



Pakistan: progressing towards a fully fledged digital economy



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Minister's message

With the conviction to transform Pakistan into a “knowledge based economy”, the government is taking exemplary measures for early digital inclusion and timely adoption of cutting-edge technologies, leading to the socio-economic wellbeing of our people.

With 65% of the population aged between 15 and 40 years old, and an overwhelming internet adoption growth rate of 23% (on a YoY basis), our aim is to harness a 3-5% enhancement in GDP per capita over the next three years through digitalisation. To do so, the Ministry of IT & Telecom under the guidance of the Prime Minister, has unveiled its Digital Pakistan Vision for embracing a fully fledged digital economy.

As part of our digital transformation journey, the government is pursuing a multipronged implementation strategy. This will range from nascent policy interventions to create a harmonised regulatory environment to digital awareness and skills development programmes to harness a culture of indigenous research and innovation, both using multi-stakeholder consultations to support sectoral uplift. Moreover, for augmented, seamless and transparent delivery of government to government/business/citizen services, we are implementing a comprehensive smart government ecosystem, which is helping us to consolidate our resources and time to service delivery.

With a notion of “Internet for All”, the government is heavily investing in the enhancement of digital infrastructure in underserved areas nationwide, which has led to equitable sharing of opportunities and resources, paving the way for conducive economic growth.

While the government continues to invest in the enrichment of the digital ecosystem, it is equally imperative to gauge the impact of all such initiatives for streamlining our efforts. Therefore, I believe that this report from the GSMA is indeed an important milestone for critically assessing our direction and priorities in streamlining our efforts for the most optimal realisation of a fully fledged digital economy.

In the end, I would like to appreciate the GSMA for rising to this auspicious cause, making a much required effort by offering a panoramic overview of Pakistan’s digital economy and aiding us with some insightful recommendations in light of its global experiences, which will surely be fruitful for our future endeavours.

Let’s work together towards a digitally inclusive and “Better Pakistan”.

Sincerely!

Syed Amin Ul Haque

Federal Minister for IT & Telecom, Government of Islamic Republic of Pakistan

Foreword

Pakistan is arguably one of the biggest economic blindspots in the world.

With a population that, by some estimates, will pass 220 million in 2020, and more than 100 million Pakistanis under the age of 25, the country is well positioned to play a growing role in the global economy over the next decade.

However, to achieve its potential, it is imperative that Pakistan puts the fundamental building blocks in place: an enabling environment to create an ecosystem conducive for growth, supplemented by appropriate policies and regulation to accelerate and promote innovation. As has been exemplified by other economies in Asia Pacific in the recent past, there is no faster way to accelerate economic development than the holistic digitisation of the economy.

The good news is that Pakistan's public sector and private sector leadership is willing and able to take on this challenge; mobile is at the centre of Pakistan's national development plan. This GSMA report commendably fleshes out the size of the challenges to be faced and the opportunities inherent.

It is clear that Pakistan has to simplify access and digital connectivity, and reduce the coverage gap. More than half of mobile connections do not have active mobile broadband connections; we need to understand why. The reasons likely range from cost to socio-economic factors; we need to tackle those systematically. Additionally, while we are approaching 90 million unique subscribers, some basic hurdles need to be removed for the remaining Pakistanis. Handset prices need to be curtailed, while the government continues to explore ways to both reduce the tax burden on imports and drive local production. The right incentives across the board will be required to achieve this. The private sector also has a role to play, with some operators already offering instalment plans on low-cost handsets. If we are to truly start thinking of the internet as a fundamental right for all, the ecosystem needs to work together to make solving these issues a priority.

I am thankful to the GSMA for taking an important step towards articulating the needs for a Digital Pakistan, through publishing this report and look forward to collaborating with them on our shared mission of connected and digital societies. The recommendations listed in the report will certainly be given due consideration by the Government of Pakistan.

The vision of a truly Digital Pakistan can only be achieved if all of us – public and private sector organisations and agencies – work together to instigate a fundamental shift in mindset towards digitisation.

We believe Pakistan's time is now!

Tania Aidrus

Chief Digital Officer, Government of Pakistan



Executive summary

Mobile at the heart of Pakistan's digitisation journey

- Digital economies are multi-faceted constructs: high-speed internet access, digital identity frameworks and multi-sided platforms provide the foundations for effective digital citizenship, rich digital lifestyles and global digital commerce. Mobile is at the centre of Pakistan's national development plan and its progression along the digital society path, helping to close connectivity gaps, increase financial inclusion and sustainably transform verticals as part of the Fourth Industrial Revolution (or "Industry 4.0").
- The importance of the mobile sector to Pakistan is significant and growing. It is a vital contributor to the economy and is redefining the way individuals, businesses and state bodies function and interact. With decelerating GDP growth compounded by a rising population, the jobs, taxes and productivity gains generated by the digital ecosystem will be pivotal to supporting the health of Pakistan's economy and society moving forward.

A market of potential but an imperative for change

- Pakistan's mobile market has experienced rapid development since the turn of the century; however, the pervasion and widespread consumption of advanced technology and resulting digital services have yet to fully materialise. On certain telecoms metrics Pakistan lags behind its regional peers, some of which are similarly striving to overcome poverty, political crises and conflict. As neighbouring markets accelerate digitisation programmes, keeping pace requires that Pakistan does more to successfully exploit its demographic advantages, including mobilising its vast – and increasingly tech-savvy – youth population.
- Having dedicated efforts to economic stability, Prime Minister Imran Khan has now committed the government's full attention to the 2017 Digital Pakistan policy. This will focus on swiftly implementing transparent e-government services, digitising industries, empowering specific demographics and improving the country's telecoms landscape. The subsequent 2019 initiative provides the spark and mandate for change, but structural transformation will not be instantaneous, and government departments must be held accountable for driving forward the policy agenda.

Policy key to fulfilling digital objectives

- To achieve digital ambitions and unleash the potential of the mobile economy, the foremost role of the government must be to broaden access to high-quality mobile broadband networks, affordable services and smartphones. Fair and predictable regimes for spectrum licensing and tax are central to this, serving as the catalyst to unlock the huge growth potential, investment and societal benefits associated with a better connected, modern Pakistan that ensures no one is left behind.
- Regulatory reforms in isolation will not be enough. Government agencies at all levels must cooperate internally and with private firms to instigate a shift in mindset, and establish a clear direction for accomplishing the Digital Pakistan vision. This will involve the development of robust policies that strengthen institutional frameworks, raise literacy rates, address inequalities, permit and protect cross-border data flows, and engender an innovation culture. With well-communicated messaging, together these will create a trusted environment in which citizens, tech start-ups and enterprises can flourish, jump-starting Pakistan's evolution into an advanced online economy and digital powerhouse in South Asia.





2.1 Fundamental components of a digital economy

A digital society comprises six main elements:

- **Connectivity** is the bedrock upon which the entire digital ecosystem is built. Its delivery relies on high-speed communications network infrastructure, which users expect to be secure and to safeguard data privacy. In Pakistan, digital services function primarily through mobile connectivity, with fixed broadband penetration relatively low.
- **Digital identity**, the other foundational pillar of a digital society, empowers users to participate fully online and reap the benefits. Mobiles and other connected devices can verify and authenticate unique identity intelligence, while minimising the risk of fraud and falsification without the need for physical engagement from the individual.
- **Platforms** are internet-enabled, multisided services with at least one side open to the public. They act as a conduit for digital activity for all types of agent, producing network effects (the more people that connect to the platform, the greater the value of the products or engagement they support).
- **Digital citizenship** refers to the efficient two-way interaction between governments and citizens, including the timely dissemination of public information online, and more sophisticated systems for collecting taxes and disbursing subsidies. Migrating public services to digital channels can help governments enhance productivity, save costs and better allocate resources.
- **Digital lifestyle** reflects the transformation of individuals' personal and professional lives. More people are able to use mobile broadband to work and learn remotely, access and communicate via social media, and enjoy augmented or virtual reality (AR/VR) games. Convenience and ease of use are key factors in supporting digital lifestyles, as is the availability of affordable smartphones.
- **Digital commerce** covers all forms of digital payments and interactions with financial services. Around the world, digital commerce has created new economic models and reshaped business processes, enabling more dynamic relationships between firms and consumers. It extends the addressable market for goods and services by overcoming physical barriers, particularly in countries where many still lack access to savings, credit and insurance products.¹

¹ Collaborative platforms for digital societies in Asia Pacific, GSMA Intelligence, 2019

Figure 1

Key components of a digital society



Digital Citizenship

Interaction between government, businesses and citizens specifically in the provision and use of public services over digital channels



Digital Lifestyle

Use of smart devices to access locally relevant content and non-core communication solutions that offer a more convenient experience



Digital Commerce

Simplifies a commerce activity by expanding access to marketplaces, replacing physical cash, and facilitating the processing and delivery of orders over digital channels

Platforms

Internet-enabled, multisided services that cater to both providers and users (e.g. consumers, vendors and governments)

Digital Identity

Proof of identity is a prerequisite to socio-economic development and essential to accessing basic services. Mobile technology is uniquely positioned to enable accessible and inclusive digital identity

Connectivity

Fast, reliable and continuous individual access to the internet is the foundation for the creation, distribution and consumption of digital applications and services

Source: GSMA

Sectoral digitisation is paramount to establishing a modern, technology-led economy and realising the benefits of the Fourth Industrial Revolution. In Pakistan, mobile connectivity is advancing the digital transformation of industries and facilitating the development of new solutions:

- **Agriculture** is a key sector within Pakistan’s economy, yet businesses often face challenges around manual processes in the value chain. In 2017, Jazz collaborated with the GSMA and Farmerline, to deploy last-mile digitisation solutions for the dairy market, which comprised farmer registration, milk procurement records and mobile payments via JazzCash.
- Branchless **banking** services (such as Telenor’s Easypaisa and Ufone’s UPaisa) have grown in scale, deepening financial inclusion in areas where banks have limited reach due to the high costs of physical expansion, and simplifying commercial transactions and remittances between individuals and organisations.
- In the **transport** sector, in November 2018, the National Highway Authority (NHA) launched an app featuring two tools – Journey Planning and Interactive Maps – to help commuters plan trips. There has also been rapid growth in the use of ride-hailing services such as Bykea, Careem and Uber, which are now available in major cities in Pakistan.
- In **education**, Telenor launched its Internet Champion (iChamp) programme in 2014 to equip students with a basic knowledge of mobile technology, and help improve their future prospects. The second iteration, iChamp2, was launched in 2017 – in collaboration with Facebook – to provide students with free access to an online portal featuring 17 educational websites, via a Telenor 4G connection.

