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On



GLOBAL TRADE WARS AND THEIR IMPACT ON INDIA'S ROADMAP TO VIKSIT BHARAT 2047

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Volume – 1

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DIGITAL TRADE, ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES IN THE CONTEXT OF GLOBAL TRADE WARS: IMPLICATIONS FOR INDIA'S ROADMAP TO VIKSIT BHARAT 2047

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Abstract

The global economy is undergoing a fundamental transformation driven by the rise of digital trade, artificial intelligence (AI), and emerging technologies such as quantum computing, blockchain, 5G/6G connectivity, and advanced semiconductors. At the same time, the nature of international trade conflicts has evolved beyond tariffs and quotas into technology-centered disputes involving export controls, digital sovereignty, cyber governance, and data regulation. This paper examines the intersection of digital trade, AI, and emerging technologies with global trade wars and evaluates their implications for India's strategic aspiration of achieving Viksit Bharat 2047. The paper argues that India's ability to leverage digital trade competitiveness, strengthen AI innovation ecosystems, and secure resilient technology supply chains will play a decisive role in shaping its development trajectory. It also highlights the importance of policy coherence in areas such as data governance, cross-border digital flows, intellectual property rights, and strategic alliances. The paper concludes with a framework of policy and strategic priorities to position India as a major global technology and trade power by 2047.

Keywords: Global Trade Wars – AI- Digital Trade- Emerging Technologies

Introduction

The global trading system has historically been shaped by physical goods, traditional supply chains, tariff negotiations, and institutional frameworks created in the aftermath of the Second World War. However, in the twenty-first century, the global economy has entered a phase where intangible assets, digital services, cross-border data flows, and technology-enabled platforms have become central to trade competitiveness. Digital trade now represents one of the most dynamic components of international commerce, encompassing e-commerce, digitally delivered services, digital payments, cloud-based operations, and global data-driven value chains. The digitalization of trade has not only increased the efficiency of business transactions but has also expanded the scope of global economic integration by enabling firms of all sizes to participate in international markets.

Simultaneously, the international system is witnessing a resurgence of trade wars and economic nationalism. Unlike the trade conflicts of earlier decades, contemporary trade wars are increasingly characterized by strategic rivalry over technological dominance. The

intensification of geopolitical competition, especially among major powers, has produced a new form of economic confrontation in which trade restrictions are often linked to national security narratives. This transformation is evident in the growing use of export controls on advanced semiconductors, restrictions on AI-related technologies, sanctions on digital infrastructure providers, and rising regulatory barriers surrounding cross-border data movement. In many ways, global trade wars have become deeply intertwined with the contest for technological supremacy.

For India, this evolving global order presents a unique combination of opportunities and challenges. India is one of the world's fastest-growing digital economies, supported by a large pool of skilled professionals, rapid smartphone penetration, and the success of large-scale digital public infrastructure systems such as Aadhaar and Unified Payments Interface (UPI). India's growing start-up ecosystem and expanding IT and IT-enabled services sector further strengthen its global position. Yet, India also remains dependent on external sources for advanced semiconductor supply chains, critical hardware components, and certain high-end AI technologies. Moreover, India's policy landscape on data governance, cross-border data flows, and digital trade regulation continues to evolve and must align with both national interests and international market access requirements. The vision of Viksit Bharat 2047, which aims to transform India into a developed nation by the centenary of its independence, cannot be achieved without a strategic focus on digital trade, AI, and emerging technologies. This paper explores the changing structure of global trade wars, highlights the growing importance of AI and digital trade, and evaluates the strategic steps required for India to achieve its long-term development objectives.

Digital Trade and the Transformation of Global Commerce

Digital trade has emerged as a key driver of modern economic globalization. It includes both digitally ordered transactions, such as e-commerce purchases, and digitally delivered products and services, such as software exports, cloud services, online education, digital entertainment, and professional consulting. The rise of digital trade has significantly reduced transaction costs, expanded access to global markets, and enabled even small enterprises to connect with international consumers. Digital platforms now play a dominant role in shaping trade flows, with global marketplaces and digital intermediaries increasingly acting as trade facilitators. This has resulted in the growth of new business models, including subscription-based services, remote delivery of professional work, and digital financial services.

The increasing role of digital trade is also reshaping global value chains. Traditional manufacturing supply chains are being integrated with digital technologies that allow real-time tracking, predictive analytics, automated customs processing, and smart logistics. Digital payments and fintech ecosystems further enable cross-border trade by improving transaction transparency and reducing delays. Cloud computing and data centers have become essential infrastructure for trade, as businesses require reliable platforms to store, process, and transmit information across borders. As a result, data flows have become

central to international trade competitiveness, sometimes even surpassing the economic value of physical trade in goods.

