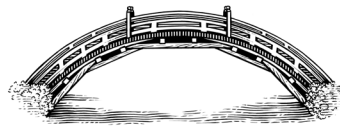


ROUNDTABLE ESSAY

Reconstructing Order: The Geopolitical Risks in China's Digital Silk Road

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NOTE ≈ The author writes in his own capacity and his writing does not reflect U.S. Department of Defense or government policy.

KEYWORDS: CHINA; GLOBAL ORDER; 5G; INFORMATION AND COMMUNICATIONS TECHNOLOGY

EXECUTIVE SUMMARY

This essay examines the strategic intentions and origins of the Digital Silk Road and the implications for the U.S. and like-minded countries.

MAIN ARGUMENT

The People's Republic of China (PRC) is attempting to incrementally reshape the global order through the Belt and Road Initiative (BRI). To this end, it is using—among other means—new disruptive technologies that will allow it to dominate data and communications in the political, economic, and social realms across the large expanse of the initiative. The Digital Silk Road has been a part of the PRC's approach since at least 2015, when it first appeared in a government white paper on BRI. The Digital Silk Road binds together new technologies in “bundles,” such as smart cities, smart ports, and satellite-networked communications, using 5G as a baseline for other technologies like artificial intelligence, data analytics, and the Internet of Things. Success in using this communications infrastructure to dominate markets, standards, and political elites would give China a multiregional base from which to project its norms, systems, and networks to the wider global market. In the long run, this will not only give a competitive advantage to Chinese companies but also allow them to spread more widely across remaining markets.

POLICY IMPLICATIONS

- The Digital Silk Road has deep geopolitical implications. Building the backbone of communications infrastructure in BRI countries will allow the PRC to access, analyze, and exploit in real time the large data sets of recipient countries.
- Through these technologies and its tech companies, the PRC is exporting its governance model, surveillance system, and financial institutions.
- Policy elites in recipient nations could become vulnerable to even greater influence operations as Chinese tech companies administer their networks in real time and collaborate with stage actors like the United Work Front Department.
- The PRC could use the centralization of data in smart port systems to create a deniable, surgical sanctions system by interdicting or slowing the container traffic of states or their leaders.

One of the principal defining features of this age is the rise of the People's Republic of China (PRC) and the strategic competition that is accompanying it. For many years, there were questions as to China's trajectory, the nature of its domestic political and economic reforms, and its ultimate ambitions as a great power. Would it seek to revise or challenge the liberal international order, or would it become a status quo power?¹ The current period under Xi Jinping has brought this question into sharp relief as China has changed its policies, messages, and intentions from Deng Xiaoping's "hide and bide" approach to the "moving to center stage" approach of Xi. One of the most evident aspects of this—widely discussed in academia, Western media, and business circles—is the Belt and Road Initiative (BRI). According to a Chinese white paper, BRI aims to "promote the connectivity of [the] Asian, European, and African continents and their adjacent seas...[and] set up all-dimensional, multi-tiered and composite connectivity networks."²

Academics debate whether China's foreign policy behavior constitutes a limited-aims or revisionist vision of the global order.³ This essay argues that what the PRC is doing with the Digital Silk Road (DSR) is strategically significant. It is a deliberate attempt to create "a global information highway with China at its core,"⁴ in effect developing its own sticky power through technology "bundles" comprised of smart cities, smart ports, e-commerce and digital currency, communications networks, and satellite networks.⁵ This is, at its heart, a long-term effort to incrementally create an order more in line with China's preferences, first at the regional level and then by extension at the global level. The United States and other liberal democracies must understand the nature of these changes and the long-term impact on the liberal postwar system they have created and upheld.

¹ See, for example, Alastair I. Johnston, "Is China a Status Quo Power?" *International Security* 27, no. 4 (2003): 5–56; Ted G. Carpenter, "China as a Prickly, but Pragmatic, Revisionist Power," Cato Institute, January 17, 2013 ~ <https://www.cato.org/publications/commentary/china-prickly-pragmatic-revisionist-power>; and Lye Liang Fook, "China in World Politics: Is China a Status Quo Power?" *China: An International Journal* 15, no. 1 (2017): 1–3.

² National Development and Reform Commission (NDRC), Ministry of Foreign Affairs, and Ministry of Commerce (PRC), "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road," March 28, 2015 ~ https://en.ndrc.gov.cn/newsrelease_8232/201503/t20150330_1193900.html.

³ Alastair I. Johnston, "China in a World of Orders: Rethinking Compliance and Challenge in Beijing's International Relations," *International Security* 44, no. 2 (2019): 9–69. For a discussion of status quo and revisionist powers, see Randall L. Schweller, *Deadly Imbalances: Tripolarity and Hitler's Strategy of World Conquest* (New York: Columbia University Press, 1998), 19–26.

⁴ Hong Shen, "Building a Digital Silk Road? Situating the Internet in China's Belt and Road Initiative," *International Journal of Communication* 12 (2018): 2683–701.

⁵ For a discussion of sticky power, see Walter R. Mead, "America's Sticky Power," *Foreign Policy*, March/April 2004, 46–53.