2.2 The importance of mobile and ICT for national growth

Pakistan recorded an average annual GDP growth rate of more than 5% between 2014 and 2018.² The government is aiming for average growth of 5.4% over the 2018–2023 period, as part of the 12th Five-Year Development Plan, with its main interventions centred on further industrialisation, regional investment and expansion of trade.³

However, economic growth fell to a nine-year low of 3.3% in the financial year ending June 2019; the government has conceded that achieving the targeted 4% growth rate for the current year appears unlikely. With the population expanding at 2% each year, per-capita GDP is rising at an even more subdued tempo. The mobile ecosystem (and particularly operators) therefore plays an increasingly important role in GDP growth, job creation, tax generation and driving productivity gains across primary sectors such as agriculture and manufacturing. According to the International Telecommunication Union (ITU), a 10% increase in mobile broadband penetration in Asia Pacific leads to a 1.5% rise in GDP.⁴

Figure 2

The total economic contribution of the mobile ecosystem in Pakistan in 2018 was worth \$16.7 billion, equivalent to 5.4% of GDP

\$ billion, % GDP 2018



Source: GSMA Intelligence

By 2023, the economic contribution of the mobile industry in Pakistan will reach \$24 billion, accounting for 6.6% of GDP. The majority of this uplift will be driven by improved productivity and efficiency, particularly from the increased take-up of mobile internet services. Wider network coverage and the rapid adoption of new 4G services could further accelerate growth and, subsequently, the industry’s contribution to the economy.

² <https://data.worldbank.org/country/pakistan>

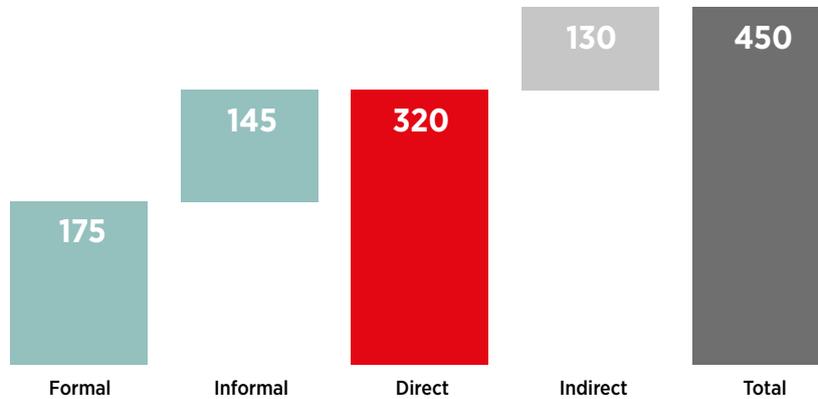
³ https://www.pc.gov.pk/web/press/get_press/285

⁴ Economic contribution of broadband, digitization and ICT regulation: Econometric modelling for Asia-Pacific, ITU, 2019

Figure 3

The mobile ecosystem in Pakistan directly and indirectly employed 450,000 people in 2018

Jobs (thousands)

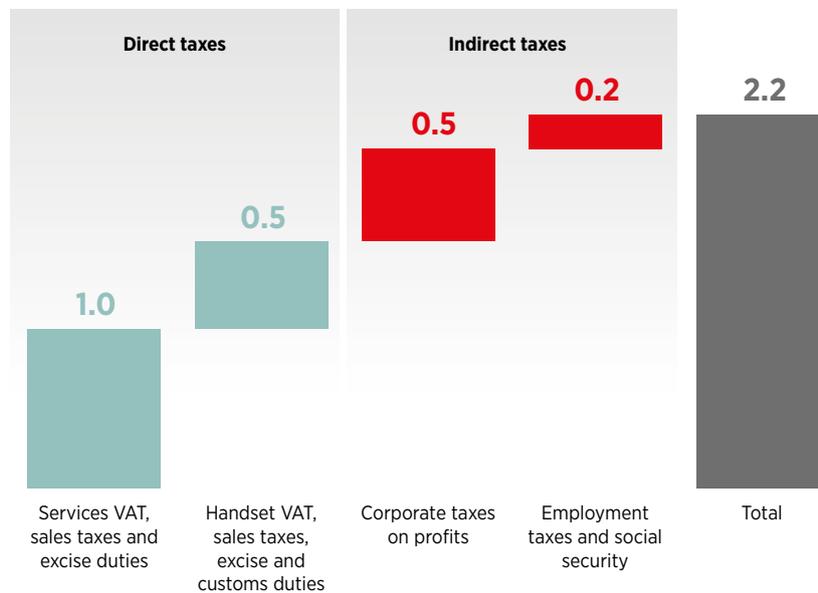


Source: GSMA Intelligence

Figure 4

In 2018, the mobile ecosystem in Pakistan contributed \$2.2 billion to public sector revenue

\$ billion



Source: GSMA Intelligence

Pakistan's mobile industry is also a key partner for the government in its efforts to realise the UN's Sustainable Development Goals (SDGs) and meet socioeconomic targets under the Pakistan Vision 2025 and the Digital Pakistan policy.⁵

⁵ The power of mobile to accelerate digital transformation in Pakistan, GSMA Intelligence, 2019

3. The mobile market in Pakistan: the story so far



Pakistan is an emerging mobile economy, with digital technologies beginning to transform the way people live and work. For a growing number of citizens, digital platforms have become the primary channel for accessing public and private services – a trend particularly evident in the retail, transport and banking sectors. However, Pakistan still has a sizeable ‘coverage gap’ and lags behind peers in certain areas; for example, mobile broadband⁶ accounts for less than five in 10 mobile connections. Pakistan also scored 39.8 in the GSMA’s latest Mobile Connectivity Index, compared to an average of 45.7 for South Asia.⁷

National and provincial policymakers and the Pakistan Telecommunication Authority (PTA) are playing a vital role in increasing access to high-quality connectivity and digital services, as well as cultivating inclusion, e-commerce and entrepreneurial spirit. Mobile will be at the core of Pakistan’s industrial development and the wider evolution to a knowledge-based economy characterised by an openness to trade, a fair tax regime and a supportive business environment. The outlook shows clear potential, but authorities must together lead the necessary action to realise key societal, economic and digital ambitions.

⁶ 3G or 4G services

⁷ South Asia is defined as Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka: <http://www.mobileconnectivityindex.com/>

3.1 Subscriber penetration and mobile internet usage trail some regional peers

Figure 5

After an initial acceleration, market penetration broadly tracks below rates seen elsewhere in South Asia⁸

Unique mobile subscriber penetration (%)

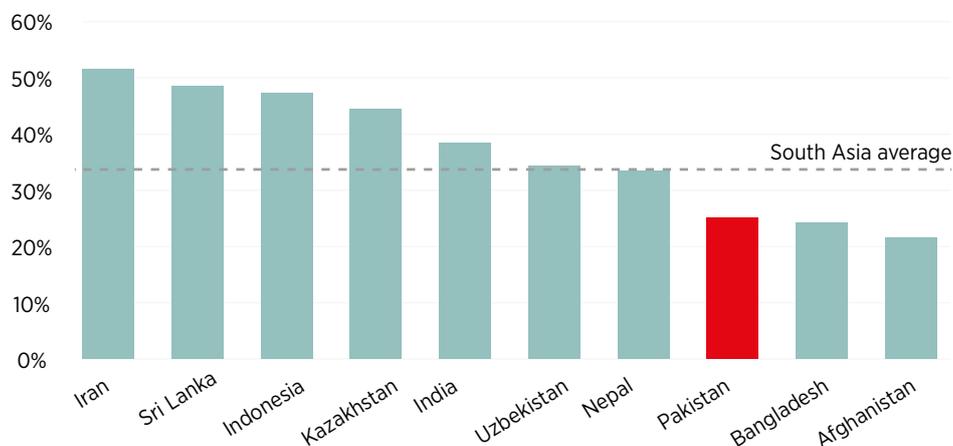


Source: GSMA Intelligence⁹

Figure 6

Mobile internet penetration in Pakistan lags behind many comparator markets

Mobile internet penetration (%)



Source: GSMA Intelligence

⁸ In 2015, penetration dropped by 10 percentage points due to the new SIM registration process implemented by the government.

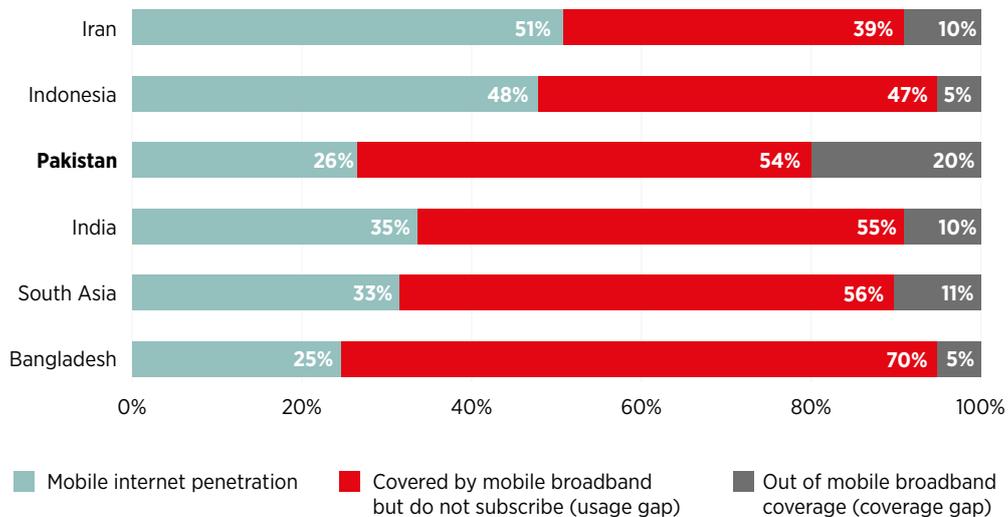
⁹ For Figure 5 and subsequent charts, South Asia comprises Afghanistan, Bangladesh, Bhutan, Diego Garcia, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka.



