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The 5G Question and India’s Conundrum

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Abstract: This article examines the Indian response to the ongoing debate on 5G technology. It explores the divergence between the government and the industry stakeholders on the issue in India—particularly in the context of deteriorating Sino-Indian ties. Though the Indian government is yet to announce its stand on Chinese telecom equipment manufacturers, and as such, India’s vacillation on 5G may look indecisive, given how various stakeholders are divided on the question of sourcing the equipment from the People’s Republic of China, this delay also may represent a sophistication in India’s outlook on this important question, warranting a cautious, “wait and watch” approach to arrive at a decision.

The latest generation of wireless technology, 5G, has come to the forefront of an ongoing geopolitical and technological rivalry between the People’s Republic of China and the United States. The technology—described as “transformative”—is the next frontier of the digital revolution, and will be an integral part of critical infrastructure serving the needs of government, businesses, and individuals alike. Given 5G’s significance, the first mover of this technology will gain a significant advantage over other countries and consolidate its position as an important cyber power.

Presently, Chinese telecom giant Huawei Technologies Co. Ltd. (“Huawei”) is dominating the market and steadily has become the leading supplier and manufacturer of this new technology. In comparison with Ericsson and Nokia—Huawei has the largest number of 5G commercial contracts, the biggest market share, and leads the 5G-technology patents race.1 However, a combination of factors, such as its close ties with the Beijing government, opaque ownership structure and past allegations of legal

1 Aarshi Tirkey, “The 5G Dilemma: Mapping responses across the World,” Observer Research Foundation, p. 9, May 2020.
violations, has raised concerns that its equipment could be used for espionage and surveillance. More significantly, allowing Huawei’s participation in domestic markets is viewed as synonymous with acknowledging and promoting China’s ambitions to be a technological superpower. Western nations not only consider this move to be a national security threat, but also see it as a permanent shift in global technological leadership from the United States to China.

Determined to arrest China’s rise and alarmed by the prospect of possible surveillance, the United States has taken a slew of measures to not only ban Huawei from entering its domestic market, but to also prevent the export of American technology to Chinese companies. Washington is also persuading allies to follow suit through extensive diplomatic lobbying—even going so far as to threaten a severance of intelligence ties with those that allow Huawei. Beijing for its part, has criticized nations for blocking Chinese telecom companies—terming it as a flagrant attempt to politicize a technology issue—and has hinted towards the use of “reverse economic sanctions” if Chinese telecom companies are banned. With China and the United States battling to reign supreme, a “digital iron curtain” threatens to fall across technology, where the world faces a choice between doing business with one or the other.

Against this backdrop, India’s decision on a supplier for 5G technology, equipment, and software is a crucial one. Timely deployment of a secure, affordable, and efficient version of the technology, is important for New Delhi’s vision to emerge as an economic and technological power. However, a complex matrix of technological, economic, and strategic factors will affect this decision. First, the decision should be one that brings technological advancement without widening India’s digital divide, and hence, further the goal of social and economic development. Second, the equipment should be safe, secure, and free from the tethers of a foreign power. Third, New Delhi should determine that its final decision on the 5G dilemma, which is inherently a domestic policy question, will be made independently of any external pressure, demands, or requests. Finally, the choice of supplier should not only balance its strategic ties with the United States, but also maintain a stable relationship with China, which continues to be plagued by a growing mistrust, especially since the June 2020 Galwan Valley clash.

In December 2019, India’s telecommunications ministry announced that it would allow all applicants—including Huawei—to participate in 5G trials. However, participation in trials does not guarantee a contract for the vendor. Moreover, the heightened tensions between India and China have given rise to strong anti-China sentiment within the Indian polity—precipitating into a call for boycotting Chinese goods. However, since the Narendra Modi government is yet to announce its official position, the question of allowing Huawei in India continues to be an open one.

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2 Adam Segal, Cobus Van Staden, Elsa B. Kandia, Samm Sacks, and Elliott Zaagman, “Is an Iron Curtain Falling Across Tech?” Foreign Policy, Feb. 4, 2019, https://foreignpolicy.com/2019/02/04/is-an-iron-curtain-falling-across-tech/.
The 5G Question and India’s Conundrum

Identifying Key Themes in the 5G Debate

5G can enable a new era of digital transformation by providing greater data speeds, low latency (better responsiveness), high-throughput communication, and the possibility of simultaneously connecting more devices. Among the many uses of 5G, the technology will help develop advanced applications in government service delivery, healthcare, agriculture and industrial sectors. It will also underpin the development of emerging technologies associated with the fourth industrial revolution, namely artificial intelligence, big data, Internet of Things (IoT), advanced factory automation, and driverless cars. Consequently, the network will form a part of the critical infrastructure and process large amounts of sensitive data, thereby leading to various risks and vulnerabilities. As most countries are well on their way to deploying 5G networks, their policy choices are situated on the triangulation of three considerations—national security, strategic concerns and economic considerations.

India’s Prime Minister Narendra Modi

On the national security front, cybersecurity risks and surveillance concerns are the focus of deliberations in 5G related policies. The European Union’s (EU) 2019 cybersecurity risk assessment report describes how 5G’s architecture vastly differs

3 “Eurasia Group White Paper: The Geopolitics of 5G White Paper,” Eurasia Group, Nov. 15, 2018, p. 5, https://www.eurasiagroup.net/siteFiles/Media/files/1811-14%205G%20special%20report%20public(1).pdf.
from previous generations of mobile networks, brings greater complexity to the supply chain and removes distinction between the core and edge networks, which increases entry points for attackers. Cybersecurity risk is a significant concern for India; its rank in the International Telecommunication Union’s Global Cybersecurityrisk index dropped from 23 (2017) to 47 (2018). Instances of malicious cyberattacks were identified on the World Economic Forum’s Global Risk Report, where “Aadhaar,” the Indian government’s unique ID for its residents, suffered a massive data breach, potentially compromising the records of 1.1 billion individuals. As New Delhi has yet to formulate a robust legal and institutional mechanism for protecting privacy and data, it will need to show increased caution with respect to 5G networks.