This essay is organized as follows:

- ≈ pp. 8–12 examine the strategic intent and activities of the DSR related to communications infrastructure development, technology spread, and financing.
- ≈ pp. 12–15 address the strategic origins of the DSR, looking at the impetus for the project and its development as government policy under Xi.
- ≈ pp. 15–20 analyze the strategic implications in three areas: values and governance, markets and trade, and ports and shipping.
- ≈ pp. 20–21 conclude with thoughts about China’s agenda with the DSR and implications for the United States and like-minded countries.

STRATEGIC INTENT

The scope of the PRC’s ambitions is apparent in the scale of BRI, which involves more than 60 countries constituting 55% of the world’s GDP, 70% of the world’s population, and 75% of its energy resources.⁶ Over the life of BRI, total Chinese spending could reach \$1.2–\$1.3 trillion.⁷ It is a grand strategy of the most impressive proportions economically, politically, and geographically, and certainly includes the export of the Chinese development model—authoritarian capitalism—by linking China’s economic growth to global economic gains.⁸ The 18th National Congress of the Chinese Communist Party (CCP) argued that all humans share a “community of common destiny,” whereby the development of China is closely linked to the development of the global economy.

While the DSR is less discussed than BRI outside of China, a growing body of literature suggests that it is intended to play a central role in the PRC’s geopolitical reordering strategy. The Digital Silk Road is the name given to the many digital and telecommunications infrastructure projects that the PRC is carrying out in partner nations across BRI. As more and more of the global economy goes online, and as personal data and the means to harvest it grow, new technology bundles will empower the state. The question is less about whether there is strategic intent behind the DSR and more about (1) the nature of that strategic intent and (2) its likely impact on Western strategic interests.

⁶ Inna Šteinbuka, Tatyana Muravska, and Andris Kuznieks, “Cooperation Formats of China and Europe: Synergies and Divergences,” *Baltic Journal of European Studies* 7, no. 1 (2017): 98–118.

⁷ “Inside China’s Plan to Create a Modern Silk Road,” Morgan Stanley, March 14, 2018 ~ <https://www.morganstanley.com/ideas/china-belt-and-road>.

⁸ Elizabeth C. Economy, “Yes, Virginia, China Is Exporting Its Model,” Council on Foreign Relations, Asia Unbound, December 11, 2019 ~ <https://www.cfr.org/blog/yes-virginia-china-exporting-its-model>.

While the language utilized by the PRC to develop this new architecture is vague—perhaps deliberately so—its intent is not. This strategy consists of two main phases.

The first is the construction of the DSR as Beijing uses its investments and financing of communications infrastructure projects within recipient nations to promote and export not only its technology companies, products, and standards but also its development model, its governance model, and a China-centric trade and financial system. This occurs as new disruptive technologies that involve data and communications—such as 5G, artificial intelligence (AI), and quantum computing and routing—are harnessed in infrastructure bundles and grouped together in so-called smart cities and smart ports in ways that deeply affect governance, law, trade, and, of course, security. The main concern with this is the PRC's ability to strategically harvest real-time data across a large portion of the world and to use that data for strategic effect.

The grand scope of this strategy is further revealed in its second phase as Beijing uses its network of BRI countries and their acceptance of its preferred technological standards to win the wider global standards competition in 5G, the next-generation information communications technology (ICT) that is widely argued to herald the Fourth Industrial Revolution and the Internet of Things.⁹ In this way, 5G will also act as a building block for other technologies that revolutionize the capture, analysis, and exploitation of data, including AI, big data analytics, blockchain, cloud computing, quantum computing and networking, financial technology (fintech), industrial automation, and other new technologies.

Peeling back the activities that undergird the DSR—the mass deployment of ICT infrastructure—reveals that the amount of investment required is significant, including not only the construction of base stations, fiber optics, antennas, and the like but also the partnership with and acquisition of local tech firms. While much is made of cyberspace, a huge amount of physical infrastructure is required to transmit that virtual world to the end user. The United Kingdom's National Cyber Security Centre divides the required infrastructure for ICT into three different layers, including the transport layer, involving physical fiber-optic cables and microwave equipment; the routing and switching layer, which operationalizes the transport layer by sending

⁹ Thomas Duesterberg, "Can We Avoid Collateral Damage in the 5G Battle with China? The Role of International Standards," *Forbes*, December 12, 2019 ~ <https://www.forbes.com/sites/thomasduesterberg/2019/12/12/can-we-avoid-collateral-damage-in-the-5g-battle-with-china-the-role-of-international-standards/#6a849746fb98>.

data via the best route; and the access layer, or “edge.”¹⁰ 5G requires far more infrastructure—particularly cells, microstrip antennas, and wearable devices—because it uses high radio frequencies that do not travel as far as 4G wavelengths, which has repercussions for financing and network architecture design. As 5G becomes used for “technology baskets” like smart cities and smart ports, it is clear that the rollout of such infrastructure will be immense and expensive.

