



中國傳媒大學
COMMUNICATION UNIVERSITY OF CHINA



Institute for a Community
with Shared Future
人類命運共同體研究院



The Digital Silk Road:

Technology and Innovation in Belt and Road Initiative

By Ms. Mahnoor Inayat, Scholar of International Relations and PRCCSF
Fellow, Pakistan Research Center for a Community with Shared Future
(PRCCSF), Islamabad



Published on 20th October 2023

The Belt and Road Initiative (BRI) represents a modern reimagining of the historical Silk Road, where technology and innovation play a pivotal role in enhancing the global connectivity, trade, commerce, and economic development. This article explores the profound impact of the



"Digital Silk Road" within the BRI which is the technological backbone of the BRI furthermore, delving into its historical roots, contemporary significance, technological integration, challenges and future prospects, ultimately highlighting the transformative potential of this digital journey on a global scale and the number of reasons why we should care about the BRI. In today's interconnected world, the Belt and Road Initiative (BRI) represents a formidable force in global trade, and development.

Historical Roots and Modern Significance

The historical Silk Road, dating back centuries served as a vibrant trade network connecting the East and West. Its legacy of cultural exchange and economic interdependence is the foundation upon which the Belt and Road Initiative (BRI) stands today. Just as the ancient Silk Road facilitated commerce and cultural exchange, the BRI seeks to modernize and expand these connections on a global scale.



In today's rapidly evolving world, the Digital Silk Road plays a pivotal role within the BRI because Digitalization is very crucial for achieving the BRI's objectives of seamless connectivity, and efficient trade. Through high-speed Internet, smart logistics, and digital infrastructure, it will facilitate faster and more cost effective cross border transactions. Additionally, it enables innovation in sectors like e-commerce, finance, and telecommunications, fostering economic growth and development along the BRI routes.

The BRI and Digital Silk Road

The inception of the Belt and Road Initiative (BRI) traces back to two significant speeches by Xi Jinping. In September 2013, while addressing the Nazarbayev University in Kazakhstan, Xi Jinping proposed the Silk Economic Belt, aiming to connect China to Europe over the land. This initiative aimed to foster stronger ties and cooperation across the Eurasian region. A month later, in Jakarta, Xi introduced the 21st Century Maritime Silk Road, an idea that would connect Europe through sea routes and enhance maritime collaboration with the Association of Southeast Asian Nations (ASEAN). Together, these





initiatives were coined as 'One Belt, One Road' later translated to 'Belt and Road Initiative' in English, while retaining the Chinese name '*YidaiYilu*'. As of April 2023, 149 countries, including China have joined the BRI through the signing of Memorandums of Understanding (MoUs), reflecting its global reach and influence. In which 44 countries are in the Sub Saharan Africa, 35 BRI countries are in Europe and Central Asia, 25 BRI countries are in East Asia and Pacific including China, 21 BRI countries are in Caribbean and Latin America, 18 BRI countries are in the Middle East and North Africa, and 6 countries are in SouthEast Asia.

As a part of the massive Belt and Road Initiative (BRI), Beijing has launched the Digital Silk Road (DSR) which is the biggest infrastructure undertaking in the world ever. The Digital Silk Road is the core component of the Belt and Road Initiative (BRI) emerged in 2015 which focuses on fostering digital connectivity and cooperation among the participating nations. It encompasses a wide spectrum of industries, including satellite navigation, artificial intelligence, cloud computing, e-commerce, and telecommunications spanning regions across Asia, Africa, Europe, and Latin America. The Digital Silk Road's primary objectives include expanding market opportunities and reshaping the global digital landscape, shifting it away from the dominance of the US and South Korea.

Digital Innovations within the BRI

China's Belt and Road Initiative (BRI) is not solely focused on physical infrastructure but is also fostering notable digital innovations. These innovations span various technological

domains such as smart cities, and digital payment systems, and are redefining connectivity while driving the economic growth across the countries involved.

For instance, the BRI has spurred the development of smart cities along its routes. These smart urban centers leverage cutting-edge technologies like IoT sensors, data analytics, and artificial intelligence to enhance urban living standards and optimize resource management. They serve as examples of sustainable development, with digital infrastructure facilitating efficient resource allocation.

Another significant facet is digital payment systems. China's pioneering digital Currency Electronic Payment (DCEP) system is a prime example. This system demonstrates the

potential of digital currencies in simplifying cross border transactions. As more BRI countries adopt a similar system, it streamlines financial processes, promotes international trade and fuels economic progress.



Additionally, the deployment of 5G networks within the BRI region is pivotal. China's leadership in 5G technology enables faster and more reliable data transmissions, benefiting diverse industries like healthcare and logistics. This enhanced connectivity not only boosts local economies but also strengthens cross border trade, reducing trade barriers and fostering increased investments.



What are the Weak Spots?

The main challenges to implementing technology within the Belt and Road Initiative (BRI) are;

- 1. Maritime Security Concerns:** The Indo-Atlantic Ocean, a crucial route for BRI's digital infrastructure, poses security challenges due to concerns about China's rising influence, leading to geopolitical tensions and competing interests.
- 2. Limited Control Over Critical Hardware:** China faces a challenge in obtaining and controlling critical hardware components like microprocessors and semiconductors, which are vital for emerging technologies. The majority of chip design is dominated by the US and South Korea, and Taiwan and South Korea control a substantial 75 percent of the world's semiconductor manufacturing capacity,
- 3. Competing Technological Leadership:** The BRI's ambition to lead in technology standards clashes with the Western world's determination to maintain its lead in developing and setting standards for emerging technologies, creating competition and rivalry.
- 4. Countermeasures and Alliances:** Other nations, like the United States, India, Japan, Australia, France, and the European Union, have formed alliances and initiatives to counter China's influence in technology and protect their interests in the Indo-Atlantic region, creating challenges for BRI's expansion.



Future Prospects

China is set to increase investments in the Digital Silk Road, a key part of the Belt and Road Initiative (BRI). These investments will primarily target soft infrastructure and may involve government-to-business and business-to-business collaborations. Notably, Chinese tech companies are already actively investing in regional tech firms. China is committed to boosting research and development spending, and a post-COVID-19 relief package includes efforts to build digital infrastructure grids nationwide, covering areas like 5G, AI, IoT, high-speed rail, and R&D institutions. Despite global economic challenges, China's foreign direct investment in BRI partner countries is robust and expected to grow, reinforcing cooperation and comprehensive initiatives. This strategic investment aims to enhance communications and data infrastructure in partner nations to support BRI's success.

Conclusion

Looking ahead, the Digital Silk Road within the Belt and Road Initiative (BRI) holds promising future prospects. Technology will continue to be a driving force, reshaping global connectivity and trade dynamics. Emerging technologies like 5G, quantum computing, and advanced cybersecurity measures are poised to play pivotal roles in further enhancing the Digital Silk Road's capabilities.

China's investments in submarine cables and satellite networks will expand connectivity, particularly in underdeveloped regions. Chinese digital services and e-commerce,



combined with advances in AI and smart cities, will stimulate cross-border trade and innovation.

Yet, challenges like data security, privacy, digital sovereignty, and geopolitical tensions must be addressed. Nonetheless, the Digital Silk Road underscores China's ambition to lead in the digital economy and set new global standards.