



# China's Digital Silk Road: Strategic Technological Competition and Exporting Political Illiberalism

---

By  
Clayton Cheney

## ISSUES & INSIGHTS

### WORKING PAPER

VOL. 19, WP8 | JULY 2019



## **Pacific Forum**

Based in Honolulu, the Pacific Forum ([www.pacforum.org](http://www.pacforum.org)) is a foreign policy research institute focused on the Asia-Pacific Region. Founded in 1975, the Pacific Forum collaborates with a broad network of research institutes from around the Pacific Rim, drawing on Asian perspectives and disseminating project findings and recommendations to global leaders, governments, and members of the public throughout the region. The Forum's programs encompass current and emerging political, security, economic, and maritime policy issues, and works to help stimulate cooperative policies through rigorous research, analyses and dialogues.

# TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	iv
I. INTRODUCTION .....	1
II. LITERATURE REVIEW .....	2
III. MAPPING THE DIGITAL SILK ROAD .....	3
A. PHYSICAL INFRASTRUCTURE IN THE DIGITAL SPHERE ....	4
B. DEVELOPING ADVANCED TECHNOLOGIES .....	6
SATELLITE NAVIGATION SYSTEMS .....	6
ARTIFICIAL INTELLIGENCE .....	7
QUANTUM COMPUTING .....	8
C. DIGITAL COMMERCE .....	8
D. INTERNATIONAL NORMS IN CYBERSPACE AND ADVANCED TECHNOLOGIES .....	9
IV. STRATEGIC TECHNOLOGICAL COMPETITION AND THE GLOBAL ORDER .....	11
A. UNITED STATES-CHINA STRATEGIC COMPETITION SHIFTING TO THE TECHNOLOGICAL ARENA .....	12
B. SECURITY CONCERNS SURROUNDING CHINESE CORPORATIONS AND DIGITAL INFRASTRUCTURE .....	13
C. CREATING A NEW INTERNATIONAL ORDER OR RESHAPING THE EXISTING INTERNATIONAL ORDER .....	16
D. BIG DATA - SHARP POWER, HUMAN RIGHTS AND ADVANCED TECHNOLOGIES .....	18
V. FUTURE POLICY IMPLICATIONS AND RECOMMENDATIONS .....	19
A. FUTURE POLICY IMPLICATIONS .....	20
B. POLICY RECOMMENDATIONS .....	20
POLICY RECOMMENDATIONS FOR THE UNITED STATES .....	21
POLICY RECOMMENDATIONS FOR CHINA .....	21
POLICY RECOMMENDATIONS FOR THE INTERNATIONAL COMMUNITY .....	22
VI. CONCLUSION .....	22
ABOUT THE AUTHOR .....	23

---

## EXECUTIVE SUMMARY

---

The Digital Silk Road is the component of China's Belt and Road Initiative that aims to establish China as the global technological superpower. While the Belt and Road Initiative is generally understood to be a foreign policy initiative, it is important to view the Digital Silk Road as both a foreign and domestically focused aspect of the initiative. The first step to analyzing this component of the Belt and Road Initiative is to create a conceptual roadmap to understand the components of the Digital Silk Road. This paper argues that it comprises four interrelated, technologically focused initiatives. First, China is investing abroad in digital infrastructure, including next generation cellular networks, fiberoptic cables and data centers. Second, it contains a domestic focus on developing advanced technologies that will be essential to global economic and military power. These advanced technologies include satellite navigation systems, artificial intelligence and quantum computing. Third, because China recognizes the importance of economic interdependence to international influence, the Digital Silk Road promotes e-commerce through digital free trade zones. Last, digital diplomacy and governance, including through multilateral institutions, are key to China creating its ideal international digital environment.

After outlining a broad conceptual map of the Digital Silk Road, this paper focuses on how China's investment in digital infrastructure and the strategic technological competition between China and the United States will shape the international orders in the Asia-Pacific region and globally. It argues that China perceives technological advancement as the sphere in which it can most adequately challenge the United States' global power without creating direct confrontation, including possible military confrontation. Second, the United States seeks to constrain the Digital Silk Road and China's technological ascendancy by presenting Chinese technology corporations as posing an unacceptable risk to international security. Third, China does not want to replace the current international order that has persisted since the end of the Second World War. Rather, it would like to maintain the liberal economic order that has permitted its economic rise and export its form of digital authoritarianism to create an illiberal political international order. Finally, through investing in data centers and pursuing data localization policies, China aims to achieve strategic geopolitical objectives by projecting sharp power abroad, which will be facilitated by big data.

Ultimately, this paper concludes that while it is likely that the intensifying strategic technological competition between China and the United States will result in separate spheres of technological influence, due to the intertwined nature of global technology supply chains and the degree of economic and political interdependence between the United States and China, it is unlikely that this competition will create separate, noninteroperable technological ecosystems divided along political lines.

---

## INTRODUCTION

---

Great power competition has returned as a defining feature of the geopolitical landscape on the global stage, with the United States and a rapidly emerging economic and military power, China, vying for global and regional influence. Technological development and international connectivity in the digital space will play crucial roles in determining the outcome of this great power competition, which will ultimately shape the international order in the Asia-Pacific region and globally. China has begun to assert itself on the international stage, most notably via its signature foreign policy initiative, the Belt and Road Initiative (BRI). Through physical infrastructure investments, China aims to spread its influence abroad to become a regional hegemon and a global superpower. China's success in implementing one specific aspect of the BRI, the Digital Silk Road, will be of critical importance in determining China's ability to increase its influence on the international stage.

First announced through a white paper jointly issued by the Chinese National Development and Reform Commission, the Ministry of Foreign Affairs, and the Ministry of Commerce, the Digital Silk Road is the portion of the BRI focused on enhancing digital connectivity abroad and furthering China's ascendance as a technological power. At this crucial moment in the great power competition between the United States and China, this paper asks: how will the Digital Silk Road influence the outcome of this competition and what impact will it have on the global and Asia-Pacific regional orders? Because the Digital Silk Road is an understudied aspect of the BRI, this paper will answer this question by first creating a conceptual map of what comprises the Digital Silk Road. This is necessary to understand what China's intentions are in pursuing the Digital Silk Road. Next, the paper analyzes government documents, scholarly articles, policy papers and journalistic reporting to understand how the strategic technological competition between the United States and China will shape the emerging international order.

An international order in geopolitics refers to “the body of rules, norms, and institutions that govern relations among the key players in the international environment.”<sup>1</sup> For more than 70 years, international institutions established after the end of the Second World War, such as the United Nations and the World Bank, have shaped the international order and, at least since the end of the Cold War, it has been dominated by the United States as the unipolar power. The post-Cold War international order has also generally promoted political liberalism, democracy, and human rights as key aspirational values. With China as a rising global power promoting a model of state-led capitalism and political illiberalism, and digital technology playing an increasingly central role in all aspects of society, it is vital to understand China's Digital Silk Road and how the initiative will influence the trajectory of the current international order.

After detailing the broad contours of the Digital Silk Road, this paper makes several arguments regarding the initiative. First, through strategic technological competition, China aims to challenge American global power without provoking direct confrontation. Second, the United States is seeking to constrain the initiative and the global expansion of Chinese technology giants by presenting such expansion as an unacceptable risk to international security. Third,

---

<sup>1</sup> Michael Mazarr, Miranda Priebe, Andrew Radin and Astrid Stuth Cevallos, “Understanding the Current International Order,” Rand Corporation (2016): 7.

China's intention is not to overturn the current global order; rather, it would like to maintain economic components of the order that have facilitated its economic rise, while spreading a politically illiberal model of governance. Fourth, China sees the Digital Silk Road as a means to project its power abroad, which is facilitated by China's control over large amounts of data through the construction of digital infrastructure under the initiative. Finally, this paper outlines future policy implications of the Digital Silk Road and provides recommendations for various stakeholders.

## Literature Review

While China's BRI has received considerable scholarly attention, there has been less in-depth analysis of the Digital Silk Road component of China's signature foreign policy initiative. As described below, certain aspects of the Digital Silk Road have been the subject of academic and think tank writing, but to date, no publication has attempted to provide a comprehensive understanding of what the digital and technological aspects of the BRI entail and how they will impact the regional and global geopolitical landscapes.

In 2016, Sebastian Heilmann coined the phrase "digital Leninism" to describe how China was using technological advancements to transform the traditional authoritarian model into the digital age as a means to control its domestic population. Heilmann warned that digital Leninism was a "big-data-enabled, IT-backed authoritarianism [that] has the potential to put China on a path towards an entirely new, potentially totalitarian future."<sup>2</sup> The focus of his publication was on the potential domestic repression that could result from the Chinese government employing new technologies in its security and censorship efforts. This type of repression in the domestic environment is a precursor to China's attempts to export illiberal uses of technology on the international stage through the Digital Silk Road.

