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India's Strategic Ascendance Amid Global Technological Nationalism

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Abstract

In the 21st century, tech isn't just critical to growing the economy; it's an essential part of how countries flex their power. This is often referred to as tech nationalism, in which countries want to govern vital sources of tech, data and online distribution for protection and advancement. India, one of the fastest-growing economies in the world and a rising power on the global stage, has developed its own approach to dealing with this. This article examines how India is addressing tech nationalism at a global level. It writes about what India is doing to develop its own tech skills, secure its supply chains, talk to other countries using digital means, find its space between the U.S. and China and remain steadfast on technology independence while still being part of the world. It dissects India's primary plans, partnerships and what's standing in its way, to provide a fuller picture of how the country hopes to rise to big tech and global power.

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Introduction

The politics of the world today has been transformed by nationalisms around tech: tech nationalisms, in an attempt to control it. Data has never been more vital, A.I. is crucial for the future of armies, and computer chip supply lines are now a battle front. India's world strategy, in fact, has changed radically in this situation. India has for long been neutral and intent only on growth: Now it wants to be a dominant global tech power, managing new ideas with control, openness with safety, other countries with its own needs. India's plan is a mix of big ambition and practicality. It is trying to become a high-tech power but knows there's some catching up to do and doesn't want to be too dependent on other countries. This article explores how India's global strategy is evolving with tech nationalism, analyzing policies, global alliances, economy plans and what it means for India.

Tech Nationalism and What It Means for the World

Tech nationalism is the notion that a country's power and security depend on its control of information technology. Feldstein said as far back as 2019 that countries are beginning to believe that being dependent on other nations for

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tech is a source of weakness and subject to attack. This concept has been growing in popularity, with the United States and China even fighting over such things as phones, AI, computer chips and quantum computing. This fight has reshaped the way global supply chains and governments function. In 2018, Jasanoff and Hurlbut made the case tech is no longer just about money, but also a weapon in world politics. Whispering challenges and spying on allies; the world is more competitive — and insecure — than ever.Undefz/x Something like limiting chip exports, punishing big tech companies or trying to form exclusive digital groups make clear that competition and security define today's world.

It's going to be affected by all this, because of where India is and because it's one of the world's fastest growing digital markets. India has long understood the importance of strategic tech but what's happening in the world is making it even more important to develop its own tech industry. India's concerns about its position in the world, particularly versus China, have made it more conscious of its tech weaknesses, Pant and Krishnappa noted last year. And so, the growing tech nationalism around is both a problem and an opportunity for India as it seeks to arm itself and have more of a say in world affairs.

Rationale of Atmanirbhar Bharat and Technological Sovereignty

The Atmanirbhar Bharat, announced in 2020, is the most apparent of the expressions of India's reaction to global technology disruptions. While it's an issue of economic self-sufficiency primarily (Aatmanirbhar Bharat) is also a broader philosophical move that technology drive should be linked to national security and geopolitical advantage. The parameter demonstrates the effort of India to lead its economic and technological organisation in such a way which is not structurally dependent on the external world (Sridharan 2021). In technology, the demand is primarily Atmanirbhar Bharat to local production, more indigenous innovation centers and making of strategic technologies like semiconductors, AI and telecom system etc. It has spared no effort to encourage local production of electronics and defence systems, it has provided funding to start-ups in that regard and given preference for procurement to indigenously developed technologies. That India realised that technological independence is a necessity if it has to steer clear of getting struck in geopolitical shocks is more than palpable for all the steps that the Union government has taken. This historical aspect of India's foreign policy tradition of strategic autonomy has a new meaning, as the emphasis on self-reliance can facilitate India's capacity to advance its geopolitical interests under its own terms in this technocontexts (Mohan 2006).

Digital Public Infrastructure as a Geopolitical Lever

Building robust digital public infrastructure (DPI) is one of the key components of India's tech strategy. The platforms such as Aadhaar, Unified Payments Interface (UPI), CoWIN and DigiLocker are the components of this digital governance structure that is among the biggest in the world. Through these digital services, people are able to access financial services, securely validate their identity, monitor their vaccinations, store documents and leverage a whole range of other digital services. Khera (2019) mentions that Aadhaar has transformed' the governance in authorising services on the basis of authentication at an extensive scale. India has employed more than just DPI for domestic rule and as a tool in digital diplomacy as well. India provides its digital platforms to developing nations and in that way, becomes a cost-effective and trustworthy provider of digital solutions for all such countries especially those who wish to bypass the Chinese technological ecosystem. Chaudhuri (2023) argues that by promoting its digital governance model, India not only raises soft power but also contributes to molding a digital sphere along the principles of democratic and transparency. India as a norm contester: Through the India Stack project and multilateral digital partnerships, India uses it's normative influence to compete in the global digital ecosystem. This is not only a compliment to India's soft power, but also an enhancement of its voice as the representative of the Global South on tech policy issues.

