

AI, BIG DATA AND THE EVOLUTION OF DIGITAL DIPLOMACY: A TRANSFORMATIVE SHIFT IN 21ST CENTURY FOREIGN POLICY PRACTICE

IA, BIG DATA E A EVOLUÇÃO DA DIPLOMACIA DIGITAL: UMA MUDANÇA TRANSFORMADORA NA PRÁTICA DA POLÍTICA EXTERNA NO SÉCULO XXI

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Abstract

This study examined the transformative impact of digital technologies—particularly artificial intelligence (AI), big data, and algorithmic systems—on contemporary diplomacy. The primary objective was to conceptualize "algorithmic diplomacy" and analyze its integration into the strategic practices of foreign ministries. Using qualitative content analysis of policy documents and digital communication platforms, the research identified key trends such as real-time decision-making, digital public diplomacy, and crisis management enabled by AI. Findings also highlighted challenges including cybersecurity threats, digital authoritarianism, and ethical opacity. A focused case study on Azerbaijan demonstrated how a Global South nation leveraged AI and digital platforms to modernize its diplomatic infrastructure. The study concluded that digitalization redefined core diplomatic concepts like power and sovereignty. It called for ethical standards and international cooperation to ensure transparent and accountable algorithmic governance in diplomacy.

Keywords: Digital Diplomacy. Artificial Intelligence. Big Data. Algorithmic Governance. Cybersecurity. E-Governance.

Resumo

Este estudo examinou o impacto transformador das tecnologias digitais — particularmente inteligência artificial (IA), big data e sistemas algorítmicos — na diplomacia contemporânea. O objetivo principal foi conceituar a "diplomacia algorítmica" e analisar sua integração nas práticas estratégicas dos ministérios das relações exteriores. Por meio da análise qualitativa de conteúdo de documentos políticos e plataformas de comunicação digital, a pesquisa identificou tendências-chave, como tomada de decisão em tempo real, diplomacia pública digital e gestão de crises possibilitadas pela IA. Os resultados também destacaram desafios, incluindo ameaças à segurança cibernética, autoritarismo digital e opacidade ética. Um estudo de caso focado no Azerbaijão demonstrou como uma nação do Sul Global utilizou IA e plataformas digitais para modernizar sua infraestrutura diplomática. O estudo concluiu que a digitalização redefiniu conceitos diplomáticos centrais, como poder e soberania, e defendeu padrões éticos e cooperação internacional para garantir uma governança algorítmica transparente e responsável na diplomacia.

Palavras-chave: Diplomacia Digital. Inteligência Artificial. Big Data. Governança Algorítmica. Segurança Cibernética. Governança Eletrônica.



1 INTRODUCTION

In the age of digital transformation, diplomacy is undergoing a fundamental shift shaped by emerging technologies such as artificial intelligence (AI), big data analytics, and algorithmic governance. These digital tools are not merely auxiliary mechanisms but are becoming central to the way states conduct foreign policy, engage publics, and manage international relations (BJOLA; ZAIOTTI, 2021; MANOR; CRILLEY, 2023). The diffusion of digital technologies has blurred traditional diplomatic boundaries, giving rise to a hybrid environment where cyber, physical, and cognitive domains increasingly intersect (CORNAGO; RIQUELME, 2023). As governments integrate AI into strategic communication and real-time decision-making, diplomacy is shifting from a reactive to a predictive and data-driven practice (KURBALIJA, 2022).

One of the defining features of this transformation is the emergence of algorithmic diplomacy, where automated systems shape diplomatic messaging, agenda-setting, and engagement with foreign audiences (ZWITTER; BOISSE-DESPIAUX, 2020). AI-powered sentiment analysis, automated response systems, and real-time threat detection have already been employed in crisis communication and strategic forecasting by ministries of foreign affairs across Europe and Asia (CHRISTENSEN; ADLER-NISSEN, 2023). Meanwhile, big data analytics offer states the ability to interpret massive streams of global digital behavior, enabling the crafting of targeted public diplomacy campaigns and proactive influence strategies (TSVETKOVA *et al.*, 2021).

