China's Digital Silk Road: Innovation in a New Geopolitical Environment

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What were the driving forces and policies that supported the Digital Silk Road (DSR) scheme? How are they linked to Chinese domestic innovative capabilities in the digital economy? This article presents an analysis of policies promoting DSR infrastructure and facilities in different regions in Asia and Africa. It also discusses key concepts such as digital sovereignty and geopolitics in their historical contexts.

THE BELT AND Road Initiative (BRI) was launched in 2013 with a vision that China returns to its historical role as the centre of the world, which is also closely related to Chinese President Xi Jinping's Chinese Dream vision. The objectives

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of the initiative include support for policy coordination, facilities connectivity, unimpeded trade, financial integration and enhanced people-to-people bonds.

The Launch of a Digital Silk Road

The BRI has focused on development of infrastructure such as railways and ports in Asia and Europe, undertaken mostly by major Chinese state-owned corporations and financed primarily with loans from policy banks, such as the China Development Bank and Exim Bank of China. In some cases, projects that already commenced before the formal launch of the BRI were subsequently included in the BRI portfolio. Investments and loans allocated by China to BRI countries tended to favour engineering projects and exports, in particular when compared to non-BRI countries.[1]

In 2015, China established the Asian Infrastructure Investment Bank (AIIB) to facilitate and accelerate infrastructure improvement in BRI countries by providing capital loans and technical services. In March 2015, the National Development and Reform Commission, Ministry of Foreign Affairs and Ministry of Commerce issued a statement that included a passage about creating an "Information Silk Road":[2]

> We should jointly advance the construction of cross-border optical cables and other communications trunk line networks, improve international communications connectivity and create an Information Silk Road. We should build bilateral cross-border optical cable networks at a quicker pace, plan transcontinental submarine optical cable projects, and improve spatial (satellite) information passageways to expand information exchanges and cooperation.

Shortly thereafter, this complementary initiative for BRI became better known and is referred to as the "Digital Silk Road" (DSR), which received additional impetus as a result of Xi Jinping's speech at the inaugural Belt and Road Forum in May 2017.[3] At the same time, the DSR also gradually encompasses a broad range of digitalisation: cross-border e-commerce, technical standardisation, data rules and security, digital health care, scientific cooperation and online education. The announcement of China's plans for the expansion of the DSR generated an

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[1]   Saileshsingh Gunessee and Liu Jianmin, "The Economics of the Belt and Road Initiative", in *International Flows in the Belt and Road Initiative Context*, ed Chan Hing Kai, Faith Ka Shun Chan and David O'Brien, Singapore, Palgrave Macmillan, 2020.

[2]   "Full Text: Vision and Actions on Jointly Building Belt and Road", Xinhua News Agency, March 2015, <http://2017.beltandroadforum.org/english/n100/2017/0410/c22-45.html> (accessed 15 June 2021).

[3]   It is interesting to note that an earlier project titled "Digital Silk Roads" was launched by Japan and UNESCO in 2001, with a focus on the creation of digital platforms and libraries for cultural heritage. See Kinji Ono et al., "Progress of the Digital Silk Roads Project", *Progress in Informatics*, no. 1 (2005), pp. 93–141.

international debate that reflected diverse opinions. The DSR soon became affected by the tensions that characterise the new geopolitical environment of the 21st century, notably related to the Sino–US tech war.

This article studies the driving forces and policies that supported the Digital Silk Road scheme and its link to Chinese domestic innovative capabilities in the digital economy. It discusses the role of technical standards in developing the digital infrastructure and facilities envisaged for the Digital Silk Road, and presents examples of DSR projects in different regions in Asia and Africa. This article also examines the future prospects for the DSR in its geopolitical context, given the Chinese and international assessment of potential benefits and risks that the implementation of the DSR involves.

China's Digital Economy, Innovation and International Expansion

One of the reasons for the shift in emphasis from construction of physical communications and energy infrastructure in the early years of the Belt and Road Initiative to digital projects was that the Chinese economy itself was undergoing rapid digitalisation. The export of digital technologies to BRI countries has provided an alternative, less capital-intensive option to address a current infrastructural need, since many BRI countries were experiencing a "digital divide" gap with advanced countries and were unable to benefit from the expansion of the global digital economy.

