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IMPACT OF MODERN TECHNOLOGIES ON STRATEGIC DOCUMENTS OF THE UNITED STATES

Oleksandr Kraiev, Yehor Valiarenko
Taras Shevchenko National University of Kyiv
Educational and Scientific Institute of International Relations
Yuriia Illienka str., 36, 04119, Kyiv, Ukraine

The article examines the impact of technological advancements on the strategic documents of the United States, particularly during the Trump and Biden administrations. By analyzing key strategic documents, the study reveals how innovations such as artificial intelligence, cybersecurity, blockchain, and advanced communication tools have been integrated into national security and foreign policy strategies. The research highlights how modern technologies have enhanced the efficiency of military operations, improved intelligence gathering, and introduced new paradigms in cybersecurity and information warfare. These technologies have also influenced diplomatic practices and public diplomacy, enabling more effective and direct engagement with both domestic and international audiences. Moreover, the article discusses the challenges posed by these advancements, including regulatory concerns and the need for new frameworks to address issues such as cyber threats and misinformation.

Within the studied strategic documents of two American presidential administrations, we were able to deduct only a hint of the real importance of technological issues within the foreign policy domain. Unfortunately, within the scope of the mentioned documents the discussion of these issues is quite restrained and still leaves a lot of issues unresolved. The findings underscore the importance of technological progress in maintaining the United States' global position and addressing emerging threats in an increasingly interconnected world. By providing a detailed content analysis of strategic documents, this study contributes to a deeper understanding of how the United States adapts its policies to leverage technological advancements, ensuring national security and promoting sustainable development in the digital age. The evolving nature of geopolitical dynamics in the context of modern technologies highlights the need for continuous innovation and strategic planning to navigate the complexities of the contemporary international environment.

Key words: modern technologies, national security, strategic documents, USA, foreign policy.

Introduction. The rapid advancement of modern technologies has fundamentally transformed the political and security landscape of international relations. These changes dictate a consequent shift in such notions as security and defense, making them even more complex and multidimensional. In order to navigate new circumstances, states face the necessity to continually reassess their geopolitical and strategic outlook, focusing on the sustainable development of their technological and scientific capabilities. Against this backdrop, the United States, as a global superpower, has been at the forefront of technological innovation and its integration into policies. The interplay between technological advancements and American strategic documents demonstrates the United States' efforts to maintain its position in the global arena and address emerging threats.

This article aims to contribute to a deeper understanding of how technological advancements are reshaping national security paradigms and policy formulation by critically examining the impact of modern technologies on the strategic documents of the United States and testing the hypothesis that *the impact of modern technologies has been evident in the strategic documents of the United States of America under Trump and Biden administrations*.

Therefore, the research focuses on an overview of previous academic findings concerning the impact of technological developments on the international strategic and security landscape and deduces the main spheres and aspects in which such impact has been evident. On that basis, a case study focusing on such strategic documents of the USA as the National Security Strategy and Nuclear Posture Review during the Trump and Biden administrations has been conducted along with a content analysis of their texts seeking to highlight the references to modern technologies and/or wording and formulations directly or indirectly referring to adaptations made due to recent technological advancements.

Background. Strategic foreign and security policy documents are considered instrumental in forming the policies of international relations actors. Strategic documents present a guide for policymakers, offering a framework for making foreign and security policy decisions as well as ensuring the understanding of certain decisions. They make an attempt to encompass the diverse range of factors forming the international environment and combining with the domestic context [8]. Another important element of a strategic document is the assessment of the external environment in which the policies are to be executed, as well as the identification of potential threats from other actors. Combined, these factors determine the national interests and long-term objectives of the state, which, in turn, entail the respective foreign policy strategies and tools used for their realization. Lytvyn and Naumenko concluded that forming the conceptual framework significantly contributes to the strategic planning processes, thus serving effective strategic management and state development [9].

The emergence and rapid development of modern technologies has become one of the key factors transforming the international environment over the last decades, affecting multiple spheres of international relations including foreign and security policy of individual states. Their impact has been evident in most traditional foreign policy tools, influencing the methods and content of states' foreign policy activities [11]. Besides, along with new opportunities, technological advancements presented a range of new rapidly evolving threats, compelling the states to include these considerations in developing new policies and strategies. According to Zhang, the strategic use of technology transfers and respective alliances have become integral to major powers in achieving their security and foreign policy objectives [17].

Such an impact in the security and military spheres has been among the most influential in terms of affecting the states' strategic outlook. Technological advancements have brought about the optimization of currently existing processes and procedures. Increased processing capabilities, along with the introduction of artificial intelligence (AI), have accelerated data collection and enabled analysis of wider ranges of data in shorter periods of time. Modern surveillance technologies, such as satellites and drones, allow for enhanced real-time monitoring of domestic and international affairs, thus impacting the decisions on national security and military strategies and accelerating the decision-making process.