Surveillance and espionage concerns relate to the possible installation of “backdoors” in the network, which could allow China to intercept and monitor communications. The threat of backdoors in telecom equipment is evinced from the controversial Edward Snowden leaks in 2013. Back then, Cisco’s routers—one of America’s leading tech companies—came equipped with backdoors that allowed US’ National Security Agency to carry out surveillance activities. Several US laws, from the 1973 Foreign Intelligence Surveillance Act to the recently enacted Clarifying Lawful Overseas Use of Data ("CLOUD") Act, provide legislative backing to access extraterritorial data and communications. In a similar fashion, backdoors in Huawei’s kit, coupled with China’s laws, such as the 2016 Intelligence Law and the 2014 Counterintelligence Law—which require companies to assist the government and intelligence agencies—evoke similar concerns. For those who view China as a foreign adversary or a hostile country, they feel that Chinese telecom equipment could be misused to compromise national interests by carrying out cyberattacks, surveillance and espionage. Further, the absence of a robust, independent judicial mechanism in China that could redress potential privacy violations and unwarranted intrusion in foreign networks, has dampened confidence in the integrity of Huawei’s gear.

The close association of Huawei with the Beijing government, courtesy of the connection of current Huawei CEO Ren Zhengfei to the People’s Liberation Army

4 “Global Cybersecurity Index (GCI),” International Telecommunication Union, 2017, p. 55, https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2017-PDF-E.pdf.
5 “Global Cybersecurity Index (GCI),” International Telecommunication Union, 2018, https://www.itu.int/en/ITU-D/Cybersecurity/Documents/draft-18-00706_Global-Cybersecurity-Index-EV5_print_2.pdf.
6 The Global Risks Report 2019 (Cologna: World Economic Forum, 2019), p. 16, http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf.
7 “EU coordinated risk assessment of the Cybersecurity of 5G networks,” NIS Cooperation Group, European Commission, pp. 6-7, https://g8fip1kplvr33r3krz5b97d1-wpengine.netdna-ssl.com/wp-content/uploads/2019/10/Report-EU-risk-assessment-final-October-9.pdf.
8 “As Huawei frightens Europe’s data protectors, America does too,” The Straits Times, Feb. 24, 2019, https://www.straitstimes.com/world/europe/as-huawei-frightens-europes-data-protectors-america-does-too.
9 Kadri Kaska, Henrik Beckvard and Tomáš Minárík, “Huawei, 5G and China as a Security Threat,” NATO Cooperative Cyber Defence Centre of Excellence, 2019, p. 11, https://ccdcoe.org/uploads/2019/03/CCDCOE-Huawei-2019-03-28-FINAL.pdf.
10 “EU coordinated risk assessment of the Cybersecurity of 5G networks,” p. 27.
has furthered this narrative. Huawei’s meteoric rise as the largest, most affordable, and technologically advanced supplier, has been supported by Beijing through direct financing and subsidies, amounting to nearly $222 million in government grants in 2018.\textsuperscript{11} As a result, in 2018, Australia placed a full ban on Huawei and ZTE citing security risks, given that it is “likely to be subject to extrajudicial directions from a foreign government.”\textsuperscript{12} A 2018 analysis notes that while discussions regarding Huawei and its leadership preface all deliberations on 5G, it is actually “distrust”—not against Huawei, but distrust between governments with conflicting geopolitical agendas that is at the root of the 5G dilemma.\textsuperscript{13}

This leads to the second factor, which relates to strategic concerns and geopolitical considerations. As the trade and technology war escalated, it evolved into great power rivalries between the United States and China, and aggravated competition for global leadership between the two. In this context, scholars Manoj Kewalramani and Anirudh Kanisetti analyze how strategic concerns relate to “the potential splintering of global cyberspace and technology into distinct spheres of influence under either the United States or China.” Countries—including India—based on their strategic interests will need to decide with which camp to align.\textsuperscript{14}

Predominantly, the American stratagem against Chinese equipment manufacturers relates to preventing China from gaining first mover advantage in the technology. The United States effectively has banned Chinese equipment manufacturers, beginning with a 2018 amendment to ban federal agencies from using equipment from Huawei or ZTE on national security grounds.\textsuperscript{15} The U.S. Federal Communications Commission in November 2019 deemed Huawei and ZTE as companies that posed a national security threat to the integrity of communications networks and supply chain.\textsuperscript{16}

Washington’s actions appear to be pushing the two countries towards what has been called a “decoupling,” as the two largest global economies aim to cut

\textsuperscript{11} Maizland and Chatzky, “Huawei: China’s Controversial Tech Giant.”
\textsuperscript{12} “Government Provides 5G Security Guidance To Australian Carriers,” Ministers for Communications, Cyber Safety and the Arts, Aug. 23, 2018, https://www.minister.communications.gov.au/minister/mitch-fifield/news/government-provides-5g-security-guidance-australian-carriers.
\textsuperscript{13} Nicolas Botton and Hosuk Lee-Makiyama, “5G and National Security: After Australia’s Telecom Security Review,” ECIPE Policy Brief No. 8/2018, Oct. 2018, https://ecipe.org/wp-content/uploads/2018/10/TSSR-final.pdf.
\textsuperscript{14} Kewalramani and Kanisetti, “5G, Huawei & Geopolitics: An Indian Roadmap.”
\textsuperscript{15} John S. McCain, National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, https://www.congress.gov/bill/115th-congress/house-bill/5515/text.
\textsuperscript{16} “Protecting Against National Security Threats to the Communications Supply Chain Through FCC Programs,” Federal Communications Commission, Nov. 26, 2019, 28-66, https://docs.fcc.gov/public/attachments/FCC-19-121A1.pdf.
dependence on each other—especially in the realm of technology. To be sure, China has comparable measures in place, which aim to phase out foreign technology in sensitive sectors, and increase the role and capacity of Chinese companies in its market.