During the last two decades, the Chinese economy had witnessed an accelerating digital transformation driven by private entrepreneurs as well as public support for the expansion of advanced telecommunications. Further upgrading of strategic and frontier sectors of digital infrastructure, including artificial intelligence and semiconductors, have been included in China's 14th Five-Year Plan to mobilise a variety of economic actors and the accompanying new instruments of innovation policy. The emerging Chinese innovative capabilities supported by government programmes and indigenous research and development (R&D) thus underscore the ambition of Chinese leaders to turn China into a global technological power.

In this context, China's exports of optical fibre communications, 5G mobile phone networks, cloud computing facilities and various types of surveillance equipment with features such as face recognition have created opportunities for China's advanced technology to be tested abroad. Indeed, the expansion of international exports and networks constitutes a central component of the "dual circulation" strategy promulgated by the Chinese leadership in May 2020.

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Such a strategy envisions a reliance on nurturing innovative capabilities to meet domestic demand and on strengthening openness to international markets. The DSR thus constitutes a key link in such international circulation.

China's ability to reach technological frontiers in digital industries and services has enabled the country to claim a new position in international trade, banishing its former "factory of the world" image of foreign-designed products and abundant cheap labour, to increasingly assert a new geopolitical status of innovation champions that challenge incumbents from advanced industrialised countries. In particular, telecommunications firms such as Huawei and ZTE have built core digital infrastructure, mobile 5G networks and facial recognition surveillance systems in DSR countries.

Developing e-commerce

China's digital economy hit 50.2 trillion yuan (equivalent to US$6.9 trillion) in 2022, accounting for 41.5% of the country's gross domestic product. China has developed its mutual e-commerce trade agreements by signing MOUs (memorandums of understanding) on e-commerce cooperation and establishing bilateral e-commerce cooperation mechanisms for cooperation in policy exchange, planning coordination, industry promotion, subnational cooperation, capacity-building and other fields with some 30 countries.

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China's cross-border e-commerce exports in the first quarter of 2022 rose by 92.7% year on year. Alibaba and other internet service firms have expanded their network of cloud computing centres in DSR nations; and through acquisitions, they have been able to offer e-commerce and payment services. During the 2021–22 period, there were 201 Chinese companies in the digital sphere that implemented 1,334 overseas investment and cooperation projects, 57% of which were associated with the Digital Silk Road.[4]

A new plan for China's digital development announced by the Central Committee and the State Council in February 2023 further promoted such a development. In addition to setting out the principles for China's development of the digital economy, the plan is envisaged to both promote international cooperation and establish an international exchange and

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[4] Anthony Xiao and Ding Yifei, "Evolution of China's Belt and Road Initiative: Digital Silk Road", Invesco Insight, 1 March 2023, <https://www.invesco.com/apac/en/institutional/insights/fixed-income/evolution-of-chinas-belt-and-road-initiative-digital-silk-road.html> (accessed 15 August 2023).

cooperation system for the digital domain, with multiple layers of coordination, multi-platform support and multi-party participation. In this way, China aims to establish a high-quality "Digital Silk Road" and actively develop the "Silk Road e-commerce".

China already holds a leading position in cross-border e-commerce, having adopted a range of policies and institutional regulations to facilitate cross-border logistics transactions between multiple parties of different regions and their customs systems through e-commerce platforms.[5] Two-way cross-border e-commerce (CBEC) trade volume for China surpassed RMB2,110 billion in 2022, an equivalent of 8.3% growth from 2021 and accounted for about 5% of China's total trade. Total CBEC in 2022 was nearly twice China's total CBEC trade in 2019 at RMB1,290.3 billion.

During the 2015–20 period, a policy initiative was introduced to establish CBEC pilot zones that allow local governments and entrepreneurial enterprises to explore innovative breakthroughs in the management of customs clearance, tax collection and management, foreign exchange supervision, cross-border financial services and logistics for cross-border trade. Thus, during the 2015–22 period, the State Council had approved 105 comprehensive pilot zones for cross-border e-commerce in five batches, covering all provinces in China except for Tibet. Most zones were located in coastal regions like Beijing (1), Shanghai (1) and the provinces of Guangdong (13), Zhejiang (10), Jiangsu (10), Shandong (7) and Fujian (6). Policymakers believe that the CBEC trade would help China diversify its trade links in the context of the BRI and reshape international trade patterns amid US–China trade tensions.[6]

Optical cable networks

The development of China's capabilities for innovative digital technologies includes the production of optical fibre communications and cables. Due to the expansion of telecommunications networks in China in the 1990s, Chinese producers of optical fibre cables developed advanced capacity in a rapidly expanding domestic market and they soon entered the market for undersea cables. Given that more than 90% of internet traffic involve digital transmission via submarine optical fibre cables, as of 2019, China was a landing point, owner or supplier for 11.4% of the world's undersea cables. The proportion is expected to grow to 20% between 2025 and 2030.

