TECH destiNATION PAKISTAN

MINISTRY OF IT & TELECOM

PAKISTAN'S INFORMATION TECHNOLOGY & DIGITAL SERVICES

INVESTMENT PITCHBOOK

IT & TELECOM SECTOR

WHY PAKISTAN?

As China advances its New Quality Productive Forces, Chinese technology, digital services, and telecommunications enterprises are seeking new markets for their platforms, solutions, and expertise. Pakistan stands out as a viable partner at this inflection point. Anchored by the All-Weather Strategic Cooperative Partnership and the China-Pakistan Economic Corridor (CPEC), Pakistan offers Chinese enterprises access to a high-growth digital economy and connectivity market, a young and tech-savvy population, and rapidly evolving network infrastructure needs alongside a flourishing startup ecosystem. With rising domestic demand for digital services, broadband, mobile, and enterprise connectivity, a large pool of English-speaking IT and engineering talent, and clear government commitment to universal digital transformation, Pakistan presents itself both as a market for technology and telecommunications solutions and as a hub for service exports and regional connectivity. The convergence of demographic scale, geographic advantage, digital adoption, infrastructure demand, and policy alignment makes the current Pakistan window uniquely compelling for the entry of Chinese technology and telecommunications enterprises

PAKISTAN'S INFORMATION TECHNOLOGY & DIGITAL SERVICES

PAKISTAN INVESTMENT HIGHLIGHTS

Pakistan's Technology & Digital Services sector presents a strong investment case driven by six core factors.

1. Pakistan is a rapidly expanding digital market with over 117 million internet users and 161 million broadband subscribers, underpinned by growing smartphone penetration and falling data costs.

2. Pakistan offers cost-competitive IT talent, with approximately 75,000 IT graduates annually, competitive salary structures, and a large pool of English-speaking developers, data scientists, and cybersecurity professionals.

3. Pakistan's growing freelance and startup ecosystem—ranked among the top freelance economies globally —provides a fertile ground for joint ventures, technology partnerships, and platform localization.

4. strong government backing reflected in the Digital Pakistan policy framework, data protection legislation, fiscal incentives for IT exports, and fast-track facilitation mechanisms for foreign investors through SIFC.

5. Pakistan's geographic location and time zone advantage enable service delivery to Middle Eastern, African, and East Asian markets with minimal latency.

Sixth, CPEC-enabled digital connectivity, including ongoing optical fiber and data corridor projects, positioning Pakistan as a digital services hub linking China with regional markets.

MARKET OVERVIEW AND OPPORTUNITY

Pakistan's Technology & Digital Services market currently stands at USD 3.8 Billion with a five-year compound annual growth rate (CAGR) of 30%. Demand growth is visible across the following priority sub-sectors:

- Fintech
- iE-Commerce
- AI Cloud Computing
- Cybersecurity
- Gaming and Animation

Demographic fundamentals provide durable demand momentum. Pakistan's population of 259.3 million , with a median age of 21.53 and an urbanization rate of 39.17%, creates a large and growing consumer base for digital services. Approximately 67 % of the population is under the age of 30, making Pakistan one of the youngest digital markets in the region.

Demand is further accelerated by expanding 4G and 5G coverage, increasing availability of digital payments (with 120 million mobile wallet users, rapid growth of e-commerce platforms, and rising venture capital interest in local startups.

TALENT POOL AND HUMAN CAPITAL

Pakistan possesses a young, growing, and increasingly skilled IT workforce. Key talent indicators include:

INDICATOR	DATA
Annual IT/CS graduates	**75,000**
Active freelancers	**2.37 Million**
English proficiency rank (EF Index)	**67 out of 123 Countries**
Software Development Firms	**20,711**

Government-led initiatives to align technical and vocational training programs with industry requirements, including partnerships with Chinese technology firms for knowledge transfer and upskilling, further strengthen long-term talent availability. Pakistani enterprises have demonstrated strong willingness to co-invest in training and certification programs with Chinese partners.

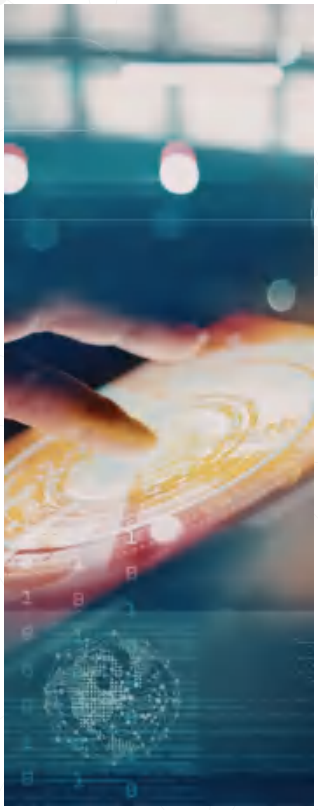
DIGITAL INFRASTRUCTURE AND CONNECTIVITY

Pakistan's digital infrastructure has improved significantly in recent years:

- Broadband subscribers: 160 million
- 4G/LTE population coverage: 81 %
- 5G rollout status: Commercial 5G services formally inaugurated on March 19, 2026
- International internet bandwidth: 17,210 Gbps
- Data center capacity: 23.53 MW

CPEC digital corridor projects, including the Pakistan-China Optical Fiber Cable project, are enhancing connectivity between the two countries and reducing latency for cross-border digital services.