Looking at the predictions of Chinese tech companies for how these technologies will be bundled together over time, there seems to be a developmental progression in how 5G enables greater digitalization of urban, economic, and political activity, leading to multiple new applications. For example, at the Fortune Global Tech Forum 2019 in Guangzhou, one Chinese CEO predicted that this development will “start on the level of smart home devices, like those offered by China’s Xiaomi, then expand into cities until there are enough cities to form an interconnected network of smart cities from Shanghai to Doha to Tokyo.”¹¹ This progression goes from the creation of networks to a network of networks.

Chinese entities—both public and private—have played a large role in designing and building this future, providing more than \$17 billion for DSR projects since 2013, including lending \$7 billion for fiber-optic and telecommunications projects alone.¹² As with their entry into the European market, Huawei and ZTE’s push into Central Eurasia has been heavily subsidized by both the China Development Bank and the Export-Import Bank of China to the tune of billions. While the projects themselves are of interest, it is the norms and standards that are implicit in them that require scrutiny: these range from the prioritization of the renminbi as the currency of choice in digital commerce, to internet sovereignty norms, to standards related to policing, surveillance, and political rights.

Starting with hardware, Chinese tech companies such as Huawei Marine Networks have laid 59,488 kilometers of undersea cable in more than 98 projects spanning the Indo-Pacific, South Pacific, and Atlantic regions.¹³ Chinese firms have gone from participating in a mere 7% of transnational

¹⁰ Ian Levy, “Security, Complexity, and Huawei; Protecting the UK’s Telecoms Networks,” National Cyber Security Centre (UK), web log, February 22, 2019 ≈ <https://www.ncsc.gov.uk/blog-post/blog-post-security-complexity-and-huawei-protecting-uks-telecoms-networks>.

¹¹ “How Smart Cities and Homes Will Take China into the Future,” *Fortune*, November 7, 2019 ≈ <https://fortune.com/2019/11/07/china-smart-cities>.

¹² “MERICS Belt and Road Tracker,” Mercator Institute of China Studies (MERICS) ≈ <https://www.merics.org/en/bri-tracker>.

¹³ “Experience,” Huawei Marine Networks ≈ <http://www.huaweimarine.com/en/Experience>.

undersea cable projects in 2012 to participating in 20% in 2019.¹⁴ These new fiber-optic submarine cables have been further supplemented by the 33-satellite BeiDou Navigation Satellite System, meant to offer a Chinese alternative to U.S.-led GPS and provide worldwide coverage by 2020. Already, more than 30 countries along BRI are covered by BeiDou, including Pakistan, Laos, Thailand, and Indonesia.¹⁵ As self-driving vehicle networks develop and become increasingly reliant on satellite navigation and low-latency 5G, the PRC's influence within these countries will grow. The most prevalent forms of ICT deployment along the DSR—the smart city and the smart port—are arguably the spearhead of PRC strategy, with two companies leading the market. Huawei has upgraded over 200 cities across 40 countries into smart cities, while ZTE has smart city projects in over 170 cities across 60 countries.¹⁶

This deployment has accompanied the PRC's interest in developing a separate commercial and financial system from that of the U.S.-led system based on the dollar. Indeed, Beijing's calls for a replacement to the dollar began in 2009 in the wake of the financial crisis and even led to the creation of the Cross-Border Inter-Bank Payment System (CIPS) in 2015 as an alternative to the U.S.-dominated international financial messaging system SWIFT (Society for Worldwide Interbank Financial Telecommunication).¹⁷ Backed by the Bank of China and linked to Russia's financial messaging system, CIPS is only one possible way for China to reorder the global financial system. Another is through cryptocurrency and online payment schemes. Regarding the former, President Xi gave a speech in October 2019 in which he stated that China needs to “seize the opportunities” of digital currency.¹⁸ At the time of writing, four state banks and three state-owned telecommunications companies are involved in helping develop a “digital form of the yuan,” known as the Digital

¹⁴ Stacia Lee, “The Cybersecurity Implications of Chinese Undersea Cable Investment,” University of Washington, Henry M. Jackson School of International Studies, web log, January 25, 2017 ~ <https://jjsis.washington.edu/news/cybersecurity-implications-chinese-undersea-cable-investment>.

¹⁵ Pratik Jakhar, “How China's GPS ‘Rival’ Beidou Is Plotting to Go Global,” BBC News, September 20, 2018 ~ <https://www.bbc.com/news/technology-45471959>.

¹⁶ “Huawei's Horizon Digital Platform for Cities to Build Fully Connected Intelligent City,” Huawei, November 20, 2019 ~ <https://www.huawei.com/en/press-events/news/2019/11/huawei-horizon-digital-platform-scewc>; and “ZTE Smart City Solution,” ZTE ~ <https://www.zte.com.cn/global/solutions/201905201710/201905201742/ZTESmartCityFullSolution>.

¹⁷ On China's call to replace the dollar, see Andrew Batson, “China Takes Aim at Dollar,” *Wall Street Journal*, March 24, 2009 ~ <https://www.wsj.com/articles/SB123780272456212885>.