As mentioned earlier, the United States has extended the reach of its measures to other countries as well, in a bid to dissuade them from joining the China camp. It has also demonstrated that its power to control supply chains and modify policies of other nations, through the recent change in the UK’s 5G guidance on “high risk vendors.” Previously, in January 2020, the UK voiced confidence in its existing institutional setup—the 2010 Huawei Cyber Security Evaluation Centre (HCSEC)—to mitigate risks associated with Huawei’s kit, and published guidance for telecom operators to limit (not ban) its presence in sensitive networks. This policy was changed when the United States introduced the “Foreign-Produced Direct Product Rule” (FDPR) in May 2020, which makes it illegal to export Huawei designed chips to Huawei—if U.S. technology was used in them. Ian Levy, the Technical Director of the UK’s National Cyber Security Centre (NCSC), is convinced that Huawei could not work-around the restrictions imposed by the FDPR and still produce “state of the art technology”—and even if it manages to do so, such tech is likely to suffer from security and reliability problems. He also expressed reservations that UK’s existing mitigation strategy—under the ten-year old HCSEC—could be effective with these new factors at play. As a result, the UK announced that by 2027 all Huawei equipment will be phased out of UK telecom networks. This is a serious volte-face from London, which until recently had stood by its decision not to ban Huawei.

Similarly, strategic concerns can favour China as well. For instance, Russia— which continues to face Western sanctions since the 2014 Ukraine crisis—has welcomed Huawei to develop the high-speed network in its territory. China’s investments and Huawei’s technology are also a boon for “cash strapped”

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17 Cheng-Ting Fang and Lauly Li, “The great US-China tech decoupling: Where are we now?”, Dec. 30, 2019, https://asia.nikkei.com/Economy/Trade-war/The-great-US-China-tech-decoupling-Where-are-we-now.
18 “Huawei advice: what you need to know”, National Cyber Security Centre (United Kingdom), July 14, 2020, https://www.ncsc.gov.uk/information/huawei-advice-what-you-need-to-know.
19 “NCSC advice on the use of equipment from high risk vendors in UK telecoms networks,” National Cyber Security Centre (United Kingdom), Jan. 28, 2020, https://www.ncsc.gov.uk/guidance/ncsc-advice-on-the-use-of-equipment-from-high-risk-vendors-in-uk-telecoms-networks#section_3.
20 Ian Levy, “A different future for telecoms in the UK,” National Cyber Security Centre (United Kingdom), July 14, 2020, https://www.ncsc.gov.uk/blog-post/a-different-future-for-telecoms-in-the-uk.
21 Levy, “A different future for telecoms in the UK.”
22 Gautam Chikermane, “UK ban on Huawei is symbolic, its impact wider,” Observer Research Foundation, July 15, 2020, https://www.orfonline.org/expert-speak/uk-ban-on-huawei-is-symbolic-its-impact-wider/.
23 Andrew E. Kramer, “Huawei, Shunned by U.S. Government, Is Welcomed in Russia,” New York Times, June 6, 2019, https://www.nytimes.com/2019/06/06/business/huawei-russia-5g.html.
governments in Latin America, Africa and Central Asia. Many countries, such as Cambodia and Myanmar, view Huawei and Chinese investments favorably since they do not come bundled with onerous conditionalities or public rhetoric regarding democracy and human rights improvements. For them, China’s investments—even if they ramp up debt to unsustainable levels—are preferable to investment from the West.

The third leg of economic considerations can relate to the cost of the equipment, which is an important factor for developing countries since they have limited finances to spend on expensive 5G equipment. Another facet of economic consideration is a probable fallout of a Huawei ban in the form of “reverse economic sanctions” from China. When Germany decided to allow Huawei to build its networks, many pointed out that a possible reason behind the decision was the robust economic ties between the two countries and the fact that China is the biggest single market for German cars, such as Volkswagen, Mercedes-Benz and Daimler. A similar warning was issued to India last year, when Beijing said that any move to block Huawei from upcoming 5G operations will have consequences for Indian firms doing business in China. As such, for India as well, these three factors will play a central role in its decision.

India’s Response to the Huawei Conundrum

In India, 5G has the potential to bring major societal transformation and support the government’s flagship schemes in infrastructure, development and e-governance, such as Digital India, Smart Cities, BharatNet, and Smart Villages. There is an expectation that it can help “leapfrog” traditional barriers to development, similar to how mobile networks overcame cost and infrastructure barriers posed by fixed line telephony, and vastly improved connectivity across India. The economic impact of 5G in India is also expected to exceed US$1 trillion by 2035. As such, the early and ubiquitous deployment of the technology will reap rich dividends for India in garnering economic, political, and technological leadership.

Key ministries and departments in the Indian government have worked on policy documents, reports and papers to help build a concrete roadmap to deploy 5G in India. In September 2017, India’s Ministry of Communications constituted a High

24 Patrick Donahue, “German Spy Chief Says Huawei Can’t Be ‘Fully Trusted’ in 5G,” Bloomberg, Oct. 29, 2019, https://www.bloomberg.com/news/articles/2019-10-29/german-spy-chief-says-huawei-can-t-be-fully-trusted-in-5g.
25 “The Huawei Threat,” Business Standard, Aug. 8, 2019, https://www.business-standard.com/article/opinion/the-huawei-threat-119080801912_1.html.
26 “Making India 5G Ready,” Report of the 5G High Level Forum, Aug. 23, 2018, p. 48, http://dot.gov.in/sites/default/files/5G%20Steering%20Committee%20report%20v%2026_0.pdf?download=1.
27 “Making India 5G Ready.”
Level Forum (HLF) to approve roadmaps and action plans for deploying 5G by 2020. On August 2018, the HLF issued a comprehensive report titled “Making India 5G Ready,” which recommended policy measures on spectrum allocation, regulation, participation in international standards, and most importantly, technology demonstration and 5G trials. India’s 2018 National Digital Communications Policy lays out a framework to “connect, propel and secure India” and emphasizes 5G’s role in achieving digital empowerment and improved wellbeing of people. In February 2019, the Telecom Regulatory Authority of India (TRAI), identified probable challenges, such as security, data protection, and privacy, in a white paper titled “Enabling 5G in India,” placing cyber security at the forefront of the Indian deliberations. These documents have been useful in informing stakeholders—both public and private—regarding the policy approaches that will be taken by the government in this regard.