EXPORT POTENTIAL & MARKET ACCESS FOR DIGITAL SERVICES



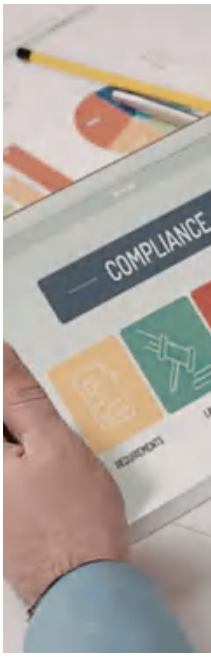
Pakistan's IT and IT-enabled services (ITeS) exports currently stand at USD 3.38 Billion, with a target to reach USD 15 Billion by 2030. Key export markets include the United States, United Kingdom, United Arab Emirates, and increasingly China.

Preferential market access for digital services is available through:

- Pakistan-China Free Trade Agreement (Phase II) – enabling technology partnerships and cross-border service delivery
- EU GSP+ status – facilitating service exports to European markets
- Growing demand for localization and Arabic/Urdu digital content in Middle Eastern markets

Chinese technology companies can leverage Pakistan as a nearshore delivery hub for Middle Eastern and Central Asian markets, benefiting from cultural affinity, language capabilities, and competitive cost structures.

GOVERNMENT FACILITATION AND POLICY FRAMEWORK



Pakistan offers a structured facilitation environment for foreign technology investors through multiple mechanisms:

- Special Technology Zones (STZs) – offering tax holidays, duty-free import of IT equipment, and one-window facilitation
- IT Export Incentives – including duty drawback, tax credits, and subsidized financing for IT companies
- Data Protection Framework – Personal Data Protection Bill providing legal certainty for data processing and cross-border data flows
- SIFC Facilitation – fast-track approvals and dedicated support for strategic technology investments

Investors benefit from streamlined approvals through federal and provincial single-window mechanisms, defined timelines for regulatory clearances, and post-investment support including dispute resolution and aftercare services.

FINTECH ECOSYSTEM

Pakistan's fintech sector is one of the fastest-growing in the region. Retail payments reached approximately 9.1 billion transactions worth USD 2.19 trillion in FY25, with digital channels accounting for 88% of total retail transactions (SBP Annual Payment Systems Review FY25) driven by:

- 130 million mobile wallet accounts (38 % year-on-year growth)
- 120 million active digital payment users
- Approximately 1 million merchants are enabled to accept digital payments, with QR-based transactions reaching 86 million valued at USD 836 million in FY25 (SBP Annual Payment Systems Review FY25)
- Regulatory sandbox operated by the State Bank of Pakistan
- 5 licensed digital banks
- The minimum capital requirement for digital retail banks starts at USD 5.4 million in the pilot phase, increasing to USD 14.3 million over three years (source)
- 460 active fintech startups
- Pakistan received USD 38.3 billion in foreign remittances in FY25, reflecting strong cross-border financial flows and integration into global payment ecosystems (SBP Remittances Data FY25)
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Opportunities for Chinese fintech companies include: digital lending platforms, payment gateway integration with Chinese e-commerce, cross-border remittance solutions, and buy-now-pay-later services.

OPPORTUNITY FOR CHINESE COMPANIES:

Deploy scalable digital payments, lending, and cross-border financial solutions into a rapidly digitizing, high-volume transaction market.

WHERE THEY FIT:

Payment infrastructure providers, digital banking technology partners, and cross-border settlement enablers working with local banks and fintechs.

INVESTMENT MODELS:

- Joint ventures with banks/fintechs for lending and payments
- Strategic partnerships for gateway and wallet integration
- Wholly owned subsidiaries for platform deployment

COMMERCIAL UPSIDE:

High transaction growth, large underbanked population, and positioning within regional remittance and trade corridors.

