

The Extension of the Digital Silk Road to Latin America: Advantages and Potential Risks

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The DSR’s Origins and Its Initial Development

The evolution of the Digital Silk Road (DSR) after its official announcement can be traced in a detailed chronology published by Fudan University’s Institute for Research on the Belt and Road and Global Governance.¹ It notes that President Xi Jinping proposed to promote changes in the global internet governance system and “jointly build a community of common destiny in cyberspace” in his keynote speech delivered at the second World Internet Conference (WIC) in 2015. The next year, the PRC even embarked on developing a Spatial Information Corridor comprising systems of communications, positioning, and observation satellites.²

Then, at the first Belt and Road Forum for International Cooperation, President Xi Jinping proclaimed that technology would be amalgamated into the Belt and Road Initiative (BRI) to create the Digital Silk Road of the 21st Century. President Xi also stated that the basic idea of the DSR is to deepen international cooperation in the digital economy. Following Xi’s announcement, the Office of the Leading Group for Promoting the Construction of the Belt and Road issued in December 2017 the “Standards Connectivity and Joint Construction of the Belt and Road Action Plan, 2018-2020”, which called for the establishment of unified standards in 5G, artificial intelligence, satellite navigation, and other technical fields.³

In April 2018, Xi reiterated at the National Cybersecurity and Informatization Work Conference that it was necessary to take the Belt and Road idea and make it “an opportunity to strengthen the network infrastructure construction, digital economy, and network security of the countries along the route, especially the developing countries to build the 21st Century Digital Silk Road.”⁴

At the opening ceremony of the second Belt and Road Forum for International Cooperation Summit Forum in April 2019, President Xi again emphasized that “to

¹ Fudan University’s Institute for Research on the Belt and Road and Global Governance, “后疫情时代，数字丝路价值将更为彰显 (In the Post-epidemic Era, the Value of the Digital Silk Road Will be More Prominent),” August 17, 2020, <https://baijiahao.baidu.com/s?id=1675252784436792803&wfr=spider&for=pc>.

² Ibid.

³ Ibid.

⁴ Ibid.

conform to the development trend of the fourth industrial revolution, to jointly grasp the opportunities of digital, networked and intelligent development, and to jointly explore new technologies, [countries must embrace] new business formats and new models, explore new growth momentum and development paths, and build a Digital and Innovative Silk Road.”⁵

During that summit, a sub-forum with the theme of "Jointly Building the 21st Century Digital Silk Road" occurred. This was, for the first time, a separate forum dedicated to the DSR. Nearly 30 countries and 15 companies participated in this sub-forum, and signed multiple new cooperation projects. Indeed, Beijing signed cooperation agreements with at least 22 countries at the sub-forum.

The DSR concept soon took off. As of mid-2019, China had signed memoranda of understanding on strengthening DSR cooperation with 16 countries, and signed memoranda of understanding on bilateral e-commerce cooperation with 19 countries. In August 2019, the DSR International Cooperation Conference was held in Chongqing. The participants agreed that “the digital economy has become an important part of global cooperation and is constantly creating new production supplies and stimulating new consumer demand. Countries and regions along the BRI should seize opportunities for the development of the digital economy and cooperate to expand new spaces for its implementation.”

The DSR’s Expansion and Its First Hurdles

BRI’s digital dimensions are far-reaching, as they include fiber optic cables, 5G networks, satellites, data centers, smart city projects, and devices that connect to these systems, all of which in turn can support the information and communications technology business. Through DSR, Chinese enterprises have the chance to speed up their growth plans, taking advantage of state support as they expand globally. Indeed, through DSR, Chinese technology giants receive assistance in expanding further into the Asia-Pacific, Middle East, and Africa, among other regions. And many developing countries welcomed the DSR. Many emerging economies have a lack of basic telecommunications technology and need significant infrastructure upgrades to reach a stage where they can have 4G and 5G networking.

A driving force of DSR is to ensure that state-owned or state-supported telecom companies like China Mobile, China Telecom, and China Unicom, as well as private Chinese giants such as Alibaba, Baidu, and Tencent can benefit from DSR and BRI, which assist them in their contest with leading U.S. and European technology companies in emerging markets. This competition includes areas like smart cities, surveillance, cloud services, mobile payments, and social media applications. It may eventually extend to technologies such as artificial intelligence (AI), autonomous vehicles (AVs), and internet of things (IoT) technologies and services.⁶

⁵ Ibid.

⁶ “The Digital Silk Road: Expanding China’s Digital Footprint,” Eurasia Group, April 8, 2020, <https://www.eurasiagroup.net/files/upload/Digital-Silk-Road-Expanding-China-Digital-Footprint.pdf>.

The DSR is also designed to bolster China's decelerating economic growth by helping create export markets for large Chinese companies. Indeed, the DSR is supposed to help boost cross-border e-commerce and promote digital economic cooperation, which would help Chinese companies. Chinese firms involved in the DSR, and in BRI more generally, also benefit from substantial low-interest loans from Chinese banks.

For instance, Alipay, the giant Chinese e-payment platform, has begun to establish a presence in more than 40 countries across Europe and Asia, either by introducing Alipay directly or by working through local firms.