The Government’s Stand: From Divergence to Pronounced Caution

The first leg of the process is 5G trials, which help increase awareness, stimulating research and development, and encouraging suppliers to target 5G for local needs. While 31 countries have launched commercial 5G services and over 300 pre-commercial trials have been carried out, 5G trials are yet to begin in India. On the question of participation of Chinese vendors in 5G trials, India’s Telecom Minister Ravi Shankar Prasad announced in late December 2019 that all applicants, including Huawei, would be allowed. Despite this, the Indian government has been reluctant to mention Chinese equipment manufacturers in their official documentation on 5G policies. The 2018 HLF report mentions that India’s Department of Telecommunications (DoT) “invited” major suppliers like Samsung, Ericsson, Nokia, CISCO, NEC, Qualcomm, and Intel for proposals to conduct large 5G trials. The omission of Huawei and ZTE Communications from this list is curious, given that a

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28 “Constitution of High Level Forum for 5G in India 2020,” Department of Telecommunications, Ministry of Communications, Government of India, Sept. 22, 2017, http://www.tcoe.in/sites/default/files/5G%20India%202020%20High%20Level%20Forum.PDF.
29 “National Digital Communications Policy 2018,” Department of Telecommunications, Ministry of Communications, Government of India, Sept. 26, 2019, http://dot.gov.in/sites/default/files/Final%20NDCP-2018_0.pdf.
30 “Enabling 5G in India,” Telecom Regulatory Authority of India, Government of India, Feb. 22, 2019, p. 54, https://main.trai.gov.in/sites/default/files/White_Paper_22022019.pdf.
31 “Making India 5G Ready,” p. 41.
32 “The 5G Dilemma: Mapping responses across the World,” p. 6.
33 Navadha Pandey, “Huawei is still in the game as govt lets it take part in 5G trials,” LiveMint, Dec. 30, 2019, https://www.livemint.com/industry/telecom/govt-to-give-spectrum-for-5g-trials-to-all-including-huawei-telecom-minister-11577704145912.html.
34 “Making India 5G Ready,” p. 41.
government statement\textsuperscript{35} confirms that the DoT had received proposals from them as well to conduct 5G trials.

Given the complex security, strategic and economic factors that need to be considered, the government proceeded to set up committees to tender advice on the matter. In June 2019, the government formed a committee chaired by the Principal Scientific Advisor (PSA)—who advises the government on science and technology policies—to give recommendations on 5G security and technology trials.\textsuperscript{36} The committee comprised of officials from the Intelligence Bureau (IB), Ministry of External Affairs (MEA), Ministry of Home Affairs (MHA), Ministry of Communications and Information Technology, and the Department of Science & Technology.\textsuperscript{37} In March 2020, it was revealed that the committee recommended that 5G trial applications should be based on “consultation with stakeholders keeping in mind the relevant social, economic and security aspects on case to case basis.”\textsuperscript{38}

While the full report of the deliberations is unavailable, discussions from a June 2019 meeting of the committee demonstrate differences between the members on whether Huawei should be allowed to participate in 5G trials.\textsuperscript{39} The PSA believed that India should go for 5G trials immediately with all vendors, except Chinese ones. This action would help fast-track India’s deployment of the technology, while allowing the government to return to the China question at a later time. The telecom ministry and the Intelligence Bureau contend that the decision should be a political one, with the former stating that the PMO’s approval should be taken after appraising them of all the pros and cons. The MEA, on the other hand, supported all field trials, including those of Chinese vendors, provided that additional safeguards are adopted.

The response of the MEA back then can be understood better in the context of a statement made by External Affairs Minister Subrahmanyam Jaishankar. In late 2019, he refused to join the Trump administration in calling it a security issue and announced that India would take a “bilateral approach” on 5G, since this is a “telecom issue and not political one.”\textsuperscript{40} In the context of balancing Sino-Indian ties, Minister Jaishankar commented that the two countries have had a “somewhat complicated

\textsuperscript{35} “5G Trials,” Lok Sabha Starred Question No.73, June 26, 2019, \url{http://164.100.24.220/~loksabhaquestions/annex/171/AS73.pdf}.

\textsuperscript{36} “5G Trials,” Lok Sabha Starred Question No. 73, June 26, 2019, \url{http://164.100.24.220/loksabhaquestions/annex/171/AS73.pdf}.

\textsuperscript{37} “5G Panel Wants India to Start 5G Mobile Network Trials Without Chinese Vendors, Including Huawei,” \textit{News18}, July 2, 2019, \url{https://www.news18.com/news/tech/5g-panel-wants-india-to-start-5g-trials-without-chinese-vendors-including-huawei-2212963.html}.

\textsuperscript{38} “5G Networks,” Lok Sabha Unstarred Question No. 2233, March 4, 2020, \url{http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=13419&dsno=17}.

\textsuperscript{39} Pankaj Doval, “5G panel head wants Chinese vendors excluded from trials,” \textit{Times of India}, July 2, 2019, \url{https://timesofindia.indiatimes.com/business/india-business/5g-panel-head-wants-chinese-vendors-excluded-from-trials/articleshow/70032601.cms}.

\textsuperscript{40} Lalit K. Jha, “India to take bilateral approach on issues faced by other countries with China: S. Jaishankar,” \textit{Economic Times}, Oct. 3, 2019, \url{https://economictimes.indiatimes.com/news/politics-and-nation/india-to-take-bilateral-approach-on-issues-faced-by-other-countries-with-china-s-jaishankar/articleshow/71417623.cms?from=mdr}. 
history,” but the search for “equilibrium” would be “satisfactory on both sides.”

However, much has changed since the October 2019 Mamallapuram summit between Prime Minister Modi and Chairman Xi Jinping and their meeting on the sidelines of the 11th Brazil, Russia, India, China, South Africa (BRICS) Summit—which were attempts to commence a policy of rapprochement.

