



# The 2024 U.S. Tech Policy and Its Effects on Global 5G Trade

The Biden administration's 2024 tech policy has intensified its focus on 5G technology, positioning it as a core component of both economic strategy and national security. In an era where 5G networks play a pivotal role in the future of telecommunications, artificial intelligence, and the Internet of Things (IoT), U.S. policies surrounding 5G have had broad implications for global trade and alliances. The administration's emphasis on securing 5G infrastructure, countering perceived security threats, and promoting domestic production is reshaping international alliances, trade dynamics, and industry standards. This analysis examines the specific elements of the Biden administration's 2024 tech policy, its implications for global trade in the telecommunications sector, and how other nations and companies are adapting to this evolving landscape.

## KEY ELEMENTS OF THE 2024 U.S. TECH POLICY ON 5G

The Biden administration's tech policy focuses on three primary aspects concerning 5G networks: security, domestic capacity building, and international partnerships.

- 1. Security and Countering Foreign Influence:** The U.S. continues to view foreign control over 5G infrastructure, particularly from Chinese firms such as Huawei, as a national security threat. Biden's 2024 policy builds on earlier restrictions against companies deemed high-risk, enhancing export controls on sensitive technologies related to 5G and telecommunications. These restrictions have intensified, preventing U.S.-based and allied companies from engaging with suppliers tied to potential cyber risks. Additionally, strict cybersecurity protocols are mandated for telecommunications companies operating within the U.S. market, with an emphasis on network encryption and data privacy.
- 2. Domestic Investment in 5G Infrastructure:** The Biden administration has ramped up efforts to promote the U.S. as a leader in 5G technology by investing in domestic manufacturing and R&D. In 2024, substantial grants and subsidies were provided to encourage U.S. firms to manufacture 5G infrastructure components, semiconductors, and software. The administration's "Made in America" initiative promotes local 5G production to mitigate reliance on foreign supply chains, thereby strengthening the country's position in global technology trade. Significant investments have also been directed toward workforce training to expand the talent pool capable of supporting advanced telecommunications infrastructure.
- 3. Building International Partnerships:** The U.S. is fostering alliances to support a 5G ecosystem that aligns with American security standards. To counterbalance China's influence, the Biden administration has strengthened partnerships with key allies, including those in the EU, Japan, South Korea, and Australia, to create a trusted 5G network framework. This collabo-

orative effort has also led to the formation of joint research initiatives and the exchange of best practices in 5G deployment. By promoting collaboration on 5G policy and cybersecurity standards, the U.S. aims to build a unified front that counters reliance on China-centric technology in global markets.

## IMPACT ON GLOBAL 5G TRADE AND SUPPLY CHAINS

The U.S. tech policy is shaping global trade by influencing how countries and companies choose their 5G providers, as well as by determining which markets and regions align with U.S. standards. The result is a bifurcation in the global 5G landscape, where certain regions align with U.S.-endorsed suppliers and others with Chinese technology, particularly Huawei.

- 1. Shift Towards U.S.-Friendly Suppliers:** The U.S. policies have pushed allied countries to adopt American or other non-Chinese alternatives for 5G infrastructure. Companies such as Nokia and Ericsson, European leaders in telecommunications, have seen increased demand from countries seeking to comply with U.S. security guidelines. With American subsidies supporting domestic 5G research and manufacturing, U.S.-based companies, particularly smaller telecom providers, are becoming more competitive in the global market. This shift not only influences purchasing decisions but also affects industry standards, as U.S.-aligned countries may adopt regulatory frameworks that are incompatible with Chinese technology.
- 2. Rising Trade Barriers and Export Restrictions:** The Biden administration's policies have led to stricter export controls, especially for semiconductor technology, high-frequency transceivers, and other essential 5G components. These restrictions impact companies that rely on components manufactured in the U.S. or allied countries, leading some firms to adjust their supply chains or seek alternative suppliers. In regions with close ties to both the U.S. and China, companies are caught in a complex web of trade restrictions, forcing them to adapt by diversifying suppliers or creating separate product lines tailored to different regulatory environments.
- 3. Increased Costs and Supply Chain Adjustments:** Aligning with U.S.-approved 5G providers and sourcing secure technology comes at a cost. As countries shift to American or European suppliers to meet the U.S.'s security guidelines, the cost of network implementation has increased. Furthermore, the U.S.'s "Made in America" initiative is making telecommunications components more expensive domestically, as companies face higher costs due to tariffs on foreign inputs and investments in American manufacturing. This trend may lead to increased costs for consumers in countries adhering to U.S.-endorsed suppliers, as companies pass these expenses onto end users.

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## ALLIANCES AND GLOBAL PARTNERSHIPS

The U.S. has effectively fostered alliances to promote a unified stance on 5G standards, cybersecurity, and trade practices that align with American values. These alliances include NATO members, EU nations, and several Indo-Pacific allies. The U.S. is working closely with the European Union to coordinate 5G policy, ensuring that the cybersecurity measures and standards align, thereby preventing loopholes that adversaries could exploit.

The Indo-Pacific region is especially significant in this context. Countries like Japan, South Korea, and Australia are prioritizing U.S. partnerships to ensure their own national security, while also investing heavily in 5G and telecommunications innovation. Japan and South Korea, for example, have launched joint 5G R&D programs with the U.S., focused on open-radio access networks (O-RAN) that reduce dependency on single suppliers. These partnerships reflect a broader strategic shift, as countries that were traditionally neutral in tech competition are increasingly aligning with U.S. standards and policies on 5G technology.

