

Latin America's 5G construction in the context of the Sino-US technology game: challenges and prospects

Wang Huizhi Fu Liyuan

Abstract: Latin America's 5G construction is still in its infancy, and its 5G technology development has certain advantages. However, because Latin America lacks the ability to independently develop 5G technology, relying on foreign investment and foreign technology has become a key path for Latin America to fully realize the development potential of 5G technology. However, As the 5G dispute between China and the United States becomes more and more protracted and intense, the 5G issue in Latin America has also become politicized. Faced with the interference of the United States in China-Latin America 5G cooperation from the political, economic, rules and security dimensions, Latin American countries are in a dilemma. Signs of differentiation in regional 5G technology development are becoming more and more obvious. Most Latin American countries have adopted a delaying strategy of exchanging time for space in response to US pressure. Some Latin American countries have resisted US pressure, insisted on proceeding from their own national interests, and continued to promote market-oriented pragmatic cooperation with Huawei. A few countries have succumbed to the United States on some related matters. Generally speaking, although the delaying strategy is a helpless move in a dilemma, its negative impact is obvious. The positions of other countries will become an important reference for making decisions on key 5G issues in Latin America in the future. However, There is no realistic possibility for Latin American countries to completely turn to the United States on 5G issues. Although China-Latin America 5G cooperation has suffered short-term setbacks, there is still ample room for cooperation, and cooperation prospects are promising.

Keywords: China-US game, China-Latin America cooperation, digital technology 5G About the author: Wang Huizhi, Ph.D. in history, Assistant Researcher, Institute of World History, Chinese Academy of Social Sciences, Fu Liyuan, Research Intern, Institute of Latin America and Caribbean, China Institutes of International Studies

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The fifth generation of mobile communications technology (referred to as 5G or 5G technology) has profoundly affected the historical process of the 21st century. Countries around the world have regarded 5G as a priority development area in their national digital strategies to strengthen industrial layout and create new competitive advantages. Latin American countries is no exception. However, the 5G dispute between China and the United States has spread to Latin America. The technical issues of 5G in Latin America have been geopoliticized and ideological, and the uncertainty of the promotion prospects has increased significantly. Based on the systematic exposition of the development overview of 5G in Latin America, this article will The United States conducts a focused analysis of the interference in Latin America's 5G construction and the responses of Latin American countries, and looks forward to the development prospects of 5G in Latin America. In the context of the complex, intense, and normalized technological game between China and the United States, this article provides a more comprehensive and objective understanding of It is of certain reference significance to evaluate the 5G development trends in developing countries and regions such as Latin America.

An overview of 5G technology development in Latin America

The level of digital infrastructure construction in Latin America is uneven, and 5G is still in the early stages of development. Although Latin America has obvious advantages in 5G construction, it lacks the ability to independently develop 5G technology. The introduction of foreign investment and technology has become an unavoidable path for the future development of 5G technology in Latin America.

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digital infrastructure construction in Latin America has improved significantly. However, countries in the region still face a large digital divide. According to the Global Mobile Communications System Association GSMA data shows that mobile broadband networks now cover about 93% of the population in Latin America, but about 38% of those covered but unable to use the mobile Internet face other obstacles, such as poor network signals and low smartphone penetration. In fact, currently only 52% of the population in Latin America can enjoy mobile broadband services. A large number of people are still excluded from the mobile economy (Mobile Economy) space. From the perspective of the development stage of information and communication technology (ICT), the current 2G network It is still being used in many countries in Latin America and is expected to be withdrawn from the market in 2024. The 4G network

is in the large-scale deployment stage, and the 5G network construction has just started. Among them, according to the official 5G spectrum auction situation, Uruguay, Suriname, Puerto Rico, Trinidad and Tobago, Peru, Chile, Brazil and the Dominican Republic have entered the 5G era. According to the GSMA Latin America Mobile Economy Report, as of September 2021, Brazil, Peru and Colombia have already entered the 5G era.