COVID-19 has raised serious questions regarding Beijing’s concealment of the virus, and its larger aim to bolster its position in the global order through sheer economic might. The pandemic brought unprecedented socio-economic turmoil to India. As a result, the government revised its Foreign Direct Investment (FDI) rules, to curb “opportunistic takeovers” at a time when companies would be facing unprecedented economic stress. The new rules mandate that any entity from a country that shares a land border with India can only invest through the government route. Beijing was visibly upset by this new rule, and called on New Delhi to revise its “discriminatory trade practice.”

The Galwan Valley clash in June 2020—along India’s northwestern border—resulted in a further deterioration of ties between the two countries, evoking a similar “distrust” between governments that is present in Australia and U.S.’ response to Huawei. In response to Galwan Valley, India banned 59 Chinese apps, including TikTok and WeChat stating that these apps were prejudicial to user sovereignty and integrity of India.

The United States also has urged New Delhi to “work together only with trusted sources” when deploying 5G. For India, maintaining its strategic ties with the United States while balancing its engagement with its largest neighbor China is a difficult task. Through U.S. support, India can maintain a bulwark against China’s increasing influence in Asia and the Indo-Pacific—courtesy of the Belt and Road Initiative. It is highly likely that without a ban, India’s efforts to build a strategic partnership with Washington through the 2+2 ministerial dialogue and the foundational military cooperation agreements will suffer. On the other hand, unresolved border issues and Beijing’s close friendship with Pakistan, raise tangible

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41 “EAM’s remarks at Carnegie Endowment, Washington DC,” Ministry of External Affairs, Government of India, Sept. 30, 2019, https://www.mea.gov.in/Speeches-Statements.htm?dtl/31893/EAMsRemarks_at_Carnegie_Endowment_Washington_DC_30_September_2019./
42 Harsh V. Pant, “India fires a salvo at China,” Observer Research Foundation, April 22, 2020, https://www.orfonline.org/expert-speak/india-fires-a-salvo-at-china-65011/.
43 Prabha Raghavan, “Explained: Why India tightened FDI rules, and why it’s China that’s upset,” Indian Express, April 23, 2020, https://indianexpress.com/article/explained/why-india-tightened-fdi-rules-and-why-its-china-thats-upset-6374693/.
44 “Government Bans 59 mobile apps which are prejudicial to sovereignty and integrity of India, defence of India, security of state and public order,” Press Information Bureau (India), June 29, 2020, https://pib.gov.in/PressReleaseDetail.aspx?PRID=1635206.
45 Anandita Singh Mankotia, “Huawei-wary U.S. puts more pressure on India, offers alternatives to data localization,” Economic Times, Oct. 3, 2019, https://economictimes.indiatimes.com/articleshow/71415751.cms?from=mdr&utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.
concerns regarding the potential use of Huawei tech to spy on India.46 A Huawei ban will further plunge Sino-Indian relations into mistrust and suspicion, pushing their bilateral ties to a point of no return. As New Delhi’s ties with Beijing become tenuous, the projection of India’s interests in platforms like the Shanghai Cooperation Organization and the BRICS will face issues, and it may increasingly find itself being alienated in its neighborhood and continental Asia.

Given how strategic concerns have become closely interwoven with emerging technologies, the MEA has brought novel changes to its institutional structure and established a dedicated department—the New and Emerging Strategic Technologies (NEST) division—to look into the complex technology related policy decisions. However, it has now become apparent that the Modi government is looking at the 5G question through a purely security lens. In June 2020, a second committee, led by the ministry of home affairs and comprising members from the department of telecommunications, Intelligence Bureau and National Security Council Secretariat was setup.47 The composition of the committee in itself indicates that the considerations of national security will dominate the discussions now. In fact, the IB recently took a hard stand and expressed that it is against data going outside India during trials and wants to prohibit the granting of remote access to Chinese equipment manufacturers—a move that could make it difficult for them to conduct trials.

The approach of caution is also evident in state-owned telecom service providers, as the government attempts to distance them from Chinese suppliers. In February 2017, the Bharat Sanchar Nigam Limited (BSNL), a major state-owned telecom service provider, signed a Memorandum of Understanding (MoU) with Nokia on 5G and Internet of things (IoT).49 It is unclear if BSNL’s inclination to opt for Nokia is connected to the alleged hacking of its network by Huawei back in 2009 and 2014.50 As of July 2018, neither BSNL nor other another state-owned service providers, like the Mahanagar Telephone Nigam Limited (MTNL), have issued any

46 Harsh V. Pant and Aarshi Tirkey, “Is India Betting Big on Huawei?” Foreign Policy, Feb. 6, 2020, https://foreignpolicy.com/2020/02/06/is-india-betting-big-on-huawei/.
47 Kiran Rathee, “5G trial in India: Modi govt hardens stance on Chinese vendors like Huawei, ZTE”, Financial Express, June 27, 2020, https://www.financialexpress.com/industry/technology/5g-trials-modi-govt-hardens-stance-on-chinese-vendors-like-huawei-and-zte-courtesy-border-tension/2005371/.
48 “New conditions around remote access and data storage may hamper 5G trials with Huawei, ZTE: Report,” ET Telecom, July 8, 2020, https://telecom.economictimes.indiatimes.com/news/new-conditions-around-remote-access-and-data-storage-may-hamper-5g-trials-with-huawei-zte-report/76847548.
49 “5G Networks,” Lok Sabha Starred Question No. 460, April 5, 2017, http://164.100.24.220/loksabhaquestions/annex/11/AS460.pdf.
50 “BSNL can buy equipment from Chinese vendors: Govt.,” Economic Times, Aug. 19, 2019, https://economictimes.indiatimes.com/industry/telecom/bsnl-can-buy-equipment-from-chinese-vendors-govt/articleshow/6338136.cms.
51 “Chinese telecom equipment maker Huawei allegedly hacked BSNL network: Govt,” Indian Express, Feb. 5, 2014, https://indianexpress.com/article/india/india-others/chinese-telecom-equipment-maker-huawei-allegedly-hacked-bsnl-network-govt/.
proposal for introducing the 5G technology to their customers.52 Both the state-owned services providers have small market share compared to private players, and currently lag behind them even in 4G deployment—as such, their entry into 5G services will be late. In relation to 4G, however, in July 2020 the DoT cancelled the anticipated 4G upgradation tender for BSNL and is expected to issue a new tender to restrict them from using equipment from Chinese vendors.53