The DSR also includes efforts to build deep-sea internet cables that foster continental connections, and to expand the reach of China's BeiDou satellite navigation system, a potential alternative to the U.S.-based Global Positioning System (GPS). Indeed, the PRC has in recent years expanded the DSR, and the BRI more broadly, into a multi-dimensional mega-project covering a land, sea and space domain. Eventually, these initiatives could help Beijing create an entirely self-supporting economic and security system.⁷

The U.S. government has taken multiple measures to combat some of what it views as the concerning aspects of China's global investments in physical and digital infrastructure. Washington has pushed countries to block Huawei from building their 5G networks, due to fears that Huawei's involvement in 5G could allow the Chinese government easier access to sensitive data. Under U.S. pressure, countries like the United Kingdom and Australia have banned Huawei and ordered domestic telecom companies to remove its technology from their networks.

Yet some evidence suggests that Chinese companies are primarily responding to—and benefitting from—demand in developing countries for faster, relatively inexpensive telecommunications infrastructure, rather than seeking to build out 5G networks to spy on other states. Rather than an assertion of a rising tech hegemony, many China-backed 5G projects in developing countries are seen, locally, as efforts to link these countries more closely to China, to bolster Chinese technology companies, and to boost China's overall trade links abroad.

China is placing itself to lead in this technology, acknowledging that 5G mobile communications will be key for the future “information expressway.” Huawei, for one, is engaged in deploying 5G mobile technology under the DSR, although other Chinese companies also benefit heavily from the DSR. As of February 2020, Huawei owned 45 percent of all 5G patents worldwide. In approximately five years, about half the globe will be covered by 5G and over a billion people will actually use 5G technology.⁸ Accordingly, there is a lot at stake here.

In the light of China's record of surveillance, censorship, and intellectual property theft, it remains a serious question whether countries participating in the DSR will be preyed upon by China's intelligence services, which will utilize backdoors in networking and

⁷ Sabena Siddiqui, “BRI, BeiDou and the Digital Silk Road,” April 10, 2019, *Asia Times*, <https://asiatimes.com/2019/04/bri-beidou-and-the-digital-silk-road/>.

⁸ Andrew Kitson and Kenny Liew, “China Doubles Down on Its Digital Silk Road”. *Critical Connections*, November 14, 2019, <https://reconnectingasia.csis.org/analysis/entries/china-doubles-down-its-digital-silk-road/>.

other equipment to spy on foreign countries.⁹ For instance, the French newspaper *Le Monde* reported that confidential data on the network of the Chinese-built African Union (AU) headquarters in Ethiopia was diverted to servers in China between 2012 and 2017. Eight days after news of the alleged Chinese espionage broke, the AU leadership joined China's denials that there had been espionage at all. The AU chairman appeared in Beijing with the PRC foreign minister to call the allegations raised by *Le Monde* "all lies," while the Chinese foreign minister added that the accusation was a Western plot to divide China and Africa.¹⁰

The DSR's Main Constraints

U.S. Policies

The U.S. government has become increasingly concerned about the expansion of DSR, noting that China's DSR expansion could not only lead to espionage but also could endanger the security of the United States and its partners. In a July 2020 report, the Minority Staff of the Senate Committee on Foreign Relations stated that China is at the forefront of developing and expanding a new, different, and deeply troubling Internet governance model it called "digital authoritarianism."¹¹

It should be noted that the National Intelligence Law of China, which was approved in 2017, raises questions about the reliability of Chinese telecommunication companies operating overseas. Article 7 of the law specifies that "organizations and citizens are obliged to support, assist and cooperate with [PRC] intelligence organs," and Article 14 authorizes the intelligence organs to demand assistance from institutions, organizations and citizens. Therefore, it would be illegal for Chinese telecommunication companies to reject any demand of information from its intelligence agencies—a major concern for the United States and other countries as Chinese companies expand globally.¹²

The United States, and some of its partners, have begun to resist the DSR and the global expansion of Chinese technology companies in several ways. The Trump Administration has introduced mechanisms such as the "Digital Connectivity and Cybersecurity Partnership" (DCCP) to bolster internet security and foster open internets abroad. Indeed, according to its official statement the DCCP aims to promote "an open, interoperable, reliable, and secure Internet." Launched on July 30, 2018, the DCCP furthered the Trump Administration's concept of a Free and Open Indo-Pacific region. The DCCP also aims to "increase support for American companies and companies from

⁹ Matthew P. Goodman, "Roundtable on China's Digital Silk Road," Center for Strategic and International Studies, February 5, 2019, <https://www.csis.org/events/chinas-digital-silk-road>.

¹⁰ Joan Tilouine and Ghali Kadiri, "A Addis-Abeba, le siège de l'Union africaine espionné par Pékin," *Le Monde*, January 26, 2018, https://www.lemonde.fr/afrique/article/2018/01/26/a-addis-abeba-le-siege-de-l-union-africaine-espionne-par-les-chinois_5247521_3212.html.

¹¹ "The New Big Brother: China and Digital Authoritarianism," United States Senate Committee on Foreign Relations July 21, 2020, https://www.foreign.senate.gov/press/ranking/release/ranking-member-menendez-publishes-new-minority-report-the-new-big-brother_china-and-digital-authoritarianism.