¹⁸ Quoted in Arjun Kharpal, “With Xi's Backing, China Looks to Become a World Leader in Blockchain as U.S. Policy Is Absent,” CNBC, December 15, 2019 ~ <https://www.cnbc.com/2019/12/16/china-looks-to-become-blockchain-world-leader-with-xi-jinping-backing.html>.

Currency Electronic Payment (DCEP).¹⁹ Encouraging the use of this new digital currency for all transactions across the DSR will ultimately lessen the utility of the dollar while simultaneously increasing Beijing's oversight of all financial activity.

Given the scope of the PRC's digital ambitions and the nature of the initiative's ideological component, in 2018 former CEO of Google Eric Schmidt predicted that the internet itself would be bifurcated into two parts—one led by China and one led by the United States. He explained: “Look at the way BRI works—their Belt and Road Initiative, which involves 60-ish countries—it's perfectly possible those countries will begin to take on the infrastructure that China has with some loss of freedom.”²⁰

STRATEGIC ORIGINS

The strategic origins of the DSR are found in China's narratives around historic humiliation at the hands of technologically superior Western forces in the nineteenth century.²¹ As a result, the PRC has long had programs that attempt to upgrade Chinese technologies in the military and strategic spheres, including the 995 Program, the 863 Program, and the Super 863 Program.²² Under Xi Jinping's leadership, a number of key plans and policies have been implemented that emphasize the drive for Chinese technological superiority, including Made in China 2025 (2015); the “Outline of the National Strategy for Innovation-Driven Development” (2016); the 13th Five-Year Plan (2016), which included a massive push for breakthroughs in quantum computing; and the “Next-Generation Artificial Intelligence Development Plan” (2017). Others, like the “16-character policy” and “civil-military fusion doctrine,” blur the lines between civilian and military R&D and push civilian tech companies into “integrated development” in critical areas.

¹⁹ Cissy Zhou, “China's New Digital Currency Isn't Bitcoin and Is Not for Speculation,” *South China Morning Post*, December 22, 2019 ~ <https://www.scmp.com/economy/china-economy/article/3043134/chinas-new-digital-currency-isnt-bitcoin-and-not-speculation>.

²⁰ Lora Kolodny, “Former Google CEO Predicts the Internet Will Split in Two—And One Part Will Be Led by China,” *CNBC*, September 20, 2018 ~ <https://www.cnbc.com/2018/09/20/eric-schmidt-ex-google-ceo-predicts-internet-split-china.html>.

²¹ Elsa B. Kania, “Technology and Innovation in China's Strategy and Global Influence,” *China's Global Influence: Perspectives and Recommendations*, ed. Scott D. McDonald and Michael C. Burgoyne (Honolulu: Daniel K. Inouye Asia-Pacific Center for Security Studies, 2019), 228–49.

²² Select Committee of the U.S. House of Representatives, *Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China*, 105th Cong., 2d sess. January 3, 1999, Rep. 105-851 ~ <https://www.govinfo.gov/content/pkg/GPO-CRPT-105hrpt851/pdf/GPO-CRPT-105hrpt851>.

While the PRC has had similar science and technology policies since its inception, Xi's influence has been to actively point to key technologies that he wishes to prioritize. For example, in 2016 he stated "internet core technology is the greatest vital gate, and the fact that core technology is controlled by others is our greatest hidden danger."²³ Using military-sounding language, he asserted that China must "attack strategic passes in a coordinated manner...[and] assault the fortifications of core technology research and development."²⁴ The "Outline of the National Strategy for Innovation-Driven Development" makes very clear that Beijing's technological ambitions are closely aligned with its geopolitical ambitions, stating that "disruptive technologies are constantly emerging, continually reshaping the world's competitive landscape, [and] changing the balance of power among states."²⁵

In March 2015 the Ministry of Foreign Affairs, Ministry of Commerce, and the National Development and Reform Commission jointly published a white paper on BRI, the initiative's first public document.²⁶ What is of interest about the document is that it was the first attempt by the PRC to explain BRI, and the digital aspect was already embedded into the strategy. In other words, the data-driven aspect to the wider strategy has been there from the very beginning. The paper states that the "information Silk Road" will "improve the connectivity of their infrastructure construction plans and technical standard systems...and form an infrastructure network connecting all subregions in Asia, and between Asia, Europe, and Africa, step by step." According to Hong Shen, BRI and the DSR are an extension of the PRC's long-standing "going out" policy that uses private-public partnerships to push Chinese companies into commanding positions in the global economy. While overcapacity and inner-province economic lags were among the key drivers of BRI, actions such as the 2016 informatization strategy and the promotion of BRI by Xi in various forums have added both a technological and geopolitical component to the initiative.²⁷

²³ Xi Jinping, "Speech at the Work Conference for Cybersecurity and Informatization," available in English translation by Rogier Creemers at China Copyright and Media, April 19, 2016 ~ <https://chinacopyrightandmedia.wordpress.com/2016/04/19/speech-at-the-work-conference-for-cybersecurity-and-informatization>.

²⁴ Ibid.