The final decision on the Huawei question, of course, appears to rest with the PMO and other members of the cabinet committee on security. However, Modi’s decision will also need to consider the opinions of its many affiliates and supporters. In August 201954 and again in December 2019,55 the Swadeshi Jagran Manch, an affiliate of the Rashtriya Swayamsevak Sangh (RSS) that supports the ruling Bharatiya Janata Party, urged the government to ban Chinese telecom companies from India’s networks, citing “unacceptable security risk.”

The Indian government has moved from an initial divergence on the Huawei conundrum to a more cautious approach, and is cognizant of the possible risks that may be associated with the technology. At the same time, the DoT’s inclination to consider Huawei’s proposal for 5G trials—despite ongoing tension—indicate that it does not wish to make a premature decision.

**Industry Stakeholders: Plagued by Financial Quandaries**

Industry stakeholders comprised of private telecom service providers and industry associations represent telecom companies. India’s largest mobile operators, or the “big three,” are Reliance Jio, Bharti Airtel and Vodafone Idea with market shares of 33.47 percent, 28.31 percent and 27.57 percent, respectively.56 Given their market share, these companies can significantly influence the government’s decision on any future 5G policy. Pre-existing partnerships and economic rationales—such as low costs and better technology—will be crucial factors for Indian mobile operators when it comes to choosing a 5G supplier. 5G requires high capital expenditure, accounting for costs related to spectrum licensing, infrastructure development and equipment.

52 “Auction of 5G spectrum,” Lok Sabha Unstarred Question No. 12, July 18, 2018, http://164.100.24.220/loksabhaquestions/annex/15/AU12.pdf.
53 Jagmeet Singh, “BSNL 4G Tender Cancelled by DoT, Fresh Tender May Exclude Chinese Companies: Sources,” NDTV Gadgets 360, July 1, 2020, https://gadgets.ndtv.com/telecom/news/bsnl-4g-tender-cancellation-dot-chinese-equipment-huawei-zte-2255336.
54 “Huawei ‘very confident’ it will participate in India’s 5G rollout,” Nikkei Asian Review, Oct. 16, 2019, https://asia.nikkei.com/Business/Telecommunication/Huawei-very-confident-it-will-participate-in-India-s-5G-rollout.
55 “Govt shouldn’t allow Huawei for trials of 5G, SJM tells Narendra Modi,” Business Standard, Dec. 31, 2019, https://www.business-standard.com/article/companies/govt-shouldnt-t-allow-huawei-for-trials-of-5gs-sjm-tells-narendra-modi-119123101333_1.html.
56 Romita Majumdar, “Vodafone Idea loses 6.3 million subscribers in March, Airtel 1.2 million”, Livemint, July 14, 2020, https://www.livemint.com/industry/telecom/vodafone-idea-loses-6-3-million-subscribers-in-march-airtel-1-2-million-11594723178790.html.
The 5G Question and India’s Conundrum

In addition, India’s telecom service providers are under massive financial stress as they are facing high debts, low investments, and lack of revenues. A 2019 ruling by the Supreme Court of India on adjusted gross revenues (AGR) has added to their woes; telecom operators may need to pay the government Rs. 1.47 lakh crore (USD 21 million) in the next few months. This may severely incapacitate them from investing in expensive 5G equipment and other emerging technologies. Since Huawei equipment is said to be 20 to 30 percent cheaper than Nokia and Ericsson, it is estimated that denial of permission for even trials will increase vendor costs by about 20-25 percent. Further, as India is a price-sensitive market, this will lead to increased costs of 5G services, which will be unaffordable for the average Indian consumer.

On 5G trials, the big three have submitted their proposals with multiple vendors: Jio with Ericsson, Nokia, Huawei, and Samsung; Airtel and Vodafone Idea with Nokia, Ericsson, Huawei, and ZTE, while state-run BSNL/MTNL have gone with ZTE and Nokia. Both Huawei and ZTE have a significant share in Indian telecom networks. With Airtel and Vodafone Idea, Huawei has a share of 30 and 40 percent respectively, while BSNL’s 3G network has a 40 percent share of China’s ZTE. Though Jio has named Huawei in its application for trials, it works with Samsung for its pan-India 4G network and is expected to go with the South Korean company for deploying the 5G network.

Previously, during the World Economic Forum in October 2019, Airtel’s Chairman Sunil Mittal praised Huawei’s superiority and argued that India should leverage its population and geographical proximity to China to extract the best deal for

57 Munish Sharma, “The Road to 5G: Technology, Politics and Beyond,” IDSA Monograph Series No. 65, p. 99.
58 Katya Naidu, “Top three telecom companies’ debt is at Rs. 3.9 lakh crore—that’s half of India’s fiscal deficit,” Business Insider, Aug. 30, 2019, https://www.businessinsider.in/mukesh-ambanis-telecom-war-escalates-telecom-industry-debt-to-3-9-lakh-crore/articleshow/—70906000.cms.
59 “Payment of AGR dues will weigh on Bharti Airtel,s credit profile: Moody’s”, Press Trust of India, Business Standard, Dec. 2, 2019, https://www.business-standard.com/article/pti-stories/potential-payment-of-past-due-fees-weighs-on-bharti-airtel-s-credit-profile-moody-s-119120200489_1.html.
60 “The Road to 5G: Technology, Politics and Beyond,” p. 76.
61 Kiran Rathee, “5G trial in India: Modi govt hardens stance on Chinese vendors like Huawei, ZTE,” Financial Express, June 27, 2020, https://www.financialexpress.com/industry/technology/5g-trials-modi-govt-hardens-stance-on-chinese-vendors-like-huawei-and-zte-courtesy-border-tension/2005371/.
62 Kiran Rathee, “5G trial in India.”
63 Anandita Singh Mankotia, “Indian telecom companies may leave Huawei out of core 5G network,” Economic Times, Aug. 12, 2019, https://economictimes.indiatimes.com/industry/telecom/telecom-news/indian-telecom-companies-may-leave-huawei-out-of-core-5g-network/articleshow/70636358.cms?from=mdr.
its trade with Beijing. However, recent press releases from Airtel indicate that the company is strengthening its partnership with Nokia for 5G. This is perhaps indicative of the recent emergence of anti-China sentiment in the Indian polity, as well as lack of policy clarity from the Indian government on the Huawei conundrum.