New military technologies play a crucial role in shaping the states' military potential, thus comprising an integral part of security and strategic planning considerations, including the calculations of strategic military potentials as well as the respective interests and intentions of adversaries. The development and deployment of advanced missile and high-precision systems, hypersonic missiles, and autonomous weapon systems alter military tactics and strategies, changing the dynamics of deterrence and defense [7]. Similarly, the potential militarization of space and the development of anti-satellite weapons pose new challenges for defense policies. Overall, such developments have led to shifts in military strategies, enhancing their focus on the states' capabilities [10].

Besides, the development of new technologies and the emergence of cyberspace have created an entirely new range of issues affecting state policies in various spheres. *Inter alia*, states have to deal with cyberattacks targeting government and private networks as well as critical infrastructure aimed at disrupting the internal processes of a state. New methods of cyberespionage open a variety of tools for accessing and stealing confidential and sensitive information. At the same time, the development of cyber defense measures faces issues related to complications with detecting such threats, deterring and countering them, let alone imposing proper legal regulations of such matters. The ambiguity surrounding cybersecurity politics underscores the challenges states face in achieving their strategic goals while maintaining stability in their foreign policy [2]. Besides, a combination of cyber technologies with other existing systems used in warfare creates new scenarios for current and future conflicts, including cyber-attacks on enemy infrastructure and enhancing the capabilities of conventional weapons [16]. These considerations affect the allocation of resources and investments in cybersecurity infrastructure, making it one of the priority aspects of national security and influencing engagement in international cooperation projects in this sphere.

Another sphere ordinarily highlighted in the context of technological development and its influence on international relations is communications. As Rawnsley stated, technologies have revolutionized the way states engage in public diplomacy and communicate their foreign policy [12]. Innovations in communication facilitate the dissemination of foreign policy strategies and priorities. Besides, the spread of information has been immensely accelerated, making foreign policy activities more transparent and providing states with technological capabilities for new formats of communication with both domestic and international audiences. Now, states can conduct systematic outreach to their public as well as engage with foreign audiences directly and more effectively – contrary to purely state-based communication [13]. These technologies have enabled states to leverage digital platforms to communicate their diplomatic initiatives, engage with international audiences, and enhance their public diplomacy efforts [1].

Nevertheless, along with these undeniable benefits for communication with wider audiences, the development of communication technologies does not leave much space for secrecy and could endanger sensitive information. Furthermore, it creates new opportunities for propaganda and disinformation which are disseminated conveniently through the use of the internet and social media. Such methods are commonly employed for destabilizing and polarizing societies as well as influencing electoral outcomes. Such psychological operations, when combined with advanced big data technologies and artificial intelligence capabilities, assist in targeting the morale of the public and influencing decision-making processes [4].

The development of modern technologies also influences state policies in the sphere of economy and trade. Economic activities have been affected by the integration of digital economy tools, the emergence of digital currencies, and blockchain technologies [18]. The use of information technologies optimizes export activities and facilitates foreign trade. The application of hi-tech solutions in individual economic sectors, such as agriculture or industry, bolsters the productivity and efficiency of national enterprises, thus enhancing a state's economic stance internationally. While optimizing the economic processes and ensuring faster and higher quality analysis of the market dynamics, such innovations also increase the competitive advantage of enterprises and states implementing them [6].

Additionally, the emergence of new technologies, potentially transforming the configuration of forces in an international arena, sparks competition among larger powers over the influence on markets. This has been witnessed in such spheres as 5G, semiconductors, artificial intelligence, and green technologies. Such competition not only influences trade policies but also

becomes intertwined with a wider geopolitical context, promoting policy adjustments in political, diplomatic, and military strategies.

Content analysis. Within the national security strategies of the administration of Donald Trump (2017–2021) and Joseph Biden (2021–2025), the use of technology within the national security strategies had a pronounced character. Although both documents take a different approach to this topic, common narratives and commonalities still prevail.

In the Trump-era strategy, written in 2017, technology is seen as part of innovation and potential economic prosperity. It is part of Pillar 2 within the strategy framework, which is titled "Promote American Prosperity". Technology is mentioned within a sub-paragraph, "Lead in Research, Technology, Invention, and Innovation". But within the scope of this chapter, the use and perception of technology do not go beyond the use of its achievements within the framework of economic cooperation with partners and the achievement of economic advantages over opponents [15, page 20-21]. Among the necessary milestones to achieve this proficiency, we find the following points:

– Understand worldwide science and technology (s&t) trends;
– Attract and retain inventors and innovators;
– Leverage private capital and expertise to build and innovate;
– Rapidly field inventions and innovations [ibid]

Other references refer exclusively to certain aspects of foreign policy and security and are found only sporadically throughout the text in different parts of it. Technology is defined as an undeniable advantage that the United States has in confronting its adversaries, but also as a threat that can empower adversaries in the geopolitical arena and give them the tools to do irreparable damage to US interests and capabilities. In general, we must state that the Trump administration did not form a full-fledged and complete position regarding technologies in its own Strategy and mostly perceived it as an auxiliary topic to more general foreign policy narratives.