²⁵ State Council (PRC), "Ye fengong zhongda tiaozheng, dianfu xing jishu buduan yongxian, zhengzai chong su shijie jingzheng geju, gaibian guojia lilian guibi" [The Outline of the National Strategy for Innovation-Driven Development], May 2016 ~ http://www.gov.cn/zhengce/2016-05/19/content_5074812.htm.

²⁶ NDRC, Ministry of Foreign Affairs, and Ministry of Commerce (PRC), "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road."

²⁷ Kania, "Technology and Innovation in China's Strategy and Global Influence," 239.

The key question, of course, is the nature of that geopolitical component and its impact on the United States and its allies. Though it is still early in what will likely be a decades-long geopolitical strategy, the PRC appears to be incrementally building a new type of order, one characterized by a political-economic “near abroad” that is closely tied to China’s own models of development and governance and tightly bound to the country through economic integration, with data playing a supportive role. In fact, there is a neoimperial aspect to China’s expansion of communications technologies, something that first found expression in British imperialism during the eighteenth and nineteenth centuries. In addition to drawing from China’s own imperial past, much of what the PRC is doing through BRI, including the DSR and the Maritime Silk Road, echoes British imperial strategy. Alfred Thayer Mahan’s theory that sea power—both commercial and military—is a central pillar of global power or Halford Makinder’s theory that control of the Eurasian landmass (and its peoples and resources) is key to global hegemony are both relevant examples.²⁸

Are the Chinese building an empire in a “fit of absence of mind,” as Sir Robert Seeley once claimed about the English?²⁹ Jonathan Hillman argues that “China is not only following in Britain’s footsteps, but climbing on its shoulders,” noting that Huawei Marine Networks is actually a joint venture between Huawei and British company Global Marine Systems—a successor to the imperial-era firm that laid the first transatlantic cable in 1866.³⁰ With the Made in China 2025 strategy, Beijing shows its intent for Chinese companies to capture 60% of the world’s fiber-optic communications market.³¹ Significant DSR infrastructure projects have included the Pakistan and East Africa Connecting Europe (PEACE) cable connecting Pakistan to Kenya, with plans to extend to France by 2021; a cable linking Cambodia and Hong Kong; and the 25,000-kilometer Asia-Africa-Europe 1 (AAE-1) cable that involves China Unicom.³² As Paul Kennedy noted in 1971, while British cables were

²⁸ On Mackinder’s theory, see Halford J. Mackinder, “The Geographical Pivot of History,” *Geographical Journal* 23, no. 4 (1904): 421–37.

²⁹ John R. Seeley, *The Expansion of England* (London: Little, Brown, 1922), 12.

³⁰ Jonathan Hillman, “China’s Global Ambitions Retrace Britain’s Imperial Past,” *Financial Times*, May 15, 2019 ~ <https://www.ft.com/content/58c649f0-771c-11e9-be7d-6d846537acab>. For the sake of transparency, the author is an adjunct fellow with the Center for Strategic and International Studies (CSIS), where Hillman directs the Reconnecting Asia Project.

³¹ “‘Made in China 2025’ Plan Unveiled,” *Xinhua*, May 19, 2015 ~ http://www.china.org.cn/business/2015-05/19/content_35605975.htm.

³² Chan Jia Hao, “All May Not Be Smooth along China’s Digital Silk Road,” Lowy Institute, Interpreter, August 20, 2019 ~ <https://www.lowyinstitute.org/the-interpreter/all-may-not-be-smooth-along-china-s-digital-silk-road>.

not “conceived of exclusively or even primarily for strategic purposes” in the 1850s, the system “inevitably attracted the attention of the military and naval departments of government, and of those who were concerned with the unity and security of the empire,” with government strategy playing a predominant role in laying cable from 1870 onward.³³

STRATEGIC IMPLICATIONS

There is a range of strategic implications of the DSR for the United States, Japan, and other advanced economies that depend on how successful China is in using BRI to reorder the regional system and whether it can eventually overlay or supplant the U.S.-led alliance and ASEAN regional systems. Three main areas of concern are voiced by the United States and its allies. In the order they might be said to proceed, these concerns include (1) the promotion of the PRC’s authoritarian social norms and values bundled in the “Chinese model of development” and smart city programs that could be used to replicate the worst elements of China’s social credit system, bringing private and commercial data ever more under Beijing’s or other authoritarians’ watchful eyes, (2) the exploitation of large amounts of personal and commercial data flowing through PRC financial institutions where tools can ensure dominance of key strategic markets and sectors, (3) the digitalization and centralization by China of shipping data in smart ports that both complements and reinforces its already impressive ownership of many of the world’s largest container ports and shipping companies. These three areas of concern might be grouped as values and governance, markets and trade, and ports and shipping.

