



Competing with China on 5G and future technologies **TO BEAT CHINA ON TECH IN EMERGING MARKETS, LEARN FROM IT**

If the United States is going to compete with China on future technologies, President Biden needs to find new friends outside his traditional partners in Western Europe and East Asia. With future economic growth anchored in emerging markets, the United States will need to learn from China's own global tech expansion and work closer with developing countries in Africa, Latin America, and Asia.

After four years of Donald Trump in the White House, it is hard to imagine that life for China's technology companies could have become much worse. During his time in office, Trump waged a relentless war against China's global tech expansion. His administration used nearly every weapon at America's disposal to pummel Chinese tech companies—such

RECOMMENDATIONS

- The US, South Korea, Japan, and the EU can pool resources to level the playing field with China and offer new finance options for developing countries seeking to upgrade their communications and technology infrastructure.
- The US should look to the India and Vietnam model and help other nations develop domestic capacities that lower dependencies on Huawei and other foreign tech providers over time.
- Open RAN is no silver bullet to compete with China. Its potential will only be fully realized in the mid and long run, after high integration costs, security gaps, and other problems are worked out.

as semiconductor giant SMIC and smartphone maker Xiaomi—with executive orders blocking access to American markets, technology, and investment.

Trump was particularly keen on kneecapping China's tech champion Huawei. In a far-flung pressure campaign, Washington demanded allies and partners around the globe ban Huawei, and plowed through sanctions that cut off the Chinese telecom's links with foreign technology suppliers using any American equipment or software. Even in the waning days of his presidency, Trump did his utmost to upend the company's leading position in 5G—telecommunications technology that will revolutionize industries by allowing for rapid and seamless machine-to-machine communication, driverless cars, and automated factories.

Cooperating more closely with the United Kingdom, Japan, and other advanced democracies in Western Europe and East Asia offers the US instant partners in its competition with China. But once the Covid-19 pandemic downturn subsides, global economic growth will increasingly come from emerging markets in the coming decades. If America and its allies ignore large and populous economies like Nigeria, Brazil, and Indonesia, they're certain to lose the long game on tech. Biden has ditched Trump's derogatory language toward the developing world, but he also needs to shake off America's entrenched reluctance to view the strategic gains possible in engaging these regions.

The problem for the Biden administration is that China is already miles ahead of Western competition. For too long, the United States has viewed much of the

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But the Biden administration is not China's saving grace. President Biden is maintaining a hard line against Chinese tech, upping America's own game by pumping billions of dollars into basic research and development, and rallying fellow democracies together to promote global technology standards on cybersecurity and digital trade. China's tech companies may soon find themselves facing both Trump's restrictions and new competition from an international tech alliance led by the United States.

Yet if President Biden is serious about winning the race against China on 5G mobile networks and other new technologies, he will need more than the support of America's traditional allies; he'll also need to learn from China's own global tech expansion and work closer with developing countries in Africa, Latin America, and Asia.

developing world as overrun by poverty, humanitarian crises, and conflict. Conversely, China has recognized that these regions offer plenty of economic opportunity in trade, investment, and technology cooperation. In the last couple decades, Chinese tech companies have gained first-mover advantage by capturing large market shares in these budding economies and laying the groundwork as a standards-setter for how the next generation of technologies will work.

In Africa, for example, after developing a long line of affordable smartphones, the Chinese tech company Transsion now dominates the continent's mobile phone industry with over 40 percent of total market share. Chinese telecoms Huawei and ZTE built the majority of Africa's 4th generation mobile networks, and are now carving a similar path in developing 5G mobile networks in Indonesia, Malaysia, and much of



Along with Australia, Japan, Vietnam, and others, India is also moving to deny Huawei's involvement in developing 5G mobile networks within its borders. These decisions weren't the result of Trump's aggressive diplomacy, but rather grew out of deepening tensions in relations with Beijing



Southeast Asia. Guaranteed market share in China and billions in preferential loans for partner countries have allowed China's telecoms to deeply underprice their competitors. Chinese tech executives also had the foresight to recognize the potential for future growth in these markets.

But all is not lost for the United States and its tech allies. China's geopolitical behavior has caused plenty of self-inflicted damage to its own tech companies. After deadly border clashes last year between Indian and Chinese soldiers, India banned dozens of popular Chinese social media apps, including TikTok and WeChat, over security concerns. This was hardly a small loss: India was TikTok's largest market with some 200 million active users. China will find it difficult to lead the future of new technologies without India's 1.3 billion population on board.

And along with Australia, Japan, Vietnam, and others, India is also moving to deny Huawei's involvement in developing 5G mobile networks within its borders. These decisions weren't the result of Trump's aggressive diplomacy, but rather grew out of deepening tensions in relations with Beijing. Huawei's main competitors, such as Sweden's Ericsson, are looking to fill any gaps left by China's geopolitical troubles. But some countries also aspire to develop their own capabilities in 5G.

Working alongside California-headquartered Qualcomm, the Indian conglomerate, Reliance Industries, is developing its subsidiary Jio Platforms to provide a homegrown solution for India's 5G mobile networks. On top of partnering with Ericsson and Finland's Nokia, Vietnam also aims to develop its own 5G mobile networks with its national company Viettel.

For President Biden, China's setbacks in these rapidly growing markets provide new openings the United States and its allies can pursue.

The Trump administration struggled to get Brazil and other emerging economies to block Huawei from participating in their 5G mobile networks, despite offering to finance equipment from its competitors. Now that Trump is no longer frustrating American allies with trade war threats, the Biden team can negotiate with South Korea, Japan, the European Union, and others to pool resources in order to level the playing field with China. While not all partners in the developing world will fit into the idea of a democratic tech alliance, President Biden should look to the India and Vietnam model and help other nations develop domestic capacities that lower dependencies on Huawei and other foreign providers over time.

New open radio access network technology is one way to develop such alternative solutions. Open RAN essentially allows a variety of companies to supply different parts of a telecommunications network, decoupling the hardware from the software, rather than relying on one provider like Huawei or Ericsson. Though still a work-in-progress, this new technology is believed to have the potential to undermine Huawei's cost advantage by dramatically lowering the necessary investment to develop 5G networks.

European telecom service providers Orange and Vodafone are already introducing such networks in Africa and beyond. The United States is also realizing the possibilities for Open RAN. Late last year, amid political turmoil surrounding Trump's election defeat, a bipartisan bill quietly passed the US House, unlocking \$750 million in funding to accelerate Open RAN

development and deployment. In the face of fierce Chinese competition, the next step will be to work with Japan, the United Kingdom, and other allies to explore how to push this new technology forward and make it amenable to emerging market demands.

But Open RAN is no silver bullet to Biden's Huawei challenge. Its potential will only be fully realized in the mid and long run, after high integration costs, security gaps, and other problems are worked out. It should not distract from finding new ways to compete with China in traditional mobile networks.

If President Biden is serious about beating China in a global tech race, he will need to learn from the Chinese experience and reverse America's longstanding failure to see the strategic gain from engaging the developing world on technology. Biden must not follow Trump's playbook page by page. Trump's egregious approach to crippling Chinese competition did little to win over new partners. By offering tech solutions that spur on new growth and development, President Biden can harness the power and ingenuity of America and its allies to outcompete China.

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