E-COMMERCE SECTOR

Pakistan's e-commerce market is valued at USD 5.2 Billion and growing at a CAGR of 5.92% annually. Key indicators include:

- Number of active online buyers: 11 million
- Pakistan’s e-commerce revenue was estimated at approximately USD 5.4 billion in 2024, reflecting steady growth in online consumer activity (Source)
- Major platforms: Daraz (Alibaba Group), PriceOye, Telemart, and others
- Daraz Group serves over 30 million users and 200,000 active sellers across its markets, demonstrating the scalability of marketplace models in Pakistan (Source)
- Payment methods: COD currently dominates at 90%, but digital payments are growing rapidly.
- E-commerce payments by volume are distributed as follows: Cash-on-Delivery (75%), debit cards (9%), credit cards (8%), mobile wallets (4%), bank transfers (2%), and BNPL (~1%) (Source)
- Cross-border e-commerce potential: Pakistan's FTA with China enables tariff-free movement of certain goods
- Around 80% of e-commerce transactions are conducted via mobile devices, highlighting strong mobile-first consumer behavior (Source)

OPPORTUNITY FOR CHINESE COMPANIES:

Scale marketplace models, optimize logistics, and integrate Pakistani sellers into Chinese cross-border ecosystems.

WHERE THEY FIT:

Platform operators, logistics and fulfillment providers, and cross-border marketplace integrators.

INVESTMENT MODELS:

Joint ventures with platforms/logistics firms

Strategic partnerships for cross-border integration

Wholly owned subsidiaries for warehousing and operations

COMMERCIAL UPSIDE:

Early entry into a growing market, ability to drive payment digitization, and integration into regional supply chains.

AI CLOUD COMPUTING

Pakistan's cloud computing market is rapidly expanding, driven by digital transformation across banking, retail, and government sectors. Key indicators:

- Current cloud market size: USD 180 million, including around USD 110 million in public cloud and USD 70 million in private cloud services (Source)
- Projected CAGR: 17.80%
- Major cloud service providers active: Microsoft Azure, Amazon Web Services, Google Cloud Platform, Huawei Cloud, Alibaba Cloud, IBM Cloud and Oracle.
- Pakistan’s National AI Policy 2025 has been formally approved, providing a strategic framework for AI adoption, governance, and innovation (National AI Policy 2025 -Ministry of IT & Telecom (MoITT)
- Government cloud policy: The Pakistan Cloud First Policy (2022) mandates that federal Public Service Entities (PSEs) prioritize cloud-based solutions for new IT investments. It establishes a Cloud Office for accreditation and a data classification framework to ensure data sovereignty and security
- Pakistan’s data center installed capacity is estimated at 23.53 MW in 2025, projected to grow to over 53 MW by 2030 (Source)
- The Government of Pakistan has allocated approximately 2,000 MW of electricity in the first phase for AI data centers and advanced computing infrastructure (Source)

OPPORTUNITY FOR CHINESE COMPANIES:

Capture rising demand for cloud infrastructure, data localization, and AI-led digital transformation across public and private sectors.

WHERE THEY FIT:

Cloud providers, AI solution developers, and infrastructure partners for enterprise and government digitization.

INVESTMENT MODELS:

- Wholly owned subsidiaries for data centers and cloud platforms
- Joint ventures for sector-specific AI solutions
- Strategic partnerships for cloud migration and deployment

COMMERCIAL UPSIDE:

Recurring cloud revenues, early positioning in AI adoption, and alignment with national digital transformation programs.

CYBERSECURITY

Pakistan's cybersecurity market is growing rapidly, driven by increasing digitalization, regulatory requirements, and threat awareness. Pakistan has been ranked in Tier 1 “Role Model” category in the ITU Global Cybersecurity Index 2024, reflecting strong institutional and policy development (Source). Key indicators:

- Current market size: USD 161.8 Million
- Projected CAGR: 7.05 %
- Regulatory framework: Prevention of Electronic Crimes Act (PECA), National Cyber Security Policy
- The National Cyber Security Policy establishes a framework for compliance, audits, and national-level cybersecurity governance across sectors (Source)
- Government initiatives: National CERT, Cyber Security Audit Framework
- Pakistan Information Security Framework (2025) introduces baseline mandatory cybersecurity controls for federal institutions (Source)
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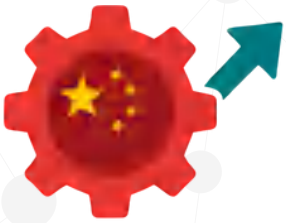
Address rising demand for enterprise and government-grade cybersecurity solutions as digital infrastructure expands.



OPPORTUNITY FOR CHINESE COMPANIES

WHERE THEY FIT:

Providers of network security, SOC infrastructure, data protection platforms, and cybersecurity services.

INVESTMENT MODELS:

- Strategic partnerships for SOC and enterprise security deployment
- Joint ventures for managed security services
- Wholly owned subsidiaries for product and solution rollout

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- Joint ventures for managed security services
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COMMERCIAL UPSIDE:

Stable, compliance-driven demand with long-term enterprise and government contracts.