Values and Governance

The bundling of various technologies in smart city programs has been well-documented in a previous section of this essay. Primarily, the danger in smart cities is found in their panopticon-like nature that involves building layers of sensors to collect and centralize real-time data across the urban environment and connect computing service platforms with cloud services to “intelligent operations centers” where data is received and analyzed and

³³ Paul M. Kennedy, “Imperial Cable Communications and Strategy, 1870–1914,” *English Historical Review* 86, no. 341 (1971): 728–52.

solutions are offered.³⁴ The premise is that a better-integrated and more effectively operated city boosts economic activity and promotes growth, as these centers pull disparate information from all over the city to create real-time, comprehensive, and actionable data sets. As Patrick Cha and I have written elsewhere, ICT such as 5G enables large reams of data to be collected and centralized, while technologies like big data analytics and AI allow for its processing and exploitation.³⁵

A 2018 Freedom House report noted how the PRC has promoted the use of data for censorship, surveillance, and propaganda in the DSR by offering training workshops and cultivating media and policy elites from 36 out of 65 countries surveyed at various conferences.³⁶ According to the report, visiting officials toured the headquarters of a company that handles big data on public opinion management and were offered training courses on “new media development.” Reuters reported in 2018, for example, that ZTE helped create an “advanced citizen surveillance program” in Venezuela with the assistance of smart identification cards to monitor location and behavioral data, including voting patterns, financial spending, healthcare, and use of social programs.³⁷ Paired with facial recognition, a heavy saturation of surveillance cameras, and geolocation devices on phones, Beijing is enabling many nation-states across the DSR the ability to collect huge databases on their populations in real time and monitor and punish political behavior by gating access to public services. As of 2018, China had helped establish such systems in Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Malaysia, Pakistan, Singapore, Sri Lanka, the United Arab Emirates, Uzbekistan, and Zambia.³⁸ At the extreme end of the spectrum, intelligent operations centers can look like the Integrated Joint Operations Platform that allows the Public Security Bureau to monitor and control the Uighur population in Xinjiang.³⁹ The development of cyber laws similar to the 2016 China Security Law in recipient nations is also a concern,

³⁴ The English philosopher Jeremy Bentham developed the concept of the panopticon prison, whereby prisoners could be observed by guards at all times. While prisoners were unsure of when they were being watched, the mere thought that they could be made them self-regulate their behavior.

³⁵ John Hemmings and Patrick Cha, “Exploring China’s Orwellian Digital Silk Road,” *National Interest*, January, 7, 2020 ~ <https://nationalinterest.org/feature/exploring-china%E2%80%99s-orwellian-digital-silk-road-111731>.

³⁶ Adrian Shahbaz, “Freedom on the Net 2018: The Rise of Digital Authoritarianism,” Freedom House, October 2018 ~ https://freedomhouse.org/sites/default/files/FOTN_2018_Final%20Booklet_11_1_2018.pdf.

³⁷ Angus Berwick, “How ZTE Helps Venezuela Create China-Style Social Control,” Reuters, November 14, 2018 ~ <https://www.reuters.com/investigates/special-report/venezuela-zte>.

³⁸ Shahbaz, “Freedom on the Net 2018,” 9.

³⁹ “China: Big Data Fuels Crackdown in Minority Region,” Human Rights Watch, February, 26, 2018 ~ <https://www.hrw.org/news/2018/02/26/china-big-data-fuels-crackdown-minority-region>.

with Vietnam, Egypt, Tanzania, and Uganda producing their own versions in 2018 and 2019.⁴⁰

At the other end of the spectrum of data exploitation is the use of data by Chinese intelligence operatives and the United Front Work Department to influence and shape the decisions of key policymakers in DSR countries to effect social and political changes in line with the PRC's national interests. The impact of influence operations as a means of getting foreigners to act in China's interests would be amplified if used in tandem with reams of processed and analyzed personal data as well as real-time online activity and location tracking.⁴¹ This could include influence operations or using *kompromat* (compromising material) on political and military leaders, media magnates, or industrialists who have a large voice in their respective countries whenever key decisions arise that affect Beijing's strategic preferences. At the risk of exaggeration, the DSR may be the largest intelligence-collection network ever constructed. It is on this network that local PRC-trained security services monitor and analyze data on Chinese-built equipment and servers. The risks to foreign companies, political elites, and diplomats operating in such spaces—as well as the risks to their personal data—are still not fully understood and should be further analyzed. For countries like the United States and Japan, it is necessary to brief people deploying to these regions on how to operate inside what is likely to be a fully compromised internet system.

Markets and Trade

There are serious concerns that BRI and the DSR overly favor Chinese companies in awarding contracts. It is certainly no secret that at the political level Chinese companies are encouraged to “go out” and have received state support in doing so from large development banks. In sectors of strategic importance, such as ICT, this is particularly prevalent, with tech giants like Huawei, Hik Vision, and ZTE receiving financial support in the form of credit or loans from state banks like the China Development Bank and the Export-Import Bank of China. Both banks are huge by Western standards—the China Development Bank held the top ranking for infrastructure financing in Asia between 2016

⁴⁰ On North Africa, see Tin Hinane El Kadi, “The Promise and Peril of the Digital Silk Road,” Chatham House, June 6, 2019 ~ <https://www.chathamhouse.org/expert/comment/promise-and-peril-digital-silk-road>. On Tanzania and Uganda, see Shahbaz, “Freedom on the Net 2018,” 7.