Mobile is the dominant form of digital connectivity in Pakistan, with 89 million unique subscribers as of the end of 2019. Some 67% of those who have accessed the internet have only ever done so using a mobile phone.¹⁰ That said, Pakistan exhibits a relatively large ‘usage gap’; 54% of the population are covered by a 3G/4G network but do not subscribe to mobile internet services. Access to connectivity and affordable devices are two factors behind this. However, increasing the availability of relevant local language content, ensuring privacy and security, addressing gender imbalance issues and improving digital literacy rates will also be critical in reducing the current differential and accelerating the digital economy.¹¹

Figure 7

Availability, affordability and content barriers are drivers of the mobile usage gap



Source: GSMA Intelligence

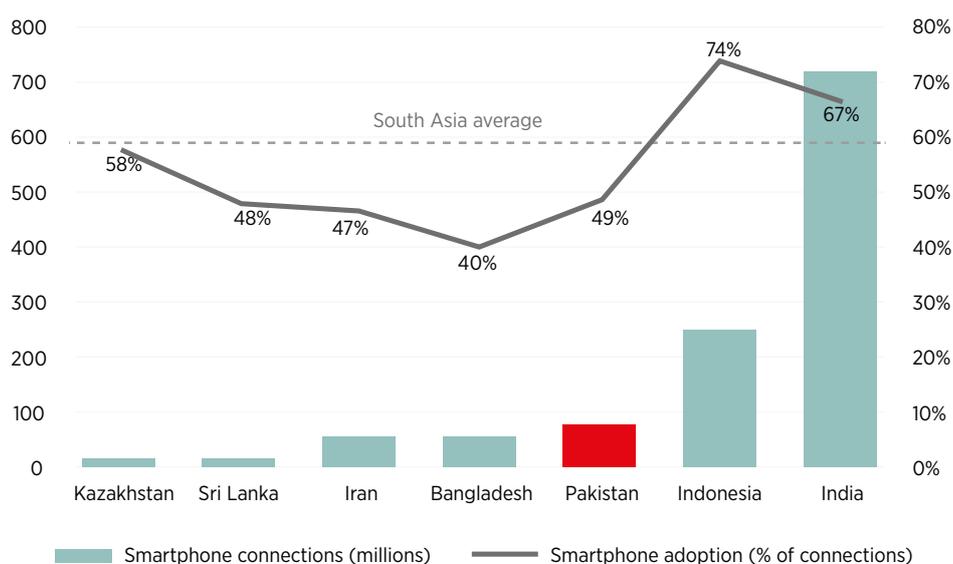
¹⁰ GSMA Intelligence Consumer Insights Survey 2019
¹¹ Region in Focus: Asia Pacific, Q2 2019, GSMA Intelligence, 2019

3.2 Smartphone adoption relatively low but beginning to ramp up

The number of smartphone connections in Pakistan has nearly doubled over the last two years, reaching 81 million by the end of 2019. Rising smartphone adoption means more people are able to use feature-rich and IP-based digital content on their mobile phones, mitigating the challenge of much lower penetration of PCs and other data-enabled devices. Handset prices remain expensive though, with Pakistan ranked 98th out of 121 countries – below Bangladesh and Sri Lanka – for this metric by the Network Readiness Index 2019.¹² The situation should be ameliorated following the government’s decision in January 2020 to reduce income tax, sales tax and customs duty on imported mobile phones. Meanwhile, Jazz has launched the Digit 4G smartphone – the cheapest of its kind in Pakistan – which is targeting lower income segments of society with a down payment of PKR1,800.

Figure 8

Smartphone adoption below average for South Asia despite strong growth



Source: GSMA Intelligence

3.3 Consumer migration to mobile broadband is ongoing

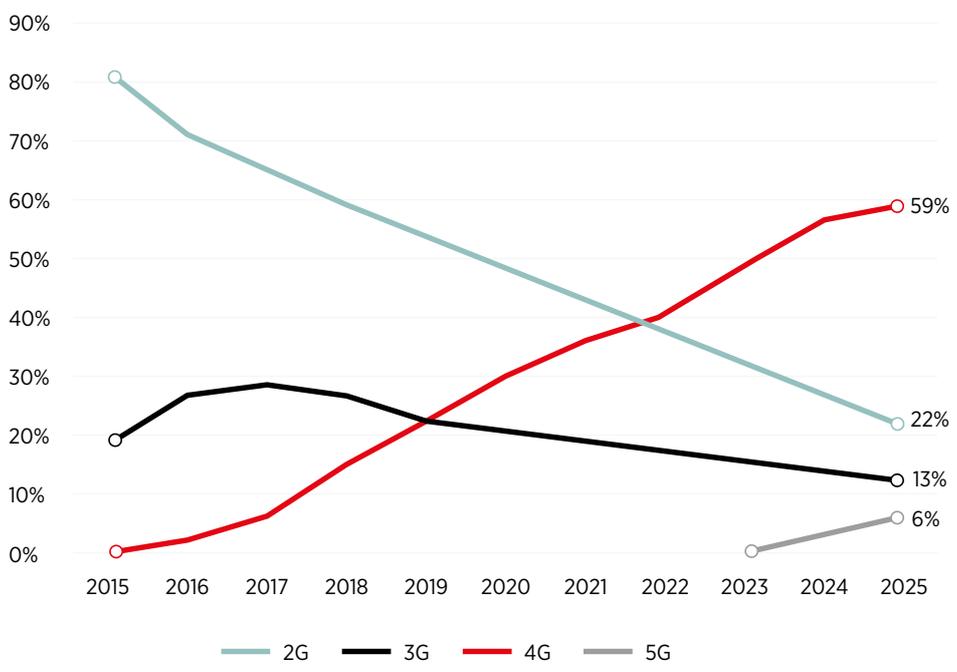
At the end of 2019, there were 76 million mobile broadband connections in Pakistan, accounting for 46% of total connections. Widening network coverage and the increasing adoption of smartphones are helping bring mobile internet services to people across the country. With 4G entrenched as the dominant technology in developed Asia, Pakistan’s own growth rate is slowing: catching up with regional pioneers will mean connecting the unserved in remote and sparsely populated areas. To this end, the government has tasked the organisation responsible for managing the universal service fund (USF) with extending broadband networks to every corner of Pakistan to connect those currently without access.

¹² The Network Readiness Index 2019: Towards a Future-Ready Society, Portulans Institute/WITSA, 2019

Figure 9

With 3G having peaked, 4G is set to take the lead in Pakistan in 2022, reaching 129 million connections by 2025

Percentage of connections (excluding licensed cellular IoT)

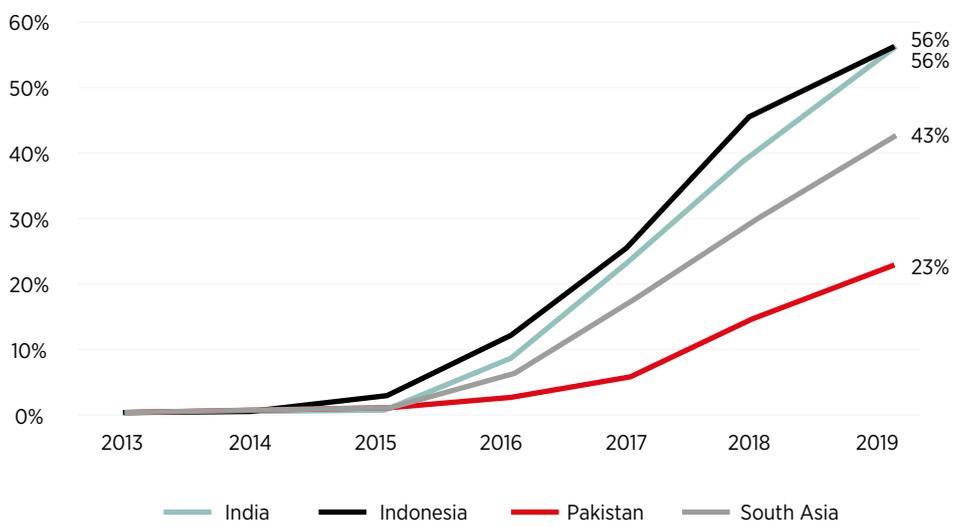


Source: GSMA Intelligence

Figure 10

Conservative pace of 4G adoption in recent years suggests intervention is needed to disrupt market dynamics

4G as a percentage of connections (excluding licensed cellular IoT)

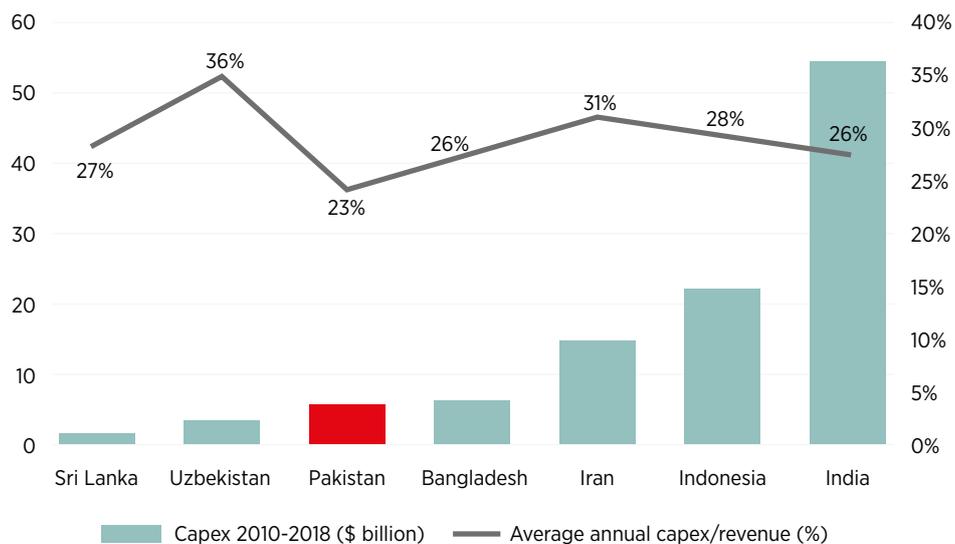


Source: GSMA Intelligence

3.4 Lower capital intensity ratio in Pakistan compared with other middle-income countries

Figure 11

Pakistan’s operators invested \$5.3 billion between 2010 and 2018, but average capex as a proportion of revenue was below several peers¹³



Source: GSMA Intelligence

Around \$67 billion will be spent on mobile networks in South Asia between 2019 and 2025, with \$3.5 billion of this from Pakistani operators. Some 30% of the region’s capex will be devoted to 5G networks – a figure that rises to 40% in India and Sri Lanka, but falls to just 10% in Pakistan given the ongoing 3G/4G lifecycle. However, as competitive and regulatory pressures threaten to restrain investment in neighbouring markets, Pakistan has a narrow window in which to forge ahead and build digital momentum. Though Jazz and Zong have tested non-commercial 5G services, appropriate policy decisions will be needed (especially with regard to a spectrum pricing reset) to embolden operator investment and ensure the country does not fall behind regional leaders in rolling out next-generation networks.

