CAREC TECHNOLOGY FORUM

Digital infrastructure, investment models, and regional cooperation

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The 'Digital Code' Milestone: From Fragmented to Unified

2019
Digital Kyrgyzstan 2019–2023 Strategy

2021
Ministry of Digital Development Founded

2023
Open Data & G-Cloud Expansion

2024
Digital Code Enacted

2028
Universal Broadband Penetration Target

Legal Unification

The Digital Code consolidates multiple fragmented regulatory instruments into one unified legal framework — a foundational step for investor certainty and cross-agency digital cooperation.

Legal Container — Not Completion

The Code establishes the legal architecture. Enforcement, compliance capacity, and cross-agency coordination are the active implementation agenda for 2024–2028.

Regional Legal Leadership

By enacting the Code ahead of most Central Asian peers, Kyrgyzstan is setting a de facto standard for digital governance law in the region.

Global Innovation Index Trajectory

Kyrgyzstan climbed from 117th (2013) to 94th (2022) among 132 countries — reflecting the cumulative impact of successive digital reform programs.

The Tunduk Ecosystem & G-Cloud: The Digital Identity as Master Key

Tunduk Platform

- Interoperability layer connecting all government agencies on a single backbone
- Comparable architecture to Estonia's X-Road — a recognised global benchmark
- Enables citizen data portability without repeated self-declaration across agencies

G-Cloud Infrastructure

- Sovereign Government Cloud reduces agency-level IT fragmentation and cost duplication
- Scalable foundation for all future digital service deployment across ministries
- Data sovereignty assurance critical for multilateral programme credibility

Digital Identity — Master Key

- Single digital credential enabling all citizen-to-state interactions
- Measurable reduction in multi-agency visit requirements per service transaction
- Foundation layer for digital tax ID, health profile, and social service integration

Source: Ministry of Digital Development and Innovation.

The Last-Kilometer Opportunity: Geographic Connectivity Unevenness

~60%

Population living in rural areas (2024)

97.9

Active internet users per 100 inhabitants (2024)

455K

Fixed broadband subscriptions (2023)

The majority of digital content remains in Russian or English

The Challenge

Mobile internet penetration reached 97.9 per 100 inhabitants by end-2024 — a major achievement. The structural gap remaining is in fixed broadband: only 455,000 fixed connections versus 6.5 million mobile users. Rural and mountainous regions rely primarily on mobile access, limiting capacity for data-intensive public services.