⁴¹ For the best treatment of this subject, see Anne-Marie Brady, “Magic Weapons: China's Political Influence Activities under Xi Jinping” (paper presented at the conference “Corrosion of Democracy under China's Global Influence,” Arlington, September 16–17, 2017) ~ https://www.wilsoncenter.org/sites/default/files/magic_weapons.pdf.

and 2018.⁴² During the debate over Huawei and 5G integration in Western countries, it was revealed that the China Development Bank had extended around \$100 billion to the Chinese telecommunications firm to assist its expansion.⁴³ The website of the Export-Import Bank of China states that the bank is state-funded and state-owned, with a mandate to “facilitate China’s national development strategies....Its financial support goes to foreign trade, cross-border investment, the Belt and Road Initiative, international industrial capacity and equipment manufacturing cooperation, science and technology, cultural industry, ‘going global’ endeavors of small and medium enterprises, and the building of an open economy.”⁴⁴ The bank provided \$44 million to the Pakistan-China Fiber Optic Project—85% of the total required. It also loaned the government of Nigeria \$328 million to build a Huawei-commissioned telecommunications network.⁴⁵ In 2016, at the height of China’s lending, six of the world’s seven top lenders were Chinese banks.⁴⁶ China further supplements this financial support for BRI infrastructure projects from various other mechanisms, including the World Bank, the Asian Infrastructure Investment Bank, the Silk Road Fund, the Asian Development Bank, and the New Development Bank.⁴⁷

While the development of ICT infrastructure will be a huge gain for recipient countries, there is the risk that Chinese companies will mainly benefit from the data flows that arise from building cloud-based servers and developing e-commerce firms, thus hindering market entry for Western companies and stymying the growth of local tech firms. This is partly because the Chinese tech giants that build the ICT infrastructure tend to also bring with them an ecosystem of other Chinese tech firms that deal in software, cloud computing, fintech, and other applications. These firms also have a great opportunity to draw on the consumer data that is harvested from

⁴² Don Weinland, “China State Banks Pull Back from Risky Overseas Projects,” *Financial Times*, April 4, 2019 ~ <https://www.ft.com/content/273c324c-55ec-11e9-a3db-1fe89bedc16e>.

⁴³ Ellen Nakashima, “U.S. Pushes Hard for a Ban on Huawei in Europe, but the Firm’s 5G Prices Are Nearly Irresistible,” *Washington Post*, May 29, 2019, ~ https://www.washingtonpost.com/world/national-security/for-huawei-the-5g-play-is-in-europe--and-the-us-is-pushing-hard-for-a-ban-there/2019/05/28/582a8ff6-78d4-11e9-b7ae-390de4259661_story.html.

⁴⁴ “About the Bank,” Export-Import Bank of China ~ <http://english.eximbank.gov.cn/Profile/AboutTB/Introduction>.

⁴⁵ Andrew Kitson and Kenny Liew, “China Doubles Down on Its Digital Silk Road,” CSIS, Reconnecting Asia Program, November 14, 2019 ~ <https://reconnectingasia.csis.org/analysis/entries/china-doubles-down-its-digital-silk-road>; and Weinland, “China State Banks Pull Back from Risky Overseas Projects.”

⁴⁶ Weinland, “China State Banks Pull Back from Risky Overseas Projects.”

⁴⁷ “Financing and Funding for the Belt and Road Initiative,” Belt and Road News, May 17, 2019 ~ <https://www.beltandroad.news/2019/05/17/financing-and-funding-for-the-belt-road-initiative>.

Chinese e-commerce giants such as Alibaba, Baidu, and Tencent. These companies host leading mobile payment systems Alipay, Baidu Wallet, and WeChat Pay in many of the BRI countries, which additionally promote the use of the renminbi. As of 2018, all these transactions must pass through a clearinghouse led by the People's Bank of China called Wanglian. As mobile fintech develops across the DSR, it will provide massive amounts of consumer data to Chinese tech companies—and presumably to China's state bank.

Tin Hinane El Kadi, an associate fellow at Chatham House, notes that by accessing this data, “Chinese tech giants can understand markets better, identify and eliminate local competitors and carry out commercial research and development, limiting the capacity of homegrown players to reap the economic benefits of data produced in the region.”⁴⁸ She describes how North African mobile device manufacturers are already coming under severe competition from Chinese manufacturers Oppo and Vivo. These companies have entered the market in the wake of ICT projects such as Tangier Tech, which is Morocco's widely touted smart city project being built by China Communications Construction Company.⁴⁹ As e-commerce companies begin discerning the spending habits of their foreign customers, this data might be used to dominate future products such as wearable devices and home applications in the Internet of Things.