However, this transition is not without significant challenges. Digital diplomacy raises pressing concerns about privacy, algorithmic bias, cybersecurity, and the erosion of diplomatic norms (MEYER, 2022). Moreover, the competitive use of AI and surveillance technologies by authoritarian regimes in digital foreign policy has created a fragmented and contested international digital order (FALK, 2024). These dynamics suggest that diplomacy is not just being digitally upgraded but fundamentally redefined.

Azerbaijan exemplifies a country actively navigating this digital diplomatic transformation. In recent years, Azerbaijan has made strategic investments in AI and digital technologies to modernize its foreign policy toolkit and governance structures, particularly following the Second Karabakh War. The government's initiatives include establishing national AI standards and prioritizing digital sovereignty within its

diplomatic engagements. Azerbaijan's approach combines traditional diplomatic practices with innovative digital tools to strengthen its regional influence, enhance crisis response capabilities, and promote public diplomacy in the global arena. This case highlights how emerging digital frameworks are becoming integral to smaller and medium-sized states in their pursuit of diplomatic agility and global relevance.

This article seeks to examine the evolving landscape of diplomacy in the digital era, focusing specifically on the integration of AI, big data, and algorithmic tools into the practice and theory of international engagement. Drawing on the most recent scholarship and case studies from 2020 to 2025, the article explores the implications of these transformations for statecraft, soft power, and global governance. The research aims to offer a conceptual and practical framework for understanding how digital innovation is reshaping diplomatic strategy in the 21st century.

2 METHODOLOGY

This study employed a qualitative research design to explore the integration of digital technologies---particularly artificial intelligence (AI), big data analytics, and algorithmic systems---into modern diplomatic practice. The research was grounded in methodological approaches developed by both national and international scholars who examine digital transformation and diplomatic innovation within the context of international relations.

The primary materials for analysis included normative documents, strategic policy papers, digital diplomacy frameworks, official government statements, and scholarly publications dated between 2020 and 2025. The study specifically focused on the practices of selected foreign ministries, international organizations, and the Republic of Azerbaijan. Publicly accessible datasets, official websites, and digital platforms used for foreign policy communication were also examined.

The research utilized document analysis as the primary instrument, including systematic review of official government publications, international reports, and academic journal articles. Strategic communications, AI-driven digital interfaces, and policy frameworks were cataloged and coded for thematic analysis.

The study incorporated the following analytical techniques:

- **Content Analysis:** Used to identify dominant themes and strategic patterns in the documents and digital platforms under review.
- **Comparative Analysis:** Applied to examine similarities and differences in the adoption of algorithmic tools by different countries, with a specific focus on Azerbaijan.
- **Retrospective Method:** Used to trace the evolution of digital diplomacy practices over the five-year period studied.
- **Theoretical Modeling:** Employed to conceptualize the framework of algorithmic diplomacy as an emerging paradigm.

The combination of these methods facilitated a multidimensional understanding of how digital tools are transforming both the theoretical and operational dimensions of diplomacy. No statistical tests were used, as the research did not involve quantitative data. Instead, qualitative coding and interpretive analysis were used to identify trends, assess national practices, and develop theoretical insights.

3 THEORETICAL FRAMEWORK AND LITERATURE REVIEW

In the preparation of this study, particular attention was paid to recent scholarly contributions that explore the intersection of digital technologies and diplomatic practice. One of the central themes is the transformation of diplomacy through Artificial Intelligence (AI) and algorithmic governance. Bjola and Zaiotti (2021) examine how digital tools are reshaping the autonomy and legitimacy of international organizations. Their analysis highlights the growing integration of AI-driven decision-making in multilateral institutions, prompting a re-evaluation of diplomatic norms and institutional adaptability.