¹³ Total capital expenditure includes tangible and intangible assets, but excludes spectrum licence costs.

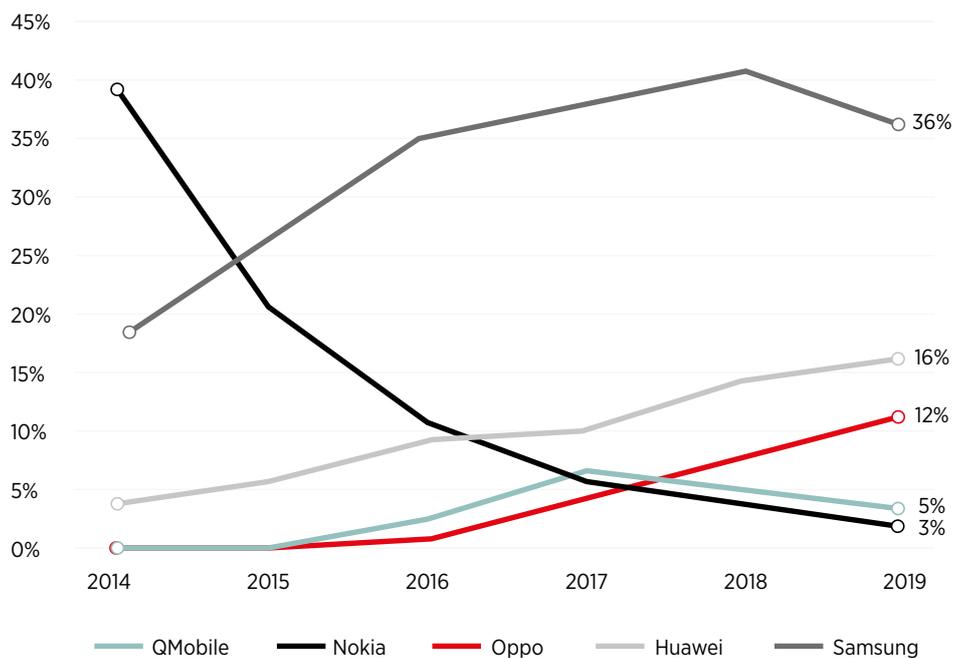
3.5 Imports dominate device sales, leaving domestic manufacturers playing catch-up

Basic/feature phones remain pervasive in Pakistan; at the end of 2019, they represented 44% of total connections in the country. Due to historically lower wages in other countries, duties on parts and the lack of a framework for the approval of domestic manufacturing, most devices are produced abroad and imported. QMobile is the only Pakistani company in the top 10 largest mobile handset vendors in the country; however, its phones are Chinese-made and then sold under the QMobile brand. In contrast, India is home to a burgeoning mobile phone industry, with factories run by foreign companies (e.g. Samsung) and domestic manufacturers, including HCL, Karbonn, Lava and Micromax.

Figure 12

Samsung and Huawei account for over half of all mobile phone sales in Pakistan, reflecting an absence of homegrown firms

Market share by sales (%)



Source: GSMA Intelligence¹⁴

The PTA has taken steps to promote local manufacturing of handsets, permitting 26 companies to establish and operate factories for this purpose. The regulator reports that 100,000 mobile phones are now being assembled each month in Pakistan, while the initiative has created more than 3,200 jobs.¹⁵ In future, the PTA envisages the domestic production of premium smartphones, and is engaging with government departments to incentivise foreign companies to invest in the manufacture of mobile handsets in Pakistan.

¹⁴ Analysis based on statcounter data: <https://gs.statcounter.com/vendor-market-share/mobile/pakistan/#monthly-201412-201912>

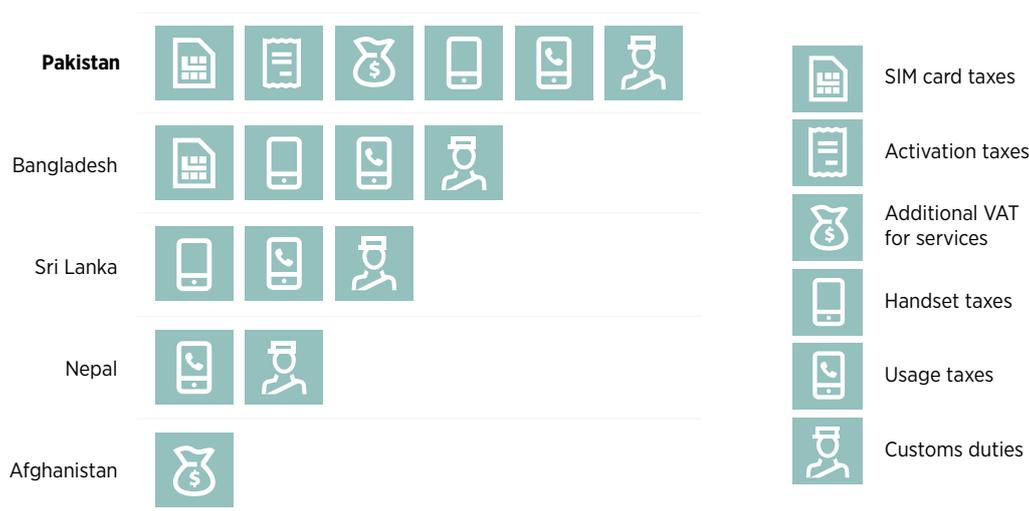
¹⁵ Annual Report 2018, PTA, 2018

3.6 Tax regime for telecoms sector in need of modernisation

Sector-specific taxes, such as those on smartphones, SIM cards and data usage, influence retail prices and may have a strong impact on the poorest consumers, lessening their ability to become mobile broadband subscribers. In Pakistan, telecoms services are perceived as a luxury and are taxed accordingly, which deters both usage and operator investment. For the country’s bottom 20% and 40% income groups, the total cost of mobile ownership (TCMO) for both low and medium consumption baskets¹⁶ is above the UN’s “1 for 2” target (i.e. 1 GB of data costing less than 2% of monthly income).¹⁷ Moreover, the upfront cost of a handset represents an affordability challenge for those lower-income Pakistanis who do not have access to finance, which otherwise would enable them to pay by instalment.

Figure 13

Consumers in Pakistan face a complex system of taxes and fees, which impedes mobile internet access



Source: GSMA Intelligence¹⁸

The government has acted to alleviate some of the tax pressure on mobile consumers, including cutting SIM card taxes by 75% in 2004/2005. It removed the 16% VAT rate on mobile handsets in 2016 – a move that resulted in year-on-year handset sales growth of 25%¹⁹; however, this has since been reinstated. Further, at 31%, tax as a percentage of TCMO is significantly above the global average (19%), while the mobile sector makes a disproportionately large tax contribution relevant to its own economic footprint.

¹⁶ Low consumption basket includes 500 MB of data, the medium basket – 1 GB of data, 250 voice minutes and 100 SMS.

¹⁷ Reforming mobile sector taxation in Pakistan, GSMA/EY, 2019

¹⁸ Taxing mobile connectivity in Asia Pacific: A review of mobile sector taxation and its impact on digital inclusion, GSMA Intelligence, 2018

¹⁹ Rethinking mobile taxation to improve connectivity, GSMA Intelligence, 2019

3.7 IoT industry takes tentative steps forward

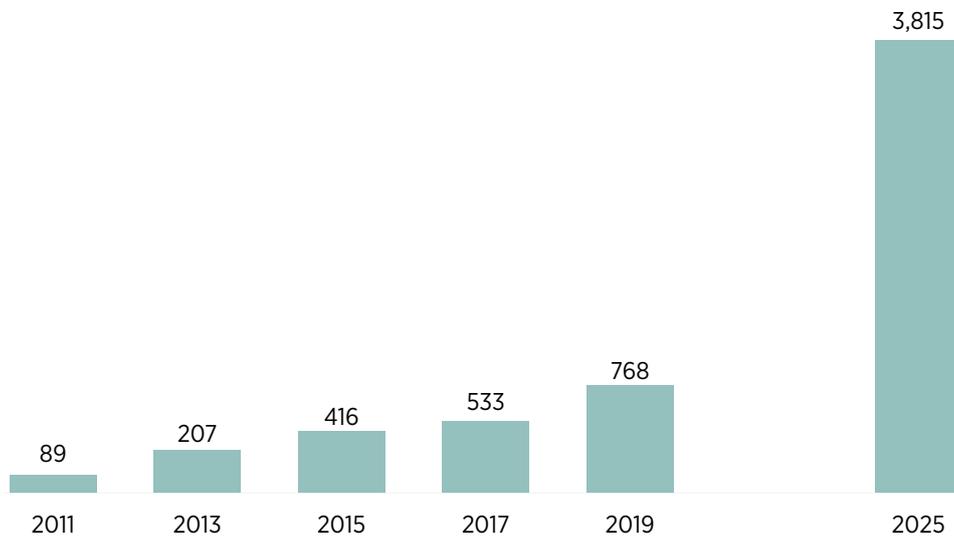
In addition to internet connectivity, mobile technology enables cellular IoT connectivity for a variety of consumer goods and industrial devices. Currently, IoT applications in Pakistan include solar-powered home solutions enabling off-grid rural households to power electronic devices; on-board diagnostics (OBD) devices for fleet management; and IoT solutions integrated with vehicle and motorcycle insurance products to help combat theft.