The number of mentions of the very word «technology» within the Strategy of the Biden administration has increased almost one and a half times. Technologies are defined as a separate element of Part 3, "Our global priorities". The technology section of this part of the strategy is a richer multi-directional narrative and includes more elements than the previous administration's strategy – from cooperation with allies and strategic use of fossil fuel reserves to military technology and active work to attract the best professionals from the field of technology and innovation to work in the United States of America. It also emphasizes the need for wider and more active investment in this area: "These investments will enable the United States to anchor an allied techno-industrial base that will safeguard our shared security, prosperity and values. This means working with allies and partners to harness and scale new technologies, and promote the foundational technologies of the 21st century, especially microelectronics, advanced computing and quantum technologies, artificial intelligence, biotechnology and biomanufacturing, advanced telecommunications, and clean energy technologies. We also will partner with like-minded nations to co-develop and deploy technologies in a way that benefits all, not only the powerful, and build robust and durable supply chains so that countries cannot use economic warfare to coerce others" [14, page 33].

Additional attention is also paid to US-Chinese rivalry, especially within 5G infrastructure and the necessity to remain dominant within the technological sphere of competition and within cyberspace: "As an open society, the United States has a clear interest in strengthening norms that mitigate cyber threats and enhance stability in cyberspace. We aim to deter cyber attacks from state and non state actors and will respond decisively with all appropriate tools of national power

to hostile acts in cyberspace, including those that disrupt or degrade vital national functions or critical infrastructure" [14, page 34].

Conclusion. Overall, the situation with a systematic approach to technological issues in American foreign policy remains dire. The absence of a coherent strategic framework within the United States for the analysis and mitigation of information operations or information warfare is a significant deficiency, as highlighted by the Congressional Research Service [3]. Information operations, commonly understood as a concerted strategy involving the utilization and management of information to gain a competitive edge, encompassing both offensive and defensive measures, lack a structured approach for effective handling. This deficiency partly stems from the complex challenge of balancing the imperative of safeguarding online freedom of expression with the necessity of addressing malicious activities.

Moreover, the multiplicity of definitions employed by various government entities further complicates the issue. These definitions span a spectrum, encompassing concepts such as hybrid threats, hack and leak operations, and strategic disinformation campaigns. In contrast, public discourse often revolves around terms like misinformation and disinformation, which oversimplify the problem by focusing solely on the delineation between truth and falsehood.

The absence of a unified strategic framework not only hampers policy formulation but also impedes the efforts of law enforcement and intelligence agencies in distinguishing between constitutionally protected speech and illicit conduct. Therefore, the development of a comprehensive strategic framework is imperative. Such a framework would not only elucidate policy options but also provide a solid foundation for delineating the boundaries between free speech and unlawful behavior» [5].

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ВПЛИВ СУЧАСНИХ ТЕХНОЛОГІЙ НА ФОРМУВАННЯ СТРАТЕГІЧНИХ ДОКУМЕНТІВ СПОЛУЧЕНИХ ШТАТІВ АМЕРИКИ

Олександр Краєв, Єгор Валяренко
Київський національний університет імені Тараса Шевченка
Навчально-науковий інститут міжнародних відносин
вул. Юрія Іллєнка, 36, 04119, м. Київ, Україна

У статті розглядається вплив технологічного прогресу на стратегічні документи Сполучених Штатів, зокрема за часів адміністрацій Дональда Трампа та Джо Байдена. Аналізуючи ключові стратегічні документи, дослідження показує, як такі інновації, як штучний інтелект, кібербезпека, блокчейн та передові засоби комунікації, були інтегровані в стратегії національної безпеки та зовнішньої політики. Дослідження підкреслює, як сучасні технології підвищили ефективність військових операцій, покращили збір розвідувальної інформації та запровадили нові парадигми в кібербезпеці та інформаційній війні. Ці технології також вплинули на дипломатичну практику і публічну дипломатію, уможлививши більш ефективну і пряму взаємодію як з внутрішньою, так і з міжнародною аудиторією. Крім того, у статті обговорюються виклики, пов'язані з цими досягненнями, у тому числі регуляторні проблеми та необхідність створення нових рамок для вирішення таких питань, як кіберзагрози та дезінформація.

У досліджених стратегічних документах двох американських президентських адміністрацій ми змогли виокремити лише натяк на реальну важливість технологічних питань у зовнішньополітичній сфері. На жаль, в рамках згаданих документів обговорення цих питань є досить стриманим і все ще залишає багато питань невирішеними. Результати дослідження підкреслюють важливість технологічного прогресу для збереження глобальної позиції США та протидії новим загрозам у все більш взаємопов'язаному світі. Завдяки детальному контент-аналізу стратегічних документів це

дослідження сприяє глибшому розумінню того, як Сполучені Штати адаптують свою політику для використання технологічного прогресу, забезпечення національної безпеки та сприяння сталому розвитку в цифрову епоху. Еволюційний характер геополітичної динаміки в контексті сучасних технологій підкреслює необхідність постійних інновацій та стратегічного планування, щоб орієнтуватися в складнощах сучасного міжнародного середовища.

Ключові слова: сучасні технології, національна безпека, стратегічні документи, США, зовнішня політика.