Managing Great-Power Tensions in a Multipolar Technological Order

Multipolar technological order opens up a space for India to derive advantages from great powers' competition while staying at the vanguard of its diplomatic options. The fluoride debate is an image of modern India's fate and the days ahead are about how it should navigate in an age of tech nationalism since it will be caught between two coercive powers. He has refused to make official alliance commitments, but he has gradually drawn closer to the U.S. bilateral defense and technology partnership with Japan. The U.S.-India Initiative on Critical and Emerging Technologies (iCET) law passed by 2023 is one sign of the growing compatibility in strategic interests scope between two estranged entities, particularly in semiconductors, AI, Quantum research and telecommunications (White House 2023). Madisson (2022) also mentions that both countries are pursuing the same goals in aiming to make global supply chains less dependent on individual regions and China, and also reduce risk of China's technology rise. Direct cooperation with the U.S., India and Southeast Asian and European partners is buttressed by multiple fora, including the Quad. These agreements allow for cooperation in various fields including cyber security, digital infrastructure as well as establishing technology standards. India, on the other hand, is not yet willing to abandon China and has been working toward a pointedly neutral stance vis-a-vis China's regional aspirations. India tries to de-skill from Chinese tech strategically but at the same time cannot completely decouple with China as it has huge manufacturing capacity and deep network of global supply chains (Joshi, 2021). India thus, preserves a thin distinction between power politics and economic forces operating which characterizes India's prefer for an independent and self-reliant foreign policy.

Developing Indigenous Capacity in Semiconductors and Telecom products

India is on it's way to realize that the semiconductor manufacturing and telecommunication infrastructure will be cornerstone of it's technological sovereignty in the long run. The Semicon India is to form the full semiconductor ecosystem and give eaprt of countries who will now be invited to establish their fabrication units, to explore boosting chip design within India apart from raising the investments for talent training. This endeavor, as per the Ministry of Electronics and Information Technology (2022), will result in a shift of India as world's hub for semiconductor research and innovations. Yet, as Fuller (2020) notes, semiconductor fabrication requires sustained investment over decades, access to proprietary materials, and a skilled labor force so onshoring chip production would be challenging. Telecommunications is the second vital part of India's strategy. India's decision to close some foreign companies out of the 5G trials is an Indian response to security concerns and apprehensions on the sanctity of the network by these companies. Singh (2021) asserts that building the domestic telecom capacity while engaging in establishment of international standards is the future for India's own digital independence. The 6G roadmap prepared in India seeks such research partnership, sharing of intellectual property and opportunity for trusted global partners. India wants to reduce reliance on foreign vendors and play a role in the global development of next-generation communications technology, so that is the path it will go down.

Digital Diplomacy and Global Governance of Emerging Technologies India's digital diplomacy goes beyond building digital public goods to contributing to multilateral discussions on governance in tech. As a G20 member and United Nations and ITU member, India advocates principles of openness, inclusiveness and broad-based applications to address digital divide between countries. These are the same priorities that the Government of India (2023) has been highlighting during its G20 presidency largely through advocacy around digital public infrastructure as a global public good. India is also eager to influence global norms around AI ethics, data governance and cyber resilience. That is the Indians saying that India seeks not only the adoption of DLT as economic and financial infrastructure but that the rules on which this infrastructure will run be determined by

India. India wants to be the biggest interlocutor in discussions on digital rights, ethical AI, access to new technology under fair terms.

India's Tryst With Technology Stands

As India seeks to maintain strategic autonomy, it is forced to confront deficits that are next to impossible for the country itself break if it wishes to go down the path of technological autarky." The problem for India, nevertheless, is the absence of headway toward a high end semiconductor ecosystem.

It also demands that power supply be utterly reliable and some pretty pure water for other purposes (Fuller 2020) and infrastructure as robust transportation, logistics and supply chains spring up. India has already built the underpinning of this infrastructure, but falls far short in engineering skills and technical training to do so. Also, the R&D spending in India is very low comparing to the top tech nations. India invests about 0.7% of its GDP in R&D, and the belief that one can create breakthroughs–be it quantum computing, or AI, biotech etc — from such budgets is delusional (Joshi,2021). Also, the shortage of top-flight scientists and lack of private contribution are other hinderances to future technology. Cybersecurity, moreover, is the monster of a problem that's just too big to ignore or paper over. India: India is and has been the victim of many cyber-attacks, with its state exacerbated by the fact that a lot of them are state sponsored and from its neighbouring countries. They also represent a promise of the government getting more people to have internet is going come with complexities on infrastructure, regulation and capacity of the governments which will be risk for digital security. Fighting these challenges will not be possible unless there is mutual investment in cyber security, capacity development of professionals and sharing of intelligence by the security operators of different countries.

Conclusion

Its particular technological nationalism as India's geopolitical posture in the age of technology highlights a very clear, sophisticated and complex strategy to ensure technological sovereignty and yet keep strategic autonomy alive in an ever more fragmented world. India with its varied policies such as Atmanirbhar Bharat to boost domestic innovation, digital on public infrastructure regulation, strict regulation and tech partnerships signed up across the globe is a fine mosaic of a country resting on top of tons of tech. Tercerizar is a method of balancing the three sides of national defense, economic growth and international cooperation. Apart from issues on infra, R&D and supply chain resilience India's trajectory will also have to demonstrate that it is not only technologically capable but is poised to influence the global pole with capacity built. How India resolves the dissonance of technological nationalism in the coming decades will be a primary determinant of how the world views India and how free India is to chart its strategic course.

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