An effort has been made to understand Chinese objectives in pursuing the Digital Silk Road and to analyze what role it plays in the overall BRI. In an insightful scholarly article, Hong Shen argues that the Digital Silk Road is an initiative driven by the alliance between the Chinese government and Chinese companies to achieve a variety of objectives. The article delineates five objectives of the Digital Silk Road: addressing industrial overcapacity, facilitating international expansion of Chinese technology corporations, supporting the internationalization of the renminbi, creating China-centric digital infrastructure, and promoting inclusive globalization enabled by cyberspace.<sup>3</sup> Shen's analysis is extremely useful in an effort to comprehend Chinese motivations in assigning a central role in the BRI to the Digital Silk Road, and its focus on technology and digital infrastructure. In an international environment where understanding the intentions of other parties is vital to crafting appropriate policy responses, this article persuasively articulates several Chinese objectives in its pursuit of the Digital Silk Road.

The aspect of the Digital Silk Road that has received the most scholarly and public attention is the development of next-generation cellular networks, or 5G. A leading policy think tank, the

---

<sup>2</sup> Sebastian Heilmann, "Leninism Upgraded: Xi Jinping's Authoritarian Innovations," *China Economic Quarterly* 20, no. 4 (2016): 17.

<sup>3</sup> Hong Shen, "Building a Digital Silk Road? Situating the Internet in China's Belt and Road Initiative," *International Journal of Communication*, no. 12 (2018): 2684-2685.

Center for Strategic and International Studies, and a prominent consultancy firm, Eurasia Group, have each issued policy papers analyzing the geopolitical and security implications of 5G networks. James A. Lewis, a leading expert in the field of technology and public policy, highlights that 5G networks, and the vast array of applications for this technology, will be the focal point of a new technological competition between global powers. He points out that success in this technological competition and leading in innovation “is the source of economic strength and military security” in the information age. He further argues that 5G infrastructure will be the cornerstone of the digital environment.<sup>4</sup>

In a white paper analyzing the geopolitical implications of 5G networks, Triolo, Allison and Brown provide an excellent description of the current status of competition between various telecommunication corporations to set the standards and obtain patents that will provide the blueprint for 5G networks. Their white paper emphasizes that because of the growing technological cold war between the United States and China, it is possible that separate 5G ecosystems could emerge, one led by the United States and one led by China. This bifurcation of 5G networks would “increase the risk that the global technology ecosystem gives way to two separate, politically divided and potentially noninteroperable technology spheres of influence.”<sup>5</sup> Describing the current international environment as a new cold war centered around technological competition, or describing potential bifurcation of 5G networks as a “digital iron curtain,”<sup>6</sup> may be premature at this point in time. Yet, as tensions around technological competition continue to rise, these historical comparisons become less speculative and more plausible.

## Mapping the Digital Silk Road

To begin the process of understanding China’s Digital Silk Road and formulating strategic policy responses, it is necessary to conceptualize what the initiative entails. As is the case with the BRI more generally, there is no publicly available detailed accounting of what the Chinese government considers part of the Digital Silk Road. This section of the paper serves as an exercise in broadly mapping its contours. The Digital Silk Road is the portion of the BRI that seeks to establish China as a global technological superpower, the success of which will have important economic, security and geopolitical implications for the Asia-Pacific region and beyond. While the BRI is primarily a foreign policy initiative, to develop effective policy responses to the Digital Silk Road aspect of the BRI, it is useful to conceptualize it as not just a foreign policy initiative, but also as a domestic effort by China to assert itself as the dominant technological power on the global stage. Through in-depth research and analysis of Chinese policies, public statements of officials, scholarly articles and media publications, the conceptual map developed in this paper views the Digital Silk Road as comprising four broad categories of interrelated technology focused initiatives.

---

<sup>4</sup> James Lewis, “How Will 5G Shape Innovation and Security: A Primer,” *Center for Strategic and International Studies*, (2018): 12.

<sup>5</sup> Paul Triolo, Kevin Allison and Clarise Brown, “Eurasia Group White Paper: The Geopolitics of 5G,” *Eurasia Group*, (2018): 4.

<sup>6</sup> Sheridan Prasso, “China’s Digital Silk Road is Looking More Like an Iron Curtain,” *Bloomberg*, January 10, 2019, <https://www.bloomberg.com/news/features/2019-01-10/china-s-digital-silk-road-is-looking-more-like-an-iron-curtain>.

**Physical Infrastructure in the Digital Sphere.** First, through the Digital Silk Road, China seeks to become a world leader in providing physical infrastructure in the digital sphere, which includes next-generation cellular networks, or 5G technology; fiberoptic cables used to transmit data over the Internet; and data centers used to store data. The focus of the next section will be on how China's investment in digital infrastructure through the Digital Silk Road will shape the geopolitical and security environment on the international stage, so it is important to highlight several areas where China is concentrating its investments in this regard. While there has been a great deal of public attention placed on Chinese corporations' involvement in developing 5G networks, there has been less public scrutiny and scholarly attention paid to Chinese investments in fiberoptic cables, which are the backbone of the Internet, and data centers, which store digital data. Under the auspices of the Digital Silk Road, Chinese state-owned enterprises (SOEs)<sup>7</sup> and private corporations are investing heavily in these three areas of digital infrastructure. The opaque nature of Chinese foreign investment makes it difficult to precisely determine the scale of such investments; however, according to the International Institute for Strategic Studies, China is engaged in digital infrastructure projects in approximately 80 countries<sup>8</sup> and, according to RWR Advisory Group, it has invested \$79 billion in Digital Silk Road projects around the globe.<sup>9</sup>

The new 5G cellular networks being developed around the globe will substantially increase transmission speeds and reduce latency, which are essential to developing new applications around these networks such as driverless cars, the Internet of Things, artificial intelligence (AI), and smart cities. The current status of 5G network development is extremely fluid, with the United States recently issuing an executive order banning "American telecommunications firms from installing foreign-made equipment that could pose a threat to national security," and in a separate move by the government, preventing certain Chinese telecom corporations from purchasing American parts and technologies without government approval.<sup>10</sup> These moves are a significant escalation in the competition between Chinese and Western companies for the dominant position in creating 5G networks around the globe.

Chinese SOEs and China's large technology corporations have started to establish themselves as a dominant supplier of underwater and terrestrial fiberoptic cables, which transfer vast amounts of information through the Internet. Due to the importance of the Digital Silk Road and the overarching BRI to the Chinese government, these corporations pursue such projects under the umbrella of the Digital Silk Road. Doing so allows them to receive favorable financing terms from Chinese policy banks and political support from the government. It can be difficult to determine the percentage of underwater fiberoptic cables Chinese companies are involved in constructing; however, one estimate projected these firms' involvement in such

---

<sup>7</sup> For the purposes of this paper, the phrase SOEs refers to enterprises where the state has significant control through full, majority or significant minority ownership. See, "OECD Guidelines on Corporate Governance of State-Owned Enterprises," *OECD Publishing*, (2005): 11.

<sup>8</sup> Sally Adee, "The Global Internet is Disintegrating – What Comes Next?," *BBC*, May 15, 2019, <http://www.bbc.com/future/story/20190514-the-global-internet-is-disintegrating-what-comes-next>.

<sup>9</sup> Sheridan Prasso, "China's Digital Silk Road is Looking More Like an Iron Curtain," *Bloomberg*, January 10, 2019, <https://www.bloomberg.com/news/features/2019-01-10/china-s-digital-silk-road-is-looking-more-like-an-iron-curtain>.

<sup>10</sup> Cecilia Kang and David Sanger, "Trump Moves to Ban Foreign Telecom Gear, Targeting Huawei in Battle with China," *New York Times*, May 15, 2019, <https://www.nytimes.com/2019/05/15/business/huawei-ban-trump.html?action=click&module=Top%20Stories&pgtype=Homepage>.



projects rose from 6 percent of all projects from 2012–2015 to 20 percent from 2016–2019.<sup>11</sup> In Southeast Asia, Chinese corporations have already completed more than a dozen undersea fiberoptic cable projects and nearly 20 more are in the process of being constructed.<sup>12</sup> Additionally, in 2017, as part of the China-Pakistan Economic Corridor, one of six economic corridors along the BRI, Chinese corporations began laying fiberoptic cables through Pakistan to the Port of Gwadar, which will subsequently be linked to Djibouti through undersea cables when it is completed in 2020.<sup>13</sup> China is gradually expanding the reach of its fiberoptic cable network, gaining a dominant position in the Asia-Pacific region. While the largest amount of Chinese investment in fiberoptic cables may be in the Asia-Pacific region, Chinese corporations are still focused on markets well beyond this region for such investments. China aims to become the leader in this field in Africa and the Middle East and Chinese corporations, including Huawei and ZTE, have signed agreements to construct fiberoptic cables in countries around the world, including Belize, Ecuador, Guinea and the Solomon Islands.<sup>14</sup>

From a security perspective, Chinese companies constructing and maintaining fiberoptic cable networks creates several risks, including that “China could monitor or divert data traffic, and even cut off links with entire countries if it wished.”<sup>15</sup> There is a fear among the United States and other nations that have tense relations with China that, should tensions escalate, China could exploit these networks to its advantage. Furthermore, China views its control over these networks as crucial to its security over its own data and information because it is a means of shielding its communications from foreign intelligence gathering services.