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From a global perspective, the backwardness of digital infrastructure in Latin America has not improved significantly. The Nokia 5G report pointed out that since the 21st century, although the broadband penetration rate in Latin America has increased, compared with developed countries, the digital divide still exists. According to the prediction of market research company Omdia, as long as digital development policies remain unchanged, the digital divide between Latin America and regions with higher levels of digitalization will further widen. In the latest speed test of Ookla, the global Internet speed test authority, Latin America Only Chile and Panama have average download speeds higher than the global average fixed broadband speed of 73.6 Mbps. Previous speed test results show that the average in Latin America is lower than the global average. Only Brazil and Chile have fixed broadband speeds higher than the global average.

(2) Latin America There are certain advantages in developing 5G technology. Although the construction of 5G in Latin America has just started, the regional development of 5G technology has obvious advantages and huge potential.

First, Latin American leaders have a clear understanding of 5G and the huge development opportunities behind it.

Knowledge and enthusiasm for promoting the development of 5G technology in the country are high. Edwin Rojas, an official of the United Nations Economic Commission for Latin America and the Caribbean, said that 5G will unleash its technological potential and solve social problems in the 21st century. In the future, global digital development will greatly improve people's living standards. Brazil President Jair Bolsonaro said when the 5G tender was launched: "With 5G technology, Brazilians will have the opportunity to show the real Brazil. Not only the indigenous people, but also nearly 10,000 small towns that are currently not connected to the Internet will have the Internet." Dominican President Luis Abinadel said: "5G will have an impact on all walks of life and make our country more competitive, more dynamic and better connected." Chilean President Piñera said that the deployment of 5G is a milestone for Chile to continue to promote digital inclusion and telecommunications development. The beginning of the deployment of 5G represents an important progress in network speed and data traffic, thereby producing a "transformation" effect through the digitalization process, in areas such as robotic surgery, autonomous driving, smart cities, and diseases. Improving people's lives in areas such as detection and climate change monitoring.

Second, Latin America has great potential for 5G technology development. On the one hand, Latin America has a good user base.

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«Latin America moves towards 5G: Chile looks forward to becoming a digital hub», Reference News Network, December 1, 2021, <http://www.cankaoxiaoxi.com/digital/2021/1201/2461295shtml> [2022-02-21]

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In fact, there are only telecom operators in Latin America and there are no 5G suppliers. To seize the opportunity of the fourth wave of technological revolution and achieve overtaking in corners, the only way is to rely on foreign capital and foreign brains. Currently, there are only Huawei (China), Huawei (China), Five companies, Ericsson (Sweden), Nokia (Finland), Samsung (South Korea), and ZTE (China), provide 5G radio hardware and complete systems. Among them, Nokia and Ericsson in the EU own about 50% of the global telecommunications equipment market and some core patents. Chinese companies rank first in the world in terms of 5G patents and account for half of the world's communication equipment. Global wireless access technology is mainly provided by China's Huawei and Europe's Ericsson and Nokia. This determines the position of global 5G "pioneers" such as the European Union and China. Funding and technology are crucial to the development of 5G in Latin America. In fact, the Latin American countries that are currently the first to enter the 5G era are inseparable from international cooperation. For example, as the first country in Latin America to realize 5G commercialization, Uruguay's 5G technology is provided by the country's operators Antel and Nokia completed the cooperation. Chile's 5G deployment is inseparable from Ericsson. Suriname, Trinidad and Tobago, and Dominica have entered the 5G era with the help of Huawei.

2. Challenges to 5G construction in Latin America from the technological competition between China and the United States

As the importance of digital technology becomes increasingly prominent, China's development trend as a latecomer in the field of digital technology has aroused anxiety and concern in the United States. In 2018, the United States imposed sanctions on ZTE, marking a new round of U.S. Sanctions on China's science and technology have begun. Advanced telecommunications technology with 5G technology as the core has become the focus of the United States' containment of China. China's top telecommunications companies represented by Huawei have been subject to continued high pressure from the United States. Although Latin America is not a leader in the field of digital technology, The countries at the forefront are not the highest priority areas for the US diplomatic strategy. However, it is an indisputable fact that the technological game between China and the United States has extended to Latin America. This means that the 5G issues in Latin American countries are no longer purely technical issues, but have become ideological and ideological. Politicization, increasing uncertainty about promotion prospects.