GAMING & ANIMATION SECTOR

The global gaming and animation industry has surpassed USD 500 billion, and Pakistan has firmly positioned itself as a credible and scalable contributor within this rapidly expanding digital content economy.

Pakistan's creative technology ecosystem includes over 300 gaming studios, 50 animation studios, and a sector valued at over USD 500 million, reflecting both maturity and sustained growth potential.

PAKISTAN–CHINA COLLABORATION:

At the center of Pakistan's international expansion in this sector is its deepening relationship with China. Chinese firms have been among the earliest and most consistent partners for Pakistani studios, commissioning millions of dollars in game development, 3D animation, and Unreal Engine-based content. Pakistani-developed titles are already featured on leading Chinese distribution platforms, reaching hundreds of millions of users.

This partnership is not transactional, it is structural and strategic:

- Pakistani studios offer scalable, English-proficient, and technically advanced development capabilities across:
  a. Game development
  b. 3D animation
  c. AR/VR
  d. Metaverse environments

- Chinese partners bring:
  a. Global publishing infrastructure
  b. Advanced distribution ecosystems
  c. Access to the world's largest gaming market

Together, this collaboration represents a strong Asia-to-Asia creative production model delivering measurable commercial success.

INSTITUTIONAL SUPPORT

Pakistan's Ignite National Technology Fund, under the Ministry of IT & Telecom, has established the Centre of Excellence in Gaming & Animation (CEGA), with facilities at:

- NED University, Karachi
- NASTP, Lahore

CEGA is designed to accelerate:

1. Export-oriented production
2. Industry-academia collaboration
3. Market access, particularly toward China

OPPORTUNITY FOR CHINESE COMPANIES:

Leverage Pakistan's creative and technical capabilities to build scalable global content pipelines across gaming and digital media.

WHERE THEY FIT:

- Game publishers
- Animation studios
- AR/VR platform providers
- Metaverse developers
- Digital content investors

INVESTMENT MODELS:

- Joint ventures with Pakistani studios
- Co-development agreements
- IP sharing and co-creation models
- Studio investments and acquisitions
- Talent exchange and training programs

COMMERCIAL UPSIDE:

- Cost-efficient, high-quality production
- Access to global content pipelines
- Rapid scalability across multiple platforms
- Entry into emerging creative economies

Pakistan and China share a common vision of a technology-driven future, underpinned by innovation and long-standing cooperation. The gaming and animation sector presents a high-growth frontier for this partnership.
Pakistan is ready. The studios are built. The talent is world-class. The opportunity is immediate.

Financing Ecosystem and Investment Models
Investors have access to long-term project financing from local banks and development finance institutions, complemented by Chinese financial institutions including ICBC, Bank of China, and the Silk Road Fund.

Venture capital and private equity activity in Pakistan's technology sector reached USD 74.2 Million in the last 12 months, with active investors including Zayn VC, Indus Valley Capital, i2i Ventures, Sarmayacar, Fatima Gobi Ventures, Gobi Partners, Shorooq Partners Sturgeon Capital, K3 Ventures, Yango Ventures, Andreessen Horowitz (a16z), Tim Draper / Draper Associates and International Finance Corporation.
Investment structures may be configured as joint ventures, wholly-owned subsidiaries, or strategic partnerships, supported by incubation centers and technology parks across major cities.

PAKISTAN'S TELECOMMUNICATIONS SECTOR INVESTMENT PITCHBOOK

PAKISTAN INVESTMENT HIGHLIGHTS

Pakistan's Telecommunications sector presents a strong investment case driven by six core factors.

First, Pakistan is a rapidly expanding telecommunications market with over 205 million mobile subscribers, over 156.6 million broadband subscribers, and growing demand for 4G/5G services, fiber-to-the-home (FTTH), and enterprise connectivity solutions. Telecom coverage exceeds 92% of the country's geographic area, and 97% of cellular networks have been upgraded to 4G technology. The sector recorded revenues exceeding PKR 1 trillion in FY2024–25, reflecting a 12% year-on-year increase, with sectoral investments growing by 9% to reach US$ 838 million.

Second, Pakistan offers cost-competitive engineering talent, with approximately engineering graduates annually, competitive salary structures, and a growing pool of network engineers, RF specialists, and telecommunications professionals.

Third, Pakistan's geographic location at the crossroads of South Asia, Central Asia, the Middle East, and China positions it as a strategic hub for international data transit and regional connectivity architectures. Pakistan is currently strengthening its regional connectivity with four new high-capacity submarine cables under deployment.

Fourth, strong government backing reflected in the Telecom Policy framework, Universal Service Fund (USF) obligations, fiscal incentives for telecom infrastructure investment, and fast-track facilitation mechanisms for foreign investors through SIFC. The PTA's regulatory framework provides licensing certainty across fixed, mobile, LDI, and value-added services, with a recently concluded 5G spectrum auction in March 2026 awarding licenses to participating operators for the rollout of next-generation services.