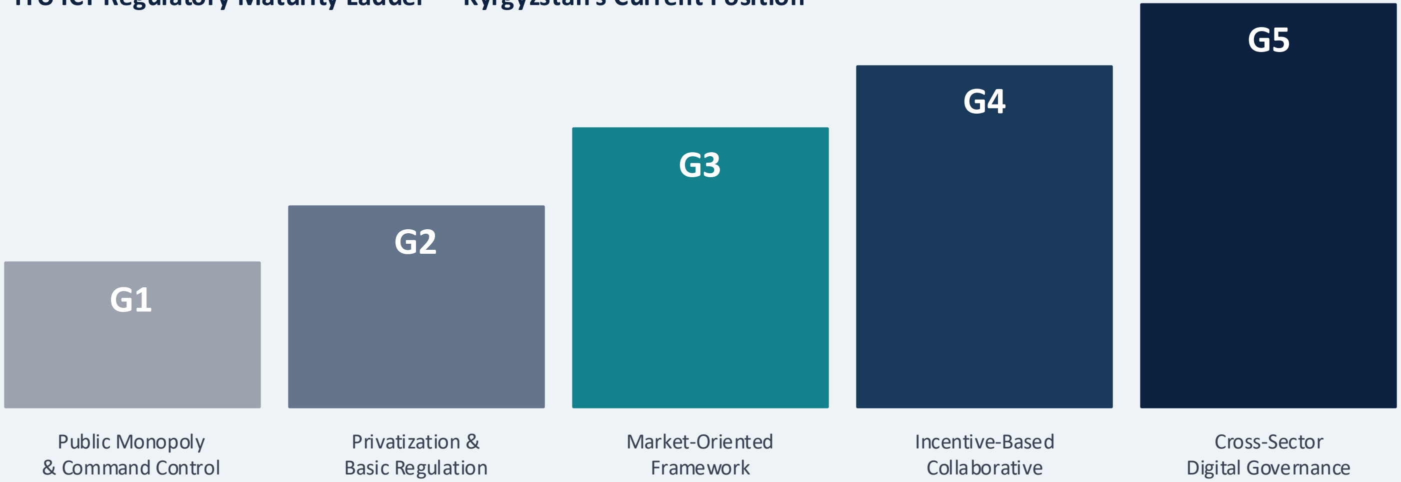
The Investment Case

The shift from basic connectivity to high-quality, fixed broadband represents the next investment frontier. Digital CASA-KR: 2,500+ km of fiber planned; 380+ km deployed — connecting 4,000 facilities. Closing the fixed broadband gap unlocks the full productivity of Tunduk digital services, e-taxation, and e-commerce for all regions. High-speed connection growth tripled in five years — demand is established.

Sources: National Statistical Committee of the Kyrgyz Republic (March 2026); World Bank; ADB Management and Staff.

The Regulatory Modernization Frontier: Evolving Toward G4–G5

ITU ICT Regulatory Maturity Ladder — Kyrgyzstan's Current Position



E-Government Index (UN 2024)

0.73

Above global avg (0.64)

Strong service delivery score, above regional average for Central Asia — reflecting Tunduk's deployment at scale.

E-Participation Index (UN 2024)

0.46

Gap vs. E-Gov score

Service delivery outpaces citizen engagement — the next regulatory frontier and a direct investment opportunity.

Cybersecurity (ITU 2024)

ITU Global Cybersecurity Index (2024): Kyrgyzstan — Tier 3 'Establishing'

Sources: UN E-Government Survey 2024 · ITU Global Cybersecurity Index 2024 · ITU ICT Regulatory Tracker (G1–G5 Framework)

Kyrgyzstan's Digital Infrastructure: Key Indicators & Trajectory

★ Indicators where Kyrgyzstan performs competitively relative to its economic size and landlocked geography

Indicator	Value (2024)	Trend	Context / Significance	
Internet users per 100 inhabitants	**97.9 ★**	**↑ from 80 in 2020**	Major 5-year gain	
Mobile internet users	**6.5M ★**	**↑ rapidly**	Primary access mode — mobile broadband dominant; market approaching saturation	
Fixed broadband subscriptions	455K	↑ since 2020	Growth but gap vs. mobile — key investment gap	
High-speed connections (>10 Mbps)	**3× growth ★**	**↑ strongly**	Quality shift underway	
UN E-Government Index (2024)	**0.73 (above global avg) ★**	**↑ improving**	Above global average of 0.64; Tunduk platform	
ITU Cybersecurity Index (GCI 2024)	49.6 / 100	↑ improving	Below global avg (65.7) — closeable gap; Tier 3 'Establishing'; positive direction	
IT Export Tax Regime (HTP)	**Perpetual since 2022 ★**	**Stable**	0% VAT, 1% gross revenue — unique perpetual regime	

Sources: NSCKR, ITU, UN

Smart Cities & Urbanization: Erasing the 'Mountain Tax'

Bishkek & Osh hold over 38% of the national population. Smart city investment here delivers disproportionate national returns and demonstrates a replicable model for regional centers.

Intelligent Transport Systems (ITS)

- Traffic management reduces congestion costs as Bishkek urbanization accelerates.
- Incident response times reduced in pilot zones — quantifiable ROI.
- Integrated with national e-ID for vehicle and driver data interoperability.

Smart Utility Grids

- Smart metering addresses commercial energy losses — among highest in the region.
- Real-time monitoring enables targeted grid investment decisions with data backing.
- Pairs with energy sector modernization financing for compounding program impact.

