ABSTRACT

of the dissertation work of Ashimova Aitolkyn on the topic "Artificial Intelligence as an Instrument of Political Communication: Application and Global Forecasting", prepared for the degree of Doctor of Philosophy (PhD) in the educational program "8D03202 – Media and Communications"

General Information. This dissertation investigates the transformative impact of artificial intelligence (AI) on political communication in the era of global digitalization, with a particular emphasis on Kazakhstan. The study examines how AI technologies—such as natural language processing, generative models, and automated content creation—reshape traditional models of communication between political actors and the public. The dissertation proposes a conceptual model of political communication evolving from linear to interactive and transactional structures under the influence of AI. It also explores Kazakhstan's national strategies for AI integration, highlighting both opportunities and challenges. The research offers practical recommendations for policymakers, media professionals, and scholars to effectively implement AI tools in political communication. The work fills a research gap in Central Asia and contributes to the global academic discourse on digital politics.

Relevance of the research topic. Amid global digitalization and the widespread adoption of AI across socio-economic sectors, communication processes and the political sphere are undergoing significant transformation. AI has reshaped traditional mass communication and enabled new forms of interaction between political actors and society. Kazakhstan, aligning with international trends, is actively implementing technological innovations through national projects. The "Concept for the Development of Artificial Intelligence for 2024–2029," developed by the Ministry of Digital Development, highlights goals such as increasing AI-driven products and patents on the National AI Platform by 2029. Legal reforms, including amendments to the Law "On Informatization," have introduced key terms like "intelligent robot" and "national AI platform," reflecting the growing role of AI in both public and private sectors.

AI's influence on the political sphere extends beyond state functions, transforming political communication itself. Previously characterized by state-led, linear information flows and limited citizen participation, communication models are now more interactive and participatory. AI technologies, including large language models and generative tools, enable content creation that can rival human output. Visual AI-generated media (e.g., deepfakes) further complicate political discourse. These tools have quickly gained mainstream usage among businesses and the public alike.

Emerging concepts like digital political communication and computational propaganda explore AI's use in campaigns, microtargeting, and automated content distribution. Although globally studied—such as in the monograph Computational Propaganda by Woolley and Howard—Central Asia, and particularly Kazakhstan, remains underexplored in academic literature. This gap makes Kazakhstan a valuable case for examining AI's role in political communication.

Shifts in media consumption and the rise of social media as a key political arena have reshaped journalistic practices. The accessibility of digital tools allows diverse actors to influence public discourse, while AI continues to be a central topic in international political debates. It is viewed both as a transformative force in global power dynamics and a subject of international negotiation, as reflected in national strategies and UN resolutions.

Despite growing interest, there is still no established methodology to assess AI's implementation and impact in political communication. Studying these dynamics is vital for shaping state policy and ensuring Kazakhstan's technological competitiveness. As AI capabilities rapidly evolve, so too does the urgency of understanding and forecasting its influence on political communication.

The degree of the scientific development of the topic. The development of AI as an academic discipline draws from both philosophical and theoretical foundations. The modern concept was first outlined in 1956 by John McCarthy, Marvin Minsky, Nathaniel Rochester, and Claude Shannon at the Dartmouth Conference, building on Alan Turing's 1950 idea that if a machine could imitate human responses convincingly, the question of whether it can think becomes irrelevant. Later, John Haugeland connected thinking with symbol manipulation, while in the Soviet Union, Victor Finn and Dmitry Pospelov contributed to formalizing plausible reasoning and defining AI as the science of knowledge representation. Marvin Minsky also explored computational models of human intelligence. While no single comprehensive work exists, Artificial Intelligence: A Modern Approach by Stuart Russell and Peter Norvig remains a cornerstone, promoting an agent-based approach.

Academic exploration of the impact of information technologies on society began in the early 20th century with thinkers like Toynbee, Spengler, Berdyaev, and Ortega y Gasset. Mid-century theorists such as Bell, Castells, McLuhan, and Toffler further developed the concept of the "information society," which evolved into ideas like Žižek and Dean's "communicative capitalism" and Schwab's vision of the Fourth Industrial Revolution, marked by AI and robotics.

Foundations of modern mass and political communication were established by Edward Bernays and Harold Lasswell, whose linear communication model was later expanded. Alternative models emerged in the mid-20th century: Wilbur Schramm introduced feedback loops; Westley and MacLean included environmental influences and gatekeeping; Frank Dance and Dean Barnlund later developed transactional models emphasizing complexity and continuous feedback.

Modern political communication using AI tools, termed "computational propaganda," was explored in Computational Propaganda by Samuel Woolley and Philip Howard. The study covers cases from nine countries, detailing how political actors use AI on social media. Contemporary actors and models of interaction of political communications in the network landscape were investigated in the study by Yulia Lektorova. In Kazakhstani political science, problems and features of formation of foreign and Kazakhstani political communication in the mass media was outlined in the works of Gulmira Sultanbayeva.

The object of the study involves political communication in the context of digitalization and introduction of artificial intelligence.

The subject of the study encompasses the use of artificial intelligence technologies in modern political communication, their impact on the communication between political actors and the audience and forecasting transformation of political communication processes under the artificial intelligence influence.

The aim of the study is to analyze the impact of AI technologies on political communication in the context of digitalization process, with special emphasis on Kazakhstan, and to forecast trends in political communication processes driven by AI.