In addition to cellular networks and fiberoptic cables, the construction of data centers is also an important digital infrastructure component of the Digital Silk Road. Chinese investments in data centers, which store Internet users’ data, have focused on construction of these centers both domestically and abroad. These investments serve an important role in facilitating the global expansion of Chinese technology companies and they have important implications for the use and protection of the data being stored. The vice-president of Alibaba has highlighted that the company’s overseas investment in data centers “has served the purpose of ‘paving the road and building the bridge’ for other Chinese companies in their overseas operations, especially software companies.”<sup>16</sup> As Chinese corporations and SOEs expand their investments in data centers overseas, the Chinese government has much easier access to data that is stored in these data centers. Furthermore, Chinese policies that require foreign corporations to maintain user data in China, a policy known as data localization, increase the amount of data the Chinese government has access to and raises significant privacy concerns. In the age of big

---

<sup>11</sup> Kristin Shi-Kupfer and Mareike Ohlberg, “China’s Digital Rise – Challenges for Europe,” *Mercator Institute for China Studies*, no. 7 (2019): 18.

<sup>12</sup> Brian Harding, “China’s Digital Silk Road and Southeast Asia,” *Center for Strategic and International Studies*, February 15, 2019, <https://www.csis.org/analysis/chinas-digital-silk-road-and-southeast-asia>.

<sup>13</sup> Sabena Siddiqui, “BRI, BeiDou and the Digital Silk Road,” *Asia Times*, April 9, 2019, <https://www.asiatimes.com/2019/04/opinion/bri-beidou-and-the-digital-silk-road/>.

<sup>14</sup> Stewart Patrick and Ashley Feng, “Belt and Router: China Aims for Tighter Internet Controls With Digital Silk Road,” *Council on Foreign Relations*, July 2, 2018, <https://www.cfr.org/blog/belt-and-router-china-aims-tighter-internet-controls-digital-silk-road>.

<sup>15</sup> Sabena Siddiqui, “BRI, BeiDou and the Digital Silk Road,” *Asia Times*, April 9, 2019, <https://www.asiatimes.com/2019/04/opinion/bri-beidou-and-the-digital-silk-road/>.

<sup>16</sup> Hong Shen, “Building a Digital Silk Road? Situating the Internet in China’s Belt and Road Initiative,” *International Journal of Communication*, no. 12 (2018): 2689.

data, and where access to data provides certain strategic advantages, data center investments are an important aspect of the Digital Silk Road.

**Developing Advanced Technologies.** Second, China has intensified its pursuit of and focus on developing advanced technologies, which have important economic and strategic uses. Three key advanced technologies to be discussed below are satellite navigation systems, AI, and quantum computing. These advanced technologies will be used for civilian and military purposes and will serve to enhance Chinese power from both an economic and military perspective. As one prominent expert on China points out, “Xi’s ambitions for Chinese leadership in innovation are integral to his ‘China dream’ of ‘national rejuvenation’—[advanced technologies] are thus inherently challenging to an international order in which the United States has long been predominant.”<sup>17</sup> Although Chinese investments in developing advanced technologies are in large part domestically concentrated,<sup>18</sup> these investments will have significant effects on the international balance of power and thus should be considered part of the Digital Silk Road when thinking about how best to conceptualize the initiative and strategically respond.

#### *Satellite navigation systems*

Currently, the United States maintains the dominant global position in satellite-driven navigation systems with its Global Positioning System (GPS). Yet China is investing heavily in its own satellite navigation system, the BeiDou system, with the aim of having 35 satellites in operation by 2020, providing global coverage.<sup>19</sup> The BeiDou system provides direct benefits to the People’s Liberation Army, enhancing China’s military capabilities and reducing any reliance it may have upon a satellite navigation system operated by the United States Department of Defense, as is the case with GPS. Additionally, China is encouraging nations participating in the BRI to adopt the BeiDou system as a means of enhancing integration and interdependence among BRI nations. At present, 30 BRI nations, including Pakistan, Laos, Brunei, and Thailand, have linked up to the BeiDou system.<sup>20</sup> China is urging nations to use the BeiDou system as a way for nations to enhance the efficiency of BRI infrastructure, such as railways and pipelines, through using a Chinese navigation system.

As more nations become dependent on the BeiDou system, China’s influence with these nations will grow because they will be reliant on Chinese systems for sustained economic growth. As is the case with other aspects of the Digital Silk Road and the BRI more generally, China seeks to expand its economic and political influence on the international stage at the expense of the United States through the promotion of its satellite navigation system. In an

---

<sup>17</sup> Elsa Kania, “China’s Quantum Future – Xi’s Quest to Build a High-Tech Superpower,” *Foreign Affairs*, September 26, 2018, [https://www.foreignaffairs.com/articles/china/2018-09-26/chinas-quantum-future?cid=nlc-fa\\_twofa-20180928](https://www.foreignaffairs.com/articles/china/2018-09-26/chinas-quantum-future?cid=nlc-fa_twofa-20180928).

<sup>18</sup> In 2015 alone, China invested approximately \$209 billion in research and development of advanced technologies. See, Scott Kennedy, “The Fat Tech Dragon: Benchmarking China’s Innovation Drive,” *Center for Strategic and International Studies*, August 2017, 20.

<sup>19</sup> Keshav Kelkar, “From Silk Threads to Fiber Optics: The Rise of China’s Digital Silk Road,” *Observer Research Foundation*, August 8, 2018, <https://www.orfonline.org/expert-speak/43102-from-silk-threads-to-fiber-optics-the-rise-of-chinas-digital-silk-road/>.

<sup>20</sup> Sabena Siddiqui, “BRI, BeiDou and the Digital Silk Road,” *Asia Times*, April 9, 2019, <https://www.asiatimes.com/2019/04/opinion/bri-beidou-and-the-digital-silk-road/>.

international environment dominated by strategic competition between great powers, these types of technologically driven points of influence will be important sources of global power. China has even described its efforts to establish a satellite-based navigation system as a Space Silk Road, which indicates the expansive manner in which the Chinese Communist Party (CCP) views the BRI.

### *Artificial Intelligence*

Another area of advanced technology that China has promoted as essential to its rise on the global stage is the development of AI. China has recognized the economic, military and geopolitical importance that AI will play in shaping the future international environment. This can be seen through China's recent unveiling of its Next Generation Artificial Intelligence Development Plan, in which China aims to become the global leader in AI technology by 2030,<sup>21</sup> and its creation of an AI National Team comprising prominent Chinese tech companies, including Baidu, Tencent, Alibaba and iFlytek.<sup>22</sup> China's reliance on its private sector to achieve its strategic objectives in the technology sector is an illustration of its growing reliance over the past two decades on civil-military fusion,<sup>23</sup> which eliminates distinction between civilian and military uses of technology innovations.

The breadth and impact of AI on the domestic and international stages is beyond the scope of this paper, but it is worth briefly highlighting the military and civilian purposes for which AI will be crucial because it indicates the importance that this technology will play in determining China's power on the global stage. From a military perspective, there are numerous applications of AI, such as drone swarms, and being the global leader in AI technology will allow a nation to enhance its battlefield capabilities. In addition, there are concerns that AI will decrease the costs associated with military engagement, through removing the need for manpower and increasing the precision with which military operations can be carried out. Decreased costs may actually increase the likelihood of conflict between dominant AI nations.<sup>24</sup> It will be important for AI superpowers to find some areas of consensus on military uses of AI to avoid an increased risk of military confrontation. In addition to these types of kinetic military uses, AI could also be used to develop software that can "defend itself against cyberattacks."<sup>25</sup> Countries are increasingly using cyberspace as a forum to further their strategic objectives without resorting to conventional military attacks, which means that cybersecurity-related AI could prove to be an invaluable resource. Finally, it is worth pointing out that AI can be used to sift through the incredibly large amounts of data that our society produces, which could allow AI to be used to

---

<sup>21</sup> Ian Bremmer and Nicholas Thompson, "The AI Cold War That Threatens Us All," *Wired Magazine*, October 23, 2018, <https://www.wired.com/story/ai-cold-war-china-could-doom-us-all/>.

<sup>22</sup> Sophie-Charlotte Fischer, "Artificial Intelligence: China's High-Tech Ambitions," *Center for Security Studies*, no. 220, (2018): 3.

<sup>23</sup> Lorand Laskai, "Civil-Military Fusion and the PLA's Pursuit of Dominance in Emerging Technologies," *Jamestown China Brief*, Vol. 18, Issue 6, April 9, 2018, <https://jamestown.org/program/civil-military-fusion-and-the-plas-pursuit-of-dominance-in-emerging-technologies/>.

<sup>24</sup> Melissa Rapp-Hooper and Rebecca Friedman Lissner, "The Open World – What America Can Achieve After Trump," *Foreign Affairs*, May/June 2019, 20.