Looking ahead, cellular IoT connectivity and services will usher in novel smart city solutions, which can help government agencies cope with rapid urbanisation and improve security services. Operators are laying the groundwork for this future: Zong has implemented parent company China Mobile’s IoT platform OneNet in Pakistan, while, in November 2019, Telenor launched the country’s first narrowband IoT (NB-IoT) network site, and aims to use the technology to “bring revolutionary changes” to local industries and “improve civil infrastructure”. In January 2020, the PTA established a working group of stakeholders from academia, government and industry to explore the formulation of a regulatory framework for IoT. As the region enters the next industrial revolution, IoT has the potential to drive productivity gains across an array of verticals. GSMA Intelligence forecasts that IoT will have a positive impact on the Asia Pacific economy worth 0.34% of GDP in 2025.²⁰

Figure 14

Licensed cellular IoT connections in Pakistan will see growth hasten to surpass 3.8 million in 2025

IoT connections (thousands)



Source: GSMA Intelligence

²⁰ The contribution of IoT to economic growth, GSMA Intelligence, 2019

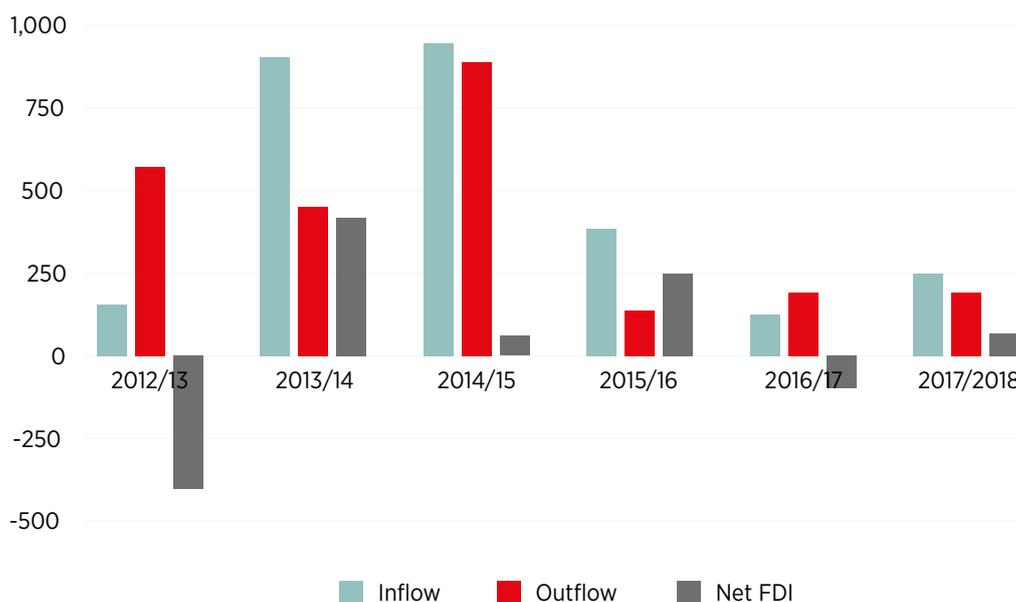
3.8 Business climate improving despite the drop in international investment in telecoms

The Pakistan economy grew at an average rate of over 5% between 2014 and 2018²¹ on robust private consumption, improving agricultural productivity and rising investment (especially in energy and infrastructure projects around the China-Pakistan Economic Corridor). The same period also witnessed a fall in foreign direct investment (FDI) in the country's telecoms sector, including a deficit of more than \$90 million in FY 2016/2017. Nevertheless, aggregate inflows have grown in recent years, with Airlift, Bykea, Careem, Daraz, Rozee and Zameen all securing multi-million dollar investments. Access to venture-capital funding, alongside reliable and affordable connectivity, digital payments, talent and consumer trust, is consistently cited as a prerequisite to a thriving internet economy.²²

Figure 15

External investment in Pakistan's telecoms sector has declined considerably since 2014/2015

FDI (\$ million)



Source: GSMA Intelligence²³

²¹ <https://data.worldbank.org/country/pakistan>

²² "e-Economy SEA 2018: Southeast Asia's internet economy hits an inflection point", Google, November 2018

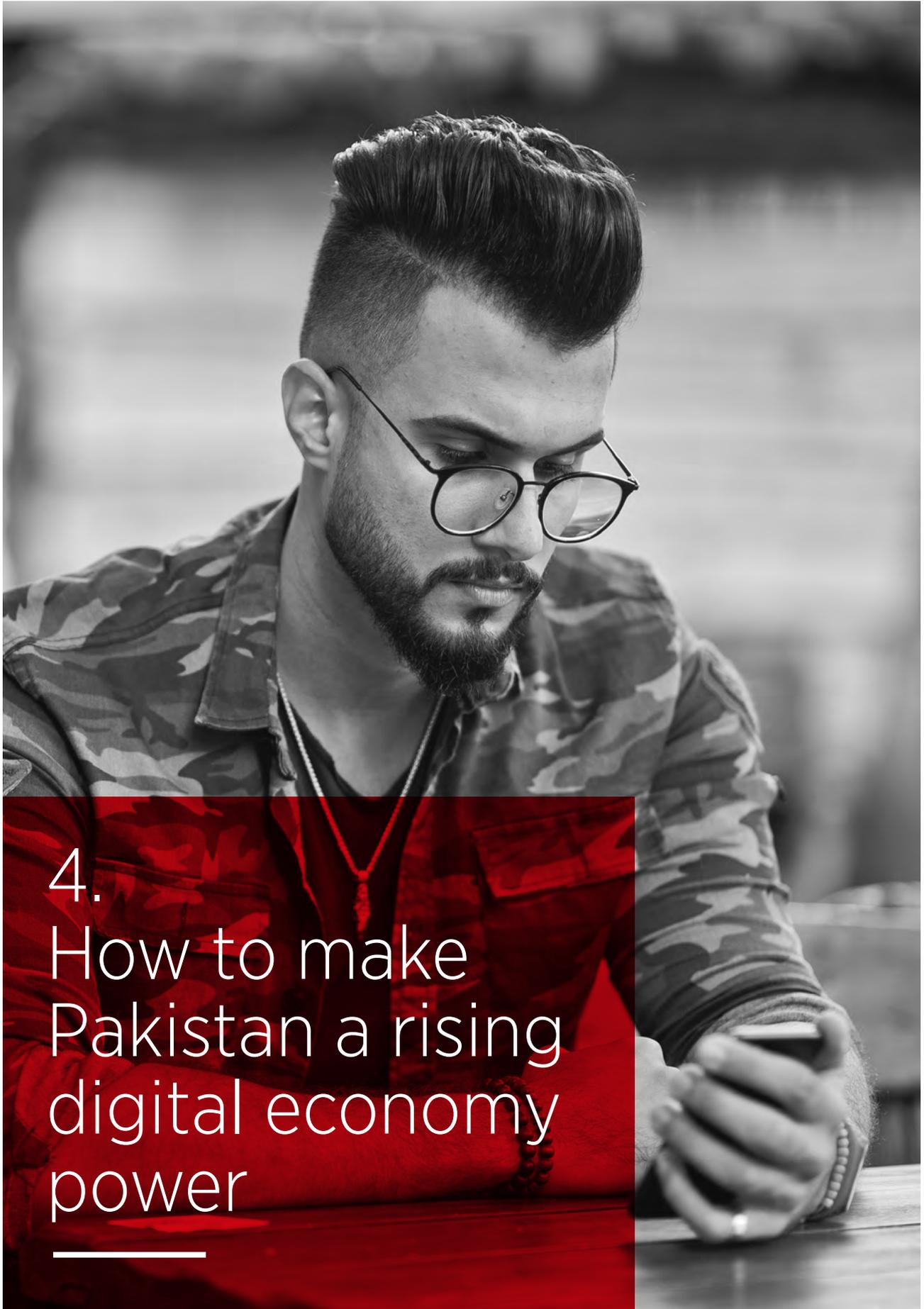
²³ Analysis based on data from PTA annual reports: <https://www.pta.gov.pk/en/data-&-research/publications/annual-reports>



The World Bank has highlighted Pakistan's notable improvement regarding the ease of doing business, with the country effecting multiple reforms to speed up and streamline processes for obtaining construction permits, paying taxes online and registering property.²⁴ However, despite moving up to number 108 in the 2020 ranking (from 136 in 2019 and 147 in 2018), Pakistan remains behind other middle-income economies such as Kazakhstan (25), India (63) and Indonesia (73). Pakistan is similarly positioned (110 out of 141 nations) in the World Economic Forum's latest Global Competitiveness Report, scoring highly for market size but below the South Asia average for many other indicators.²⁵ As organic GDP growth contracts, further progress is required – particularly relating to the resolution of commercial disputes, enforcement of contracts and labour market flexibility – to reinforce the country's external perception of an openness to business and a viable location for investment. Positively, the government's e-Commerce Policy and the State Bank's framework for Electronic Money Institutions (EMIs) will support the development of mobile payments and trade online, and represent steps towards a digitally inclusive economy.

²⁴ Doing Business 2020, World Bank, 2019

²⁵ Global Competitiveness Report 2019, World Economic Forum, 2019



4.
How to make
Pakistan a rising
digital economy
power

The government in Pakistan has recognised the significance of digital technologies and skills to enhance inclusion, encourage research and innovation, and unlock economic competitiveness. In May 2018, the Ministry of Information Technology and Telecommunication (MoITT) received cabinet approval for Digital Pakistan, which comprises 12 objectives. The policy aims to use ICT as a strategic enabler for sectoral transformation, economic growth and a better quality of life for citizens.