¹² "National Intelligence Law of the People's Republic of China," People's Republic of China National People's Congress Network, June 12, 2018, <http://www.npc.gov.cn/npc/c30834/201806/483221713dac4f31bda7f9d951108912.shtml>.

allied and partner countries,” and essentially to provide alternatives to DSR-supported projects.¹³

The Trump Administration, as noted above, also has put intense pressure on Huawei and several other major Chinese technology companies. On August 5, 2020, Secretary of State Mike Pompeo announced the “Clean Network,” an initiative designed to safeguard U.S. online assets, and promote digital security and privacy from authoritarian foreign actors, including China. Among the components of the new Clean Network initiative are proposals to “prevent untrusted PRC smartphone manufacturers from pre-installing—or otherwise making available for download—trusted apps on their apps store;” to “prevent U.S. citizens’ most sensitive personal information and... businesses’ most valuable intellectual property, including COVID-19 vaccine research, from being stored and processed on cloud-based systems accessible to our foreign adversaries through companies such as Alibaba, Baidu, China Mobile, China Telecom, and Tencent;” and to “ensure the undersea cables connecting [the United States] to the global internet are not subverted for intelligence gathering by the PRC,” among others.¹⁴

The following day, President Trump signed an executive order that prohibited Tencent from conducting any WeChat-related transactions with any individuals and entities subject to U.S. jurisdiction.¹⁵ This order, however, left somewhat unclear how exactly it will be enforced.

Standards

As part of DSR, Chinese state-owned banks offer loans to BRI member states to support the development of telecoms infrastructure, provided that infrastructure is built by Chinese firms. This lending to foreign countries in turn facilitates Chinese companies’ access into new markets. Several DSR-related agreements signed by Beijing and foreign countries include the condition that telecommunications equipment should be provided by Chinese companies.¹⁶

China also intends to set technological standards as part of DSR. Since 2014, the Cyberspace Administration of China has organized an annual event designed to woo other countries and push Chinese standards for cyberspace. In addition, in 2017 the “BRI Connectivity and Standards Action Plan 2018-2020” was released by the Standardization Administration of China (SAC) to promote uniform standards among BRI recipient states ranging across technologies including 5G, artificial intelligence, and satellite navigation systems.¹⁷

¹³“Advancing Digital Connectivity in the Indo-Pacific Region,” USAID, August 7, 2019, https://www.usaid.gov/sites/default/files/documents/1861/USAID_DCCP_Fact_Sheet_080719f.pdf.

¹⁴ “Announcing the Expansion of the Clean Network to Safeguard America’s Assets,” U.S. Department of State, August 5, 2020, <https://www.state.gov/announcing-the-expansion-of-the-clean-network-to-safeguard-americas-assets/>.

¹⁵ “WeChat and TikTok Transactions Prohibited to Protect the National Security of the United States,” U.S. Department of Commerce, September 18, 2020, <https://www.commerce.gov/news/press-releases/2020/09/commerce-department-prohibits-wechat-and-tiktok-transactions-protect>.

¹⁶ Rubén Laufer, “La Asociación Estratégica Argentina-China y la Política de Beijing hacia América Latina,” *Cuadernos del CEL* 4, no. 7 (2019): 74-108. <http://www.celcuadernos.com.ar/upload/pdf/4.%20Laufer.pdf>.

¹⁷ Chan Jiahao “China’s Digital Silk Road and Stopping Divergent Technology Standards”. May 21, 2019, The Lowy Institute, <https://www.loyyinstitute.org/the-interpretor/china-s-digital-silk-road-and-stopping-divergent-technology-standards>.

Yet in trying to support Chinese tech companies, and alter or create new standards, Beijing is running into roadblocks. China cannot just create worldwide 5G standards on its own; 5G standards are set by the International Telecommunications Union (ITU). Although Beijing wields significant influence within the body—the ITU’s General Secretary is a Chinese national and China intensively lobbies the ITU—the ITU is governed by its Plenipotentiary Conference and its Administrative Council. The Plenipotentiary Conference is ITU’s decision-making body, and it is not totally dominated by China.¹⁸

Technical Challenges

Beijing has rhetorically prioritized the DSR within the larger BRI. However, to date, deals signed as part of DSR make up a small percentage of all deals signed by Chinese firms. According to the China Global Investment Tracker (CGIT) database produced by the American Enterprise Institute, telecom deals make up only around two percent of China’s outbound investment projects and less than one percent of outbound construction projects.

Indeed, despite bold promises, the DSR is still in its early stages. It is also worth clarifying that the CGIT database excludes smaller contracts and deals that do not reach the \$95 million threshold that CGIT has established for inclusion into the database. This excludes some DSR satellite and fiber optic cable projects.

The State of Digital Infrastructure in Latin America

Only a few Latin American governments have made strategic and systematic investments in digital infrastructure, services, and skills. Latin American financial technology start-ups also have faced difficulties raising funds. In 2019, Brazil’s Ministry of Science, Technology, Innovation, and Communications (MCTIC) launched a plan for machine-to-machine services and the Internet of Things. The Chilean Economic Development Agency (CORFO) has launched a Smart Industry strategy. The Mexican Government has issued a roadmap for development of the IoT. And at the subcontinental level, LAC members have created the “Digital Agenda for Latin America and the Caribbean” (eLAC).¹⁹

Technological innovation is a driver of productivity increases and long-term economic development, and Latin America is no exception to this rule. Digital innovation in the region could help bolster Latin American growth and help Latin American states upgrade the value of their exports.

