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## EDITOR'S NOTE

MUHITTIN ATAMAN

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The world is undergoing one of the most profound transformations in modern history, a transition from an international system shaped primarily by military and economic might to one increasingly dominated by technological power. Artificial intelligence, quantum computing, cyber capabilities, advanced robotics, and data sovereignty have become the new frontlines of global competition. This transformation is not merely technical, it is deeply political, economic, social, and strategic. It is giving rise to what scholars and analysts are increasingly calling a technopolar world order, in which those who master key technologies shape the direction of global affairs.

At the heart of today's global economic realignment lies the centrality of technology as the primary driver of value creation, competitiveness, and resilience. Traditional sources of economic power, natural resources, industrial capacity, or even financial clout, are increasingly subordinated to control over data flows, algorithmic infrastructures, digital platforms, and advanced manufacturing capabilities.

The rise of the intangible economy, driven by artificial intelligence, cloud computing, and smart automation, has created new economic fault lines between technological “haves” and “have-nots.” The countries that dominate semiconductor supply chains, AI development, and digital services are fast becoming the new centers of gravity in the global economy.

For states, falling behind in technological innovation is no longer a manageable disadvantage, it is an existential threat to national competitiveness, productivity, and security. The rapid pace of change leaves no room for complacency. Economic dependency on foreign technologies, whether in telecommunications, AI, or defense systems, renders states vulnerable to strategic coercion and economic disruption. As such, states find themselves compelled to invest heavily in indigenous innovation, digital sovereignty, and resilient supply chains, even at great economic and political cost.

In Türkiye, these trends are acutely felt. The country has actively embraced the economic opportunities presented by emerging technologies by fostering a vibrant start-up ecosystem, expanding its national AI strategy, and investing in advanced defense technologies through firms like Baykar Technologies and ASELSAN. New initiatives such as TOGG, Türkiye's first domestically produced electric vehicle, and the growth of biotechnology and fintech sectors exemplify efforts to diversify the economy.

Emerging technologies are also transforming the political dimensions of state power and sovereignty. Technologies such as semiconductors, 5G infrastructure, cloud computing, and big data are no longer neutral tools of efficiency, they have become strategic assets wielded by states and corporations alike as instruments of foreign policy, economic leverage, and geopolitical coercion.

The weaponization of technology is now visible in the use of export controls on semiconductors, data localization demands, and the strategic positioning of data centers and digital infrastructures as sites of influence and contestation. The ongoing U.S.-China technology rivalry, battles over AI supremacy, and control of critical supply chains highlight the extent to which technological dominance has become a key determinant of international influence.

The social impacts of emerging technologies are equally transformative. Digital platforms now mediate not only commerce and communication but also political participation, identity formation, and social organization. Technologies such as AI-powered content algorithms, deepfakes, and digital surveillance are reshaping public discourse, often deepening societal polarization and creating vulnerabilities to misinformation, cyber manipulation, and digital authoritarianism.

Perhaps the most rapid and consequential changes are occurring in the military and security domain. Technologies such as artificial intelligence, drone warfare, cyber operations, and space-based systems are revolutionizing how conflicts are waged and how deterrence is maintained. The recent return of Donald Trump to the U.S. presidency is widely expected to accelerate the militarization of artificial intelligence, with greater investment in autonomous

weapons, cyber offense, and AI-enhanced command systems. This development signals the onset of a more volatile strategic environment where AI-enabled military competition -which will also lead to an increased security dilemma within the international system, will intensify not only between major powers but also in contested regions where middle powers play an increasingly prominent role.

Across all these domains, one reality becomes clear: the speed and scale of technological change leave states with no viable alternative but to adapt. The costs of technological disengagement are simply too high. In today's rapidly evolving landscape, not engaging in the race for technological advancement is equivalent to strategic self-marginalization, economically, politically, socially, and militarily.

For middle powers like Türkiye, this environment presents both opportunities and risks. By investing in strategic technologies, participating in global norm-setting processes, and building national resilience, Türkiye can avoid the pitfalls of dependency and carve out a role as a rule-maker rather than a rule-taker in the technopolar age.

For Türkiye, the technological revolution represents not only a necessity but an opportunity, an opportunity to strengthen national sovereignty, build economic resilience, and advance an autonomous foreign policy in an increasingly fragmented and competitive world.

This strategic push is guided by the recognition that remaining on the periphery of the technological revolution is not an option. Türkiye sees this transformation not as a threat but as an opportunity, specifically a means to reinforce national sovereignty, enhance economic security, and assert greater autonomy in foreign policy.