<sup>25</sup> Adam Segal, "When China Rules the Web," *Foreign Affairs*, September/October 2018, 14.

predict political movements and even to project sharp power through disinformation campaigns.<sup>26</sup>

### *Quantum Computing*

Quantum computing is an additional advanced technology that China views as part of the Digital Silk Road and as essential to its rise as a global superpower. China has prioritized billions of dollars in investment in quantum computing, including through the establishment of a National Laboratory for Quantum Information Science. This technology, while in an extremely nascent phase of its development, has numerous potential applications, most notably in enhancing China's military and intelligence capabilities. The military applications of quantum computing include developing a quantum compass that could be used by submarines and other naval vessels to navigate without the use of its BeiDou satellite navigation system.<sup>27</sup> This type of navigation system would be vital during a time of great power war, should an adversary damage satellite navigation systems. Additionally, China is in the experimental phase of creating quantum radar technology that would be able to detect ballistic missiles and stealth fighter jets, an area of U.S. military superiority.<sup>28</sup> Furthermore, quantum science could provide China with advantages in its ability to gather intelligence and protect itself from the intelligence gathering efforts of its competitors. China's ability to make significant advancements in quantum computing "could allow Chinese intelligence services to create highly secure encrypted communications channels and break most conventional encryption."<sup>29</sup>

In short, advanced technologies, including satellite systems, AI, and quantum computing, are a primary focus of China's Digital Silk Road. Its ability to become a global leader in these technologies will have profound effects on Chinese economic competitiveness and military prowess.

**Digital Commerce.** Third, China and its largest technology corporations have recognized the importance of digital commerce and its essential role in continuing China's rise as an economic superpower. Through an official statement, the Chinese government stated that it supports "the development of e-commerce, promotes integration of the digital and real economies and works to optimize the allocation of resources and boost total factor productivity, which will drive innovation, transform growth models and adjust economic structure."<sup>30</sup> The expansion

---

<sup>26</sup> Sharp power refers to "the malign and aggressive nature of the authoritarian projects, which bear little resemblance to the benign attraction of soft power. Through sharp power, the generally unattractive values of authoritarian systems—which encourage a monopoly on power, top-down control, censorship, and coerced or purchased loyalty—are projected outward, and those affected are not so much audiences as victims." See, Christopher Walker and Jessica Ludwig, "From 'Soft Power' to 'Sharp Power': Rising Authoritarian Influence in the Democratic World," *National Endowment for Democracy*, December 2017, 13.

<sup>27</sup> Elsa Kania, "China's Quantum Future – Xi's Quest to Build a High-Tech Superpower," *Foreign Affairs*, Sept. 26, 2018, [https://www.foreignaffairs.com/articles/china/2018-09-26/chinas-quantum-future?cid=nlc-fa\\_twofa-20180928](https://www.foreignaffairs.com/articles/china/2018-09-26/chinas-quantum-future?cid=nlc-fa_twofa-20180928).

<sup>28</sup> Elsa Kania, "Spooky Action: Sorting Hype from Reality in China's Quantum-Tech Question," *Defense One*, July 17, 2018, <https://www.defenseone.com/ideas/2018/07/chinas-quantum-tech-quest-hype-reality-and-what-comes-next/149755/>.

<sup>29</sup> Adam Segal, "When China Rules the Web," *Foreign Affairs*, September/October 2018, 14.

<sup>30</sup> "International Strategy of Cooperation on Cyberspace," *Ministry of Foreign Affairs of the People's Republic of China*, March 1, 2017,

of the Digital Silk Road has permitted Chinese corporations to penetrate new and lucrative markets, especially in South and Southeast Asia. In this regard, the efforts by Chinese corporations and the Chinese government to establish digital or e-commerce free trade zones and expand its mobile payment application to markets abroad should be viewed under the auspices of the Digital Silk Road. Digital free trade zones are established to reduce costs associated with international shipments and cross-border trade, which China aims to capitalize upon, especially in the large and growing markets of Southeast Asia. Malaysia has established a partnership with Alibaba to develop a digital free trade zone,<sup>31</sup> which comprises “a regional logistics center serving Southeast Asia, an accompanying e-commerce platform, and a digital payment and finance service.”<sup>32</sup>

China’s ability to increase its already robust economic interdependence with other countries in the Asia-Pacific region will promote its ability to become a regional hegemon. Prominent Chinese technology corporations are investing heavily in e-commerce industries in the region, including in Thailand, India, and Singapore, under the umbrella of the Digital Silk Road. Such investments allow these corporations to garner favor with the CCP, as they are promoting President Xi Jinping’s primary foreign policy initiative through their overseas investments. Through its most heralded corporations, China is engaging in economic statecraft that is enhancing its regional influence and ability to project power on the regional and global stages. Increasing e-commerce and cross-border transactions on the regional level have an additional benefit for China: they are accelerating the internationalization of the renminbi, the Chinese currency.<sup>33</sup> As the renminbi is increasingly relied upon for cross-border transactions, it weakens the ability of the United States to project its power and influence abroad through international financial tools such as sanctions.

**International Norms in Cyberspace and Advanced Technologies.** Fourth, cyberspace and the advanced technologies previously discussed are largely ungoverned spheres and without established norms from the international perspective. China has increased its efforts to pursue its national interests on the international stage through digital diplomacy and Internet governance. These efforts have included engagement with multilateral forums that are tasked with establishing a rules-based order in these areas. Through this diplomatic engagement, China seeks to create international norms that conform to China’s conception of the future digital world.

China promotes cybersovereignty as the organizing international principle for Internet governance. The Chinese government has described cybersovereignty as the “right [of individual countries] to choose their own path of cyber development, model of cyber regulation and Internet public policies, and participate in international cyberspace governance on an equal

---

[https://www.fmprc.gov.cn/mfa\\_eng/wjb\\_663304/zzjg\\_663340/jks\\_665232/kjlc\\_665236/qtwt\\_665250/t1442390.shtml](https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zzjg_663340/jks_665232/kjlc_665236/qtwt_665250/t1442390.shtml).

<sup>31</sup> Phidel Vineles, “ASEAN and China Struggle to Buckle the Belt and Road Forum,” *East Asia Forum*, January 26, 2019, <http://www.eastasiaforum.org/2019/01/26/asean-and-china-struggle-to-buckle-the-belt-and-road/>.

<sup>32</sup> Hong Shen, “Building a Digital Silk Road? Situating the Internet in China’s Belt and Road Initiative,” *International Journal of Communication*, no. 12 (2018): 2694.

<sup>33</sup> Nadège Rolland, “A Concise Guide to the Belt and Road Initiative,” *The National Bureau of Asian Research*, April 11, 2019, <https://www.nbr.org/publication/a-guide-to-the-belt-and-road-initiative/>.



footing. No country should pursue cyber hegemony, interfere in other countries' internal affairs, or engage in, condone or support cyber activities that undermine other countries' national security.”<sup>34</sup> Cybersovereignty as the organizing international principle for Internet governance is in stark contrast to the view of Western governments, which have promoted an open Internet that is less susceptible to government regulation, especially by authoritarian regimes. Additionally, the United States and its allies have supported “a distributed model of Internet governance that involves technical bodies, the private sector, civil society, and governments, whereas Beijing prefers a state-centric vision.”<sup>35</sup> Many governments, especially authoritarian regimes in developing countries, have viewed the Chinese perspective of cyberspace governance favorably as it gives them greater control over the flow of information to their citizens.

Authoritarian regimes are having a large degree of success using multilateral institutions, including the United Nations, to promote their vision of cybersovereignty. For example, China has increased its diplomatic efforts in shaping international cyber norms through the United Nations Group of Governmental Experts (GGE) and since 2014 it has hosted the World Internet Forum to discuss Internet policy. Given that the current administration in Washington has been overtly hostile towards multilateralism, China and like-minded nations are almost certain to continue being successful in promoting their view of cyber governance within multilateral institutions. Even private corporations in the United States that have historically championed an open and free Internet capitulated to Chinese pressure, with Google undertaking efforts to develop a restricted form of its search engine that could be deployed in China. The decision by Google “to re-enter [the Chinese market] now will deal a huge victory to Beijing and its campaign to entrench cybersovereignty in the global order.”<sup>36</sup> However, following significant backlash from the United States government and the American public, Google decided to abandon this project in late 2018. While there are legitimate reasons to restrict certain flows of information on the Internet, all too often the concept of cybersovereignty has been used as a pretext to curb the human rights and civil liberties of citizens by illiberal governments.

The Digital Silk Road plays an important role in China’s efforts to export its conception of Internet governance. In addition to funding physical infrastructure in the digital sphere, the Digital Silk Road also includes spreading the Chinese model of a restricted Internet, through legislation, monitoring and technology. As one open Internet advocate explained, “What China has done is put together a whole suite of not just technology, but information systems, censorship training, and model laws for surveillance. It’s the full kit, and the laws, and the training, to execute a Chinese version of the Internet.”<sup>37</sup> In this sense, the Digital Silk Road goes beyond physical infrastructure and includes the exporting of ideological principles regarding governance and authoritarian playbooks for implementing this ideological viewpoint.

---

<sup>34</sup> “International Strategy of Cooperation on Cyberspace,” *Ministry of Foreign Affairs of the People’s Republic of China*, March 1, 2017, [https://www.fmprc.gov.cn/mfa\\_eng/wjb\\_663304/zzjg\\_663340/jks\\_665232/kjlc\\_665236/qtwt\\_665250/t1442390.shtml](https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zzjg_663340/jks_665232/kjlc_665236/qtwt_665250/t1442390.shtml).

<sup>35</sup> Adam Segal, “When China Rules the Web,” *Foreign Affairs*, September/October 2018, 16.