Yet Latin America faces major challenges to technology innovation, beyond a lack of clear planning by most regional governments. The internet penetration rate in Latin America is growing, but lags many other developing regions. Mainly urban residents have digital transaction accounts, but digital economic services such as mobile

¹⁸ “ITU Council Overview,” ITU, <https://www.itu.int/en/council/Pages/overview.aspx>.

¹⁹ “Overview: Intellectual Property Regulations in Latin America,” *Biz Latin Hub*. June 9, 2019, <https://www.bizlatinhub.com/?p=160212>.

payments, online shopping, and e-commerce have not yet reached the majority of people in Latin America and the Caribbean.²⁰

Innovation policies must be designed to unleash Latin American countries' potential. Despite success stories like those of Brazil's fintech company NuBank, Argentina's Mercado Libre and Colombia's on-demand delivery app Rappi, no Latin American country performed well in the 2019 Global Innovation Index. The highest ranked, Chile, took only 51st place in the index.²¹

Latin America's digital economy still lags behind most of the rest of the world. The region accounts for less than 1 percent of the market capitalization of the world's 70 largest digital firms. Latin America and Africa combined host less than 5 percent of the world's data centers.²²

China's Inroads in Latin America's Technology Sector

Before the launching of the DSR, several Chinese investment projects in the technology sector (mainly telecoms) had already begun in Latin America and the Caribbean. As the China Global Investment Tracker Database produced by the American Enterprise Institute notes, between January 2005 and March 2015, these projects included:

Month & Year	Investor	Amount in USD millions	Share / Size	Partner	Sector & Subsector	Country	Green-field
Jan. 2009	Huawei	\$240	n/a	Costa Rican Electricity	Technology - Telecom	Costa Rica	No
Apr. 2011	ZTE	\$200	100 percent	Brazilian Gov't	Technology - Telecom	Brazil	Yes
Sep. 2012	Xinwei	\$300	n/a	Telcor	Technology - Telecom	Nicaragua	Yes
Sep. 2012	Lenovo	\$150	100 percent	Digibras	Technology - IT	Brazil	No
Oct. 2013	China Aerospace Science & Technology	\$300	n/a	Agencia Boliviana Espacial	Technology - Satellite building	Bolivia	No
Jul. 2014	ZTE	\$100	n/a	TIM Brasil	Technology - Broadband	Brazil	No
Feb. 2015	China Launch and Tracking Control General	\$300	n/a	CONAE	Technology - Space Observation	Argentina	Yes

Source: The American Enterprise Institute, *The China Global Investment Tracker Database*. January 2005- June 2020. <http://www.aei.org/china-global-investment-tracker/>.

²⁰ "Latin America's Tech Boom," *LatAm Investor*, May 7, 2019, <https://latam-investor.com/?p=3503>.

²¹ Soumitra Dutta, Bruno Lanvin and Sacha Wunsch-Vincent, "Global Innovation Index 2019," WIPO, July 24, 2019, p. xxxiv. <https://www.globalinnovationindex.org/gii-2019-report>.

²² Alejandro Werner, "Outlook for Latin America and the Caribbean: An Intensifying Pandemic," *IMF Blog*, June 26, 2020, <https://blogs.imf.org/?p=29959>.

Since the second decade of the 21st century, China began to place a higher importance on information technology cooperation with Latin America, and investments into the region began to rise. China's "Policy Document on Latin America and the Caribbean" issued in November 2008 only emphasized infrastructure construction, focusing on physical infrastructure like hydropower and transportation projects.²³ However, in the "White Paper on China's Policy on Latin America and the Caribbean" published in 2016, IT cooperation was highlighted as an important part of China's cooperation with the region.²⁴

Main Chinese Enterprises in Latin America's Tech Sector

At present, there are three companies leading in the development and deployment of 5G hardware and complete systems: Huawei (China), Ericsson (Sweden), and Nokia (Finland). Huawei currently leads the pack in 5G patents and deployment. In a context of domestic underinvestment, foreign capital and foreign technological enterprises undertake a crucial role in Latin America's innovation development. The availability of 4G wireless technology fluctuates significantly in the region, from quite high levels in Peru (83 percent coverage) and Mexico (80 percent coverage) to lower levels in Costa Rica and Ecuador, where 66 and 57 percent of those populations have access to 4G, respectively.²⁵

Huawei

Huawei entered Brazil's market in 1996 and the company became the country's largest network equipment supplier in 2014. Huawei also cooperates with universities and scientific research institutions in Brazil to establish joint laboratories, network technology colleges, and project cooperation; its R&D and training center in Campinas, São Paulo, trains more than 2,000 people every year. Huawei's deep cultivation of the Brazilian market has not only bolstered its bottom line but also has brought huge benefits to Brazil in terms of tax revenues, employment, personnel training, and technological improvement.²⁶

Huawei has also become a major player in Mexico. It has helped Mexico's government build the largest public Wi-Fi network in Latin America and provided technical support for the country's strategy to bridge Mexico's deep digital divide. Huawei also has built a fiber optic cable in Mexico connecting the states of Sinaloa and Baja California Sur.²⁷

Several Latin American countries are also preparing for upgrades to 5G, likely provided by Huawei. The first 5G launches in the region might occur in Mexico and Uruguay. Argentina, Brazil, and Chile have also begun public inquiries about upgrading

²³"China's Policy Document on Latin America and the Caribbean," People's Republic of China Ministry of Foreign Affairs, November 5, 2008,

http://www.fmprc.gov.cn/web/ziliao_674904/tytj_674911/zcwj_674915/t521016.shtml.