To achieve the aim of the study, the following **tasks** were set:

- to analyze the theoretical and methodological foundations of AI in the context of its historical development;
- to study the practice of the application of AI-based technologies in the modern media and their impact on the process of creating and distributing content in relation to political communication;
- to study theoretical approaches to AI in international relations and analyze its impact on global political processes;
- to analyze the theoretical basis and modern methods of political communications that use AI tools;
- to explore the influence of digital platforms and AI on political propaganda, including the use of algorithms for public opinion manipulation;
- to analyze perspectives for the introduction and further integration into the political process in Kazakhstan, including social, economic and technological aspects;
- to develop a model for forecasting the development of political communication with the integration of AI and to identify key trends in the application of AI in political sphere;
- to conduct an expert survey on perception of AI in political communication to substantiate a proposed model for forecasting the development of political communication with the integration of AI and assess its impact on political interaction.

The research hypothesis that the emergence of AI and its current impact on various communication mediums indicates that, with further development, AI will fully transform communication platforms. Consequently, political communication is shifting from a linear model toward interactive and transactional models, as AI becomes integrated into every stage of the communicative process. AI-driven digital technologies are evolving mass political communication into personalized political conversations, with increasing consumption of AI-generated content. Additionally, the author hypothesizes that as more individuals use AI tools and engage with AI-generated content, they will view the application of AI in political decision-making more favorably.

Research methods applied in the dissertation work. In the first part of the dissertation, the author employs historical and philosophical analysis to trace the development of artificial intelligence as a distinct scientific field. Key research methods include structural-functional and comparative analyses to explore the digitalization of political communication and the rise of computational propaganda, along with content analysis and systematization to examine AI applications in mass communication and international politics.

To assess the current state and future prospects of AI in Kazakhstan, the author applies a combined SWOT and PEST analysis framework. SWOT examines internal factors—strengths, weaknesses, opportunities, and threats—while PEST analyzes external macro factors: political, economic, social, and technological. Together, they provide a comprehensive understanding of Kazakhstan's digital transformation landscape.

To support the proposed interactive and transactional models of political communication, the author conducted an anonymous expert survey among media professionals, journalists, and political/data scientists. The survey aimed to identify key trends in AI-driven political communication in Kazakhstan. It used purposive and snowball sampling, collecting responses from 84 experts with a 76.4% response rate. Closed-ended questions were analyzed using IBM SPSS Statistics (v.23), employing descriptive and inferential statistics. Spearman's rank correlation revealed a significant positive relationship ($p \leq 0.05$) between frequent AI use, interest in AI-generated content, and support for its role in political decision-making.

Main provisions submitted for defense

1. AI-based tools are widely used in modern political campaigns through automated bots and algorithms for information dissemination. The evolution of AI models suggests they will move beyond mere intermediaries to play a central role across all information and communication spheres.
2. The recent rise of generative AI models for producing diverse content types indicates a more complex relationship between audiences and AI-generated content. Technologies like text-to-video, text-to-music, and text-to-image will continue to advance, accompanied by AI assistants that help users navigate an increasingly complex media landscape.
3. The combined SWOT and PEST analyses reveal that Kazakhstan's full utilization of AI technologies requires coordinated efforts from the state, private sector, and citizens. The government must build infrastructure and an innovation-friendly environment; businesses should organize and label data for AI and analytics; and citizens need to develop digital habits to adopt new technologies effectively.
4. Digitalization has led to the convergence of traditional journalism and new communication platforms such as online forums and social networks. This shift changes the direction and nature of information flows. With ongoing AI advancements already transforming communication media, further development could revolutionize communication platforms entirely.

5. The stages of AI development as a content medium in political communication align with political marketing strategies. In today's era of social media and audience segmentation, traditional non-marketing approaches like agitation are less effective. Generative AI offers opportunities to move beyond mass messaging toward personalized political conversations.
6. Different communication flow models correspond to historical stages of media evolution in political communication: linear during traditional mass media dominance; interactive in the transition to internet and social media; and transactional with the integration of AI systems into communication platforms.

The scientific novelty of the dissertation lies in its pioneering examination of the influence of artificial intelligence on political communications within the field of media research in Kazakhstan. The research outlines the theoretical and philosophical foundations for the emergence of artificial intelligence and systematizes the categories of AI and their applications. It investigates the features of the novel digital information space and the rise of new political actors, while identifying key characteristics of the digitalization of political propaganda. The study describes emerging practices in political communication alongside the social risks linked to the digitalization of public policy. Furthermore, it analyzes the use of AI tools in contemporary international politics, diplomacy, and the media. A forecasting model for the development of AI in content creation is presented, grounded in historical periodization. The research also assesses the current state and future prospects for AI development across various socio-economic sectors in Kazakhstan. Finally, based on Kazakhstan's experience, a global forecasting model for the evolution of political communications with integrated AI has been developed.

Theoretical and practical significance of the dissertation work. The study enables a clear conceptualization of artificial intelligence's impact on political communication. Analysis of computational propaganda practices in recent elections highlights emerging trends shaping modern political processes. The proposed AI development forecasting model for content creation offers a framework that can be adapted for other digital technologies in mass communication. The combined SWOT and PEST analysis results regarding AI development in Kazakhstan provide valuable insights for political scientists and journalists. Overall, the dissertation's findings contribute to research on the transformation of communication processes driven by technological advancements in mass communication and political science.

Publication and approval of research work. The main provisions and conclusions submitted for defense were reflected in 6 scientific papers, 2 of which were published in journals with a non-zero impact factor and included in the international Scopus database, 3 in scientific publications recommended by the Committee for Quality Assurance in the Sphere of Education of the Ministry of Education of the Republic of Kazakhstan, and 1 report in the proceedings of international scientific and practical conferences abroad (Spain, India).

Structure of the dissertation work. The work consists of introduction, three chapters, conclusion, list of used literature and appendices. The volume of the dissertation work is 152 pages.