5   Wang Jian, "Cross-Border E-Commerce in China: An Institutional Explanation", March 2017, <https://www.gpqi.org/files/upload/china/documents/PL_Functional_Safety/Reader%20on%20CBEC%20in%20China%20Institutional%20Explanation.pdf> (accessed 15 September 2023).

6   Zoey Zhang, "An Introduction to China's Cross-Border E-Commerce Pilot Zones and Pilot Cities", *China Briefing, 1 July 2020,* <https://www.china-briefing.com/news/cross-border-e-commerce-china-introduction-cbec-pilot-zones-pilot-cities/> (accessed 15 September 2023).

One of the Chinese cables completed in 2022 was the 7,500-mile Pakistan and East Africa Connecting Europe Cable (PEACE) which links China with Pakistan by terrestrial fibre optic cable, and from Pakistan undersea to Marseille in France and several countries along the African East Coast. The PEACE connection is expected to transmit a large bandwidth of internet traffic between China and Europe, while providing essential fast internet connections to Africa. Given the current geopolitical tensions, it is likely that the majority of traffic on the PEACE cable would be dominated by Chinese customers, while US-based internet giants would seek to use alternative routes.

Global reach with satellite systems

The DSR also connects the world with Chinese satellite systems to expand additional communication channels, provide global location services that do not depend on the US-operated GPS (global positioning system) and ultimately increase the popularity of the BeiDou Navigation Satellite System. Most smartphones sold in China are now using the BeiDou system for location services, including the iPhone 11 model. One report has indicated that capital cities in 165 of 195 major countries are observed more frequently by BeiDou satellites than by GPS, and the former system has become popular in many countries in Central Asia, South Asia and Africa.

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China also leverages its capabilities in space technology to include earth observation services as a new digital benefit offered particularly for DSR countries to promote surveillance and big data analysis to address environmental and natural resources challenges, together with disaster assessment and mitigation through the Digital Belt and Road (DBAR) project. In this way, China offers international scientific cooperation and joint actions for sustainable development that may address sustainability issues that have, to date, received scant attention in the development history of Central Asia and other BRI regions.

The Significance of Technical Standards during the Digital Era

Since the 19th century, technical standards are key to ensuring compatibility of individual components, guaranteeing safety and promoting interoperability of systems. In the First Industrial Revolution, interchangeable parts appeared as the first

instance of interface standards. In the Second Industrial Revolution (from the 1880s to the 1950s), standardisation became a prevalent practice in important industrial infrastructures such as product standards in chemicals and interoperability standards in communication networks. Standards promote productivity and have obviously contributed significantly to economic growth.

Today, technical standards regulate a wide range of economic activities and personal lives—from the voltage of electricity supply to the internet and certification of safe products. While standards were initially adopted at a national level, they have increasingly been set at an international level by technical committees with participation from governments and industrial representatives. Standards have become critical infrastructure for global supply chains and international trade; leading firms in advanced high-technology sectors have become dominant in the process of defining new standards. Accordingly, such firms and the country that contribute proprietary technology for standards may become highly competitive in the marketplace, which would in turn lead to new geopolitical conflicts.

Competition in information and communications technologies (ICT) standards

Competition has intensified in information and communications technologies (ICT) between adherents of either European GSM (global system for mobile communication) or American CDMA (code-division multiple access) in third-generation mobile phone systems (or the Chinese TD-SCDMA system) that split the world into separate regions. Similar tension also emerged in terms of the definition of standards for videotape or optical disk encoding, and for wireless communication (WAPI).

> Undoubtedly, the Chinese government has aspired to transform the country from a "standards taker'" to a "standards maker" by developing unique Chinese technology standards.

Chinese industries have felt compelled to follow international standards which are usually built on intellectual property owned by Western firms, and Chinese ICT manufacturers are fully aware of the licence costs of foreign intellectual property (IP) that eat into their slim profit.[7] The Chinese leadership has also hoped to obtain "secure and controllable" networks of communication, with standards playing an increasing role in achieving this objective in recent years.