This special issue of *Insight Türkiye* brings together scholars and experts who explore these themes in depth. Through analyses of Türkiye's defense innovation, digital transformation, regulatory approaches, and foreign policy recalibrations, this volume offers critical insights into the challenges and possibilities of the technopolar age.

This issue starts with a valuable commentary from the Minister of Industry and Technology of Türkiye, Mehmet Fatih Kacır. In his commentary Türkiye's National Technology Move is framed as a decisive and timely response to global industrial and geopolitical transformations. This integrated approach positions Türkiye as a trusted producer, global partner, and an inspiring model for emerging economies navigating the complex dynamics of a technology-driven 21<sup>st</sup>-century world order.

This issue starts with a valuable commentary from the Scientific and Technological Research Council of Turkey (TÜBİTAK). As the President of TÜBİTAK, Orhan Aydın, details in his commentary, TÜBİTAK spearheads efforts in high-tech production, digital and green transitions, and global competitiveness. Notable milestones include the development of a national supercomputer, a Turkish Large Language Model, breakthroughs in quantum sensing and post-quantum cryptography, and the successful launch of the indigenous satellite TÜRKSAT 6A.

This special issue besides its main focus on Türkiye has tried to provide a special framework in terms of technological developments taking place globally especially in regard to the U.S.-China rivalry and the developments taking place in these countries. Within this perspective, Chuanying Lu's analysis focuses on the institutionalization of digital geopolitics amid the ongoing U.S.-China technological rivalry. Lu argues that the strategic indispensability and generality of digital technologies have not only reshaped traditional international relations but have also established digital geopolitics as an emergent field where technological capabilities serve as the new currency of state power. Lu's work raises critical questions about the strategic assets at stake and whether this rivalry will evolve into a tech Cold War, with profound implications for the future international order.

Concurrently, Liu Guozhu provides a comprehensive overview of China's innovation ecosystem, emphasizing its distinctive structure driven by enterprises, national laboratories, research institutes, and universities. Liu's analysis underscores how China's coordinated innovation system plays a central role in sustaining its technological ascendancy.

Katherine Chandler's commentary underscores several critical insights about data in deep learning and AI, particularly in conflict settings. She emphasizes that the global supply chain concept extends beyond hardware like semiconductors to include data itself, which, unlike natural resources, are representations and require different treatment. Using ChatGPT's analysis of Sahel conflicts, Chandler highlights the limitations of large language models in managing complexity and uncertainty. The paper warns that ignoring data collection challenges and ongoing uncertainties in conflict zones will undermine military AI effectiveness. Ultimately, it calls for a global debate on the role of military AI, stressing that technology alone cannot address these complex issues.

Dolapo Fakuade's commentary explores the dual-edged nature of AI in intercultural communication. While AI holds great promise for bridging cultural barriers, fostering mutual understanding, and connecting diverse populations, it also introduces challenges such as algorithmic bias and the broader social consequences of digital transformation. Through regional examples, Fakuade

highlights that AI may pose more risks than opportunities if not adopted and governed with care.

In another commentary, Anicia Peters reflects on the 2025 Antalya Diplomacy Forum, which took place amid heightened geopolitical tensions and a super-power race in artificial intelligence. The forum emphasized Türkiye's diplomatic role in fostering equitable partnerships, particularly with African nations, and promoting both North-South and South-South cooperation. At the same time Peters analyzes challenges for Africa, such as poor data quality, infrastructural limitations, talent gaps, and weak regulatory frameworks, in terms of the African technological development.

Erman Akıllı and Gloria Shkurti Özdemir's article examines Türkiye's pursuit of technological sovereignty and strategic autonomy in response to decades of dependency and embargoes. Under President Erdoğan's leadership, Türkiye has initiated a broad technological transformation, developing indigenous defense systems, AI models, and national algorithms. This strategy aims to reduce foreign reliance, enhance resilience, and assert influence in the emerging technopolar world. The article highlights Türkiye's shift from technology importer to innovator and norm-shaper, positioning the country as an active digital power shaping the new global order.

Kamil Tarhan's article examines Türkiye's cybersecurity policies in an era where digital capabilities are critical to national security and global influence. The study focuses on efforts to secure critical infrastructure, strengthen digital sovereignty through comprehensive legislation and institutional development, and invest in domestic technology production. Tarhan also explores the role of AI in mitigating cyber risks and draws comparisons with the cybersecurity strategies of other emerging powers. The article portrays Türkiye's efforts to safeguard its digital domain and assert itself as a significant actor in global cyber governance within an increasingly technopolar world.

