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PLATFORM ECONOMY DEVELOPMENT IN SCO COUNTRIES: CURRENT STATUS, REGIONAL DIFFERENCES, AND KEY DRIVERS

This study analyzes the development of platform economy in SCO member states from 2018 to 2023 and finds significant regional differences: China contributes 82 % of digital economy income, while Central Asian countries such as Tajikistan (with an Internet penetration rate of only 30 %) lag significantly. There are significant differences in policy efficiency among member states, and a triple digital gap has formed in member states in terms of Internet access, digital applications and benefits. It is recommended to narrow the gap and promote regional digital coordinated development through cross-border digital infrastructure, joint cross-border e-commerce training and empowerment of small and medium-sized enterprises.

Key words: *digital economy, infrastructures, platform economy, SCO, digital divide.*

Развитие платформенной экономики в странах ШОС: текущее состояние, региональные различия и ключевые факторы

Проведен анализ развития платформенной экономики в странах – членах ШОС в период с 2018 по 2023 г., выявлены региональные различия. Отмечается, что на долю Китая приходится 82 % доходов цифровой экономики, в то время как центральноазиатские страны, такие как Таджикистан (с уровнем проникновения Интернета 30 %), значительно отстают. Между государствами – членами ШОС существуют значительные различия в эффективности проводимой политики по развитию платформенной экономики, что приводит к формированию тройного цифрового разрыва: доступа к Интернету, цифровых приложений и преимуществ. Представлены рекомендации по сокращению этого разрыва и содействию региональному скоординированному развитию посредством совершенствования трансграничной цифровой инфраструктуры, совместного обучения трансграничной электронной коммерции и расширения прав и возможностей малых и средних предприятий.

Ключевые слова: *цифровая экономика, трансграничная электронная коммерция, платформенная экономика, ШОС, цифровой разрыв.*

Introduction

The platform economy is expanding globally, fueled by algorithms and new business models [1]. Within the Shanghai Cooperation Organization (SCO), China's «Digital Silk Road» aims to boost regional integration. However, differences among SCO members hinder «Inclusive digital cooperation» (SCO Summit Declaration, 2022). Existing research focuses on single countries, neglecting regional comparisons – particularly the SCO's unique digital geopolitics. The digital gap impact on infrastructure-policy-market dynamics in transition economies also remains understudied [2]. This paper analyzes SCO members' infrastructure, policies, and market factors to propose a hierarchical governance framework for bridging gaps and enhancing cooperation.

Literature Review

The COVID-19 pandemic accelerated digital adoption, driving growth in the digital

consumer economy [3]. Digital platforms, 5G, and artificial intelligence together constitute key digital infrastructure. Definitions of the digital economy and digital platforms vary [4; 5]. Platforms typically share three traits: digital mediation, multi-user interaction, and task facilitation [6]. They serve as marketplaces for transaction matching and brand-building [7], operating via information digital capital (IDC) and information digital rent (IDR) [8]. Classifications include innovative vs. transactional platforms [9] or multilateral trading, innovation, and information platforms [10]. Platforms drive product and process innovation, enabling continuous value creation [11].

Global leaders like Alibaba and Amazon exemplify how digital platforms reshape business models through network effects [12]. Platform economy refers to a new form of economic organization born along with the popularity and application of digital technology [13]. Digital platforms are multilateral digital frameworks that shape the conditions for mutual interaction among participants. Specifically, large digital platforms provide cloud, network, and terminal infrastructure for the construction of other platforms. Driven by business model and technological innovation, they trigger the reorganization of various markets and work arrangements and lead to the goals of value creation and industrial innovation [14]. Cross-border e-commerce is a product of the development of the Internet and information technology. Cross-border e-commerce is influenced by transaction costs and cultural factors [15; 16]. Its essence is a new foreign trade model that conducts cross-border e-commerce activities with e-commerce transaction platforms, namely digital platform enterprises, as the core and realize transaction settlement. It is also a typical form of platform economy.

Digital platform enterprises have become the carrier of platform economy development [17]. Platform economy development is a new economic, new work modalities form spawned by a new round of scientific and technological revolution [18]. Platforms are the foundation and a key component of the digital economy and the driving force behind the integration of the digital economy and the real economy [19]. The platform economy – encompassing digital services and the gig economy-forms a core component of the digital economy (Figure 1). Emerging «platform capitalism» reflects ICT advancements and shifting consumption patterns [20–22].