²⁴ "Premier proposes '3 x 3' model for China-Latin America cooperation," People's Republic of China State Council, May 20, 2015, http://english.www.gov.cn/premier/news/2015/05/20/content_281475111313739.htm.

²⁵ Andrés Rodríguez, "How China is Becoming a Key Source of Tech Investments in Latin America," *Nearshore Americas*, December 18, 2018, <https://nearshoreamericas.com/?p=69508>.

²⁶ "From Made in China to Created in China - Huawei's Brazilian Brand Road," *Xinhua News Agency*, May 2, 2015, http://www.xinhuanet.com/2015-05/02/c_1115156051.htm.

²⁷ "Huawei Helps the Mexican Government Build the Largest Public Wi-Fi Network in Latin America," Huawei, April 1, 2016, <http://e.huawei.com/cn/case-studies/cn/2016/201604011719>.

networking technology to 5G. Huawei and e-commerce multinational Alibaba have signed contracts to build a 5G network and data centers in several countries in Latin America.²⁸ In addition, the Covid-19 pandemic has strengthened Huawei's position in Brazil by increasing demand for connectivity to support telework.²⁹

Alibaba, Tencent, ByteDance, Didi & Mobike

Alibaba is the world's largest online retailer and by late 2019 ranked fourth in Latin America. AliExpress, a platform offering international customers direct access to Chinese products, has driven Alibaba's growth in Brazil, Chile, and Mexico. The company also has established partnerships in the region, including in Mexico and Argentina, to give Chinese consumers access to Latin American products. Alibaba has committed to helping Chinese logistics and finance companies enter the Latin American market. It has also committed to helping Latin American small and medium-sized enterprises conduct cross-border trade. For instance, after entering Brazil in 2014, AliExpress quickly developed into one of the most popular e-commerce companies in the country.

For Latin American countries, Chinese e-commerce companies can provide solutions for them to adapt and promote local payment and logistics infrastructure construction. According to Michael Norris, research and strategy manager at Agency China, an e-commerce agency, "as Latin America skips over the desktop-internet era and moves quickly to a mobile-commerce first ecosystem, China's tech giants sense continued opportunity and have sufficient means to form relationships, technology transfers and deals [even] outside of BRI."³⁰

Tencent, the parent company of the multipurpose messaging app WeChat, has invested \$180 million in the Brazilian fintech company NuBank (*Nu Pagamentos SA*). NuBank is a pioneer in Latin America's largest market, offering fee-free credit cards and digital payment accounts. With a total of \$330 million raised since it was founded in 2013 by Sequoia Capital former partner David Vélez, Nubank is one of the best-funded start-ups in Brazil. Nubank already has issued some 5 million credit cards and served over 8.5 million customers.³¹

ByteDance, the parent company of social-networking platform TikTok, launched operations in São Paulo in 2016. Brazil has now become one of the fastest growing markets in the world for TikTok.³² Meanwhile, ride-hailing firm Didi Chuxing (usually called Didi), entered the Latin American market in 2017 by acquiring 99, a Brazilian taxi and ride-sharing app. In Mexico, meanwhile, Didi has adapted its own app to the local market, launching a specialized service. To address the country's security

²⁸ Margaret Myers and Guillermo Garcia Montenegro, "Latin America and 5G: Five Things to Know," *The Dialogue*, December 14, 2019, <https://www.thedialogue.org/analysis/latin-america-and-5g-five-things-to-know/>.

²⁹ Evan Ellis, "The Future of Brazil-China Relations in the Context of COVID-19". *The Global Americans*, September 18, 2020, <https://theglobalamericans.org/2020/09/the-future-of-brazil-china-relations-in-the-context-of-covid-19/>.

³⁰ "China Tech Riding the Belt & Road Initiative's Coat-tails?," *Bnamericas*, June 21, 2019, <https://www.bnamericas.com/en/features/china-tech-riding-the-belt--road-initiatives-coat-tails>.

³¹ Efi Pylarinou, "Tencent and Goldman Sachs Support Nubank's Expansion," *Medium*, May 30, 2019, <https://efipm.medium.com/tencent-goldman-sachs-support-nubank-s-expansion-already-8-5million-customers-89668452cf9b>.

³² "Brazil is the fastest growing market for TikTok," *LABS News*, March 13, 2020, <https://labsnews.com/en/news/technology/tiktok-113-million-downloads-in-february/>.

challenges, the Mexican app includes safety features such as an emergency alert button to call the police. The company currently operates in two cities and plans to expand across Mexico. Didi has also begun efforts to expand to Chile, Peru, and Colombia³³.