However, the growing importance of digital trade has also made it a key arena of international conflict. Digital trade is increasingly subject to regulation, restrictions, and national security concerns. Countries are adopting divergent frameworks for privacy, cybersecurity, and digital taxation, creating regulatory fragmentation. The global economy is now witnessing the emergence of “digital protectionism,” where nations use regulatory barriers to control data access, restrict foreign digital firms, or promote domestic champions. This shift has significant implications for global trade governance, as the rules established under traditional trade frameworks often struggle to address digital realities.



Artificial Intelligence and Emerging Technologies as Strategic Trade Instruments

Artificial intelligence has become one of the most important technologies shaping the global economy. AI-driven automation improves efficiency in manufacturing, enhances decision-making in finance and governance, and increases productivity in services such as healthcare and education. Beyond economic applications, AI has also become central to national security strategies, particularly in areas such as cybersecurity, surveillance, defense systems, and intelligence analysis. Consequently, AI is increasingly treated as a strategic technology, similar to nuclear power or space capabilities in earlier decades.

Emerging technologies complement AI in transforming global trade systems. Quantum computing promises to redefine encryption and cybersecurity, while 5G and 6G technologies are expected to provide the infrastructure for advanced connectivity required for IoT ecosystems and real-time industrial automation. Blockchain technology is transforming trade finance, customs processing, and supply chain transparency by enabling secure and verifiable transactions. Robotics and advanced manufacturing technologies are reshaping industrial production by reducing dependency on labor-intensive processes and enabling precision manufacturing. These technologies collectively determine the future competitiveness of nations, influencing their ability to attract investment, secure supply chains, and dominate high-value industries.

In the context of global trade wars, these technologies have become tools of geopolitical leverage. Export controls, technology bans, and restrictions on critical infrastructure providers are increasingly used to limit the technological progress of rival nations.

Semiconductor manufacturing has become particularly critical because chips serve as the backbone of AI, cloud computing, telecommunications, and advanced defense systems. The concentration of semiconductor production in limited geographic regions creates vulnerabilities in global supply chains and intensifies the strategic rivalry among nations. Trade wars, therefore, are no longer about limiting imports but about controlling technology ecosystems that determine long-term economic and military power.

Global Trade Wars and the Shift toward Technology-Centered Protectionism

The contemporary phase of global trade wars reflects a deeper structural shift in the global economy. Traditional trade wars were largely based on tariffs, quotas, and disputes over market access. In contrast, modern trade wars are characterized by technology restrictions, data governance disputes, sanctions, and strategic decoupling. Export controls on high-end chips, restrictions on AI software tools, bans on telecom infrastructure companies, and cyber-related sanctions illustrate how trade conflicts have expanded into the technological domain.

One of the defining features of this transformation is the growing emphasis on digital sovereignty. Nations are increasingly adopting policies aimed at controlling their digital infrastructure, regulating foreign digital firms, and ensuring that critical data remains under domestic jurisdiction. Data localization policies are being implemented in several countries to prevent foreign access to sensitive citizen information and to reduce dependence on international cloud service providers. While such policies may strengthen national security, they also raise compliance costs for businesses and reduce the efficiency of global digital trade. The fragmentation of global digital markets threatens to undermine the seamless flow of digital services and may result in the emergence of competing digital blocs.

Another dimension of modern trade wars involves standard-setting competition. Countries that dominate AI and emerging technologies also shape global standards related to privacy, cybersecurity, ethical AI use, and digital trade regulations. This standard-setting power has long-term consequences because it determines how global markets operate and which technologies become widely adopted. In this context, global trade wars increasingly resemble a contest for rule-making authority rather than merely a competition for market share.



India's Strategic Position in the Emerging Digital Trade Order

India occupies a unique position in the global digital economy. Its IT services industry is among the strongest globally, and it has demonstrated success in building digital public

infrastructure. India's rapid growth in fintech adoption, digital payments, and e-governance has created a foundation for digital competitiveness. The demographic advantage of a young population and the increasing availability of technical education further strengthen India's prospects in the digital era. At the same time, India faces critical challenges. Its manufacturing base for advanced electronics and semiconductors remains limited, creating dependency on imports for critical hardware. The AI ecosystem, while growing, still requires greater investment in research and development, computational infrastructure, and high-quality data systems. India also faces regulatory uncertainties in digital trade policy, particularly regarding cross-border data flows, privacy laws, and taxation of digital services. These uncertainties may affect investor confidence and create barriers for Indian firms seeking to expand globally.