<sup>36</sup> Suzanne Nossel, “Google is Handing the Future of the Internet to China,” *Foreign Policy*, September 10, 2018, <https://foreignpolicy.com/2018/09/10/google-is-handing-the-future-of-the-internet-to-china/>.

<sup>37</sup> Sally Adee, “The Global Internet is Disintegrating – What Comes Next?,” *BBC*, May 15, 2019, <http://www.bbc.com/future/story/20190514-the-global-internet-is-disintegrating-what-comes-next>.

Just as previous periods of global great power competition have been marked by competing political ideologies, “the struggle between liberal democracy and digital authoritarianism is set to define the twenty-first.”<sup>38</sup>

AI technologies are another field where there has been little engagement and zero consensus from the international community as to the appropriate level of government and international regulation. As the leaders in AI technology innovation for military and non-military purposes, China and the United States should collaborate to establish norms that would decrease the possibility for AI to become a new zero-sum global arms race. However, the current approach by the two nations is dominated by “conflicting goals, mutual suspicion, and a growing conviction that AI and other advanced technologies are a winner-take-all game,” which is pushing the two nations into greater strategic competition in the technological domain.<sup>39</sup> Outside the military sphere, AI regulation will also be important for promoting preserving democracy around the globe. Because AI technologies are increasingly permitting “governments to monitor, understand, and control their citizens far more closely than ever before, AI will offer authoritarian countries a plausible alternative to liberal democracy.”<sup>40</sup> A central pillar of China’s Digital Silk Road is using technology to further its model of political illiberalism, which undermines democracy and human rights. The United States and other democracies need to provide a positive alternative model for technology development that promotes rather than undermines democracy and human rights.

Taken as a whole, this conceptualization of the Digital Silk Road views the initiative as a comprehensive effort by the Chinese government to establish itself as the technological leader on the global stage and to promote its vision of norms and principles governing the cyber and digital realms, which will have vast and unforeseeable impacts on the future of the geopolitical architecture well beyond the Asia-Pacific region.

### **Strategic Technological Competition and the Global Order**

The United States and China have entered a period of enhanced strategic competition, which is playing out in a variety of spheres. The outcome of this strategic competition between the world’s two most powerful nations will shape the geopolitical environment in the Asia-Pacific region as well as on the global stage. The Digital Silk Road initiative is a manifestation of China’s recognition of the vital role technological dominance will play in creating economic and military power, which will largely determine how this strategic competition unfolds. This section seeks to analyze how the strategic technological competition between the United States, with a focus on digital infrastructure, including next-generation cellular networks, Internet infrastructure, and data storage, will shape the development of the future international order in the Asia-Pacific region and more broadly on the global stage.

---

<sup>38</sup> Nicholas Wright, “How Artificial Intelligence Will Reshape the Global Order,” *Foreign Affairs*, July 10, 2018, [https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order?cid=nlc-fa\\_twofa-20180802](https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order?cid=nlc-fa_twofa-20180802).

<sup>39</sup> Ian Bremmer and Nicholas Thompson, “The AI Cold War That Threatens Us All,” *Wired Magazine*, October 23, 2018, <https://www.wired.com/story/ai-cold-war-china-could-doom-us-all/>.

<sup>40</sup> Nicholas Wright, “How Artificial Intelligence Will Reshape the Global Order,” *Foreign Affairs*, July 10, 2018, [https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order?cid=nlc-fa\\_twofa-20180802](https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order?cid=nlc-fa_twofa-20180802).

An analysis of how the Digital Silk Road will affect the regional and global orders results in several important conclusions. First, China views the technological sphere, including digital infrastructure, as a sector where it can engage in direct competition with the United States, while at the same time avoiding unwanted confrontation. Second, the United States has attempted to present the involvement of Chinese SOEs and private corporations in critical digital infrastructure as a security threat, which may erode the ability of these companies to expand globally. Third, because China has greatly benefited in economic terms from the liberal international order, the Digital Silk Road aims to reshape the international order to maintain economic openness, but spread an illiberal political model through exporting digital authoritarianism. Finally, through investment in digital infrastructure and data localization policies, China seeks to achieve strategic objectives through projecting sharp power abroad, which will be facilitated by the use of big data.

#### **United States–China Strategic Competition Shifting to the Technological Arena.**

President Xi has explicitly acknowledged that China has entered a phase where it can exert its geopolitical power on the international stage. In contrast to Deng Xiaoping’s “hide your strength and bide your time” approach, President Xi believes it is now China’s time to “take center stage in the world.”<sup>41</sup> As China ascends as a global superpower and potentially a regional hegemon, it was inevitable that strategic competition with the United States would arise. Similarly, as the international order characterized by unipolarity and American dominance fades, the United States will attempt to maintain its economic, diplomatic and military superiority over China as the rising power. Neither country views direct confrontation, especially military confrontation, as in their interest. As a result, the United States and China “will largely carry out their competition in the economic and technological realms.”<sup>42</sup> From the Chinese perspective, the Digital Silk Road and investment in digital infrastructure will allow it to reap the economic and military benefits from being the dominant nation in providing this infrastructure around the globe, especially in developing nations where digital connectivity is essentially absent.

The conventional wisdom over the past several decades was that economic and technological interdependence between the United States and China benefitted both countries. Yet because they are increasingly viewing each other as direct and strategic competitors for technological superiority, there is growing concern that a bifurcated technological world could emerge. This type of competition, which is characterized as zero-sum and focuses on relative gains, could result in “two distinct technology systems, with other countries forced to choose if they are going to plug into American or Chinese technology platforms and standards.”<sup>43</sup> The potential for bifurcated technological ecosystems along political lines is now emerging with regard to 5G networks. China has exerted considerable efforts to establish 5G standards and obtain 5G patents, with the goal of being the global leader in providing 5G networks. As of February 2019, Huawei owned more than 1,500 5G patents, more than any other corporation in the world. Combined with other Chinese corporations’ 5G patents, Chinese corporations hold 36

---

<sup>41</sup> President Xi made this statement during the 2017 Communist Party congress. See, “Xi Jinping: ‘Time for China to Take Centre Stage,’” *BBC*, October 18, 2017, <https://www.bbc.com/news/world-asia-china-41647872>.

<sup>42</sup> Yan Xuetong, “The Age of Uneasy Peace,” *Foreign Affairs*, January/February 2019, 40.

<sup>43</sup> Adam Segal, “Year in Review: Huawei and the Technology Cold War,” *Council on Foreign Relations*, December 26, 2018, <https://www.cfr.org/blog/year-review-huawei-and-technology-cold-war>.



percent of all such patents.<sup>44</sup> Given the wide-ranging commercial applications and potential military applications of 5G technology, being the global leader in supplying 5G technology provides a country with considerable economic and geopolitical power. The United States, citing national security concerns, has intensified its diplomatic efforts to prevent Chinese corporations, most notably Huawei, from establishing themselves as the market leader in 5G, but it is not clear that these efforts will be successful.

While tensions between the United States and China in the digital and technological space are high at the current moment, it is unlikely that their competition will lead to separate non-interoperable technological ecosystems. This is in part because advanced technology supply chains and “the global 5G equipment supply chain is extraordinarily complex, and interlinkages with Chinese suppliers are inescapable.”<sup>45</sup> As a result, efforts by either the United States or China to completely decouple themselves from the other in the technology sphere would be extremely difficult and costly. A more likely outcome is that certain critical areas of technology become less intertwined due to the economic and security concerns that each nation has with regard to the others’ products and equipment. This type of cautious technological interdependence has been described as “a form of competitive and cooperative ‘managed interdependence’ rather than complete isolation or total integration.”<sup>46</sup> Strategic competition in the technological space will not necessarily result in harmful outcomes for the global order, but China and the United States need to ensure that this competition does not escalate to the point where they each lead separate technological ecosystems. If separate technological ecosystems evolved, this would leave third-party countries with the difficult decision as to which technology system to “plug into.” The technological bifurcation of the international community along political ideological lines would have deleterious impacts on the global economy and it could increase the possibility of direct confrontation between the China and the United States.

**Security Concerns Surrounding Chinese Corporations and Digital Infrastructure.** The United States has been pursuing a diplomatic campaign to prevent Chinese corporations from supplying equipment for critical digital infrastructure based on concerns over security. Companies are currently vying for leading roles in establishing the next generation of cellular networks around the globe and the United States along with several allies, including Australia, New Zealand and Japan, have implemented measures essentially preventing Huawei and other Chinese corporations from supplying components for their 5G networks.<sup>47</sup> The security concerns surrounding Chinese building critical digital infrastructure include concerns that China could disrupt this infrastructure during a period of heightened tensions and concerns related to intelligence gathering.

---

<sup>44</sup> Wesley Rhan, “Belt and Road Forum – Will China’s ‘Digital Silk Road’ Lead to an Authoritarian Future,” *Deutsche Welle*, April 26, 2019, <https://www.dw.com/en/belt-and-road-forum-will-chinas-digital-silk-road-lead-to-an-authoritarian-future/a-48497082>.

<sup>45</sup> James Lewis, “How Will 5G Shape Innovation and Security: A Primer,” *Center for Strategic and International Studies*, (2018): 15.