Lastly, Mobike and Ofo, China's bicycle-sharing apps, entered the Mexican and Chilean markets in 2018. Subscriptions grew rapidly at first in Mexico, but regulations have forced the company to reduce the number of its units in Mexico. Regardless, Mobike has been a success in Mexico City and several other Mexican cities. In Chile's capital Santiago, Mobike now dominates the bike-sharing market with 330,000 users; the company plans to expand to other cities in Chile as well.³⁴

Huawei Marine & China Unicom—Submarine Cable Network

In early 2017, the Chilean government announced a plan for a Trans-Pacific submarine optical cable project connecting Latin America and Asia, a project that in principle aimed to connect Shanghai with Chile. With a total length of 22,800 kilometers and an investment of approximately \$500 million, this project had great significance to the Chilean government. Transport Minister Gloria Hutt said that “this is the first initiative that will connect the region with Oceania and finally with Asia, opening enormous opportunities for Chile to become the digital hub of South America on the Pacific side, making it an attraction for various investments in datacenters and those related to digital commerce.”³⁵

Chile's telecoms regulator, Subtel, carried out a pre-feasibility study with Huawei that yielded three possible routes for the cable from Chile, all with Shanghai as the terminus: Chile-Auckland-Sydney-Shanghai, Chile-Tahiti-Shanghai, and Chile-Auckland-Shanghai. The initial influence of China (Chile's main trading partner) seemed to turn the project in favor of Huawei, but last year Chile started to receive pressure from Washington, including a visit from Secretary of State Mike Pompeo, who criticized Chinese investments in Chile, called on Santiago to refrain from contracting Huawei for 5G technology, and accused Huawei of endangering the privacy of Chilean citizens³⁶.

Subtel announced on July 27, 2020, that a submarine route passing through Auckland and ending at Sydney was “the most cost-efficient option, requiring fewer kilometers of fiber optics and landing in the digital hub of Australia.”³⁷ Later it was announced that Chile had picked Japanese firm NEC, rather than Huawei, to build the fiber-optic undersea cable³⁸.

In July 2017, China Unicom and Huawei Marine Networks announced plans to build a 9,600-kilometer submarine telecommunications fiber-optic cable across the Atlantic

³³ Fernanda Uriegas, “The Chinese Brands Latin Americans Love,” *Americas Quarterly*, April 15, 2019, <https://www.americasquarterly.org/article/the-chinese-brands-latin-americans-love/>.

³⁴ Ibid.

³⁵ Nicolás Larocca, “Chile Analiza Opciones para Conectarse con Asia a Través de un Cable Submarino,” *TeleSemana*, July 31, 2018, <https://www.telesemana.com/blog/2018/07/31/chile-analiza-opciones-para-conectarse-con-asia-a-traves-de-un-cable-submarino/>.

³⁶ “How Geopolitics Shaped Chile's Trans-Pacific Cable Route,” *Bnamericas*, July 31, 2020, <https://www.bnamericas.com/en/analysis/how-geopolitics-shaped-chiles-trans-pacific-cable-route>.

³⁷ Ibid.

³⁸ Sara Zheng, “China's Huawei Loses Out to Japan's NEC on Chile-Asia Trans-Pacific cable project,” *South China Morning Post*, July 30, 2020, <https://www.scmp.com/news/china/diplomacy/article/3095367/chinas-huawei-loses-out-japans-nec-chile-asia-trans-pacific>.

Ocean, connecting Brazil to Portugal through Cape Verde. China Unicom and CamTel worked with Huawei Marine Networks to connect an undersea cable running from Kribi Deep Sea Port in Cameroon to Fortaleza, Brazil.³⁹ The China Development Bank (CDB), the Export-Import Bank of China (EXIM) and state-owned commercial Chinese banks provided most of the funding for this project. Construction costs totaled \$136 million and the project took about 13 months to complete. The cable was completed in September 2018 and now offers the largest data transmission capacity between Africa and South America. It is the first large-scale cable project in the region led by one of the big Chinese telecom operators and China-based equipment manufacturers.⁴⁰

ZTE – Cybersecurity

Companies such as ZTE have exported surveillance technology to Argentina, Bolivia, Ecuador, Venezuela, Uruguay, and other regional states. While these systems are geared toward cutting crime, critics have raised concerns that this surveillance technology could expose citizens' private information and foster censorship and authoritarianism.

In March 2019, Argentina's northern province of Jujuy signed a nearly \$30 million surveillance contract with ZTE for security cameras, monitoring centers, emergency services, and telecommunications infrastructure. Jujuy is one of the poorest provinces in Argentina and has crime rates slightly above the national average. Security Minister Ekel Meyer said in an interview that residents "accepted the watchful eye of the security cameras in exchange for safer streets." There have been no expressions of concern about the deal in Argentina and Jujuy already has close ties to China: there is Chinese investment in lithium mining in the province and Beijing has provided the financing and technology for a solar farm there, South America's largest.⁴¹

By late 2019, ZTE also provided Bolivia with 600 cameras equipped with facial recognition technology to go along with 2,000 units already in service, as part of the country's BOL-110 Integrated System for Citizen Security. The system includes the construction of the Command and Control National Center in La Paz, by China National Electronics Service Company Ltd., for more than \$105 million. In the second phase of the project, the government plans to deploy 840 cameras for automated vehicle license plate recognition.

In Ecuador, meanwhile, Huawei and state-owned China National Electronics Import & Export Corporation have built a surveillance system of more than 4,000 cameras. The technology reportedly has reduced crime, according to Sixto Heras, deputy director of the ECU 911 Integrated Security Service, whose headquarters in Quito houses the lab. The ECU 911 center, which began operating in November 2016, has an emergency response and a monitoring system: the system features a high-tech network of video cameras installed across 24 provinces in the country and software specially designed by

³⁹ Qian Ding, "China Breakthroughs: SAIL Ahead on South Atlantic Cable Network," *CCTV English*, July 5, 2017, <http://english.cctv.com/2017/07/05/ARTI10QntQhXqvZoN4dwobj170705.shtml>.