Despite these challenges, India's strategic flexibility provides significant opportunities. In a world increasingly divided by trade wars and technology blocs, India has the potential to emerge as a trusted alternative manufacturing and digital services hub. Its democratic governance framework, strong market potential, and global diplomatic engagement allow India to negotiate technology partnerships and digital trade agreements with multiple regions. This flexibility can enable India to strengthen its position in global value chains while avoiding excessive dependence on any single bloc.

Digital Trade and Emerging Technologies in India's Roadmap to Viksit Bharat 2047

The vision of Viksit Bharat 2047 requires India to achieve sustained high economic growth, expand industrial competitiveness, improve infrastructure, and ensure inclusive development. Digital trade and emerging technologies can serve as major accelerators of this transformation. Digital trade expands India's ability to export services such as software development, IT consulting, fintech solutions, online education, healthcare services, and creative digital content. The scalability of digital services allows India to generate export revenues without the same physical constraints that apply to goods exports. This is particularly important for achieving long-term development goals. AI and emerging technologies also offer opportunities to improve domestic productivity. AI-enabled automation can enhance manufacturing competitiveness, improve agricultural yields through predictive analytics, strengthen healthcare delivery through diagnostic tools, and improve governance through data-driven public administration. Emerging technologies such as blockchain can increase transparency in supply chains, reduce corruption in procurement systems, and improve trade finance access for small businesses. These technologies can enable India to improve both its export capacity and domestic development outcomes.

However, the integration of these technologies into India's growth strategy must be accompanied by strong policy planning. India must develop robust cybersecurity infrastructure, protect citizens' data rights, and build ethical AI governance frameworks that align with democratic principles. It must also invest in building indigenous capabilities in semiconductor manufacturing and advanced electronics to reduce vulnerability in global

supply chains. Without technological self-reliance in critical sectors, India's development goals could be disrupted by external trade restrictions and geopolitical conflicts.

Policy and Strategic Recommendations for India

India's response to the evolving global trade environment must focus on building resilience, competitiveness, and strategic autonomy. India should adopt a comprehensive digital trade policy framework that encourages cross-border digital services while safeguarding national interests. A predictable and globally aligned data governance framework is essential for attracting investment and enabling Indian digital firms to expand internationally. India must also negotiate digital trade agreements that ensure market access for its service exports, protect intellectual property rights, and enable interoperability of digital payment systems. Strengthening AI and emerging technology ecosystems must be a national priority. India should increase investment in research institutions, computational infrastructure, and innovation funding for AI start-ups. Public-private partnerships can play a major role in developing AI applications in healthcare, agriculture, education, and manufacturing. At the same time, India must prioritize skill development, ensuring that the workforce is equipped with advanced digital capabilities. The long-term goal should be to develop India not merely as a user of global technologies but as a producer and exporter of high-value digital solutions. Finally, India must adopt a strategic approach to technology diplomacy. In a fragmented world, partnerships with multiple countries and blocs can reduce dependence and enhance resilience. India should position itself as a leader in ethical AI governance, responsible digital trade, and inclusive technology development. Such leadership can enhance India's global credibility and allow it to influence international digital trade rules and standards.

Conclusion

The evolution of global trade wars into technology-centered conflicts marks a defining shift in the international economic system. Digital trade, artificial intelligence, and emerging technologies are no longer peripheral drivers of growth but have become central instruments of geopolitical influence and national competitiveness. As trade wars increasingly revolve around semiconductor supply chains, export controls, data governance, and digital infrastructure, countries that fail to secure technological resilience risk long-term economic vulnerability. In this environment, India's vision of Viksit Bharat 2047 depends significantly on its ability to strategically harness digital trade expansion, AI-driven productivity, and emerging technology innovation. India possesses considerable advantages, including a globally competitive IT services sector, a strong talent base, and successful digital public infrastructure models. These strengths provide India with an opportunity to emerge as a key global player in the digital economy. Yet, India must also address critical challenges such as dependency on foreign hardware supply chains, limited semiconductor manufacturing capabilities, and evolving regulatory frameworks that influence cross-border digital business. The fragmentation of the global trading order creates both risks and opportunities,

and India must navigate this landscape with a balanced strategy that combines openness with strategic autonomy.

A well-designed roadmap must integrate technology policy with trade diplomacy, innovation funding, and skill development. India must focus on building domestic technology capabilities, strengthening cybersecurity, enabling global market access for its digital exports, and promoting ethical and democratic governance of AI systems. If India successfully aligns its trade policy, industrial strategy, and digital governance architecture, it can not only mitigate the disruptive impacts of global trade wars but also leverage them to strengthen its position in global value chains. Ultimately, digital trade, AI, and emerging technologies will play a decisive role in shaping India's transformation into a developed nation, enabling inclusive growth and positioning India as a rule-shaper rather than merely a rule-taker in the evolving global economic order.

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