<sup>46</sup> Anthea Roberts, Henrique Choer Moraes and Victor Ferguson, “The U.S.-China Trade War Is a Competition for Technological Leadership,” *Lawfare*, May 21, 2019, <https://www.lawfareblog.com/us-china-trade-war-competition-technological-leadership>.

<sup>47</sup> Sheridan Prasso, “China’s Digital Silk Road is Looking More Like an Iron Curtain,” *Bloomberg*, January 10, 2019, <https://www.bloomberg.com/news/features/2019-01-10/china-s-digital-silk-road-is-looking-more-like-an-iron-curtain>.

The United States has actively campaigned for countries to avoid using Chinese corporations to develop their 5G networks. While the United States has failed to publicly provide direct evidence that these corporations have intentionally supplied unsecure components for these networks, the security concerns over involving Chinese corporations in critical infrastructure such as 5G are warranted. Analysts and government officials who have argued that Chinese corporations should not be trusted to provide components of this digital infrastructure point to the close ties between these corporations and the CCP, and routinely highlight China's 2017 National Intelligence Law, which requires Chinese corporations and citizens to support the work of Chinese intelligence agencies, as an insurmountable security obstacle. There is growing evidence that the CCP is increasing its influence and control over the private tech sector in China, as "just about every major Chinese tech company – including Baidu, Alibaba, Tencent, iFlytek, Xiaomi and Sina, among many others—has established a [CCP] branch or committee."<sup>48</sup> For these corporations to successfully operate in China and expand globally, they must have the support of the Chinese government and the CCP, which creates understandable security concerns for governments in using these corporations to construct critical digital infrastructure. Chinese tech corporations are thus stuck in a difficult position: to expand domestically and abroad they must establish links to the CCP, but to assuage the security concerns of foreign governments they must show that they are truly independent of the Chinese government. Absent a fundamental restructuring of the relationship between the private sector and the Chinese state, it is unlikely that Chinese tech corporations will be able to expand globally on the scale that they desire.

In addition to links between the government and Chinese tech companies, the legal framework in China creates security concerns for other nations. China's 2017 National Intelligence Law states, "All organizations and all citizens shall, in accordance with the law, support, cooperate with, and collaborate in intelligence work, and guard the secrecy of national intelligence work they are aware of."<sup>49</sup> It is unclear how the Chinese government will implement this law and whether it has previously used it to require corporations to assist in its intelligence gathering efforts, but as countries construct digital infrastructure that carries vast amounts of public and private data, this law indeed poses a serious security risk. The practical outcome of this law is that "international expansion plans of Chinese companies—state-owned and private—which have been well and truly boxed into a corner with this law. The CCP has made it virtually impossible for Chinese companies to expand without attracting understandable and legitimate suspicion."<sup>50</sup> The irony is that this law was created to enhance Chinese intelligence gathering efforts but will likely result in pushback against Chinese tech companies operating in certain countries, which may ultimately hinder China's intelligence gathering efforts. Without access to information possessed by governments and intelligence services, it is difficult to assess whether the concerns over security in relation to the links between private tech companies and the CCP as well as China's 2017 National Intelligence Law are truly warranted. Nonetheless, some nations, including those that have implemented measures to ban Huawei and other Chinese

---

<sup>48</sup> Elsa Kania, "Much ado about Huawei (part 2)," *The Strategist*, March 28, 2018, <https://www.aspistrategist.org.au/much-ado-huawei-part-2/>.

<sup>49</sup> See, [http://cs.brown.edu/courses/csci1800/sources/2017\\_PRC\\_NationalIntelligenceLaw.pdf](http://cs.brown.edu/courses/csci1800/sources/2017_PRC_NationalIntelligenceLaw.pdf).

<sup>50</sup> Danielle Cave, "Huawei highlights China's expansion dilemma: espionage or profit," *The Strategist*, June 15, 2018, <https://www.aspistrategist.org.au/huawei-highlights-chinas-expansion-dilemma-espionage-or-profit/>.

corporations from contributing to their critical digital infrastructure, have determined that these companies pose an unacceptable security risk.

Since 2010, the United Kingdom's intelligence agency has operated the Huawei Cyber Security Evaluation Centre, which has been used to evaluate Huawei components to ensure they do not pose an intolerable security risk. Other nations, including Germany, have indicated their interest in pursuing this type of security arrangement to mitigate the security risk without completely banning Chinese tech companies from providing equipment for their digital infrastructure. While this model does mitigate the risk to some degree, the most recent report by the United Kingdom's intelligence service stated that it could give "only limited assurances" that Huawei's equipment did not pose a risk to national security.<sup>51</sup> It is appealing to try to find a middle-ground approach to ensuring the security of digital infrastructure, but this model of jointly testing the products of Chinese corporations insufficiently mitigates the security risk posed by their products. The software that will be used in 5G networks will require consistent updates and fixes, which means that although the software may have been initially secure when installed in the network, subsequent updates and fixes create new security vulnerabilities. In addition, even with jointly administered security evaluation centers, "the complexity and dynamism of the new 5G networks mean[s] it would be difficult to find vulnerabilities."<sup>52</sup> As a result, it is difficult to see how such an approach can sufficiently reduce the security concerns some countries have in using Chinese technology in their critical digital infrastructure.

Finally, from the Chinese perspective, the Digital Silk Road and its focus on constructing cross-border fiberoptic cables benefits its offensive and defensive intelligence capabilities. If Chinese corporations and SOEs build and maintain underwater and terrestrial fiberoptic cables, there is the potential for them to "bend or clamp the fibers so as to create micro-bends or ripples, which allows data to leak out and be transferred, if a receiver is installed."<sup>53</sup> This creates the possibility that Chinese intelligence services would be able to gain access to government and private information that is transiting fiberoptic cables that are maintained by a Chinese company. The ability for intelligence services to access this information would undermine the security of the country whose information was accessed and there is the potential for China to benefit economically by accessing and stealing valuable intellectual property. Thus, the Digital Silk Road poses an "obvious strategic risk, as optical fiber transports huge amounts of personal, government, and financial data, which would presumably be shared with the Chinese government if controlled by Chinese companies."<sup>54</sup>

In addition to offensive intelligence capabilities, constructing and operating fiberoptic cables serves to reduce China's susceptibility to the intelligence gathering efforts of its adversaries. China and other likeminded nations, such as Russia, view the control of cross-border fiberoptic

---

<sup>51</sup> Thorsten Benner, "Germany Is Soft on Chinese Spying," *Foreign Policy*, Dec. 9, 2018, <https://foreignpolicy.com/2018/12/09/germany-is-soft-on-chinese-spying/>.

<sup>52</sup> David Sanger, Julian Barnes, Raymond Zhong and Marc Santora, "In 5G Race With China, U.S. Pushes Allies to Fight Huawei," *New York Times*, Jan. 26, 2019, <https://www.nytimes.com/2019/01/26/us/politics/huawei-china-us-5g-technology.html>.

<sup>53</sup> Stewart Patrick and Ashley Feng, "Belt and Router: China Aims for Tighter Internet Controls With Digital Silk Road," *Council on Foreign Relations*, July 2, 2018, <https://www.cfr.org/blog/belt-and-router-china-aims-tighter-internet-controls-digital-silk-road>.

<sup>54</sup> Brian Harding, "China's Digital Silk Road and Southeast Asia," *Center for Strategic and International Studies*, February 15, 2019, <https://www.csis.org/analysis/chinas-digital-silk-road-and-southeast-asia>.

cables as a manner to “shield themselves from U.S. and other Western intelligence agencies and probably believe that their own communications – both with one another and to and from Europe – will be better protected if cables run across their own territory rather than through the Indian Ocean or the U.S.”<sup>55</sup> Cable ownership would permit China to enhance its own security at the expense of the United States and other nations because their intelligence gathering capabilities would be diminished.

Ultimately, the security concerns expressed by the United States and allied nations regarding Chinese corporations’ involvement in constructing global digital infrastructure emanate from the structural nature of the Chinese economy, including the interconnected relationship of the Chinese government, SOEs, and private corporations. It is difficult to envision easy solutions to this dilemma and the most likely result is that Chinese technology corporations will find it difficult to increase their market share abroad, at least in nations closely aligned with the United States. Due to Chinese corporations offering lower-cost digital infrastructure equipment and attractive financing from Chinese banks, they will likely have more success in developing nations, increasing the risk of technological spheres of influence emerging from the strategic technological competition between the United States and China.

