a digital nation has never been more urgent. It would help the country accelerate progress with the components of a digital nation and achieve its short- and long-term digital transformation plans. This requires leadership from the highest level of

government, cross ministry collaboration, extensive engagement with private sector stakeholders, and cooperation with international partners. Below are five key areas that Pakistan should implement the principles of WGA to realise the potential of emerging technologies and transition to a digital nation:

- **Leadership:** central to the effective formulation and implementation of policies and initiatives on emerging technologies, considering their far-reaching impact.
- **Public-private collaboration:** an integrated approach that involves strategic investments, policy reforms, and extensive collaboration between the government, telecom operators, and other stakeholders.
- **International cooperation:** help minimise the risk of exacerbating the significant digital advancement gap among countries in Asia Pacific.
- **Open data:** accessible, reliable, and timely availability of data will be crucial to train AI models.
- **Impact mitigation:** essential to address concerns around the potential impact (real or perceived) of emerging technologies.

Encouragingly, the government has demonstrated its commitment to digital transformation through collaboration with other stakeholders, as evidenced by high-level meetings with key industry players. These collaborations aim to enhance digital infrastructure, promote innovative services, and support the adoption of digital solutions. Events like the “Smartphone 4 All” initiative, organised in collaboration with the Ministry of Information Technology and Telecommunication (MoITT) and GSMA, exemplify successful WGA around public-private collaboration. As Pakistan continues on the path to a digital nation, more of such collaborations across the digital ecosystem and with international partners will be required to sustain progress.

GSMA

1 Angel Lane
London EC4R 3AB
United Kingdom

Tel: +44 (0)20 7356 0600

Fax: +44 (0)20 7356 0601