According to statistics, there are currently 36 major companies active in the 5G market in Latin America and the Caribbean, including Huawei (China), Telefonica (Spain), Fon (Spain), Orange (France), S iradel (France), Vodafone (UK), Virginmobile (UK), bango (UK), Sky (UK), TIM (Italy), Verizon (USA), AT &T (US), Cisco (US), NEXTEL (US), 5Gamericas (US), CenturyLink (US), Seventeen international companies, including Facebook Connectivity (USA), account for almost half of the market. The remaining companies are from Latin America and the Caribbean, such as Embratel, Cablevisión, Claro, Viva, Oi, ANATEL, Algar, Tele com (Argentina), Inatel, Entel, VTR, Tigo, Sercomtel, Telesur, Indotel, Digicel, Telecom, Movistar, as well as market research company Omdia and consulting company Teleco (Brazil). Zhang Li, Hu Dayi: "On

"Choosing Sides" in the International Game", Published in "Contemporary Asia-Pacific", 2021 Issue 5 of the year

(1) The United States has taken multiple measures to obstruct China-Latin America 5G

cooperation. The United States has taken a multi-pronged approach from the political, economic, rules, security and other dimensions to obstruct China-Latin America 5G cooperation in all aspects.

As a result, it has become the biggest external interference factor in the current advancement of 5G technology in Latin America.

Politically, senior U.S. government officials and many ambassadors to Latin American countries have personally hyped up the "Huawei 5G or China technology threat theory" and frequently slandered Huawei and ZTE Corporation as being controlled by the Chinese government, saying that their "equipment is unsafe and their operations are opaque" and "will Affecting the sovereignty, security and democratic freedoms of regional countries" and "threatening the way of life of local people". For example, in April 2019, during his visit to Chile, then-U.S. Secretary of State Pompeo made groundless accusations that "China is doing business in Latin America and other places and transferring corrosive capital to the country." Injecting it into the blood of the economy, causing economic corruption and the erosion of good governance." It also pointed out that "Huawei's 5G equipment has brought risks to the citizens of the country" and asked the Chilean government to cancel the 5G contract signed with Huawei. In 2020, Brazilian President Jair Bolsonaro During his visit to the United States, then-President Trump publicly stated that Brazil wants to limit China's influence in Latin America, and it is crucial to curb the spread of Huawei technology in the region. The U.S. Embassy in Argentina stated that if Argentina adopts Huawei or other Chinese suppliers' telecommunications infrastructure, the personal freedom and privacy of Argentine users will be threatened, and it will also pose a threat to Argentina's national security. The United States has also stopped purchasing "products from Latin American companies that have business dealings with Huawei" and "interrupted disaster relief assistance". "If you don't listen to the advice, you will face serious political consequences." "political crisis or lowering the level of cooperation" and other means to coerce Latin American countries to stop cooperation with Chinese companies in 5G and other related

fields. Economically, the United States uses increasing investment in 5G construction in Latin America or increasing other financial assistance as a bargaining chip to lure regional countries away from Huawei 5G. During his term of office, Trump will promote investment cooperation in the field of information and communication technology into the "Growth of the Americas" initiative, expand the "Digital Connectivity and Cybersecurity Partnership Program" (DCCP) to Latin America, and also try to expand cooperation through the Export-Import Bank of the United States, the United States International The Development Finance Corporation (DFC), the Trade Development Agency and other relevant departments provide financing or loan guarantees for Latin America's 4G and 5G network infrastructure. Among them, the U.S. State Department Office released a checklist to support digital transformation implementation in Latin America and the Caribbean in November 2020, providing It has been decided to raise US\$10 million under the DCCP framework to promote the digital transformation of the Western Hemisphere. The US International Development Finance Corporation is financing communication projects in Ecuador and Peru, aiming to build 500 base stations and expand the scope of 4G mobile broadband access. The United States also announced that it will Eguar

He Shuangrong and Wang Juexin: «China and Chile join hands to create a model of China-Latin America "Belt and Road" cooperation in the new era», published in «Latin America Research

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The Inter-American Counter-Terrorism Committee of the National Organization supports Latin American countries in taking cyber confidence-building measures, such as funding the Legal Cooperation Department under the Inter-American Conference of Ministers of Justice or Attorneys General (REMJA) to organize regional training workshops on combating cybercrime.