Fatih Sinan Esen's contribution highlights Türkiye's strategic use of AI as a tool for national competitiveness and security in a technopolar era. Esen documents Türkiye's transition from being a technology importer to becoming an active innovator, particularly in sectors such as defense, healthcare, and education. Emphasizing inclusive AI, human capital development, and data governance, the article places Türkiye's AI strategy within the broader geopolitical and regulatory context.

Military remains the main sector which is first and foremost impacted by the emergence of the new technologies. Within this perspective, Ozan Ahmet Çetin's study analyzes differing national priorities in AI development through a comparison of Türkiye and the United Arab Emirates (UAE). The research re-



veals given resource constraints, states often prioritize proven AI solutions that address immediate needs. Türkiye emphasizes AI for counter-terrorism, while the UAE addresses labor shortages.

Still maintaining the focus on the military domain, Mehmet Emin Erendor and Emre Çıtak examine the transformative impact of autonomous weapons and AI-integrated systems on modern warfare, with particular focus on AI-supported killer drones. The study explores how AI-enabled drones impose strategic pressure on adversaries and provoke new forms of deterrence and countermeasures, offering critical insights into the future of warfare and military doctrine.

In another research article, Gökhan Bozbaş explores the innovative integration of defense technologies, such as drones, sensor networks, and AI, into Türkiye's agricultural sector to enhance productivity, sustainability, and resilience. Türkiye's defense-agriculture integration is presented as a replicable model for other emerging economies, emphasizing the need for multi-sectoral collaboration to drive sustainable rural development.

2024 was an important year for Türkiye in terms of its space program. İtir Toksöz investigates the concept of technopolarity to describe a world where powerful technology companies increasingly rival the authority of nation-states, particularly in the space domain. By contrasting the U.S. model of market-driven technological power with China's state-centric approach, Toksöz examines how an emerging space nation like Türkiye can navigate this complex environment.

Besides space domain, sea domain is another one where technology is having a great impact. Within this context, Ahmet Özkan and Meysune Yaşar analyze Türkiye's naval modernization between 2011 and 2024 through the lens of offense-defense balance theory and emphasize the critical role of technology in Türkiye's pursuit of becoming a rising naval power.

Following with another article, Cenay Babaoğlu and Ecem Buse Sevinç Çubuk examine AI's dual role in global governance. The article assesses the U.S.-China AI rivalry and the European Union's regulatory leadership through the EU AI Act. While Türkiye is not yet a major AI developer, it is emerging as a regional mediator and soft-balancer through its diplomatic engagements and AI initiatives, leveraging its unique geopolitical position to shape international tech governance norms.

Nezir Akyeşilmen and Yavuz Akdağ explore the potential for creating a holistic, accountable, and effective global digital governance framework amid escalating geopolitical tensions and regulatory fragmentation. Drawing on Joseph Nye's regime complex theory and the Internet Governance Forum's (IGF)

multi-stakeholder model, the article argues that a strategically recalibrated IGF can improve legitimacy and inclusivity in global internet governance.

As mentioned earlier, AI is impacting the global and regional politics more than any other technology. Helder Ferreira do Vale evaluates AI regulation across BRICS countries using a typology of governance models and an AI Readiness Index grounded in national laws and strategies. The study finds China best prepared to regulate AI, with Brazil, India, and South Africa facing significant implementation challenges, and Russia trailing behind.

Mustafa B y k's research compares ideological orientations and algorithmic biases in AI models from Eastern and Western perspectives by analyzing ChatGPT-4 and DeepSeek-R1. The study reveals that Western AI emphasizes values like individual freedom and transparency, while Eastern AI tends to reflect collective state-centered principles. The findings challenge the assumption of AI neutrality and underline AI's growing role in shaping global ideological narratives and digital norms.

Lastly, while technology remains the highlight of the developments in international affairs, unfortunately, the Middle East region has once again witnessed another war. In this issue through the commentary of Hakkı Uygur we brought to our readers a brief analysis of Israel's simultaneous air, cyber, and covert strike against Iran on June 13, 2025. This operation exemplifies how the integration of cutting-edge military technologies with advanced intelligence capabilities is reshaping regional security dynamics in the Middle East. Furthermore, the commentary assesses T rkiye's mediation initiatives and the heightened defense postures across the region, which collectively influence the evolving balance of power.

We hope that these contributions will inspire further scholarship, dialogue, and policy innovation to help ensure that the future of technology serves not only the interests of power but also the broader goals of stability, cooperation, and human well-being. ■

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