Figure 16

Objectives of the Digital Pakistan policy

Objective	Details
Holistic digital strategy	Create a digital ecosystem with infrastructure and institutional frameworks for the rapid delivery of innovative digital services, applications and content.
Sectoral digitisation	Use of technology in education, health, agriculture and other key socioeconomic sectors.
E-commerce	Promote e-commerce by providing an enabling environment in which payment service providers (PSPs) and payment service operators (PSOs) can operate.
Youth, women and girls empowerment using ICT	Initiate specific ICT for Girls programmes for imparting digital skills to reduce inequalities, provide decent work and promote economic growth in line with relevant SDGs.
Promote innovation, entrepreneurship, incubators and start-ups	Generate sustainable innovation, entrepreneurship and employment opportunities for the country's rapidly growing tech-savvy and entrepreneurial youth.
Increase software exports, IT remittances and domestic market	Leverage skills in the IT sector to boost software exports and outsourcing opportunities, as well as expand the domestic market.
ICT ranking of Pakistan	Improve Pakistan's ICT ranking based on international indices and benchmarks measuring the business and innovation environment, infrastructure, affordability, skills readiness and socioeconomic impact.
Digital inclusion	Bridge the digital divide including the urban and rural divide, gender disparity, unserved and underserved areas, and inequality for persons with disabilities (PWDs), by connecting the unconnected with broadband.
E-governance	Ensure efficiency, transparency and accountability by setting up integrated government databases and applications.
Increase foreign and direct investment	Make Pakistan an attractive destination for investment in the IT industries to create jobs and fuel economic growth.
Persons with disabilities	Reduce barriers to online access for PWDs.
Standardisation	Coordinate and support standardisation efforts, maximise reusability, create synergies and deliver cost effectiveness.

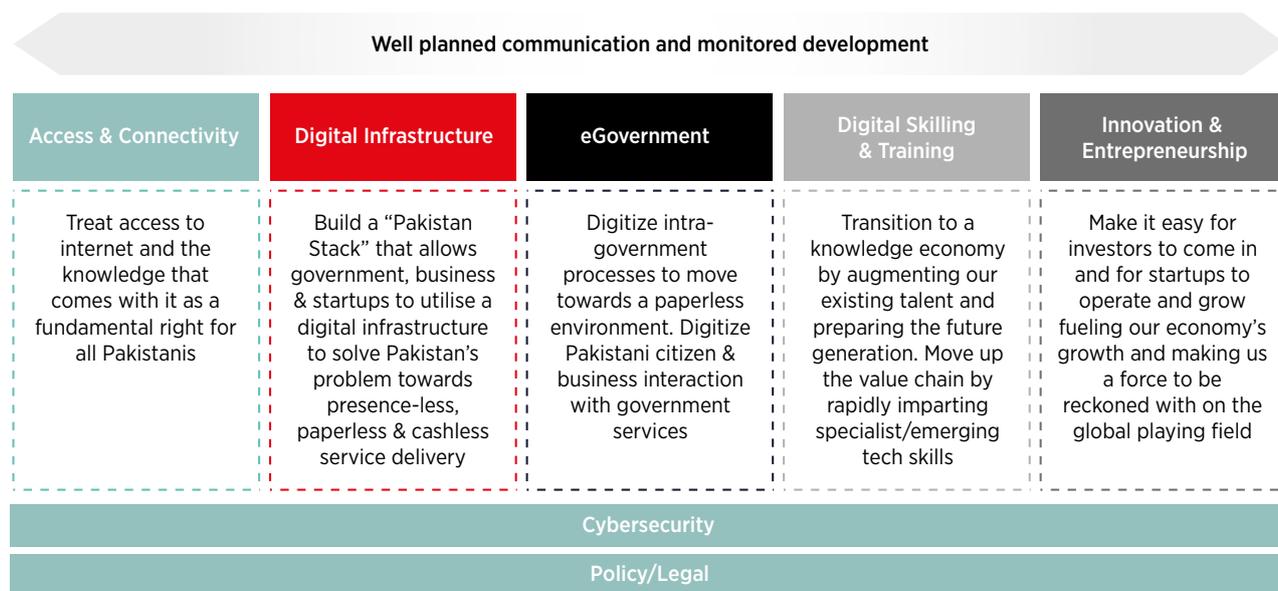
Source: GSMA Intelligence summary of Digital Pakistan²⁶

²⁶ [http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)

In December 2019, based on recommendations by the Federal Minister of the MoITT, the Prime Minister launched his vision for the flagship Digital Pakistan policy, which – among other things – aims to deliver online public services and galvanise the potential of young people and women. Subsequently, Chief Digital Officer Tania Aidrus, who has been appointed to lead Digital Pakistan, outlined five “building blocks” for the initiative (see Figure 17).

Figure 17

Five priority areas for Digital Pakistan



Source: Twitter account of Tania Aidrus (@taidrus)

The current decade will therefore be a pivotal stage in Pakistan’s national development journey and the growth of the ICT sector. However, the country is falling behind some of its peers on several connectivity-related fronts and the digital economy remains in relative infancy.

Since liberalisation, the telecoms regulatory framework in Pakistan has largely operated based on government policy directives – and it continues to do so. Government statements should be aimed at addressing aspirational visions or objectives, rather than generally policing the industry. The telecoms regime must evolve, with light-touch regulation defined for the long term to support Pakistan’s reputation as a business-friendly market that provides certainty, low barriers to entry and a stable investment climate.

Concurrently, it is imperative that the government collaborates with all relevant stakeholders (including the private sector and international partners) to curate, streamline and set in motion the country’s overarching digitisation agenda. A joined-up approach to policymaking can better drive the use of mobile technologies in establishing a knowledge-based society built on common access to fast, reliable and affordable digital services. With adequate communication mechanisms to spread awareness, cross-sector collaboration will be crucial in creating a material change in Pakistan’s market trajectory and delivering a boost to the country’s fledgling digital economy.

4.1 Reform mobile sector taxation as a policy priority

Strict tax regimes that divert large proportions of revenue from operators to governments can negatively impact connectivity, distort the industry’s development and harm end users. In Pakistan, consumers face sector-specific taxes that apply to devices, SIM cards and usage charges, which limit investment, affordability and overall mobile internet usage. These taxes are particularly likely to affect poorer consumers as mobile broadband services become too expensive, which in turn can widen the digital divide and cause exclusion.

Despite having some of the lowest average revenue per user (ARPU) and price per MB figures in the Asia Pacific region, Pakistan’s telecoms sector is currently one of the most highly taxed: the telecoms general sales tax (GST) in India and Iran is 18% and 8%, respectively, compared with up to 19.5% in certain districts in Pakistan. In May 2018, the Supreme Court made the unprecedented move to suspend the collection of service, withholding and sales taxes on prepaid top-up cards costing PKR100. However, after ordering a study into the application of the taxes from federal and provincial authorities, the court revoked its decision less than a year later.

The prevailing tax regime stifles adoption and innovation, which fetters sustainable industry growth and the net economic benefits to the country. A survey by the Asia Internet Coalition concluded that adopting the correct tax position acts as an important policy lever to becoming a digital nation. Respondents highlighted inconsistent or unpredictable treatment by the tax authority, special taxes that discriminate against the digital sector, and over-complexity in the tax laws as top concerns that would lead to delayed or cancelled investment.²⁷

Figure 18

Tax payments and fees on mobile consumers and operators in Pakistan are among the highest in developing Asia

Consumer taxes	Operator taxes
<ul style="list-style-type: none"> • Sales tax on mobile services: 17% in Islamabad, 19.5% in provinces • Sales tax on mobile handsets: PKR300-1,000 • Sales tax on SIM cards: PKR250 • Customs duties on handsets and SIM cards: PKR250 per mobile handset, 3% per SIM card • Withholding tax on mobile services: 12.5% • Mobile handset levy: up to PKR5,000 	<ul style="list-style-type: none"> • Corporate income tax: 30% • Minimum tax: 1.25% or 8% • Alternative corporate tax: 17% • Personal income tax: up to 25% • Social security contributions: 5% • Workers welfare fund contributions: 2% • Capital value tax: various rates • Withholding tax on imports of goods: 5.5% • Stamp duty: various • Customs duties on equipment: various (1-21%) • Super tax: 3%

Source: GSMA Intelligence/EY²⁸

²⁷ 83% of executives in 300 digital start-ups, investment firms and multinational businesses across 11 Asia Pacific countries expressed this position: Digital Nation: Policy Levers for Investment and Growth, AlphaBeta for the Asia Internet Coalition, 2017

²⁸ Reforming mobile sector taxation in Pakistan, GSMA/EY, 2019

If internet access is to be made a fundamental right, the government in Pakistan must take urgent action to remedy the country's regressive tax regime. The biggest supply-side impediment to data usage currently is high device taxation, including customs duties, mobile handset levies and sales taxes. Together, these can put higher-end handsets out of reach for many citizens, which is reflected in the significant proportion of basic, voice-only devices in the market. Getting affordable smartphones into peoples' hands prompts the first chapter in the internet adoption story for non-users. As their confidence and knowledge builds, users will consume more data-intensive applications and access the platforms that will connect them to the wider digital economy.

By 2023, it has been estimated that a harmonisation and reduction in the GST to 16% could increase mobile broadband penetration by 1.0%, mobile data usage per connection by 1.7%, sector revenues by 1.4% per annum, and GDP by 0.06%. Meanwhile, the elimination of the 8% minimum withholding tax on income from mobile services would ease the tax burden on operators, lowering prices and boosting investment – as well as again realising macroeconomic uplifts. In addition, the reforms are shown to be self-financing over the medium term, and should generate increased tax revenues by 2023. A more conducive tax system for the investment and development of the mobile sector should further modernise tax administration and collection, bringing more people into the formal economy. As Pakistan has only 3.6 million taxpayers (less than 2% of the population), mobile would help broaden the tax base and raise incremental revenue for the state.