(2) Latin American countries are in a dilemma

The science and technology game between China and the United States has just begun in 2019. Latin America is on the periphery of the global technology game. Look at the technological game between China and the United States in Europe from a "stay-out" stance and look forward to its prospects. As China and the United States technologically The game is getting more intense, and Latin America is forced to get involved. Compared with Europe, Latin America is less resistant to pressure from the United States and less able to bear the cost of losing China. Latin America's dilemma between China and the United States is both universal and special. Sexy

On the one hand, Latin America does not dare to easily disobey the United States. The United States has always regarded Latin America as its "backyard." Preventing foreign countries from interfering in Latin America and maintaining the United States' influence and control in Latin America are the fundamental purposes of the United States' Latin American policy. The Biden administration Although Trump has abandoned Trump's unilateralism and tough Latin America policy, it has continued Trump's series of policy ideas to hedge China's influence in Latin America, including "exclusion of China" in the 5G field. Latin America will surely become the country that the United States wants to visit. They are the targets of the Biden administration's alliance in promoting the development and application of emerging technologies that are so-called "in line with democratic values." In the context of the United States' policy of luring Latin America and will not let up, the fundamental reason for the weak resistance of Latin American countries lies in the geographical, historical, and The reality is that the economy, security and other fields are highly dependent on the United States. Taking security as an example, the United States has been the security guarantor of the Western Hemisphere since the beginning of the 20th century. Although many Latin American countries have differences with the United States, they hope that this arrangement will remain unchanged. Latin America currently benefits from U.S.-backed security initiatives and does not want to arouse U.S. hostility in the region, especially since other countries (such as China) have little direct support in this regard.

On the other hand, Latin America cannot resist the high cost-effectiveness of Chinese technology and bear the huge losses caused by the ban on Huawei 5G equipment. All walks of life in Latin America are fully aware of the cost-effective advantages of Huawei 5G. Some people

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The U.S. Council on Foreign Relations believes that more than 2/3 of the countries in Latin America and the Caribbean have used or plan to use Huawei's 5G technology. They have a clear leading position in the global distribution map of Huawei's 5G technology use. David Sacks "China's Huawei is Winning the 5G Race Here's what the United States should be pond" a - huawei - 5g [2022-02-10] According to the Brazilian National Association for the Construction of Telecommunications and Information Technology Infrastructure It is estimated that if Huawei is excluded from participating in 5G construction, Brazil will pay an additional cost of 100 billion reais, local 5G network development will be delayed for three years, and 2.2 million jobs will be lost.

We also have a clear understanding of Latin America's low position in the U.S. diplomatic layout and the fact that the United States cannot provide Huawei 5G equipment substitutes. A Brazilian diplomat bluntly said that China has invested a lot of money in Brazil, which is something the United States will never do. It will be extremely difficult for the government to prevent Huawei from operating in the country. Another business person said that even if Huawei is excluded, the popularity of TikTok and other cost-effective mobile phones from China will not disappear. Rubens, former Brazilian ambassador to the United States Barbosa also pointed out that although the Western Hemisphere Strategic Framework Document issued by the United States places Latin America at a strategic high level, Latin America's geopolitical priority in US foreign policy is still very low. Latin American countries should insist on putting national interests before geopolitics and consciousness. Above the form. In fact, Brazilian Vice President Mourao and many senior officials from the pragmatic faction have repeatedly emphasized that excluding Huawei will double the cost of 5G construction in Brazil. Brazil ABC Federal University (Universidade Federal do ABC) Professor Sérgio Amadeu also pointed out that Huawei's market share in Brazil is as high as over 50%. If it is excluded, it will slow down the promotion of domestic 5G technology and significantly increase consumer costs. (3) There are early signs of differentiation in the development of 5G technology in Latin American