⁴⁰ Evan Ellis, "The Future of Brazil-China Relations in the Context of COVID-19," *The Global Americans*, September 18, 2020, <https://theglobalamericans.org/2020/09/the-future-of-brazil-china-relations-in-the-context-of-covid-19/>.

⁴¹ Cassandra Garrison "'Safe Like China': In Argentina, ZTE Finds Eager Buyer for Surveillance Tech," *Reuters*, July 5, 2019, <https://www.reuters.com/article/us-argentina-china-zte-insight-idUSKCN1U00ZG>.

Ecuadorian and Chinese technicians to manage the network of 16 regional centers nationwide.⁴²

In Venezuela, ZTE is helping the Maduro government build a national identification system that also could potentially help the embattled government crackdown on dissent. ZTE and the Maduro government are creating a smart-card ID known as the “Fatherland Card.” The ID transmits data about cardholders to servers supplied by ZTE and is increasingly linked by the government to subsidized food, healthcare, and other social programs.

More broadly, in September 2020, ZTE and Omdia released a white paper entitled, “Security Transparency and Assurance in a 5G World.” According to the white paper, comprehensive assurance in security is essential to the entire information technology ecosystem in the 5G era, ranging from IoT devices to 5G networks. The white paper points out that ZTE’s “existing security capabilities, experience, and roadmap have demonstrated a mechanism for collaboration, transparency and openness, in a bid to address the upcoming security risks and challenges in the 5G world.”⁴³

China National Space Administration, China Great Wall Industries Corporation & Tencent - Space Collaboration

Brazil and China have been partners in the space hardware, launch, and services sector for almost 40 years after Washington refused to work with Brasilia in the 1970s due to its objections over Brazil’s missile and nuclear development. The Latin American giant turned to Beijing, which resulted in the joint China-Brazil Earth Research Satellite (CBERS) program, initiated in 1984. Several joint activities have been undertaken, with the latest occurring in December 2019. The two countries jointly developed a satellite that was launched from the PRC’s Taiyuan space base in Shaanxi. This was the sixth satellite co-developed by both nations.⁴⁴

China-Brazil space collaboration is not limited to the CBERS program. In August 2020, Alya Nanosatellites Constellation and Beijing Tianlian Space Technology agreed to collaborate on the construction of a ground control station in Bahia, for communication with and control of space vehicles. Beijing is also interested in Brazil’s Alcantara space launch facility, whose position near the equator makes it fit for sending space vehicles into equatorial orbits. However, a 2019 agreement between Washington and the Bolsonaro government for U.S. commercial use of the facility appears to have excluded its accessibility to Beijing.⁴⁵

By mid-2008, as a result of an agreement between China Great Wall Industries Corporation and Venezuela’s Bolivarian Agency for Space Activities, China launched the Venezuela One communications satellite for Venezuela. Then, in October 2008 and

⁴² “Chinese Technology Brings Falling Crime Rate to Ecuador,” *Xinhua*, January 19, 2018, http://www.xinhuanet.com/english/2018-01/19/c_136908255.htm.

⁴³ “ZTE and Omdia Release White Paper on Security Transparency and Assurance in a 5G World,” ZTE, September 15, 2020, <https://www.prnewswire.com/news-releases/zte-and-omdia-release-white-paper-on-security-transparency-and-assurance-in-a-5g-world-301130728.html>.

⁴⁴ Evan Ellis, “The Future of Brazil-China Relations in the Context of COVID-19,” *The Global Americans*, September 18, 2020, <https://theglobalamericans.org/2020/09/the-future-of-brazil-china-relations-in-the-context-of-covid-19/>.

⁴⁵ *Ibid.*

October 2017, China successfully launched the Venezuela Remote Sensing Satellite One and Venezuela Remote Sensing Satellite Two.

Tencent in 2017 invested \$27 million in Argentine space-tech startup Satellogic.⁴⁶ As a result of this deal, the Argentine company started to launch several of its micro-satellites into orbit aboard China's Long March-4B rockets from Jiuquan and Taiyuan Satellite Launch Centers.⁴⁷ Satellogic offers high-resolution imaging in a micro-satellite platform, with the ability to capture photo data of the Earth at 1-meter resolution. (By comparison, most satellites offer imagery at resolutions ranging from less than 1 meter to up to five meters).

Advantages and Potential Risks of China's Digital Involvement in Latin America

The DSR's Scope and The Effect of COVID-19

The Digital Silk Road paved by Chinese tech giants is being built from the Asia-Pacific to the Middle East, Europe, Africa and Latin America. The purpose behind Beijing's digital push is to build digital infrastructure and develop internet links among the BRI countries. Thus, DSR is an effort to expand the BRI from hard infrastructure to soft infrastructure. Moreover, China wishes to establish an alternative set of technology standards based on Chinese practices and technology. In addition, DSR could make China one of the world's most important hubs for international communications.