Undoubtedly, the Chinese government has aspired to transform the country from a "standards taker'" to a "standards maker" by developing unique Chinese technology standards. Thus, China has been quite explicit about its ambitions to

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[7]   Dan Breznitz and Michael Murphree, *The Rise of China in Technology Standards: New Norms in Old Institutions*, Research Report Prepared on Behalf of the US–China Economic and Security Review Commission, 16 January 2013, <https://www.uscc.gov/sites/default/files/Research/RiseofChinainTechnologyStandards.pdf> (accessed 10 June 2021).

enter the frontiers of technical standardisation and seek international influence in the field—these objectives are clearly stated in the China Standards 2035 strategy, drafted in 2020 and designed to reform China's work in domestic and international standards formulation, particularly for emerging fields in telecommunications, e-commerce platforms and artificial intelligence.[8] The objective of the China Standards 2035 initiative is to influence how the next generation of technologies would operate, which would clearly pose direct challenge to the existing dominance by stakeholders from the United States and Europe.

Standards and intellectual property rights

Chinese efforts have been aimed particularly at generating new intellectual property for standards in advanced technologies such as 5G and artificial intelligence where there is fierce competition for new innovations. Ultimately, the Chinese ambition is to rely on state-supported efforts to reshape the international standardisation order in order to challenge existing systems such as those of the United States and Europe, which depend to a large degree on private self-regulation.[9]

An analysis of Chinese and international process of formulation of safety testing standards for autonomous vehicles (AV)—an emerging technology that also represents a promising global industry and complex ethical questions—illustrates how China has developed a sophisticated domestic standards bureaucracy that provides support to official Chinese representatives to formulate robust Chinese proposals that can be presented to the international body.[10] However, in this case study on AV safety standards, China does not appear to have abused its leadership role of the working group, such as stacking it with Chinese representatives or forcing the international bodies to adopt Chinese standards.

Nevertheless, China has successfully cooperated with Germany, a leading nation in the network of national and international technical standards formulation. Focusing on sectors and technologies associated with smart manufacturing, Germany and China had signed agreements for cooperation in standards development for *Industrie 4.0*,

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[8]   The work on China Standards 2035 officially kicked off in 2018, see <http://www.cnstandards.net/wp-content/uploads/2019/03/China-Standard-2035.pdf> (accessed 14 June 2021). See also Emily de La Bruyère and Nathan Picarsic, *China Standards 2035: Beijing's Platform Geopolitics and "Standardization Work in 2020",* <https://www.horizonadvisory.org/chinastandards> (accessed 14 June 2021).

[9]   Björn Fägersten and Tim Rühlig, *China's Standard Power and its Geopolitical Implications for Europe*, Stockholm, The Swedish Institute of International Affairs, 2019, <https://www.ui.se/globalassets/ui.se-eng/publications/ui-publications/2019/ui-brief-no.-2-2019.pdf> (accessed 10 June 2021).

[10]   Matt Sheehan, "Standards Bearer? A Case Study of China's Leadership in Autonomous Vehicle Standards", Marco Polo Analysis, 3 June 2021, <https://macropolo.org/analysis/standards-bearer-a-case-study-of-chinas-leadership-in-autonomous-vehicle-standards/> (accessed 11 June 2021).

a major German effort to develop automation in industry that was also a significant source of inspiration for the Chinese "Made in China 2025" programme.[11]

Perhaps the field of technology where China has been most successful in using its newfound R&D capabilities to influence international technical standards is 5G mobile communication systems. Leading Chinese telecommunications firms hold a large portion of the intellectual property that have been adopted as standard essential patents (SEPs) for 5G standards, with Huawei owning 15.39% and ZTE 9.81% share of 5G declared patent families. Moreover, Huawei proposed its software utilising polar codes—developed on the basis of research by the Turkish scientist Erdal Arikan—which has been recognised as an international standard for data transmission in 5G.[12]

One of the avenues to promote Chinese standards overseas is thus to include work on standardisation in the diplomatic relations with other nations in the BRI. In June 2019, China officially announced that it had signed 85 cooperation agreements on technical standardisation with 49 countries and regions along the Belt and Road.[13] This also marks the significance of the BRI in internationalising Chinese technology.