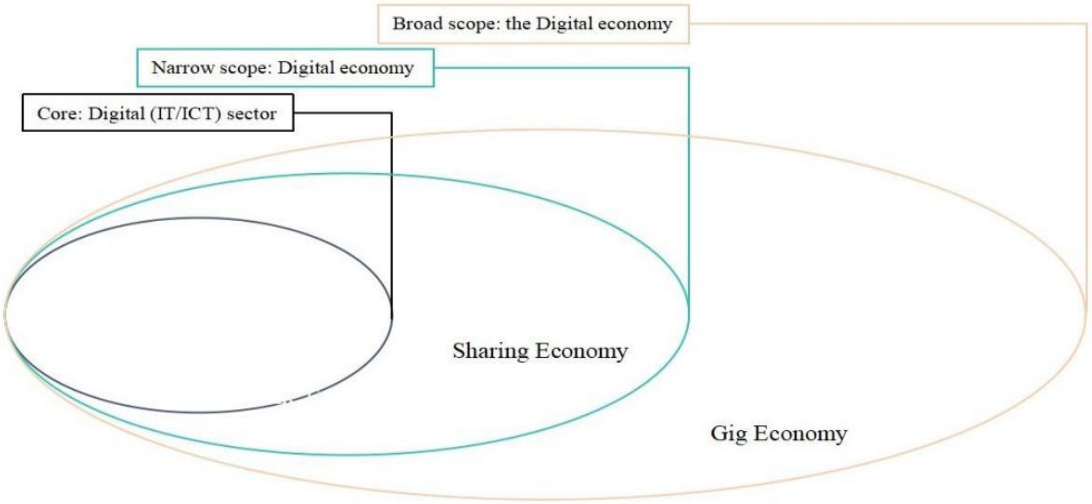

Figure 1 - Map of the relationship between the platform economy and the digital economy

Source – developed by the authors.

Current research on the platform economy mainly focuses on Western countries, leaving comparative analysis of SCO member states, especially studies on the digital gap, insufficient.

The applicability of existing digital divide theories to the SCO context remains questionable.

This study analyzes differences in platform economy development among SCO

members from three dimensions-infrastructure, policy, and market-based on 2020–2023 data. It explores the boundaries of traditional digital divide theories in this region and proposes tiered governance strategies tailored to countries like Kazakhstan and Pakistan to bridge digital gaps among members.

Methods

We compare the development status of SCO member states using trend analysis (infrastructure growth vs. platform economy expansion) and cross-country benchmarking (internet penetration rate), presenting results in tabular form.

Comparison of the status of platform economy in SCO member countries

The 2022 Samarkand Declaration and 2023 Digital Economy Cooperation Outline established SCO's digital economy framework, promoting cooperation mechanisms like big data centers and computing alliances.

Despite pandemic and geopolitical shocks, SCO's platform economy maintained growth, with notable expansion in e-commerce and social networks.

AI breakthroughs (e. g., ChatGPT) became new focal points in global platform competition, and generative artificial intelligence has become a new «race point» for global platform competition.

Comparison of platform economy market size and enterprises in SCO member countries

In recent years, the platform economy in SCO member countries has been on the rise, and the fast-growing areas include e-commerce, life services, games and entertainment, and social networks.

Compared with China, the number of platforms with more than $1 bn in SCO member countries is small.

Analysis shows China dominates SCO's digital economy with 167 platform companies valued over $1 bn (total1 billion (total $1 bn (total 2,37 trillion), while other members lag. Spatial data reveals significant differences in digital infrastructure investment and ICT development among members, influencing regional economic structures (Table 2) [23; 24].

Table 2 – Number and market value of digital platforms worth $1 bn or more in China

Year	Number of platforms (companies) valued at $1 bn or more	Total market capitalization of the platform exceeds $1 bn	Number of platforms (companies) between $1bn & $10 bn	Total market capitalization of the platform exceeds $1 bn – $10 bn	Number of platforms (companies) between $1 bn and $100 bn	Total market capitalization of the platform exceeds $10 bn
2015	64	7702	53	1208	11	6494
2016	105	9482	94	1989	11	7494
2017	131	16781	113	2283	18	14498
2018	138	17592	135	3179	23	14414
2019	174	22416	147	3028	27	19387
2020	197	35043	161	4158	36	30885
2021	182	27563	151	3965	31	23598
2022	167	23700	139	3300	28	20400

Source – developed by the authors based on [24; 27].