### **Creating a New International Order or Reshaping the Existing International Order.**

China has benefitted greatly in economic terms from the liberal international order, which has facilitated its rise to become the second largest economy in the world. The Chinese government recognizes the importance of sustained economic growth to its legitimacy. As a result, it does not seek to completely replace the liberal international order that has been in place since the end of the Second World War. The fact that the Digital Silk Road actively promotes increased cross-border e-commerce and digital free trade zones is a recognition that free trade and globalization benefit China. At the same time, China is attempting to reshape the international order to resemble its domestic illiberal political environment. Through the Digital Silk Road, China aims to export digital authoritarianism to alter the current international order, which if successful would result in a liberal economic and illiberal political international order. This would undermine democratic governance and impede the protection of fundamental human rights around the globe. As one analyst described it, “Cyber competition is here and it is getting worse, threatening to undermine democracies, upend the international order, and erode American power.”<sup>56</sup>

The concept of digital authoritarianism means “wielding technology to enhance or enable authoritarian governance.”<sup>57</sup> China has been one of the pioneers of and the most successful at digital authoritarianism. Through Internet controls, such as the Great Firewall, surveillance technology and big data, it has created a technologically facilitated authoritarian state. China is now exporting this model under the banner of the Digital Silk Road. As digital authoritarianism spreads, China is establishing spheres of influence and preventing “this kind of illiberal Chinese

---

<sup>55</sup> Nadège Rolland, “A Fiber-Optic Silk Road,” *The Diplomat*, April 2, 2015, <https://thediplomat.com/2015/04/a-fiber-optic-silk-road/>.

<sup>56</sup> Amy Zegart, “Trump’s Cyber Strategy Is Far Too Optimistic,” *Defense One*, February 4, 2019, [https://www.defenseone.com/ideas/2019/02/trumps-cyber-strategy-far-too-optimistic/154628/?oref=defenseone\\_today\\_nl](https://www.defenseone.com/ideas/2019/02/trumps-cyber-strategy-far-too-optimistic/154628/?oref=defenseone_today_nl).

<sup>57</sup> Justin Sherman, “India’s Digital Path: Leaning Democratic or Authoritarian?,” *Just Security*, Feb. 4, 2019, <https://www.justsecurity.org/62464/indias-digital-path-leaning-democratic-authoritarian/>.

sphere of influence should be the cardinal aim of [the United States'] China strategy.”<sup>58</sup> The spread of technologically driven political illiberalism will undermine Washington’s ability to establish lasting alliances as the number of nations rejecting democratic governance and violating the basic human rights of its citizens grows. This will be especially true in the Asia-Pacific region, where China seeks to become the hegemon, which will be enabled by China creating illiberal spheres of influence. Digital infrastructure that is controlled by Chinese corporations and SOEs can be used by authoritarian and authoritarian-leaning regimes to oppress their domestic populations. Furthermore, as described previously, China is not only promoting political illiberalism through investing in digital infrastructure abroad, but also by providing a model of how to use legal frameworks and censorship techniques to create authoritarian states enabled by technology. The threat of digital authoritarianism being exported abroad is far from a theoretical concern. It is already underway with digital methods of human rights repression spreading to Thailand and Vietnam and Chinese-style government surveillance and censorship appearing in Sri Lanka, Ethiopia, Iran, Russia, Zambia and Zimbabwe.<sup>59</sup>

Over the past 70 years, a key pillar of American foreign policy has been promoting the spread of democracy and protecting fundamental human rights. This pillar of its foreign policy, arguably under self-attack from the current administration in Washington, is being directly challenged by the Digital Silk Road. Authoritarian governments will likely welcome the spread of the Digital Silk Road as a form of digital connectivity that can be controlled more easily by governments to oppress dissent and prevent the free exchange of ideas and information.

As great power competition increasingly becomes the defining characteristic of the international order, China will seek to ensure that economic issues are at the forefront of this competition. China’s meteoric economic rise over the past several decades makes economic competition its preferred sphere to confront the United States, and one of the primary objectives of the Digital Silk Road is to enhance China’s economic influence regionally and globally. In this sense, China hopes to reshape the international order to increase geoeconomic competition and spread political illiberalism. A geoeconomic world order is one in which nations increasingly rely on the “use of economic instruments to promote and defend national interests, and to produce beneficial geopolitical results.”<sup>60</sup> Technological superiority and economic influence through investment in digital infrastructure, especially to developing nations, will play a crucial role in the newly formed global order that China is seeking to establish. The United States and other powerful democratic nations are engaging in great power competition with China on China’s terms when it reduces this competition to economic issues, rather than steadfastly defending politically liberal values, such as democracy, rule of law and human rights.

---

<sup>58</sup> Ely Ratner, “There Is No Grand Bargain With China,” *Foreign Affairs*, November 27, 2018, <https://www.foreignaffairs.com/articles/china/2018-11-27/there-no-grand-bargain-china?cid=nlc-fa-twrximeeting-20181129>.

<sup>59</sup> Nicholas Wright, “How Artificial Intelligence Will Reshape the Global Order,” *Foreign Affairs*, July 10, 2018, [https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order?cid=nlc-fa\\_twofa-20180802](https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order?cid=nlc-fa_twofa-20180802).

<sup>60</sup> Anthea Roberts, Henrique Choer Moraes and Victor Ferguson, “The U.S.-China Trade War Is a Competition for Technological Leadership,” *Lawfare*, May 21, 2019, <https://www.lawfareblog.com/us-china-trade-war-competition-technological-leadership>.



**Big Data – Sharp Power, Human Rights and Advanced Technologies.** The Chinese government has explicitly recognized that big data is a “fundamental strategic resource”<sup>61</sup> and is undertaking measures to ensure it increases its possession of data to achieve strategic objectives. As a result, the Digital Silk Road involves the construction of various types of digital infrastructure, including data centers, to store large amounts of data. It also entails policies that aim to ensure that data is maintained in locations where the Chinese government can have unhindered access to data. The Chinese government has enacted laws that require “data collected by critical infrastructure operators be stored within China’s borders,” which is known as data localization.<sup>62</sup> Chinese domestic and foreign investment in data centers and data localization policies have significant implications for China’s ability to project power abroad, raises privacy and basic human rights concerns, and serves as a tool to further Chinese development of advanced technologies.

Through the Digital Silk Road, Chinese corporations are making significant investments in China and abroad in digital infrastructure that maintains the user data of Chinese citizens and foreign nationals. In the information age, governments that are able to access large amounts of data can harness this information to achieve their political objectives through projecting sharp power. Sharp power, “the deceptive use of information for hostile purposes, is a type of hard power,” and it involves the “manipulation of ideas, political perceptions and electoral processes.”<sup>63</sup> Digital infrastructure and policies, such as data localization, will be essential to obtain power because “power comes from controlling data, making sense of it, and using it to influence how people behave. That power will only grow as the next generation of mobile networks goes live.”<sup>64</sup> In recent years, China has used its access to large amounts of data to ensure control over its domestic population. The Digital Silk Road may be a means to shift its use of data to project power abroad and achieve strategic and political objectives through disinformation campaigns targeting foreign citizens. Projecting sharp power abroad would be another avenue for China to undermine adversaries, most notably the United States, without engaging in direct confrontation.

Developing nations with democratic or semi-democratic governance structures that participate in the Digital Silk Road are particularly susceptible to China’s sharp power operations. Information can be weaponized against these nations and China could exploit “the cyber domain and global information ecosystem to advance national interests and influence.”<sup>65</sup> Chinese SOEs and corporations that construct data storage infrastructure in these countries will have access to large quantities of user data of citizens of these countries, which the Chinese government could use to manipulate their electoral processes. In developing countries with

---

<sup>61</sup> “The 13<sup>th</sup> Five-Year Plan For Economic and Social Development of the People’s Republic of China,” 74.

<sup>62</sup> Stewart Patrick and Ashley Feng, “Belt and Router: China Aims for Tighter Internet Controls With Digital Silk Road,” *Council on Foreign Relations*, July 2, 2018, <https://www.cfr.org/blog/belt-and-router-china-aims-tighter-internet-controls-digital-silk-road>.

<sup>63</sup> Stewart Patrick and Ashley Feng, “Belt and Router: China Aims for Tighter Internet Controls With Digital Silk Road,” *Council on Foreign Relations*, July 2, 2018, <https://www.cfr.org/blog/belt-and-router-china-aims-tighter-internet-controls-digital-silk-road>.

<sup>64</sup> Ian Bremmer and Nicholas Thompson, “The AI Cold War That Threatens Us All,” *Wired Magazine*, October 23, 2018, <https://www.wired.com/story/ai-cold-war-china-could-doom-us-all/>.

<sup>65</sup> “Chapter Five: China’s Cyber Power in a New Era,” *International Institute on Strategic Studies*, <https://www.iiss.org/publications/strategic-dossiers/asiapacific-regional-security-assessment-2019/rsa19-07-chapter-5>.

undereducated populations and weak journalistic institutions, China will find a ripe environment to achieve geopolitical objectives through disinformation campaigns using big data.

In addition to concerns over China projecting sharp power abroad, Chinese control over large amounts of data creates human rights and privacy issues for foreign citizens governed by authoritarian regimes. Data localization policies create the potential for the Chinese government to violate the fundamental human rights of its own citizens through increased monitoring of their communications and restrictions on their access to information through digital mediums. As China partners with authoritarian and authoritarian-leaning governments to build data centers abroad, as Chinese corporations recently have in Egypt and Algeria,<sup>66</sup> there is an increased risk that data controlled by Chinese corporations and SOEs could be transferred to these governments to repress their domestic populations. China's investment in data centers as part of the Digital Silk Road could be another means by which it exports its form of digital authoritarianism and enhances political illiberalism in foreign countries.