Before the industry decides, however, it wants the government to take a definitive stand on the question of sourcing equipment from Chinese telecom companies. The director general of Cellular Operators Association of India (COAI) said that Indian telecom operators would like the government to decide quickly, so that the industry itself can make “future-proof” decisions. The COAI has shown an inclination to keep Chinese vendors in the market. The Indian Mobile Congress (IMC)—a digital technology forum—organized by the DoT and the COAI, invited Huawei to showcase 5G use-applications on smart cities, transport, education, and energy. In December 2018, the COAI wrote to the DoT in defense of Huawei stating that the company is suitably equipped to “build 5G capabilities in operations” and will “ensure they are fully compliant with all government requirements.” In June 2020, the associated industry exhort that “geopolitical issues” are the provenance of the government, and that they should be kept separate from “commercial decisions” which are the provenance of companies.

On the other hand, among industry stakeholders, domestic telecom equipment manufacturers have appealed for policy measures that increase their presence in both India and abroad. India’s Telecom Equipment and Services Export Promotion Council (TEPC) wrote to India’s National Security Advisor to Prime Minister Ajit Doval, asking for restrictions in India on equipment manufactured by Huawei and all Chinese majors. The TEPC was set up by the Government of India

64 Dhirendra Tripathi, “Sunil Mittal bats for Huawei equipment, calls it superior to rivals,” Livemint, Oct. 3, 2019, https://www.livemint.com/industry/telecom/sunil-mittal-bats-for-huawei-equipment-calls-it-significantly-superior-to-rivals-11570114707883.html.

65 “Airtel and Nokia sign multi-year deal to boost network capacity and customer experience,” Airtel, April 28, 2020, https://www.airtel.in/press-release/04-2020/airtel-and-nokia-sign-multi-year-deal-to-boost-network-capacity-and-customer-experience.

66 “Panel to vet Huawei way into 5G trials,” Telegraph, Sept. 12, 2019, https://www.telegraphindia.com/business/panel-to-vet-huawei-way-into-5g-trials/cid/1704253.

67 Nandita Mathur, “Huawei showcases innovative, inclusive 5G for India at IMC 2019,” LiveMint, Oct. 14, 2019, https://www.livemint.com/companies/news/huawei-showcases-innovative-inclusive-5g-for-india-at-imc-2019-1157104699745.html.

68 Surajeet Das Gupta, “Relax, Huawei Technologies is no threat to India’s national security: COAI,” Business Standard, Dec. 17, 2018, https://www.business-standard.com/article/economy-policy/relax-huawei-technologies-is-no-threat-to-india-s-national-security-coai-118121701124_1.html.

69 “Corporate decisions separate from geopolitical issues, says COAI amid India-China standoff,” Press Trust of India, Financial Express, June 18, 2020, https://www.financialexpress.com/industry/corporate-decisions-separate-from-geopolitical-issues-says-coai-amid-india-china-standoff/1995605/.

70 Surajeet Das Gupta, “India’s telecom export council flags Huawei over national security concerns,” Business Standard, Dec. 17, 2018, https://www.business-standard.com/
to promote and develop export of telecom equipment and services. The Telecom Equipment Manufacturer’s Association (TEMA)—the apex body to represent Indian telecom equipment industry—has said that India should utilize local capacities and thereby secure its “national security interests.” However, the Indian telecom equipment industry is not globally competitive, falls short of meeting India’s own technology requirements, and was unable to put forth concrete proposals for 5G trials in India.

**Indigenization: A Difficult Proposition**

A recurring concern for all nations—including India—has been operational risks and vulnerabilities related to security. In June 2019, Telecom Minister Prasad stated that 5G is not only about technology, but is a complex question involving security issues. This opinion was echoed by National Cyber Security Coordinator (NCSC), Lt. Gen. Rajesh Pant, who emphasized that security is a major issue in 5G networks. A proposed way to offset security concerns is to boost indigenous development of the 5G technology—an important step given that India imports 90 percent of its telecom equipment.

Veezhinathan Kamakoti, member of the National Security Advisory Board (NSAB), who advises the prime minister on security matters, said that local competencies must be built and indigenization of the technology ensured. TRAI also has recommended that India should aim for net zero imports of telecom equipment by 2022. The government has made some nascent efforts towards this end. In March

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71 “TEMA reveals suggestions for BSNL 4G tender—keeping Huawei away,” Telecomlead, July 15, 2020, https://www.telecomlead.com/telecom-equipment/tema-reveals-suggestions-for-bsnl-4g-tender-keeping-huawei-away-95935.

72 “The Road to 5G: Technology, Politics and Beyond”, p. 109.

73 Ronendra Singh, “India cautious on Huawei’s participation in 5G trials, says security issues as vital as technology,” Hindu Business Line, June 3, 2019, https://www.thehindubusinessline.com/info-tech/india-cautious-on-huaweis-participation-in-5g-trials-says-security-issues-as-vital-as-technology/article27429153.ece.

74 “Security is an issue in 5G: NCSC Pant on Huawei,” Telecom World ET Prime, Sept. 7, 2019, https://telecom.economictimes.indiatimes.com/news/security-is-an-issue-in-5g-ncsc-pant-on-huawei/71019778.