Digitising the Belt and Road: Asia and Africa

The actual implementation of the Digital Silk Road relies on both public and private actors, comprising an intricate network of Chinese and overseas organisations. A large number of reports published in the last decade have discussed the Chinese activities in individual countries or regions related to the digital components of the BRI or more specifically classified as part of the Digital Silk Road. Due to space constraint in this article, the author will not review all of such activities and shall discuss a few representative examples of DSR impact in Asia and Africa.

Central Asia

Chinese President Xi Jinping first unveiled the BRI in his state visit to Kazakhstan, a country that has also been a pioneer of digital development in Central Asia. According to a recent overview, Kazakhstan entered the digital age in 1948, when a local institution was established to advance the development of mathematical

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[11] Daniel Fuchs and Sarah Eaton, "Diffusion of Practice: The Curious Case of the Sino–German Technical Standardization Partnership", 1 October 2020, <http://dx.doi.org/10.2139/ssrn.3723303> (accessed 15 June 2021).

[12] Dave Makichuk "Huawei's 5G Tech Advantage Has Roots in the '40s", *Asia Times*, 19 November 2019, <https://asiatimes.com/2020/11/huaweis-5g-tech-advantage-had-roots-in-the-40s/> (accessed 6 July 2021).

[13] Tim Nicholas Rühlig, "Technical Standardisation, China and the Future International Order. A European Perspective", <https://eu.boell.org/en/2020/03/03/technical-standardisation-china-and-future-international-order> (accessed 15 June 2021).

methods of data processing and transmission.[14] Subsequently, most of the advanced applications of ICT were focused on the oil and gas industries, later diversifying into support for government services and logistics. In 2017, the Kazakh government adopted a programme entitled *Digital Kazakhstan* that is designed to improve the digitisation of public and private organisations, and spearhead the promotion of entrepreneurial Kazakh firms in the ICT industry. This programme was coordinated with China's DSR development.

Another typical example of the DSR in Central Asia is the involvement of Huawei and Henan Costar Group in establishing a "safe city" and "smart city" networks in Uzbekistan.

Kazakhstan's internet access is provided by a combination of domestic mobile internet providers and partnership with foreign companies, which include fibre optic landline and submarine routes to China. As the most affluent and the most developed state within Central Asia, Kazakhstan has been aggressively improving its digital surveillance capacity for several years through a company called "Sergek" that collaborates with Chinese ICT companies, creating "safe city" networks in Nur-Sultan and other cities in Kazakhstan.

Moreover, the Kazakh government had also established an "Astana Hub" park for IT start-ups that work on "big data, Internet of Things (IoT), artificial intelligence (AI), cloud technologies and supercomputers". An important part of DSR activities in Kazakhstan has been the recent development of a "two countries and two parks" supply chain service system, whereby they have established logistics parks at each side of the border and have built a digital transnational supply chain service system that integrates logistics, finance and supervision.

Another typical example of the DSR in Central Asia is the involvement of Huawei and Henan Costar Group in establishing a "safe city" and "smart city" networks in Uzbekistan. Huawei's deep involvement in Uzbek telecommunications 5G networks received new impetus in 2017 when the Uzbek President Shavkat Mirziyoyev (who took office in 2016) declared the launch of a national Safe City initiative. The programme has aimed to accomplish the digital transformation of Uzbekistan across several strategic dimensions, ranging from security and public surveillance to digitising key sectors of local economy.

Southeast Asia

In many respects, countries in Southeast Asia present extensive opportunities for a regional expansion of DSR that could help build digital infrastructure and

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[14]   Vitaly Ambalov and Irina Heim, "Investments in the Digital Silk Road", in *Kazakhstan's Diversification from the Natural Resources Sector*, ed Irina Heim, Cham, Palgrave Macmillan, 2020, pp. 111–149.

enhance e-commerce. In terms of economic potential, the digitally enabled services trade in the Southeast Asian market almost doubled from 2011 to 2019. The China–ASEAN Information Harbour was established in 2016 to deepen interoperability and strengthen information cooperation. Following that, 2020 was designated the year for China–ASEAN digital economy cooperation. Thus, the DSR constitutes an extension of internationalisation strategies for digital service industries in China, as Barry Naughton's analysis of the successful establishment of an e-commerce platform and City Brain projects in Malaysia by Alibaba has demonstrated.[15]

> **The China–ASEAN Information Harbour was established in 2016 to deepen interoperability and strengthen information cooperation.**

Singapore has also undergone rapid digitalisation in the past 40 years, largely driven by a series of domestic master plans and strategies developed and implemented by the government.[16] One observer opines that both Singapore and China have gained valuable experience in developing the digital economy which can contribute towards building an Asian digital economy. For example, with the signing of the Regional Comprehensive Economic Partnership (RCEP) agreement between Singapore and China, there exist provisions for legally recognising digital signatures and data storage allows for distributed ledgers.