countries. Given the importance of China and the United States to Latin America and the deterioration of Sino-US relations, Latin American countries generally tend to remain neutral in the Sino-US game in order to maximize interests and strive to position themselves outside of conflicts. They keep a low profile and consolidate relations with China and the United States. Relations and seeking benefits have become a successful strategy for Latin American countries for some time. For example, Chile's right-wing former President Piñera tried to portray himself as the most trustworthy interlocutor between the United States and China. Argentina's center-right former President Macri and his center-left successor Fernandez is also keen on maintaining constructive relations with both the United States and China. Even Brazilian President Jair Bolsonaro, who has always claimed to be an ally of Trump, has tasked Vice President Hamilton Mourao, who has long advocated neutrality, to maintain relations between Brazil and China. However, as the technological war between China and the United States continues to escalate and the 5G construction of some Latin American countries enters a critical period, the neutral space in Latin America has been severely compressed, and the pressure to choose sides has increased significantly. At present, Latin American countries are not satisfied with the United States' "combine pull and fight" strategy. There are mainly three types of reactions:

First, most Latin American countries adopt the delaying tactic of exchanging time for space against the United States. For example, Ecuador

It is necessary to understand that the United States' "combine pull and fight" strategy is a double-edged sword. On the one hand, it can help the United States to maintain its global leadership and influence, but on the other hand, it can also lead to the fragmentation of the international system and the rise of regional powers. In Latin America, the United States' strategy has led to a significant increase in the pressure on countries to choose sides, which has severely compressed the neutral space. At present, Latin American countries are not satisfied with the United States' "combine pull and fight" strategy. There are mainly three types of reactions:

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Second, some Latin American countries have started to actively seek cooperation with China. For example, Brazil has signed a cooperation agreement with China in the field of 5G technology. This is a significant step towards strengthening ties with China and reducing dependence on the United States. Other countries like Argentina and Chile are also showing signs of leaning towards China. This is a response to the United States' strategy of isolating Latin America from China.

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Ecuador officially joined the U.S. "Clean Network" program and also reached a framework agreement with the U.S. International Development Finance Corporation, which included the U.S. helping Ecuador repay billions of dollars in loans from China in exchange for excluding Huawei from Ecuador's telecommunications network. However, Ecuador has not officially announced that it will exclude Huawei from 5G, and Ecuador is also a signatory to China's "Global Data Initiative". Although Brazil has officially joined the "Clean Network" plan, Huawei has not been excluded from Brazil's 5G spectrum auction. Colombian President Du Iván Duque has maintained close security cooperation with the United States, but also made it clear that his government has no plans to exclude Huawei from the country's 5G network construction.

Second, some Latin American countries have resisted U.S. pressure, insisted on proceeding from their own national interests, and continued to promote market-oriented and pragmatic cooperation with Huawei. For example, Suriname took the lead in entering the 5G era with the help of Huawei equipment in the context of the Sino-US game. Dominica, Trinidad and Tobago has also cooperated with Huawei to lay out part of its 5G network. The US government's proposal to exclude Huawei from 5G has been refuted by relevant companies in the country and criticized by the public.

Doubt

Third, a few countries have succumbed to the United States on some related matters. For example, under pressure from the United States, former Chilean President Piñera modified his visit to China and canceled his visit to Huawei's Shenzhen factory. Under the pressure of the United States' "Operation Clean Network" and Under the inducement of promising to provide funding for Chile's Pacific submarine cable, Chile announced that it would abandon the Chinese plan for the Pacific submarine cable project and adopt the Japanese plan from Japan to Valparaíso, Chile via Australia and New Zealand. The Prime Minister of Antigua and Barbuda updated It rejected Huawei's US\$4 million loan and bluntly stated that it did not want to get involved in the geopolitical conflict between China and the United States. El Salvador also did not send people to participate in activities related to Huawei's "Seeds for the Future Project" in 2020 as usual.