## CHINA'S RESPONSE AND MARKET ADAPTATIONS

In response to U.S. export controls and international alliances that restrict access to certain markets, China has doubled down on its self-reliance strategy. Chinese companies are investing in R&D to reduce their reliance on U.S. components and are expanding their partnerships in regions less affected by U.S. policies, such as Africa, Latin America, and parts of Southeast Asia. By offering 5G technology at competitive prices, China is filling gaps in countries with fewer financial resources for 5G infrastructure development. Furthermore, China's Belt and Road Initiative has expanded to include telecommunications infrastructure, enabling China to exert influence over the development of 5G networks in emerging markets.

Chinese firms, like Huawei and ZTE, are pivoting toward these less restrictive markets, positioning themselves as affordable and efficient 5G providers. By establishing a stronghold in these regions, China is creating a parallel 5G network system, potentially resulting in incompatible global standards. This bifurcation could create long-term challenges for seamless communication and data exchange between nations using different 5G infrastructures.

## FUTURE IMPLICATIONS FOR THE TELECOMMUNICATIONS SECTOR

The division of the global 5G market into U.S.-aligned and China-aligned sectors carries significant implications for the future of telecommunications and global trade. If this trend continues, the result may be two distinct technological ecosystems with separate standards, security protocols, and infrastructure. This division may impede international collaboration in areas like IoT and AI, where interoperability is crucial.

Additionally, countries caught in the middle of this geopolitical struggle must carefully weigh the benefits of 5G technology from both the U.S. and China. These nations may attempt to maintain neutrality, seeking a balance between security, cost, and technological capabilities. However, as U.S. policies become more assertive, the pressure to align with American standards may increase, particularly for nations that are part of American trade agreements or alliances.

## RECOMMENDATIONS FOR COMPANIES

- 1. Diversify Supply Chains:** Mitigate risks associated with export controls by diversifying suppliers and sourcing components from both U.S.-aligned and neutral countries.
- 2. Invest in Compliance:** Strengthen internal compliance frameworks to adapt to U.S. regulations, especially for companies operating in the U.S. and allied markets.
- 3. Develop Dual Production Lines:** Consider creating separate product lines for U.S.-aligned and China-aligned markets to navigate incompatible standards.
- 4. Enhance Cybersecurity Measures:** Adhere to cybersecurity standards emphasized by the Biden administration to ensure eligibility for U.S.-aligned partnerships.
- 5. Partner with U.S.-Approved Vendors:** Prioritize collaboration with companies aligned with U.S. standards, such as Nokia and Ericsson, to ensure compatibility with U.S. security guidelines.
- 6. Monitor Policy Changes:** Stay informed on evolving U.S. tech policies to adapt strategies accordingly, especially regarding export restrictions and trade barriers.
- 7. Invest in R&D:** Strengthen in-house research to reduce dependence on restricted technologies and gain flexibility in responding to trade restrictions.
- 8. Leverage Government Incentives:** Take advantage of subsidies and grants offered by the U.S. and allied governments for domestic 5G development.
- 9. Engage in Lobbying Efforts:** Work with industry groups to advocate for policies that address business needs while aligning with national security priorities.
- 10. Develop Strategic Alliances:** Form partnerships with international firms that meet U.S. security guidelines to gain access to compliant markets.
- 11. Enhance Localization Efforts:** Tailor products and services to comply with the specific regulatory requirements of each market.
- 12. Prepare for Increased Costs:** Budget for the higher production and compliance costs associated with U.S.-compliant 5G infrastructure.

## RECOMMENDATIONS FOR LEGISLATORS

- 1. Standardize Global 5G Security:** Work with allies to create universal security standards for 5G infrastructure, ensuring global compatibility.
- 2. Strengthen Export Control Regulations:** Implement clear export control policies to prevent sensitive 5G technology from reaching unauthorized entities.
- 3. Increase R&D Funding:** Allocate funding for research in secure 5G technologies, focusing on innovation within allied countries.
- 4. Support Open Radio Access Networks (O-RAN):** Invest in O-RAN initiatives to enable secure, flexible 5G infrastructure development.
- 5. Develop Incentives for 5G Manufacturing:** Provide tax credits and subsidies for domestic companies that contribute to the U.S. 5G supply chain.

- 6. Encourage Private Sector Partnerships:** Promote collaborations between tech companies and government agencies to advance secure 5G technologies.
- 7. Expand Workforce Training:** Fund programs to develop a skilled workforce that supports 5G development and cybersecurity standards.
- 8. Coordinate with Allies on Trade Policies:** Work with allied nations to harmonize policies around 5G security and trade restrictions.
- 9. Promote Supply Chain Resilience:** Introduce policies that support the diversification of suppliers for critical 5G components.
- 10. Enhance Data Privacy Regulations:** Implement strong data privacy standards to secure U.S. networks against foreign influence.
- 11. Encourage Public Awareness:** Educate the public on the importance of secure 5G technology in safeguarding national security.
- 12. Monitor Emerging Technologies:** Track advancements in 5G and related tech to anticipate and adapt policies as the industry evolves.

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