In addition to projecting sharp power and raising human rights concerns, China's growing control over big data through the Digital Silk Road is an attempt to dominate other areas of advanced technology. The development of AI technologies is largely dependent on access to data to improve the algorithms that fuel AI. As a result, data "localization can help secure China's big data advantage, which in turn will give the country a head start in AI development with its potential to reap large economic and military advantages."<sup>67</sup> This is an illustration of how various components of the Digital Silk Road are complementary to each other. The ability of China to dominate its access to the fundamental strategic resource of data will be essential to it securing the economic and military benefits of other technologies.

The data storage and management aspects of the Digital Silk Road will have important political, human rights, and technological implications. Gaining access to and using big data to achieve strategic objectives will influence the architecture of the emerging global order in the 21<sup>st</sup> century. In an environment of great power competition where China is "the Saudi Arabia of data,"<sup>68</sup> data gives China a distinct advantage in promoting its vision of an ideal international order.

## **Future Policy Implications and Recommendations**

The eventual impact the Digital Silk Road has upon the global and regional international orders will depend on how China's technological development progresses, how it implements the initiative and how other nations respond. Nevertheless, it is worth briefly analyzing the long-term policy implications of the initiative to provide some general recommendations for relevant stakeholders.

---

<sup>66</sup> 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>.

<sup>67</sup> Anthea Roberts, Henrique Choer Moraes and Victor Ferguson, "The U.S.-China Trade War Is a Competition for Technological Leadership," *Lawfare*, May 21, 2019, <https://www.lawfareblog.com/us-china-trade-war-competition-technological-leadership>.

<sup>68</sup> "China May Match or Beat America in AI," *The Economist*, July 15, 2017, <https://www.economist.com/business/2017/07/15/china-may-match-or-beat-america-in-ai>.

**Future Policy Implications.** As the current geopolitical trajectory illustrates, the United States and China will emerge as the global technology superpowers and each will achieve success in pulling other nations into their relative technological spheres of influence. To some extent, this is already occurring with several close allies of the United States refusing to include Huawei and other Chinese-made components in their 5G networks, while other allies are either limiting these components to the less critical aspects of their networks or undertaking other measures to mitigate the security risk. Meanwhile, Chinese corporations that can provide telecommunications and other technological equipment at a reduced cost and with favorable financing terms are penetrating the markets of many developing nations, especially in Asia and Africa. Furthermore, many autocratic or autocratic-leaning governments are eagerly adopting the Chinese model of Internet and technological governance as it presents a less threatening model to their regime stability than the open, free, and distributed model of cyber governance promoted by Western nations.

While the U.S.-Chinese strategic technological competition will cause spheres of technological influence to emerge, this does not mean that separate interoperable technological ecosystems will arise along political lines for several reasons. First, global technology supply chains are highly intertwined and, even in an exceedingly competitive global environment, it is unlikely that separate technological ecosystems could emerge. Second, while references to a new technological cold war and a digital iron curtain are not totally without merit, they are misleading. The current state of relations between the United States and China are extremely tense, but the economic and political interdependence of the two nations creates an environment where they have many more interests in common than the United States and the Soviet Union ever did during the Cold War. Finally, future technological advancements and innovations are inherently an unpredictable area. While it is possible to analyze trends in this area and highlight how technological development may shape geopolitics, predicting what technological innovations will occur is far from an exact science.

Still, it is extremely likely that the strategic competition between the United States and China will continue to intensify in the technological and economic domains. As China's global power continues to rise, it views the economic and technology domains as those in which it can most adequately challenge the United States. The United States, which has historically dominated technological development and reaped the associated benefits, will attempt to maintain its technological superiority because it views technological supremacy as essential to its economic security and national security. Ultimately, the economic system and governance structure that is best suited to foster technological development and innovation will likely determine the outcome of the strategic technological competition between the United States and China, with the United States employing a private industry, free market economy and a liberal political structure and China implementing a state-led capitalist economy and a illiberal political architecture.

**Policy Recommendations.** The emerging U.S.-Chinese strategic technological competition has the potential to foster technological developments that could bring economic benefits to both nations and enhance the quality of life of their citizens. Additionally, the Digital Silk Road and corresponding digital infrastructure investments made by the United States and allied nations could greatly enhance the digital connectivity of many developing nations around the world. It is also possible that this competition leads to direct confrontation with damaging global consequences and that enhanced international digital connectivity is pursued in a manner



that causes more harm than benefits for citizens of the developing world. Below are some brief recommendations for relevant stakeholders to promote positive outcomes for the Digital Silk Road.

#### *Policy recommendations for the United States*

The United States has criticized the Digital Silk Road and China's investment in digital infrastructure as a threat to international security, human rights, and democratic values. Yet it has not done enough to present a positive alternative model for global digital connectivity, especially for developing regions of the world, including from a financial perspective through providing development assistance directed towards digital infrastructure. For underdeveloped and developing nations, digital connectivity is essential to future growth and to enhancing the quality of life for its citizens. The United States, along with like-minded nations and development institutions, should increase the focus of its foreign development assistance on digital infrastructure projects, with a particular emphasis on Asia and Africa. To prevent the spread of China's model of digital authoritarianism, the United States should concentrate its digital infrastructure investment in nations that are neither firmly democratic nor authoritarian, with the goal of persuading these nations to pursue digital connectivity in a manner that promotes democratic values and respects fundamental human rights.

Regarding its technological competition with China, the United States should avoid taking measures that invigorate China's belief and pursuit of technological independence. The recent decision by Washington to prevent the export of technology components to Chinese corporations is an example of a policy that will increase China's desire to reduce its technological reliance on American companies. As the United States and China increasingly view their technological and economic interdependence as a strategic vulnerability rather than mutually beneficial, the more likely it is their competition in these spheres will escalate into direct confrontation, including possible military confrontation. Furthermore, if China succeeds in achieving greater technological independence from the United States, this would eliminate a significant point of leverage that Washington possesses with Beijing.

#### *Policy recommendations for China*

One objective of the Digital Silk Road is for Chinese technology companies to expand into new markets across the globe. The 2017 National Intelligence Law and the close links between the Chinese government and these companies create an unacceptable risk for many governments, which prevents them from permitting these companies to contribute to their critical infrastructure, including digital infrastructure. China should repeal the 2017 National Intelligence Law, which would remove one security obstacle to foreign governments working with Chinese technology companies. It is naïve to believe that China would in the near future abandon its form of state-led capitalism; however, China should undertake measures that demonstrate the independence of technology companies from government control or influence, which would enhance their global marketability. China should continue its efforts to increase digital connectivity, especially in less developed nations, as this could spur economic activity in these countries and create new e-commerce markets for Chinese companies.

While the Digital Silk Road, data localization policies, and big data may enhance China's ability to use sharp power to promote its interests abroad, China should avoid engaging in

misinformation and disinformation campaigns for several reasons. First, China has historically been one of the staunchest supporters of the principle of national sovereignty. Efforts to use sharp power abroad would undermine this position. Second, the Chinese government aggressively restricts the flow of information to its population. Engaging in disinformation campaigns targeting foreign citizens would undermine the legitimacy of China's claim that the government should control its citizens' access to digital information from abroad. Third, the use of sharp power to further interests abroad can create resentment among local governments and populations, which could pose a threat to host nation support for the Digital Silk Road and the BRI more generally.

#### *Policy recommendations for the international community*

The international community, including the United States and China, should increase efforts to establish international norms and governance structures that regulate emerging technologies, especially those with civilian and military uses. Multilateral institutions would be the appropriate forums to pursue such norms and governance structure,<sup>69</sup> as has been done for cyber governance through the United Nations GGE. However, as the United Nations GGE has shown, multilateral institutions have proven ineffective at times in forging the necessary consensus on contentious issues. If this is the case, regional multilateral institutions or groups of allied nations should begin the process of establishing governance structures and institutions that create "rules of the road" for ungoverned and under-governed technological spaces. Additionally, international trade agreements should address data and cross-border data flows as part of their terms, with the goal of preventing data localization policies that governments can exploit.

#### **Conclusion**

The strategic technological competition between the United States and China will play a consequential role in shaping the international order of the 21<sup>st</sup> century and spheres of technological influence are already emerging around the world. China's Digital Silk Road has the potential to enhance digital connectivity around the globe, including in underdeveloped nations, but simultaneously has the potential to spread digital authoritarianism, the curtailment of democracy, and the repression of fundamental human rights. It is essential that the United States and like-minded democracies make a concerted effort to provide alternative models of digital connectivity that do not come at the expense of liberal political values. Otherwise, the competition for global technological supremacy could usher in a politically illiberal international order.

---

<sup>69</sup> For example, see <https://www.lawfareblog.com/cross-border-privacy-rules-asia-overview>.

## **ABOUT THE AUTHOR**

Clayton Cheney is a Nonresident WSD-Handa Fellow at the Pacific Forum. He is a practicing attorney in New York City. In fall 2019, he received his MS in Global Affairs from New York University's Center on Global Affairs with a concentration in transnational security and energy issues. He has previously worked at several international human rights organizations and served as a legal intern at the United Nations Refugee Agency. He can be contacted at [ctc404@nyu.edu](mailto:ctc404@nyu.edu).