Three Latin American 5G technology development prospects

In the face of the escalating digital technology dispute between China and the United States focusing on 5G, Latin American countries mostly respond with a delaying strategy. Although this is a helpless move under a dilemma, it has an obvious negative impact on the development of regional countries. Although U.S. interference has a negative impact on China Latin America's 5G cooperation has caused a blow, but it is unlikely that Chinese technology companies will be completely excluded from the Latin American region.

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(1) The negative impact of the delaying strategy is obvious, and the position of other countries has become a key decision on 5G issues in Latin America in the future.

Important reference for choosing

Considering that 4G technology will continue to dominate the Latin American mobile industry in the short term, 5G technology application scenarios are limited, and 5G deployment is expensive, there is indeed some room for Latin American countries' "delay and wait for change" strategy. No.

In the long run, the negative impact of the delay strategy is obvious. Mobile communication technology is generated every decade. It is currently the period of transition of global mobile communication networks from 4G to 5G. 5G development is the general trend. In addition, as an innovative new media, A new financial technology, 5G technology also has powerful spillover and multiplication effects. Applications based on "5G + technology, smart education, medical care, smart cities, Internet of Everything, blockchain and other scenarios will greatly promote industrial digitalization or digital industrialization, process, stimulating the rapid growth of the digital economy. As the digital economy increasingly becomes a key force in reorganizing global factor resources, reshaping the global economic structure, and changing the global competitive landscape, the importance of the development of 5G technology as the primary infrastructure of the digital economy has further highlighted. This Hesitating to move forward will only delay development opportunities and reduce the country's competitiveness. The negative impact of the delaying strategy may continue to amplify.

As the 5G construction of some Latin American countries has reached a critical moment of decision-making, it has become a trend to imitate and refer to the response experiences of other countries. For example, when Brazilian Communications Minister Faria responded to the U.S. warning about the security risks of Huawei equipment, he said that the ban on Huawei issued by some countries is not a total ban, and is similar to Brazil's practice of separating government and commercial 5G networks. 2 Other Latin American countries are formulating competition for their own 5G spectrum auctions.

There is a high probability that the Brazilian approach will continue when bidding procedures and rules are adopted. In addition, governments may add warning and supervision mechanisms to appease the United States or try to obtain generous financial support from the United States through negotiations.

(2) It is impossible for Latin American countries to completely lean towards the United States on 5G issues.

Although Latin American countries dare not easily disobey the United States, they are well aware of the United States' 5G technological war against China based on ideological considerations. They also understand the 5G discourse system shaped by the United States. It is not in line with the reality of Latin American countries. It is unreasonable to blindly lean towards the United States on the 5G issue at the expense of its own national interests.

Although Latin American countries generally oppose the politicization of 5G issues and call for a pragmatic approach, they have a clear understanding of the ideological nature of the technology game between China and the United States. Alberto Betangue Posada, a historian at the National Autonomous University of Mexico, described technology competition as it is regarded as one of the means for the United States to contain China. It is believed that Biden is trying to defeat China in the game of global powers. Brazilian scholar Stinkel has conducted continuous research on the game between China and the United States.

Zhang Li, Hu Dayi: «On "Choosing Sides" in International Games», Published in «Contemporary Asia-Pacific», Issue 5, 2021, Anthony Boadley "Brazil Re gulator Approves 5G Spectrum Auction Rules o Huawei Ban" [yǔ yǎng yǎngyǎng: / yǎng yǎngyǎngyǎng yǎng/ yǎngyǎngyǎng / yǎng yǎngyǎng yǎngyǎngyǎng yǎngyǎngyǎngyǎngyǎng [yǎngyǎng yǎng yǎng] yǎngyǎngyǎng yǎngyǎngyǎngyǎng yǎngyǎngyǎng "yǎngyǎng yǎngyǎng yǎng yǎng yǎng yǎngyǎng yǎng yǎngyǎng yǎng yǎngyǎng yǎngyǎngyǎng" yǎng yǎng yǎngyǎng yǎngyǎng yǎngyǎngyǎng // yǎngyǎngyǎng yǎng / yǎngyǎng yǎng yǎng yǎng yǎngyǎngyǎng yǎng yǎngyǎng yǎng yǎngyǎng yǎngyǎng yǎng yǎngyǎng yǎngyǎngyǎng / [yǎngyǎng yǎng yǎng]