Digital Public Services — Urban Pilots

- School and kindergarten admission fully digitized via national Tunduk platform.
- iLab digital health profiles reduce manual diagnostic bottlenecks at scale.
- G-Cloud enables city-level services on shared sovereign infrastructure — no duplication.

Urbanization Cost Mitigation Logic

- Smart city investment absorbs rural-urban migration growth without proportional infrastructure spend.
- The 'mountain tax' (geographic isolation cost) reducible through digital service delivery.
- Digital government transactions = measurable reduction in per-citizen bureaucracy cost.

Source: Ministry of Digital Development and Innovation, 2024–2028 Concept to ADB Management and Staff.

Investment Architecture: PPP 2.0 & Catalytic Financing Instruments

Triple Helix PPP 2.0

Government – Academia – Industry

GOVERNMENT

Policy, regulation, procurement & digital mandate setting

ACADEMIA

Research, talent pipeline & digital skills formation

INDUSTRY

Technology, capital, scale & market reach

Catalytic Financing Instruments

Regional Digital Programme (CAREC)

Flagship multilateral instrument — fiber backbone, cross-border data infrastructure, and e-government services across Central Asia under one programmatic framework.

Technical Assistance Grants

Regulatory capacity building, policy harmonization, and Digital Code implementation support. Non-debt instrument that creates conditions for larger concessional lending.

Blended Finance Structure

Concessional capital as first-loss layer de-risks private co-investment in fiber and data centers. Target multiplier: $1 of catalytic grant unlocks $3–5 of private infrastructure capital.

Results-Based Lending

Disbursements tied to Digital Kyrgyzstan 2024–2028 KPIs — penetration rates, e-service uptake, and GCI improvement — creating built-in accountability architecture for all investors.

Investment Risk-Reward Framework: Five Opportunity Areas

Five investment areas assessed across key dimensions — evidence-based tool for investor and donor decision-making

Investment Area	Market Size	Growth Rate	Policy Support	Time Horizon
IT Services Export (HTP)	**Medium**	**High**	**Very High ★★★★★**	**Near-term**
Connectivity Infrastructure	**Large**	Medium	**High ★★★★**	Long-term
Fintech & Digital Finance	**Large**	**Very High**	**High ★★★★**	Med-term
E-Commerce	Medium	**High**	**High ★★★★**	Med-term
GovTech / AI Public Sector	Medium	**High**	**Very High ★★★★★**	Long-term

Positive

Moderate / Watch

Hardwiring the Soft Infrastructure: Digital as the Next Layer of Trade Corridor Development

The Kyrgyz Republic sits at the natural routing intersection of the BRI's eastward fiber infrastructure, Central Asia's westward corridors, and South Asian internet exchange routes—a position of structural digital advantage

Physical Corridor

CAREC has invested in roads, railways, and border crossings — connecting Central Asia to global markets through six designated trade corridors.

The Missing Layer

Physical movement of goods requires parallel digital infrastructure: e-customs, digital payments, e-signatures, and data flows.

Kyrgyzstan: Where Physical and Digital Corridors Intersect

Transit Node Advantage

Kyrgyzstan's longhaul backbone infrastructure includes international fiber networks with border crossings into neighboring countries — positioning the Republic as a natural data transit and exchange node.

Latency & Routing

Eastward fiber routes via offer a latency advantage — a structural technical benefit for cross-regional connectivity.

Trade Facilitation Multiplier

Digital corridor investment directly amplifies physical corridor returns: e-customs, e-signatures, and cross-border data flows reduce the bureaucracy tax at every CAREC border crossing.

Regulatory First-Mover

The Digital Code (2024) and Digital Corridor MoU (Nov 2025) mean KG has the legal architecture in place. The gap is not policy — it is implementation capital and technical standards alignment.

“

The Kyrgyz Republic has moved into a phase of structural digital maturity. By institutionalizing a unified legal architecture and sovereign data backbone, the Republic is effectively eliminating the 'geographical tax' inherent to landlocked economies.

For the CAREC region, this creates a high-transparency, low-friction corridor that serves as a benchmark for cross-border data interoperability and digital trade facilitation.

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