Fifth, CPEC-enabled connectivity, including the Pakistan-China Optical Fiber Cable project (operated by SCO with 1.0 Tbps installed capacity and 0.45 Tbps activated) and ongoing digital corridor initiatives, positioning Pakistan as a critical node in cross-border data transit linking China with the Middle East, Africa, and Central Asian markets.

Sixth, significant infrastructure gap requiring investment in towers, optical fiber networks, routers, switches, BTS equipment, IoT devices, and next-generation network equipment — creating substantial opportunities for both deployment and local manufacturing. Currently, fiberization of mobile tower sites stands at only 17.9%, indicating a massive investment opportunity in fiber backhaul.

MARKET OVERVIEW AND OPPORTUNITY

Pakistan's Telecommunications market currently stands at USD 3.8 Billion. The sector's fiscal contributions to the national exchequer rose to PKR 402 billion in 2025, up from PKR 336 billion in 2024. Total data usage reached a record 27,727 petabytes in 2025. Demand growth is visible across the following priority areas:

- Mobile network services (voice, data, 4G/5G)
- Fixed-line broadband and FTTH deployment
- International connectivity and submarine cable landing
- Tower infrastructure and passive sharing
- Enterprise and wholesale connectivity solutions
- IoT and M2M connectivity platforms

Demographic fundamentals provide durable demand momentum. Pakistan's population of **over 255 million**, with a median age of **20.8 years** and an urbanization rate of **approximately 35%**, creates a large and growing consumer base for telecommunications services. Broadband penetration has crossed 64.15%.

Demand is further accelerated by expanding smartphone penetration, increasing digital payments adoption (with 150.8 million mobile wallet users as in Oct-Dec 25), rapid growth of e-commerce platforms requiring robust last-mile connectivity, and rising enterprise demand for dedicated bandwidth and cloud connectivity.

TELECOMMUNICATIONS INFRASTRUCTURE & CONNECTIVITY

Pakistan's telecommunications infrastructure presents both significant existing capacity and substantial investment opportunities:

- Total mobile subscribers: **205 million**
- Broadband subscribers: **over 161 million**
- 4G/LTE population coverage: **81%**
- 5G rollout status: **Spectrum auction conducted and licenses awarded in March 2026**
- Total cell sites: **58423**
- 4G cell sites: **56694**
- Fiberization of tower sites: **10458**
- Fiber optic backbone length: **224,593 Km (Long Haul: 73,508 km, Metro: 151,085 km)**
- International internet bandwidth: **18.47 Tbps (installed)**
- Submarine cable landing stations: **Multiple systems including PTCL (SMW4, IMEWE, AAE-1), TWA (TWA-1; SMW5), Cybernet (PEACE)**.
- International terrestrial connectivity: **Pakistan-China OFC via CPEC (SCO, 1.0 Tbps installed, 0.45 Tbps activated)**

CPEC digital corridor projects, including the Pakistan-China Optical Fiber Cable project, are enhancing connectivity between the two countries and reducing latency for cross-border digital and data transit services.

TALENT POOL AND HUMAN CAPITAL

Pakistan possesses a young, growing, and increasingly skilled telecommunications workforce. Key talent indicators include:

INDICATOR	DATA
Total Cell Sites Nationwide	58,423
Existing Tower Companies	Total 13 – Major companies include Deodar (Pvt.) Ltd, Engro Enfrashare (Pvt.) Ltd, Edotco Towers Pakistan (Pvt.) Ltd, Tower Power (Pvt.) Ltd, Awal Telecom (Pvt.) Ltd, M.K.Z. Networks (Pvt.) Ltd

Government-led initiatives to align technical and vocational training programs with industry requirements, including partnerships with Chinese technology firms for knowledge transfer and upskilling, further strengthen long-term talent availability. Pakistani enterprises have demonstrated strong willingness to co-invest in training and certification programs with Chinese partners.

GOVERNMENT FACILITATION AND POLICY FRAMEWORK

Pakistan offers a structured facilitation environment for foreign telecommunications investors through multiple mechanisms:

- **Telecom Policy Framework:** Telecommunication Authority (PTA), established under the Pakistan Telecommunication (Re-Organization) Act, 1996. PTA administers a comprehensive, multi-tiered licensing regime designed to facilitate investment and promote competition. The licensing framework encompasses Long Distance and International (LDI) licenses for international voice and data traffic; Fixed Local Loop (FLL) licenses for last-mile fixed-line connectivity; Cellular Mobile licenses for nationwide mobile network operations; Class Value Added Services (CVAS) licenses covering Internet Service Provision (ISP), Voice Services, and Vehicle Tracking Services (VTS); Telecom Infrastructure Provider (TIP) and Telecom Tower Provider (TTP) licenses for infrastructure sharing; and Mobile Virtual Network Operator (MVNO) licenses enabling service provision over existing mobile networks without owning spectrum. This diversified licensing structure offers Chinese investors and technology partners multiple entry points for collaboration — whether in network infrastructure deployment, service provision, tower sharing, or value-added digital services — under a well-defined and transparent regulatory framework.