Tracking, he believes that the current Sino-US technology dispute focuses on 5G technology and the role of Huawei, because whoever sets global standards and controls these new technologies is expected to have a huge strategic advantage in global affairs in the next few decades.

Some Latin American scholars further pointed out that the real reason why China's cutting-edge technologies (new generation wireless networks, quantum computing and communications, artificial intelligence) alarm the U.S. government is that they may mean dangerous geopolitical changes: China is not only trying to formulate the 21st century It will also give the "China Model" new financial and technological connotations. The United States requires countries to abandon the use of Huawei's 5G equipment

on the grounds that Huawei's technology poses security risks. Most countries in Latin America do not accept this logic of the United States. It is not recognized. The reasons are as follows. First, not only Huawei, but global technology companies and Internet application providers may in principle be required to cooperate with national intelligence and security agencies when national and public security are at risk. Moreover, compared with China, Latin American countries are more worried about U.S. intervention, because the U.S. has bad precedents of spying on leaders of Latin American countries and intervening in the internal affairs of Latin American countries. Second, the U.S. concerns about the security risks of Huawei technology do not apply to Latin America, because most Latin American countries do not understand Industrial secrets, and these fields are highly regulated, there is nothing wrong with China entering the Latin American market in accordance with Latin American rules. Third, as some Latin American scholars bluntly said, Chinese companies mainly meet the needs of developing countries for faster and cheaper telecommunications infrastructure. It is not building a 5G network to spy on other countries. 6 Some Latin American scholars have expressed doubts about the ability of the United States and its allies to provide alternatives to China's 5G technology. They believe that although the United States has proposed initiatives such as the Blue Dot Network, it is hedging against China.

The influence of digital technology has limited effect (3) There is still room for

China-Latin America 5G cooperation. Although the

US interference has laid a stumbling block for China-Latin America 5G cooperation, it is not enough to force a halt to the China-Latin America 5G cooperation process, such as Suriname, Trinidad and Dominica. Latin American countries such as Argentina and Brazil have resisted U.S. pressure and continued to promote practical cooperation with Huawei. The heads of Latin American countries such as Argentina, Chile, and Uruguay met with Presid

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The US National Security Agency (US National Security Agency) monitors Brazilian state-owned oil companies and monitors former Brazilian President Deere The scandal over Dilma Rousseff's phone call has exposed the United States' credibility on international supervision issues is limited.

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During the phone call or phone call, both expressed their hope to strengthen cooperation with China in the fields of technological innovation and 5G construction. Argentine President Fernandez said in his speech at the 2020 China International Trade in Services Conference that Argentina and China are seeking to create emerging fields centered on 5G. Growth Points of Cooperation In fact, China-Latin America digital technology cooperation has strong momentum. The United States also knows that it is difficult to completely eliminate Huawei's presence in Latin America. This is the fundamental reason why China-Latin America 5G cooperation