Ports and Shipping

The concept of the smart port also deserves careful attention, for the digitalization and centralization of shipping data leaves this sector vulnerable to exploitation for strategic ends. Like smart cities, smart ports are concerned with similar aspects of energy and resources, and intend to create efficiencies in unloading and productivity using sensors and automated functions.⁵⁰ They also involve the centralization of data in programs like the Big Data Risk Monitoring Platform at Nanning's customs office, created by Chinese tech firm Powerbridge Technologies, which tracks cross-border trade with Southeast Asian states at 26 ports along 497 miles.⁵¹ Despite the economic

⁴⁸ El Kadi, “The Promise and Peril of the Digital Silk Road.”

⁴⁹ “Tangier Tech City Plans Revived with Selection of Chinese Giant CCCC,” Global Construction Review, May 1, 2019 ~ <http://www.globalconstructionreview.com/news/tangier-tech-city-plans-revived-selection-chinese>.

⁵⁰ “Smart Ports: Increasing Efficiency and Cutting Costs,” Ship Technology, June 19, 2018 ~ <https://www.ship-technology.com/features/smart-ports-increasing-efficiency-cutting-costs>.

⁵¹ Max Schwerdtfeger, “Big Data Platform Launched in New Silk Road,” Port Technology, July 31, 2019 ~ <https://www.porttechnology.org/news/big-data-platform-launched-in-new-silk-road>.

benefits, there are also deeply strategic aspects of these efficiency platforms. One such application is an unofficial sanctions system, whereby China uses its control of ports along the Indo-Pacific rim to exert surgical economic pressure by delaying trade and removing containers from ships. Many political leaders in Southeast Asia also have personal business interests, and having their goods offloaded at a port before delivery for customs or some invented excuse could be a strong source of political leverage. For those who think this scenario is far-fetched, one need only remember how China intermittently waylaid Philippine fruit imports at customs between 2012 and 2016 over tensions in the South China Sea.⁵² The real danger is not that the PRC would openly interfere with national trade—this would be an extreme example—but rather that it would use centralized data on goods transiting its ports to carry out deniable “surgical strikes” that would affect the business interests of key foreign policy elites.

CONCLUDING THOUGHTS

This essay has argued three main points. The first is that what the PRC is doing with the DSR is strategically significant. The second is that China has strategic intentions for the DSR that are the result of centralized decision-making and possess an ideological component that underpins the frenetic activity on the ground. The third is that the PRC’s ambitions are of the grandest scale and involve an attempt at multi-regional reordering and, by proxy, global reordering. The marriage of ICT to infrastructure has perhaps been the winning formula for China. This has allowed Beijing to promote its own standards, companies, and digital currency, granting it the benefits of new captive markets for Chinese tech firms, rich sources of data for analysis, and tools for leverage over foreign political and business elites. History—such as that presented by the British and Chinese Empires—offers us puffs of insight, but these are insufficient to fully grasp how the digital technologies of tomorrow are creating the pillars of hegemonic order today.⁵³ As more

⁵² Josephine Cuneta and James Hookway, “China Dispute Threatens Philippine Industries,” *Wall Street Journal*, May 16, 2012 ~ <https://www.wsj.com/articles/SB10001424052702303879604577407730408858666>; and Cliff Venzon, “China Uses Banana Diplomacy in Philippines to Edge Out Japan,” *Nikkei Asian Review*, July 26, 2019 ~ <https://asia.nikkei.com/Politics/International-relations/China-uses-banana-diplomacy-in-Philippines-to-edge-out-Japan>.

⁵³ Certainly, there are already superb attempts to understand the role that technology plays in the PRC’s grand strategic ambitions—by MERICS, CSIS, and the Australian Strategic Policy Institute, in particular—but it is clear that all of us are still simply scraping the surface. Much more work is necessary.

and more pillars of state power—military, economic, and political—become dependent on the digital realm for their functionality, states will seek to utilize them in geopolitical ways.

For the United States and Japan, two powers that have been integral to organizing the global economy over the last 60 years and each a major contributor to global technological innovation and growth, this is a puzzling time. The primary challenge will be to understand how best these states can address the threats to their people when they operate inside Chinese-built smart cities across Asia and the Eurasian landmass. What will be the levers for control, and how will they affect soldiers, diplomats, and journalists from these countries? How will PRC-built smart ports fortify the evident and growing Chinese domination of the sea lanes of communication? Will the United States and its friends and allies be able to manage these threats and understand when trade data is being used against their interests? The answers to these questions are not yet clear, but they certainly are of the utmost importance if the Indo-Pacific is to remain truly “free and open.”

Finally, will the United States and its partners be able to overcome the dominance of both the PRC’s technical standards and governance model in the markets and political systems of tomorrow? This, perhaps more than any other question, indicates the scale of the ideological challenge that Western countries face. How to address China’s ideologically authoritarian approach to data, the media, and citizen-state relations is of great consequence. In 1946, Winston Churchill delivered the Iron Curtain speech in Fulton, Missouri. Unlike many political leaders at the time, he recognized that the Soviet Union’s seemingly disparate actions across Eastern Europe were carried out with an endgame in mind—to increase Soviet influence and control. The United States and its allies likewise must assess the PRC’s disparate actions to discern its intentions. They must also anticipate and learn the implications for those peoples who live and operate behind China’s digital curtain. 