75 Rahul Satija, “India still wary of Huawei’s 5G despite ‘no back door’ pledge,” Nikkei Asian Review, July 8, 2019, https://asia.nikkei.com/Spotlight/Huawei-crackdown/India-still-wary-of-Huaweis-5G-despite-no-back-door-pledge2.

76 Sandhya Sharma, “National Security Advisory Board blows 5G bugle: Build local muscle, get real on China,” ET Prime, July 25, 2019, https://prime.economictimes.indiatimes.com/news/70371614/media-and-communications/national-security-advisory-board-blows-5g-bugle-build-local-muscle-get-real-on-china.

77 Kiran Rathee, “India should aim for net zero imports of telecom equipment by 2022: Trai,” Business Standard, Aug. 4, 2018, https://www.business-standard.com/article/economy-
2018, it launched a three-year program for developing indigenous 5G test beds, with a budget authorization of Rs. 2.240 million (USD 31.5 million). However, this sum falls short of matching the hundreds of billions of dollars that China reportedly has spent on developing 5G. While these projects are ongoing, Jio’s recent announcement that it has designed and developed a completely indigenous 5G solution—if it works on par with global standards—could be a game changer.

Nonetheless, as appealing as a home grown 5G solution would be, the push for indigenous development has been somewhat confounding. To put it simply, India is not a key player in technology design, development or the manufacturing of telecommunication equipment. India is yet to establish an innovative and globally competitive industry propelled by public and private support, with tie-ins to research, academia and universities. India also has not made a significant presence in 5G technology standard-setting bodies, such as the International Telecommunication Union (ITU). As India, and the world, is likely to enter a protracted state of economic hardship—it is unclear if the government would be able to provide financial incentives and support to build an indigenous 5G industry. Further, there are questions that by the time India is able to catch-up to the 5G equipment manufacturers, it may very well be too late and as some posit—the world would have moved on to 6G networks by then.

Evidently, there is a wide divergence of views on whether Huawei and other Chinese suppliers should be allowed to build India’s 5G telecommunications infrastructure and services. This dissonance—particularly between the government and industry stakeholders—arises from security, strategic and economic considerations and is present among all stakeholders, including members of the current government. However, by allowing Huawei to participate in the upcoming 5G trials, New Delhi has made an intelligent decision. By not preemptively excluding any supplier, it has given itself more time to make a final call on the Huawei question. This phase of the process not only provides a much-needed interlude before crucial policy choices, but also gives India the unique opportunity to assess carefully the alleged risks and vulnerabilities in Huawei’s gear. Additionally, India can use this time to strengthen its bilateral engagement with both the United States and China, as well as placate concerns that its decision on 5G should not be taken as a declaration to ally with one country against the other. Though it remains to be seen if the deterioration in Sino-Indian ties post June 2020 clashes allows that possibility to fructify.
India’s 5G Conundrum Moving Forward

The 5G conundrum has quickly transformed into a technological cold war between the United States and China, accentuating great power rivalries and pushing the two countries towards an expected economic and technological decoupling. Some may condemn the United States’ stratagem as alarmist, protectionist and motivated by a perceived loss of tech leadership. However, critics would argue that Huawei’s entry in telecom networks could threaten national security and leave critical infrastructure vulnerable to risks of espionage and cyber attacks from China. In addition, it will boost Huawei’s position as a dominant market player and cement Beijing’s role as a new global cyber power—enabling it to shape technological advancements for years to come. That prospect would be similar to the crucial role that the United States played in shaping the internet.82

In this context, India’s decision on the Huawei conundrum is more crucial than ever. By 2025 India could have cemented its place as the world’s second largest smartphone market, with an estimated base of almost one billion devices.83 There can be only two scenarios for New Delhi: one, where it allows Huawei to supply India’s 5G network, or another, where it bans Huawei and other Chinese vendors. The first scenario would have grand implications for India’s bilateral relations with China, as well as the United States. Given the frosty ties between the two nations, this decision would be surprising to the Indian polity, as well as India’s allies. India’s established defense and security arrangements with the United States, and its partnership in the Indo-Pacific will receive a severe setback. Further, given the current status of India’s cybersecurity architecture, it may leave India open to surveillance risks—which are all the more disconcerting given China’s aggression in the neighbourhood. However, India’s decision to use Huawei could become an important bargaining chip with China, given its market size. It may help in resolving outstanding issues in Sino-Indian relations, such as the border disputes and the controversial China-Pakistan economic corridor.

On the other hand, rejecting Huawei would be a strong signal from India and would have different implications for the current technological cold war between the United States and China. Joining Washington’s clarion call may seem to be a natural choice, given India’s growing bilateral relations with the United States and a strengthening defense partnership. However, doing so could possibly lead to the worsening of Indo-China ties. This scenario could increase tension and conflicts between New Delhi and Beijing and might further alienate India from its own neighborhood. But these are not the only considerations for India; it needs to make a decision and policy framework independently and provide the flexibility to choose a secure, reliable, and affordable supplier to install this new technology. Given how

82 Stacie Hoffmann, Samantha Bradshaw and Emily Taylor, “Networks and Geopolitics: How great power rivalries infected 5G,” Oxford Information labs, p. 26, https://oxil.uk/publications/geopolitics-of-5g/Geopolitics_5G_Final.pdf.

83 “India: Becoming 5G Ready,” GSMA Intelligence, p. 5, https://www.gsmaintelligence.com/research/?file=ff6b12abc0f6e04939ea041bf86d299ba&download.
indigenous development of the technology is a long way ahead, equipment costs and economic viability are perhaps the biggest factor for the Indian industry at the present moment.

As New Delhi makes its decision, it should be cognizant of the challenge that it faces in devising a policy position that is responsive to both the economic and security aspects of this debate. During this phase of unprecedented technological transformation, geopolitical competition among the world’s two most important powers is only likely to become more pronounced. Other nations, including India, are well aware of the consequences of this unfolding dynamic and are preparing to meet the challenges of this emerging geopolitics of technology.