can break through the US barriers and achieve greater achievements. China-Latin America Digital Technology Cooperation has come from behind, showing strong vitality. Compared with European and American countries, Chinese digital technology companies are latecomers to the Latin American market. However, Chinese companies continue to expand markets and develop in Latin America with their high-quality products and services in 5G, security and other fields. Among them, Huawei has been deeply involved in Latin America for more than 20 years. Its business covers the entire Latin American region except a few small countries in the Caribbean and Central America. Its services cover 50% of the population in the region. Its business volume in Brazil and Mexico accounts for Huawei's Latin American region. More than 20%. During the COVID-19 epidemic, Huawei 5G helped local technology fight the epidemic and provided technical support for the China-Latin America video exchange meeting. Huawei also helped cultivate local ICT talents through projects such as the "Future Seeds Program" and actively fulfilled its social responsibilities. ZTE, Hainan Security equipment produced by companies such as Convision and Tongfang Vision has entered Bolivia, Ecuador, Venezuela, Chile and other countries, using digital technology to help local disaster prevention and reduction, improve public security conditions, and provide strong support for the development of digital infrastructure and digital transformation in Latin America. For example, In March 2019, the Argentine province of Jujuy signed a \$28 million contract with ZTE, covering security cameras, monitoring centers, emergency services and telecommunications infrastructure. By the end of 2019, ZTE had provided Bolivia with a total of 600 cameras equipped with facial recognition technology. The cameras, together with the 2,000 cameras that have been put into use, have become part of the country's BOL-110 urban security integrated command and control system. In September 2020, ZTE also cooperated with Omdia to release "Security Transparency and Commitment in the 5G World" The white paper points out that ZTE's existing security capabilities, experience and roadmap demonstrate a collaborative, transparent and open mechanism designed to deal with upcoming security risks and challenges in the 5G world.

In fact, although the pressure from the United States has caused some Latin American countries to loosen their stance, the United States is also well aware that it is difficult to completely eliminate the presence of Chinese technology. Miles, the head of the Inter-American Dialogue Organization, believes that "despite the warnings from the United States and other countries that the use of Chinese technology will pose security risks, but China's cheaper, advanced equipment is attractive to many countries in Latin America. Unless Huawei is directly involved in elections or other internal affairs in the region in the coming months, Latin American countries ban China's cheaper, higher-quality equipment. of 5G infrastructure

Lu Daxin: «China-Latin America 5G cooperation has great potential», People's Daily Overseas Edition, January 26, 2021, <http://paper.people.com.cn/rqrb/html/20210126/01001.htm>

However, whether we wait for change or refer to the practices of other countries, differentiation within Latin American countries on 5G issues will become an inevitable reality. This phenomenon contains huge risks. First, it may evolve into a conflict between Huawei and the United States. Once this confrontation is formed, Latin American countries will suffer heavy losses no matter which side they stand on, because any choice will inevitably damage one of their two most important geopolitical relationships. This dilemma is undoubtedly a road of no return for Latin America. Second, regional countries choosing to join different camps may make their future technologies incompatible with each other to a large extent. This means that the development process of scientific and technological integration in Latin America may become increasingly weak, and operating under two sets of parallel rules will lead to greater divisions in Latin America. This scenario is possible. As Brazilian scholars have observed, the United States and China are establishing their respective technological spheres of influence according to different technological standards. Not only this is especially true in the 5G field, and in any subsequent technological innovations, such as artificial intelligence and quantum computing. The United States has stepped up its efforts to penetrate standards and rules in digital communications fields such as 5G in Latin America. China has also launched the "Global Data Initiative". The United Nations Secretary-General Guterres stated in the 2019 United Nations Annual Report that he is worried that a big rift may appear in the world: the world's two largest economies will divide the world into two, with two independent and competing worlds each having a dominant currency, trade and financial rules, each with Internet and artificial intelligence capabilities, and their own zero-sum geopolitics and military strategies.

The Latin American region has already paid a heavy price for its inability to work together to address challenges, such as rampant transnational crime, refugee crises and disagreements over political crises. However, the costs of divided 5G decision-making may be even greater. After all, a large part of the global economy will be associated with new technologies represented by 5G, and all these technologies will be subject to new rules for emerging technology competition. In fact, Latin American countries have realized the risk of regional 5G technology fragmentation. November 26, 2020 The 7th Latin America and the Caribbean Ministerial Conference on the Information Society convened and adopted the 2022 Digital Agenda for Latin America and the Caribbean. The agenda includes 39 specific goals under nine action plans, including "according to international standards and it is recommended to manage and use the radio spectrum to promote the unified deployment of 5G in all countries in the region." However, good intentions are far from enough. The ability and effectiveness of Latin American countries to deal with this risk still need to continue to be observed.

(Editor Gao Han)

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