- **Special Technology Zones (STZs) and SEZs:** Offering tax holidays, duty-free import of telecom equipment, and one-window facilitation
- **Universal Service Fund (USF):** Each licensed telecom operator contributes 1.5% of its Adjusted Gross Revenue (AGR) to the Universal Service Fund, which is administered under the USF Act to finance connectivity in unserved and underserved areas of Pakistan. Since its inception, USF has undertaken 26 optical fiber cable (OFC) backhaul projects, deploying approximately 18,229 km of fiber across the country. In addition, 96 broadband access projects have been completed under which approximately 3,000 new BTS sites have been deployed and around 1,000 existing sites have been upgraded to expand coverage and service quality in remote and rural communities.

- **Data Protection Framework:** Personal Data Protection Bill providing legal certainty for data processing and cross-border data flows
- **SIFC Facilitation:** Fast-track approvals and dedicated support for strategic telecommunications investments

Investors benefit from streamlined approvals through federal and provincial single-window mechanisms, defined timelines for regulatory clearances, and post-investment support including dispute resolution and aftercare services.

TOWER AND PASSIVE INFRASTRUCTURE

Pakistan's tower infrastructure sector presents significant opportunities driven by:

- Total cell sites: **58423**
- 4G cell sites: **56694**
- Tower sharing ratio: **~1.3**
- Active tower companies: **9 . Deodar (Pvt.) Ltd, Engro Enfrashare (Pvt.) Ltd, Edotco Towers Pakistan (Pvt.) Ltd, Tower Power (Pvt.) Ltd, Awal Telecom (Pvt.) Ltd, M.K.Z. Networks (Pvt.) Ltd, DHAI Teleman (Pvt.) Ltd, Telecom Infrastructure Development (Pvt.) Ltd, Smart Net (Pvt.) Ltd**

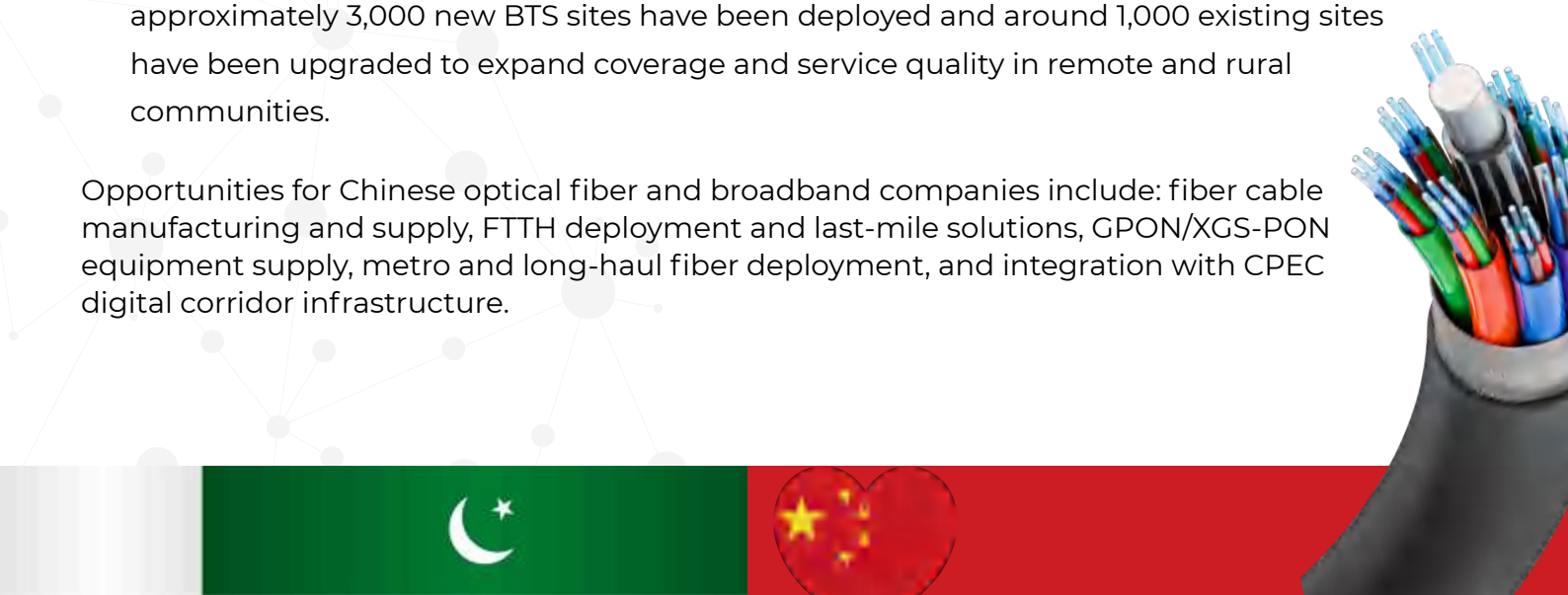
Opportunities for Chinese tower and infrastructure companies include: greenfield tower deployment, tower sharing and managed services, in-building solutions, small cell deployment for 5G densification, and rural connectivity tower rollout under USF programs.