SCO's digital economy is dominated by major platforms (Table 3), with Alibaba, Tencent, ByteDance, Meituan, Paytm, and Byju's collectively valued at over $10 bn.

These multinational players primarily operate in e-commerce, social media, payments, and lifestyle services, with e-commerce demonstrating particularly strong competitive advantages across the region.

China has established a more comprehensive and flexible regulatory model to promote the development of the digital economy [25], India and Russia have also drafted bills to regulate the development of platform digital economies [26].

Table 3 – Digital economy unicorn companies for SCO member countries in 2023

Country	Company	Business Scope	Subdivided Businesses	Geographical Business Scope	Valuation, $ bn
CN	Alibaba Group	E-commerce, Cloud Computing, Digital Media, etc.	Taobao, Tmall, Alibaba Cloud, UC Browser, Youku, etc.	CN, Global	Over 100
	Tencent Holdings	Social Network, Gaming, Internet Services, etc.	QQ, WeChat, Tencent Games, Tencent Video, etc.	CN, Global	Over 100
	Byte-Dance	Short Video, Information Distribution, etc.	TikTok, Douyin, Jinri Toutiao, etc.	CN, Global	Over 100
	Meituan	Life Services, Food Delivery, Travel, etc.	Meituan Delivery, Meituan Ride-hailing, Meituan Hotel, etc.	CN	>100
	JD.com	Commerce, Logistics, Finance, etc.	JD.com Mall, JD Logistics, JD Finance, etc.	CN	>100
	Pinduoduo	Social E-commerce	Pinduoduo App	CN	Over 100
	Xiaomi	Smartphones, IoT Devices, etc.	Xiaomi Phones, Xiaoai Assistant, etc.	CN, Global	>10
	Didi Chuxing	Ride-sharing	Didi Ride-hailing, Didi Delivery, etc.	CN	>10
	Ctrip	Online Travel Services	Ctrip App, Ctrip Hotels, etc.	CN, Global	>10
RU	Yandex	Internet Search, E-commerce, Logistics, etc.	Yandex Search Engine, Yandex.Taxi, Market, etc.	RU, CIS countries	>10
	Mail.ru Group	Social Network, Gaming, E-commerce, etc.	VK, Odnoklassniki, MY. GAMES, etc.	RU, CIS countries	>10
IN	Byju's	EdTech	BYJU'S Learning App	IN, Global	>100
	Paytm	Payments, Fintech	Paytm Mobile Payments Platform	IN	>100
	Flipkart	E-commerce	Flipkart E-commerce Platform	IN	>10
	Ola	Ride-sharing	Ola Ride-hailing App	IN	>10

Source – developed by the authors based on [24; 27].

While Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Pakistan, Iran, and Belarus lack $1 bn + digital unicorns, SCO members are advancing digital integration through platform co-development and cross-border investments.

Chinese firms (Alibaba, Xiaomi, Tencent) invest in Russian platforms, while Russian, Indian, and Kazakh companies fund Chinese digital ventures (Table 4), demonstrating mutual commitments to regional digital growth despite uneven domestic development.

The table summarizes bilateral digital platform investments among SCO member states, primarily covering Chinese enterprises' investments in Russian platforms (e. g., Alibaba, Xiaomi, Tencent) and investments from Russia, India, Kazakhstan, etc., into Chinese digital companies.

These cross-border initiatives have significantly enhanced collaborative development and practical cooperation in the digital economy among SCO members, providing substantial support for regional digital economic development.

Table 4 – Investment in digital platforms among SCO member states

Investor	Investee	Investment Amount, $	Investment Year	Investment Purpose
Alibaba Group	Yandex (Russia)	1 bn	2018	E-commerce, Logistics, Cloud Computing Cooperation
	Paytm (India)	150 mln	2015	Mobile Payments, Fintech Business Expansion
Tencent Holdings	Mail.ru Group (Russia)	450 mln	2019	Social Network, Gaming Business Cooperation
	Byju's (India)	250 mln	2017	Online Education Business Expansion
JD.com	Flipkart (India)	2 bn	2017	E-commerce Business Cooperation
Xiaomi	Yandex (Russia)	250 млт	2019	Smart Hardware Business Expansion
Yandex (Russia)	Baidu (China)	162 bn	2021	Search Engine, Advertising Cooperation
Paytm (India)	Alibaba (China)	168 bn	2018	Mobile Payments, Fintech Business Expansion
	Tencent (China)	1 bn	2017	Payments Business Cooperation
Kaspi.kz (Kazakhstan)	Meituan (China)	250 mln	2020	Local Life Services, Food Delivery Business Expansion

Source – developed by the authors based on [24; 27].