Africa

International attention has largely been devoted to issues related to the potential impact of the Digital Silk Road in Africa. The digital gap is undoubtedly large between access to and use of digital communication and processing in African nations, compared with advanced industrialised countries. Moreover, China has become heavily engaged in developing infrastructure in Africa, particularly in transport and energy sectors. It should be noted, however, that ICT represents a small proportion of investments in African infrastructure, constituting less than 1% of total Chinese commitments for development during the 2012–17 period. Chinese telecommunication firms Huawei and ZTE have long been involved in the development of ICT in Africa, and many projects for development of 3G or 4G mobile telephony systems predate the launch of the Digital Silk Road.[17]

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[15]   Barry Naughton, "Chinese Industrial Policy and the Digital Silk Road: The Case of Alibaba in Malaysia", *Asia Policy*, vol. 15, no. 1, January 2020, pp. 23–39.

[16]   Joey Erh, "Singapore's Digital Transformation Journey", *Journal of Southeast Asian Economies*, vol. 40, no. 1, 2023, pp. 4–31.

[17]   Motolani Agbebi, *China's Digital Silk Road and Africa's Technological Future, Council of Foreign Relations,* <https://www.cfr.org/sites/default/files/pdf/Chinas%20Digital%20Silk%20Road%20and%20Africas%20Technological%20Future_FINAL.pdf> (accessed 19 September 2023).

Nevertheless, Chinese support for the digital sector (telecommunications, database and surveillance systems) in Africa has increased after 2015. For example, in 2018, total ICT funding for African countries amounted to US$7.1 billion, of which US$550 million was financed by China.[18] While extant literature features a wide range of studies of Chinese projects related to digital infrastructure and services in Africa, one case study of Huawei and ZTE technology transfer to Egypt and Algeria argues that despite efforts to creating local technology spillovers and generating significant linkages with universities, both Huawei and ZTE had not been able to create meaningful learning opportunities that would contribute to technological upgrading.[19]

Digital Sovereignty

Global digital resources like the internet are, theoretically, not limited by spatial constraints or national borders. From a technical point of view, data uploaded to "the cloud" can be shared with anybody that owns an internet connection anywhere on earth, even if in reality such data is physically stored as digital code on computers in a data centre. In this sense, the digital world and cyberspace as a new and autonomous virtual realm transcends territorial space, and therefore cannot be carved up according to ideas of a Westphalian world order of territorially defined sovereign states.

Nevertheless, the regulation of new digital infrastructure and services was seen as necessary by more states in the 2000s, and the Chinese concept of internet sovereignty was launched by the White Paper on the Internet in China, issued by the Information Office of the State Council in 2010, stating that "Within Chinese territory the Internet is under the jurisdiction of Chinese sovereignty". The Chinese government had already long exercised control of internet traffic and text by Chinese users, in effect erecting the Golden Shield Project, also known as the "Great Firewall", with a law against cybercrime that the State Council adopted in December 1997.

The Chinese concept of digital sovereignty was subsequently utilised extensively in an "International Code of Conduct for Information Security" that was submitted to the United Nations General Assembly in 2011, and in a revised form in 2015, by member states of the Shanghai Cooperation Organisation (SCO), i.e. China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. This document has apparently been met with scepticism by Western governments, but its fundamental approach is still dominant in how China perceives international cooperation on digital sovereignty along the DSR, as specified in the "International Strategy of Cooperation

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[18] Daouda Cissé, *Chinese Telecommunications Companies in Africa, Megatrends Afrika Policy Brief*, 7 November 2022, <https://www.idos-research.de/uploads/media/MTA-PB07_Cisse_China_ICT_Africa_final.pdf> (accessed 19 September 2023).

[19] Tin Hinane El-Kadi, *Learning Along the Digital Silk Road? Technology Transfer, Power, and Chinese ICT Corporations in North Africa*, Manchester Centre for Digital Development Working Paper No. 98, 2023, <https://hummedia.manchester.ac.uk/institutes/gdi/publications/workingpapers/di/dd_wp98.pdf> (accessed 19 September 2023).

on Cyberspace" issued in November 2017 by the Ministry of Foreign Affairs and the Cyberspace Administration of China.