OPTICAL FIBER AND FIXED BROADBAND

Pakistan's optical fiber network is expanding rapidly, driven by growing broadband demand and government-led connectivity programs. Key indicators:

- Total fiber optic cable deployed: **224,593 Km (Long Haul: 73,508 km, Metro: 151,085 km)**
- FTTH subscribers: **over 2.7 million**
- FTTH penetration rate: **1%**
- Fiberization of mobile towers: **17.9% indicating rapid growth trajectory but massive remaining opportunity**
- Licensed FLL operators: **376 licenses granted to 145 distinct companies**
- USF-funded fiber projects: Since its inception, USF has undertaken 26 optical fiber cable (OFC) backhaul projects, deploying approximately 18,229 km of fiber across the country. In addition, 96 broadband access projects have been completed under which approximately 3,000 new BTS sites have been deployed and around 1,000 existing sites have been upgraded to expand coverage and service quality in remote and rural communities.

Opportunities for Chinese optical fiber and broadband companies include: fiber cable manufacturing and supply, FTTH deployment and last-mile solutions, GPON/XGS-PON equipment supply, metro and long-haul fiber deployment, and integration with CPEC digital corridor infrastructure.



NETWORK EQUIPMENT AND DEVICE MANUFACTURING

Pakistan currently relies on imports to meet a significant share of its telecommunications equipment demand. This import dependence highlights a clear opportunity for local assembly and manufacturing of:

- BTS / Base Station equipment
- Routers and switches
- Optical fiber cable and accessories
- IoT devices and sensors
- Small cells and DAS equipment
- CPE and broadband modems/ONTs

Local production offers material advantages over Completely Built Unit (CBU) imports, including lower land costs, reduced freight exposure, shorter lead times, and improved working capital efficiency. Government policy explicitly favors localization through higher duties on CBUs and concessional treatment for raw materials and Semi-Knocked Down (SKD) kits.

PROPOSED AREAS OF PAKISTAN-CHINA COOPERATION IN TELECOM & DIGITAL TECHNOLOGIES

Pakistan occupies a unique strategic position as a connectivity gateway linking China with South Asia, the Middle East, Central Asia, and Africa. Building on the strong foundation of CPEC and the shared vision of a Digital Pakistan, the two countries are well-positioned to deepen their partnership in the ICT sector. The proposed areas of cooperation outlined below reflect a mutual commitment to commercially viable investment, technology transfer, industrial partnership, and digital connectivity — contributing to sustainable growth and prosperity for both nations.

1. **ICT Infrastructure Development:** A resilient and future-ready digital infrastructure is the cornerstone of bilateral cooperation. Pakistan and China can jointly advance the following infrastructure initiatives:

    a. **Cross-Border Optical Fiber Network:** Under CPEC, the cross-border optical fiber cable (OFC) network is a transformative connectivity project. Phase I (Rawalpindi–Khunjerab) has been successfully completed. Phase II — extending coverage from Rawalpindi to Karachi and Gwadar, including a submarine cable landing station at Gwadar — has been approved. Pakistan and China can collaborate to expedite its execution.

b. **Broadband Access for Rural Areas:** Leveraging CPEC route infrastructure, both sides can work to extend fiber connectivity to underserved rural communities, improving digital literacy, economic inclusion, and equitable access to digital services. USF may also be engaged in this regard.
c. **Fiberization for 5G Readiness:** High-capacity fiber backbone infrastructure is a prerequisite for advanced 5G and next-generation networks. Collaboration with the Chinese side for proliferation of OFC can significantly accelerate fiberization, which is critical for 5G readiness.

2. **Digital Connectivity & Resilience**

- **Internet Exchange Points (IXPs):** Financial and technical assistance from China for establishing and operating IXPs in Pakistan, enhancing local traffic routing, reducing latency, and improving network resilience.