By equipping people with the tools that support digital and financial inclusion, and helping unlock network capex, the government can fulfil the access and infrastructure needs of Digital Pakistan, as well as produce positive externalities from the wider proliferation of mobile services. One such knock-on effect is on the e-commerce market: tax reforms that promote smartphone adoption and mobile internet usage will enable online transactions to surge beyond the \$1 billion worth of sales expected in 2020.²⁹

At the same time, Pakistan must resist any urge to heighten taxes on telecoms to inject into slowing industries, including agriculture and manufacturing. This would be counterproductive: the government should instead discharge the shackles on the mobile sector to support the digital transformation and subsequent productivity gains necessary to revive strong economic growth.



²⁹ "The Potential & Challenges for E-Commerce in Pakistan", Digital Pakistan, January 2020

4.2 Increase spectrum availability, with appropriate licence fees and terms

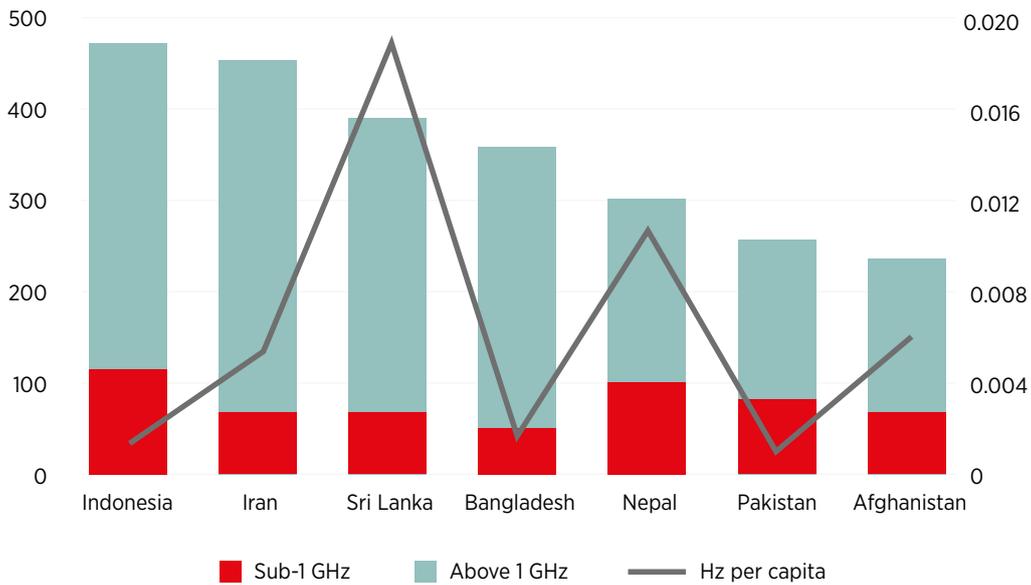
If operators do not have affordable and predictable access to sufficient spectrum, it will not be possible to achieve ubiquitous delivery of mobile internet services, hampering the closure of the digital divide and presenting barriers to usage and the release of value into the economy.

To date, Pakistan has assigned significantly less spectrum to operators compared with many developed Asian markets and several neighbouring countries. As mobile broadband adoption, smartphone take-up and data traffic continue to rise, and as a growing number of ‘things’ become connected, demand for more bandwidth, faster speeds and improved coverage can only be met by increasing the volume of spectrum released to operators. Prevailing spectrum allocations and licence fees in Pakistan risk the nation falling further behind peers in the transformation of its economy, hindering its potential to be a regional digital powerhouse.

Figure 19

Pakistan has assigned considerably less spectrum than comparator markets

MHz assigned, spectrum assigned per capita (Hz)



Source: GSMA Intelligence

With spectrum the lifeblood of the mobile sector, it is essential that the government and PTA make the right policy decisions individually and collectively. An effective spectrum licensing process is critical to support the long-term operator investments required to further expand mobile access, as well as to enhance the quality and range of services offered to citizens.

Policymakers can maximise the societal gains from finite resources by developing a transparent and comprehensive spectrum roadmap. Built on an inclusive dialogue between relevant stakeholders, this ensures sufficient spectrum is available to meet the requirements driven by changing demand and technology, including future 5G services. With corporate planning intrinsically linked to the availability of spectrum and the conditions under which it is made available, a holistic, forward-looking roadmap can negate risks and encourage operators in Pakistan to develop business cases and make positive investment decisions. In particular, the government's spectrum strategy should guarantee the release of: more 1800 MHz and 2.1 GHz spectrum given the existing handset ecosystem; and crucial sub-1 GHz bands, including 600 MHz and 700 MHz, in light of their suitability for cost-effective deployments of mobile broadband networks in rural areas with low population density.

It is vital that spectrum pricing and annual fees are appropriate and do not jeopardise operators' ability to invest and to support affordable services. High spectrum prices have been linked to more expensive, slower services, with worse coverage.³⁰ Licences must also continue to enshrine the best-practice principle of technology neutrality and have predictable durations and renewal terms that provide a first right of refusal to incumbents. Minimising the cost and complexity of acquiring and using spectrum reduces uncertainty by allowing operators to determine the long-term value of their infrastructure investments and more accurately assess spectrum lots at auction. Hence, Pakistan's proposed approach to licence renewal and general acquisition fees must be subject to immediate reconsideration in order to avoid negative outcomes for capex and consumers.

An online population remains one of the greatest resources for innovation and growth. Yet, without the foundation of widespread mobile connectivity in place, Pakistan will not be regionally competitive. Spectrum policy reforms provide an opportunity to energise the digital economy and catch up with leading Asian markets. Effecting these now would back operator investment efforts, enabling Pakistan to utilise the power of mobile broadband as a vehicle for industrial digitisation, societal progression and national prosperity.

³⁰ Spectrum pricing in developing countries, GSMA Intelligence, 2018

4.3 Combine digital ID with effective data privacy laws to build consumer trust and confidence online

Alongside decent connectivity, a trusted digital identity is a precondition for uninhibited participation in a digital society, enabling users to vote, fulfil educational opportunities and receive welfare payments. In Pakistan, every citizen over the age of 18 years old is eligible for the National Identity Card (NIC) issued by the National Database and Registration Authority (NADRA), enabling the secure delivery of a number of financial and government-to-person services such as social grant programmes and pension disbursement schemes.

Pursuant to the e-government strand of Digital Pakistan, the transition of manual and in-person public services to digital channels can help provide the interface that ensures engagement with the digital identity framework reaches critical mass. However, streamlining the integration, and facilitating the interoperability, of e-government services requires a whole-of-government approach. This mindset can avoid the wastage and inefficiency caused by fragmentation, curb corruption and save costs that could then be reallocated to digital policy budgets. The Pakistan Citizens' Portal – developed by the National Information Technology Board (NITB) – represents a good start, using digital platforms to resolve public complaints, while the NITB's E-Office app enables state departments to go paperless and become more transparent.³¹

By digitising public services, e-government can be utilised as the anchor tenant for the national ID framework, providing a secure environment for the development of end-user confidence online and for the proliferation of use cases. With 166 million Pakistani mobile connections biometrically verified, ID-related intelligence data from operators can help mitigate the risk of fraud and falsification, and meet the real-time identity management needs of service providers without requiring physical verification of identity. Accessing an e-government service in this way can breed familiarity for other digital applications, with positive spillover effects on mobile internet usage and e-commerce, as well as online banking and mobile money, which could help address issues currently faced by financially excluded groups.

³¹For more detail, see: <https://nitb.gov.pk/index>

Figure 20

Benefits of well developed digital identity programmes are multi-faceted



Source: GSMA

To reap the benefits of a mobile society, it is crucial that the government in Pakistan develops fitting policies that embed trust in the digital arena. Data privacy and cybersecurity frameworks that protect citizens’ data together with a national digital identity system provide the foundation for building and maintaining trust.³² When drafting personal data protection and privacy legislation, Pakistan must prohibit the misuse of the NADRA database without constraining the use (and commodification) of customer data by responsible agents such as mobile operators. For instance, permitting operators to expose biometric data registered against SIM cards creates an asset that could be used to overcome ‘electronic know your customer’ (eKYC) hurdles and reduce friction and the risk of fraud in the digital economy.

Frameworks must also allow data to flow across borders in ways that foster trade, innovation and e-commerce. Digital economies provide an opportunity for domestic economic growth and inclusiveness, but importantly offer scope for growth led by the export sector and engagement in international marketplaces. Competing for domestic and international digital economic growth requires recognition of the global competition for investment and support. The government must expedite the implementation of robust data privacy frameworks that uphold a level of protection, but not unduly impair data flows, thereby striking the right balance between safeguarding consumer welfare, simplifying compliance and encouraging growth of the digital economy.