DSR projects are by and large lower cost and easier to deliver than the transportation and energy projects that largely have characterized the BRI. The COVID-19 pandemic has slowed down the development of the BRI in Latin America, but the disease dramatically increased the significance of the DSR, bringing new opportunities through the so-called Health Silk Road (HSR). Many countries in Latin America bought or accepted donations of sanitary and medical equipment from China. Also, these countries are using China's digital solutions to fight the epidemic. Alipay and Tencent have developed health apps that generate QR codes indicating a user's health status. Alibaba is already offering its cloud services to model regional COVID-19 outbreaks and connect patients to health professionals. Hikvision, Dahua, and other leading surveillance companies have introduced thermal imaging systems to detect fevers.

Once the virus recedes, Beijing may try to consolidate gains made by its DSR and HSR and translate these gains into increased trade and investment in Latin America. Already the biggest trading partner for Brazil, Argentina, Chile, Peru, and Uruguay, China is likely to become the biggest trading partner for other Latin American and Caribbean states too as its economy recovers and Latin America begins to recover as well.

The DSR Impact on Latin America's Digital Landscape

In order to seize the opportunities brought by the development of the digital economy, many countries—in Latin America and globally—have launched digital economy

⁴⁶ "Fondo Pitanga and Tencent Invest \$27m Series B in Satellogic," LAVCA Venture Investors, June 23, 2017, <https://lavca.org/2017/06/23/fondo-pitanga-tencent-invest-us27m-series-b-satellogic/>.

⁴⁷ Stephen Clark, "Live Coverage: Vega Rocket Launches with 53 small satellites," *Spaceflight Now*, September 2, 2020, <https://spaceflightnow.com/2020/09/02/vega-vv16-mission-status-center-2/>.

development strategies. China has advanced communication equipment and e-commerce management experience. It also is actively willing to help build IT infrastructure in Latin American countries, increase investment in IT in the region, and increase cross-border digital trade in Latin America. The construction of the DSR provides an opportunity to promote the diversification of China-Latin America economic and trade cooperation and the integration of industrial chains, thus having an effect in the region's digital landscape.

Yet China and Latin America still face many challenges in the construction of the DSR. First of all, the DSR is still in its infancy. The establishment of the DSR in Latin America will be a long and complicated process. Take data protection and circulation as an example. The different laws and regulations on privacy protection and cross-border data circulation in different Latin American countries will complicate the rollout of the DSR in the region and potentially hinder China-Latin America cooperation in the digital economy. Second, there is still a long way to go to eliminate the digital divide between Latin American countries and within countries, which also could help slow the progression of the DSR.

The DSR's Impact on Privacy

Although there are certainly many positive aspects of China expanding the DSR into Latin America, it also could have negative implications for privacy. Communications could potentially be exposed to surveillance, cyberattacks, and many other types of cyber disruptions. To be sure, European and North American democracies also have used surveillance technology and employed their domestic tech firms to participate in some of this surveillance. Still, there are greater formal and civil society safeguards on most U.S. and European tech companies than on their Chinese counterparts.

Latin American governments will have to fulfill duties to protecting privacy even as they become more integrated with the DSR. For instance, Latin American and Caribbean countries could pass legislation banning companies from developing backdoors to networking technology and using these backdoors to intercept data. However, Latin American governments appear to be more focused on achieving access to high-speed telecommunications technologies and aid provided by China than on the possibility of privacy and security risks resulting from the DSR.

The Role of the United States and the European Union

The Trump Administration has taken multiple steps, as we have seen, aimed at preventing Beijing from getting more control over global telecommunications infrastructure, and over standards-setting for the internet and other areas. As Washington and Beijing have ramped up geopolitical, economic and technological competition, Latin America emerged as a battleground in their rivalry. These two global powers are already clashing over 5G technology, with the Trump Administration pressuring Latin American governments to prevent Huawei from providing the region with 5G telecom systems.

But beyond the issue of security, there is the issue of global market share, which Europe and the United States aim to protect. U.S. and European firms have until recently dominated global markets for telecom equipment. Yet their market share is slipping. Huawei's revenue now exceeds that of Nokia and Ericsson combined.

More research thus is needed into how much U.S. concerns about DSR are due to worries about its impact on privacy, security, and China's ability to promote an authoritarian internet model, and how much these concerns stem from fears that Chinese technology giants will inexorably eat into the global market share of major U.S. firms. As the deployment of new technologies is very much a demand-driven phenomenon, the U.S.-China clash may be decided by which country's technology giants ultimately win the larger market share in most emerging economies.

It is also important to ask what the United States and its allies are offering as an alternative to China's DSR. So far, the U.S. response has been limited, although it has offered the Blue Dot Network and several smaller initiatives. Therefore, to balance China's growing influence in the digital sphere in Latin America, the United States and its partners could increase investments in Latin America's digital economy, among other measures.

Conclusion

The DSR presents plenty of opportunities and risks as well. It remains unclear whether Beijing intends to use the DSR for the exclusive benefit of China, or whether the DSR will actually have broad-ranging benefits for recipient states. One thing is sure: if successfully developed in the developing world, the DSR will provide China significant economic and diplomatic leverage in Latin America. It also will bolster China's overall image.

As China's official pronouncements usually state, to "jointly build the DSR," governments and international organizations should play their due roles in making top-level designs, establishing intergovernmental cooperation mechanisms, and setting up industrial alliances. If the DSR is to succeed, China must reassure recipient states that the DSR will not infringe on their privacy and security and that the DSR's data protections will be in line with existing international standards.