Comparison of digital infrastructure and digitalization level

The level of digital connectivity among member countries has significantly improved, and the dividends of the digital economy have benefited the people of all countries. According to the research agency Data Reportable relevant data show that in the first half of this year, the SCO member states of the Internet penetration rate, mobile connection activity, mobile Internet and fixed Internet connection speeds and other indicators that characterize the level of development of digital infrastructure have grown significantly (Table 5), such as Pakistan and Tajikistan's Internet penetration increased by 5,4 % and 4,2 %.

Table 5 – Data on relevant numerical indicators of the SCO member States

Country	Population	Internet Penetration (Access gap)	Mobile Connections (Usage gap)	Mobile Internet Speed	Fixed Broadband Speed	Active Social Media Users	Smart phone Users	E-commerce Users	Users of Digital Payments (Benefit gap)
	mln	%		Mbps		mln			
CN	1,412,6	73,2	118,4	85,6	72,4	985,2	986,2	815,3	937,1
RU	145,8	82,1	103,6	70,2	53,8	91,3	106,7	67,2	89,7
IN	1,380,8	54,9	92,7	49,4	38,5	569,2	700,2	383,4	475,2
PK	221,1	42,1	86,5	29,7	24,3	53,2	88,6	31,1	41,5
KZ	18,7	88,7	115,2	78,3	61,2	12,7	13,5	7,9	10,6
KG	6,4	59,2	97,4	35,8	32,1	3,4	4,1	1,8	2,5
TJ	9,5	52,6	87,1	27,5	41,8	2,6	3,1	1,4	1,8
UZ	33,9	69,3	91,3	43,2	39,6	12,9	19,5	8,1	10,3
IR	83,9	76,5	94,2	41,7	35,2	51,3	59,4	24,5	32,8
BY	9,4	80,2	98,4	54,6	46,9	5,8	7,2	4,1	6,2

Source – developed by the authors based on [28].

Tajikistan and China's fixed Internet speeds increased by 93 % and 46,4 % respectively, and mobile connectivity activity exceeded 100 per cent in Kyrgyzstan, Russia, Tajikistan, China, and Kazakhstan.

However, the digital landscape remains uneven. India's rapidly growing internet population (exceeding $750 mln users) still lags the global average penetration rate of 66,2 %.

The region's connectivity leaders include Kazakhstan (>90 % penetration) and China (with mobile internet speeds ten times faster than Tajikistan's), while Pakistan trails significantly (36,7 % penetration).

Most strikingly, the expansion of China's digital economy (+$4,1 trillion in 2022) now eclipses the combined GDP of several fellow SCO members.

These findings highlight both the substantial digital progress made by SCO nations and the persistent need for cooperative efforts to address regional differences.

The growing digital gap, if left unaddressed, may hinder the realization of the organization's collective digital potential and undermine the equitable distribution of digital economy benefits across member states.

Conclusion

The study reveals pronounced differences in the development of the platform economy among Shanghai Cooperation Organization (SCO) member states, attributed to a three-tiered digital gap encompassing access, usage, and benefit gaps. While China, India, and Russia collectively account for 30 % of global digital trade, smaller economies such as Tajikistan and Kyrgyzstan face substantial challenges including internet penetration rates below 60 % and underdeveloped digital infrastructure hindering their integration into regional digital markets. Despite these imbalances, cross-border e-commerce within the SCO region has grown by over 50 % since 2021, a trend accelerated by the COVID-19 pandemic and geopolitical disruptions.

To mitigate structural inequalities, this study proposes a multilateral governance framework centered on three key interventions:

1) infrastructure development (e. g., 5G rollout and logistics modernization to enhance connectivity);

2) regulatory harmonization (particularly in data sovereignty and cross-border payment interoperability to reduce transaction costs);

3) capacity-building initiatives, such as standardized SME training programs, to improve digital literacy and market participation.

These measures underscore that institutional coordination not market forces alone determines the success of regional digitalization efforts.

Future research should address critical knowledge gaps, including the impact of AI-driven labor restructuring and geopolitical instability on trade resilience. Additionally, granular data on the gig economy's role in SCO members remains scarce, warranting further study to optimize the Digital Silk Road's estimated $9,2 trillion economic potential.

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