Emerging technologies such as blockchain may help allay cybersecurity concerns in complex, multi-party transactions via decentralised structures that are difficult to hack or alter. Regulatory sandboxes that create an environment for companies to experiment with new technologies are an approach governments may wish to explore. For example, a regulatory sandbox that allows personal data to be transferred from Pakistan to another Asian country in a controlled setting would help develop new services and lend credibility to Pakistan as a trusted data handler, boosting growth of the region’s digital economy. In November 2019, the GSMA announced a Regulatory Pilot Space within ASEAN countries which aims to empower innovation using cross-border data flows, while complying with relevant privacy laws.³³

³² The Mobile Economy Asia Pacific 2019, GSMA Intelligence, 2019

³³ “GSMA Supports World First in Asia-Pacific for Digital Innovation”, GSMA, November 2019

4.4 Encourage infrastructure sharing to lower rollout costs and boost network coverage and performance

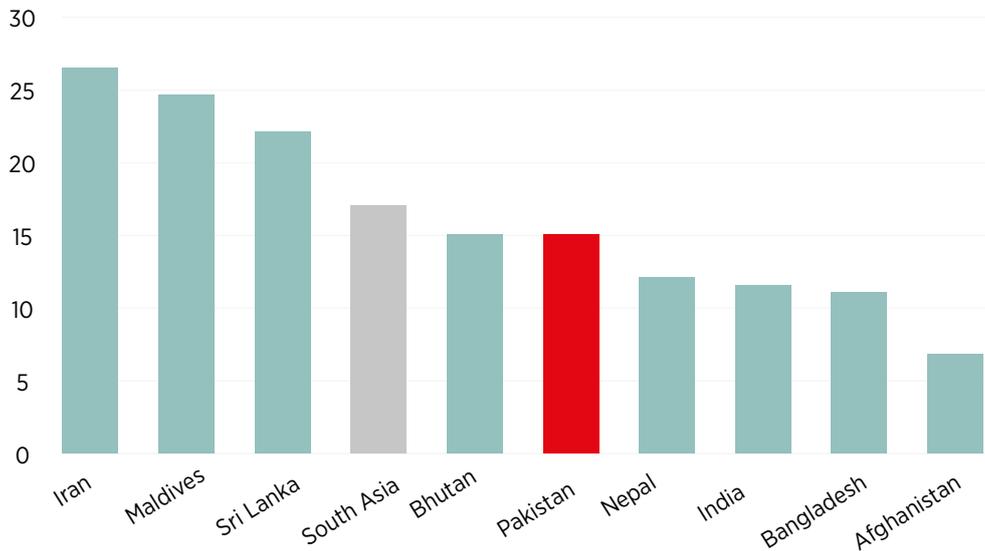
Mobile connectivity is generating profound benefits globally, helping to promote digital inclusion and support the delivery of key public policy initiatives. However, 18% of Pakistan’s population are not covered by a mobile broadband network, hampering participation in society and limiting contribution to the economy. For operators, the high upfront investment required to deploy mobile infrastructure and the long repayment cycle present risks and challenges. Network sharing can lower the cost of expanding mobile broadband coverage in remote areas by allowing operators to jointly use masts, buildings and antennas, creating efficiencies. It also reduces commercial risks due to co-investment and the revenue opportunities of extending services to new locations.³⁴

A by-product of network sharing is the gains in speeds experienced by end users. Analysis of Ookla data indicates that, at 14.9 Mbps, the average download speed across all mobile technologies in Pakistan is below the South Asia average (17.3 Mbps), and it lags behind the levels observed in many Southeast Asian countries. Infrastructure sharing would support the expansion of LTE networks to underserved communities in Pakistan, with higher speeds facilitating richer digital lifestyles, e-commerce and greater engagement of freelancers in the online gig economy (a global market of which Pakistan already has a 10% share³⁵). Advanced connectivity also benefits firms of all sizes by enabling the platforms for them to better operate and serve customers, access a broader labour pool and amplify cross-border trade.

Figure 21

Mobile download speeds in Pakistan outperform certain neighbours, but not the regional average

Mbps, 2019



Source: GSMA Intelligence (analysis based on Ookla’s Speedtest Intelligence data)

³⁴ Enabling Rural Coverage: Regulatory and policy recommendations to foster mobile broadband coverage in developing countries, GSMA, 2018

³⁵ <https://ilabour.oii.ox.ac.uk/online-labour-index/>

Regulatory support for such arrangements has been evident in recent years: in 2017, Indonesia's MCIT began the process of devising rules for the sharing of passive network elements, which it considers could save 40–60% of operators' capex and opex.³⁶ It also explored the potential for active infrastructure sharing (e.g. multi-operator radio access networks, or MORANs), indicating the release of guidelines in the future. Passive sharing is permitted – and encouraged – in Pakistan,³⁷ while infrastructure companies edotco and Enfrashare independently offer tower and site solutions, both of which help operators to optimise scarce resources and prevent unnecessary duplication of investment. Tower tenancy in Pakistan is still significantly lower than the global average, with more than 60% of mobile operators' towers within close proximity; operators should take advantage of the policy framework to share assets, which edotco estimates could cut opex by 35–55%.³⁸

Having consulted on the matter in the past, it is now vital that policymakers also authorise full active sharing, and encourage – but not mandate – commercially negotiated cooperation (where market conditions allow). Lowering the costs and risks of infrastructure deployment can incentivise investment and accelerate the build-out process, particularly in remote or topographically challenging areas, which bridges the coverage gap. In addition, improved access to high-speed mobile connectivity can result in country-level productivity gains as businesses are able to work more efficiently and effectively, thereby moderating structural vulnerabilities in the economy and stimulating growth. Pakistan should also consider a framework for spectrum sharing, which can enable operators to fill network gaps or mitigate potential demand peaks.

Ensuring that communications networks develop at pace could depend on Pakistan's fibre strategy. Fibre deployments have so far been confined to major cities, with total fibre connections constituting a fraction of a small fixed broadband market. However, fibre is becoming increasingly valuable in augmenting network capacity and throughput, and in delivering initial 5G use cases such as fixed wireless. The government is advocating measures to stimulate fibre deployments, including using public-private partnerships and the universal service fund (USF). Where the USF solely finances a project, allowing the sharing of the fibre infrastructure for backhaul enables operators to separately deploy fixed wireless services cost-effectively, with mobile over the last mile. Similarly, mechanisms that allow the use of existing public and utilities infrastructure (i.e. power lines), provide rights of way to private property and standardise telecoms site access at the national level will facilitate and lower the cost of deploying fibre connectivity beyond cities and business districts, and into rural areas. This can extend high-speed connectivity to marginalised groups, enhancing their ability to work and transact online and engage in the digital economy.

4.5 Develop citizens' digital skills and support tech start-ups

Pakistan has a huge youth population, with more than 100 million citizens under the age of 25. Absorbing this demographic into the labour force means the economy must grow faster than it has over the past five years. However, Pakistan has a literacy rate below the South Asia average and exhibits a skills deficit in certain technology areas. These factors – as well as affordability, a perceived lack of relevance and safety concerns – are important barriers to consumers' mobile internet use.³⁹ Moreover, of those who do not use the mobile internet, 27% stated that the absence of anyone to teach or help them to do so was a major obstacle.⁴⁰

The telecoms industry is providing solutions to improve numeracy and literacy, and increase the number of school-age children in education. Since 2017, the Jazz Smart School project has used mobile technology to help improve student learning outcomes and teaching methodologies. With the introduction of performance dashboards on mobile apps and web portals, results are being used to raise teaching quality and accountability. Meanwhile, the Ministry of IT & Telecom is spearheading the DigiSkills programme, which has launched a free online training platform to give individuals the qualifications to take up digital freelance roles.

³⁶ Accelerating Indonesia's digital economy, GSMA Intelligence, 2018

³⁷ Pakistan introduced network sharing through the De-regulation Policy 2003 and Mobile Cellular Policy 2004 wherein licensees were encouraged to share infrastructure for the effective utilisation of resources.

³⁸ "A Tower Company's Heaven: Pakistan to Get 40,000 New Towers in 10 Years", ProPakistani, November 2017

³⁹ The State of Mobile Internet Connectivity Report 2019, GSMA, 2019

³⁹ The State of Mobile Internet Connectivity Report 2019, GSMA, 2019

⁴⁰ GSMA Intelligence Consumer Insights Survey 2019

In light of the focus on skills and empowerment within Digital Pakistan, the government must unleash the potential of its young population so as to lay the foundation for future economic resilience and growth. This includes doing more to bring mobile-based learning and digital training courses into the school curriculum, and to arm university graduates with the technological capabilities to compete with global counterparts for IT and software jobs. Such measures are critical to reduce the usage gap and drive inclusion, but also to attract foreign investment, expand the outsourcing market and harness the talent that will fuel the long-run expansion of the online economy. Success here will rely on effecting a behavioural change in parents which ensures that more children complete at least mandatory education and lowers absenteeism and drop-out rates.

Executing on this objective will also require policymakers to address issues that severely curtail women's access to mobile phones and services. Currently, there is considerable disparity in mobile ownership, income and schooling between men and women in Pakistan. The government has initiated programmes focused on women which aim to impart digital skills, provide decent work and promote economic growth in keeping with relevant SDGs. Further progress to close the gender gap necessitates a multi-stakeholder approach, with specific targets and strategies to stimulate digital inclusion and provide training and job opportunities for women. This will reduce inequalities and raise income levels, enabling women to contribute more fully to tax revenues and the general development of Pakistan's digital society.

Provide the conditions and resources for innovators and start-ups to flourish

Pakistan has a vibrant, emerging tech ecosystem, actively supported by mobile operators and other stakeholders. The National Incubation Centre, backed by the government, Ignite, Jazz and Teamup, has established sites in five major cities. It is a prime example of a mutual commitment to fostering a culture of digital entrepreneurship in the country, and to date has incubated over 350 start-ups. Operator-led tech hubs (such as Jazz xlr8 and Telenor Velocity) are also providing start-ups with business support, mentorship and access to critical resources to help them gain scale, generate synergies with other firms and capitalise on opportunities for collaboration.

Nevertheless, a shortage of corporate venture capital (CVC) remains a key challenge for the start-up community. Southeast Asian firms received \$14 billion in funding in 2018, a healthy uplift on the previous year despite global economic headwinds.⁴² Though some CVC firms are present in the Pakistan market (for example 47 Ventures and Sarmayacar), there is a need for more early-stage funding and legislation that it is more favourable to investors. The state should consider tax exemptions, credit facilities, public-private partnerships and subsidised access to cutting-edge tech parks, which could accelerate the flow of external finance into this ecosystem, while also expanding the availability of low-cost loans under the Kamyab Najamwan programme.

With innovation and entrepreneurship cornerstones of the Digital Pakistan vision, the government should implement regulatory and fiscal frameworks that nurture tech start-ups, hasten time to market and adapt to digital business models, all of which drives a virtuous circle of investment and economic growth. Specifically, government departments must deliver on actions set out within the 2019 e-Commerce Policy, including facilitating company registration processes, improving interoperability of payment platforms and ensuring consumer protection. Enabling domestic brick-and-mortar retailers to establish an online presence provides an alternative route to market, which supports jobs and exports, while the local development of apps, content and services that meet the demands and competencies of citizens can reduce the usage gap. Cultivating the start-up scene, while leveraging advanced connectivity, greater mobile engagement and a skilled youth population, will help propel Pakistan's digital evolution towards its inflection point.

⁴¹e-Economy SEA 2019, Google/Temasek/Bain & Company, 2019



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