3. **Green Telecom Infrastructure**

- Solarization & Alternate Power Solutions: Collaboration with the Chinese side for conversion of telecom sites to solar-powered and energy-efficient infrastructure will reduce operational costs and carbon footprint, while also supporting the energy-intensive requirements of 5G network rollout.

4. **Policy & Regulatory Collaboration**
Harmonized policy and regulatory environments are essential to enabling cross-border digital trade and technology deployment. Areas of joint focus include:

a. **Emerging Technology Regulation:** Pakistan and China may collaborate towards regulatory harmonization for Artificial Intelligence (AI), Blockchain, and 5G, including standards development, licensing models, data sovereignty frameworks, and national security considerations.
b. **Digital Economy & Trade Facilitation:** Both countries may collaborate on regulatory structures to support cross-border e-commerce, technology transfer, and digital infrastructure investment, enabling equitable growth of both digital economies.
c. **Spectrum Management & Harmonization:** Joint studies on spectrum efficiency particularly for 5G and emerging technologies will aim to optimize spectrum utilization and minimize interference across borders, contributing to greater regional interoperability.
d. **International Standards Alignment:** Pakistan and China may coordinate joint positions for global standards bodies, including the World Radio Conference (WRC) and Asia-Pacific Group (APG), aligning on data security, cybersecurity resilience, and international data-sharing norms.

e. **Engagement of PTA in Technology Forums / Conferences:** PTA may be actively engaged in technology forums and conferences in China, enabling PTA human resources to gain exposure to state-of-the-art technologies and modern regulatory practices.

5. **Capacity Building & Knowledge Sharing**

Sustained collaboration requires investment in human capital and institutional knowledge. The following initiatives are proposed:

a. **Regulatory Exchange Programs:** Short-term and long-term staff exchanges between PTA and its Chinese counterparts will facilitate the transfer of regulatory best practices in 5G, ORAN, IoT, AI, and emerging technology governance, institutionalizing knowledge-sharing at the regulatory level.
b. **Joint Technical Workshops & Training:** Both sides may co-organize training programs on 5G deployment, AI integration in telecom, IoT ecosystems, infrastructure sharing, e-waste regulation, and network neutrality fostering a shared technical vocabulary and aligned implementation practices.
c. **Innovation Hubs & R&D Partnerships:** Pakistan and China may jointly establish innovation hubs to catalyze research in IoT, AI, and next-generation telecom. These hubs will nurture local talent and generate technology applications across sectors including agriculture, healthcare, and smart urban development.

6. **5G & 6G Technical Cooperation**

- **Joint Research in 5G/6G:** Pakistani telecom operators/vendors and Chinese technology firms can collaborate on applied research, testing, and deployment of 5G technology particularly for use cases in industrial IoT and smart cities opening new commercial avenues for both sides

FINANCING ECOSYSTEM AND INVESTMENT MODELS

Investors have access to long-term project financing from local banks and development finance institutions, complemented by Chinese financial institutions including ICBC, Bank of China, and the Silk Road Fund.

Venture capital and private equity activity in Pakistan's technology sector reached USD 74.2 Million in the last 12 months, with active investors including Zayn VC, Indus Valley Capital, i2i Ventures, Sarmayacar, Fatima Gobi Ventures, Gobi Partners, Shorooq Partners, Sturgeon Capital, K3 Ventures, Yango Ventures, Andreessen Horowitz (a16z), Tim Draper / Draper Associates, and International Finance Corporation. Investment structures may be configured as joint ventures, wholly-owned subsidiaries, or strategic partnerships, supported by Special Economic Zones, incubation centers, and technology parks across major cities.

PROVEN SUCCESS STORIES

Several Chinese technology and telecommunications companies have successfully entered the Pakistani market:

Zong (China Mobile Pakistan): One of Pakistan's largest mobile network operators with nationwide coverage and expanding 4G services

Huawei: Leading provider of telecommunications infrastructure, devices, and enterprise solutions, with cloud and AI services expanding

ZTE: Major supplier of network infrastructure equipment to Pakistani operators

Daraz (Alibaba Group): Acquired and expanded to become Pakistan's leading e-commerce platform, relying on robust telecom infrastructure

TikTok: Among the most popular social media platforms in Pakistan with 66.9 million active users

These success stories demonstrate the scalability and sustainability of technology and telecommunications investments in Pakistan.

PATHWAY TO INVESTMENT

Establishing technology and telecommunications operations in Pakistan follows a clear pathway from company incorporation and regulatory approvals to talent acquisition, network deployment, product launch, and scaling. The Pakistan-China B2B Investment Conference on IT and Telecom Sector offers a dedicated platform for Chinese and Pakistani technology and telecommunications companies to access project feasibilities, engage directly prior to and during the Conference, and subsequently conduct on-ground site visits. Investors are encouraged to engage with the Pakistan Embassy in Beijing and Pakistan Consulates-General in China for further information.