Geopolitical Issues

There are varying Chinese and Western perceptions of the benefits and risks that China's Digital Silk Road offers to the world. For example, news commentaries, think-tank reports and the academic literature by observers in the United States and Europe are replete with narratives that focus on potential Chinese surveillance and control of data, but few contain concrete cases or examples where such Chinese interventions were actually discovered.

One researcher with more than a decade of research into the development of telecommunications and digital infrastructure in Africa has argued that finger-pointing at China has become a lazy tactic used by Western politicians, diplomats, pundits and think-tanks to propagate imagined risks without checking whether the claims are backed by empirical evidence.[20] The author's intention is not to deny the potential for Chinese interference through digital systems set up in DSR countries, but rather he wants to highlight that he has not noticed any robust evidence of such interference taking place.

Exporting authoritarianism?

A favourite narrative advanced in such publications is that China utilises its digital technology to "export authoritarianism". While authoritarian regimes are, undoubtedly, likely to use Chinese digital technology—or for that matter, digital technology from Israel or the United States—to secure their political power and pursue dissidents, the urge to do so is not necessarily an inherent characteristic of the technology, a process often referred to as "technological determinism". Digital technologies that share similar features as China's technology exports are used in countries designated as liberal democracies as well, but without changing their political systems in significant ways.

The assertion that China has been "exporting authoritarianism" would require robust evidence that a democratic country, which allows Chinese firms to install digital infrastructure and systems, would suddenly turn into an authoritarian regime. To the author's knowledge, there is no prevailing evidence provided in the media, let alone reported in the academic literature.

> **Digital technologies that share similar features as China's technology exports are used in countries designated as liberal democracies as well, but without changing their political systems in significant ways.**

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[20]   Iginio Gagliardone, "Chinese Digital Tech in Africa: Moral Panics and the Messy Reality of Surveillance", 20 May 2021, <https://blogs.lse.ac.uk/cff/2021/05/20/chinese-digital-tech-in-africa-moral-panics-and-the-messy-reality-of-surveillance/> (accessed 19 September 2023).

A digital neo-tribute system?

Even if China is not necessarily exporting its own unique political system through digital systems, the Chinese leadership harbours aspiration to challenge the global order that has been defined by Western nations. The progress of the digital economy worldwide has also reflected the dominance of Western internet platforms, and the DSR provides new opportunities to guide global development in a more equitable direction, and China should shoulder responsibility to assist developing countries along the BRI to achieve a new global order.

> **From a Chinese perspective, an inclusive and sustainable "Globalisation 3.0" would imply a new approach that challenges the contemporary US-led digital hegemony.**

From a Chinese perspective, an inclusive and sustainable "Globalisation 3.0" would imply a new approach that challenges the contemporary US-led digital hegemony. Instead, Xi Jinping has proposed building a global community of shared future through the BRI, the Global Development Initiative, the Global Security Initiative and the Global Civilisation Initiative. According to a recent announcement from the State Council in September 2023, the concept of a global community of shared future has deep roots in China's profound cultural heritage and its unique experience of modernisation.

In one sense, such a perspective evokes the historical pattern of China's relations to foreign powers that has been described as the "tributary system", which was essentially a ritual procedure of gift exchanges between the Chinese emperor and delegations from neighbouring peoples that recognised a submission to the benevolent emperor, and which formally opened the gates for extensive trade and peaceful diplomatic exchanges. In some respects, the BRI could be viewed as reflecting a similar pattern of formalised allegiance and promotion of diplomatic and trade relations.[21]

One could argue that the Chinese policies of promotion of digital development constitutes a type of digital neo-tribute system, where China's new status in the world is recognised, while China undertakes benevolent assistance for development of digital infrastructure, digital services and digital trade for countries along the BRI. This is not a hierarchical relationship analogous to that of imperial China practised in the Ming and early Qing dynasties; in Chinese perspective, the DSR provides an alternative, but not a substitute, for "digital imperialism" that the United States has practised. ▤

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[21]   John Hobson and Zhang Shizhi, "The Return of the Chinese Tribute System? Reviewing the Belt and Road Initiative", *Global Studies Quarterly*, no. 2, 2022, pp. 1–11.