Manor and Crilley (2023) delve into the role of algorithmic engagement and bots in shaping public diplomacy strategies. They argue that the automation of engagement via social media platforms has generated both new opportunities and risks for diplomatic missions. Their work suggests that digital diplomacy must evolve from traditional message broadcasting toward algorithm-informed interaction management.

From a policy-oriented perspective, Kurbalija (2022) provides a practical framework for understanding the use of AI in diplomacy, including use cases in e-

governance, international negotiations, and predictive analytics. He argues for the institutionalization of ethical standards and digital competencies within foreign ministries to responsibly manage the digital transition.

The strategic implications of big data analytics in foreign policy are addressed by Tsvetkova *et al.* (2021), who emphasize the increasing reliance of governments on data-driven insights to anticipate geopolitical risks and shape international agendas. Their study underlines how digital trace data can be harnessed to understand public sentiment, cyber threats, and transnational dynamics.

Ethical and governance considerations are further examined by Meyer (2022), who discusses how the digitalization of diplomacy raises questions about trust, surveillance, and misinformation. He argues that algorithmic diplomacy must be guided by principles of transparency, accountability, and international cooperation.

In the context of cybersecurity and digital sovereignty, Falk (2024) explores how AI technologies are becoming tools of both cooperation and confrontation among states. He warns that without robust diplomatic frameworks, algorithmic decision-making may erode state sovereignty and deepen geopolitical fragmentation.

Several Azerbaijani and international scholars highlight Azerbaijan's proactive integration of AI and digital tools in diplomatic and statecraft processes. For instance, Gasimov (2023) examines Azerbaijan's post-conflict digital diplomacy efforts, emphasizing how the government uses AI-powered platforms and social media analytics to craft targeted narratives in the aftermath of the Second Karabakh War. This approach, Gasimov argues, has enhanced Azerbaijan's ability to manage international perceptions and build soft power amid complex regional tensions.

Azerbaijan's strategic investments in AI education and institutional digital capacities have also been analyzed by Mammadova (2024) and Aliyev, who underscore the creation of national initiatives such as the Artificial Intelligence Academy and the State Program on Digital Transformation. Their study links these domestic policies to Azerbaijan's diplomatic innovation, showing how the country leverages digital governance frameworks to enhance transparency, crisis response, and international cooperation.

Consequently, the literature reflects a multi-dimensional transformation in diplomatic practice driven by digital technologies. This transformation includes several key areas of concern:

- The conceptual redefinition of diplomacy in the age of automation and data-driven governance;
- The design of institutional models that integrate AI into foreign policy-making while upholding democratic oversight;
- The development of ethical and regulatory frameworks to balance innovation with cybersecurity, privacy, and human rights in digital diplomatic environments.

These studies collectively underscore the urgent need for both theoretical and practical adaptations to ensure that diplomacy remains effective, inclusive, and accountable in the algorithmic era.

3.1 Conceptual foundations and evolution of digital diplomacy

In the 21st century, diplomacy has undergone a profound transformation driven by the proliferation of digital technologies, particularly information and communication technologies (ICTs), social media platforms, and artificial intelligence (AI). The emergence of digital diplomacy---also known as e-diplomacy or cyber diplomacy---reflects the integration of these tools into the traditional functions of statecraft, including negotiation, representation, and communication. As Bjola and Zaiotti (2021) argue, digital diplomacy represents not merely a new channel for diplomatic communication but a reconfiguration of diplomatic norms and institutional behaviors shaped by the logic of digital interactivity and algorithmic governance.

Traditionally, diplomacy was a slow-moving process conducted behind closed doors, characterized by hierarchical communication and formal negotiation. However, the digital turn has accelerated the flow of information and opened diplomatic processes to broader publics and non-state actors. This democratization of diplomacy is particularly evident in the widespread use of Twitter, Facebook, and YouTube by foreign ministries and diplomats, which has allowed them to engage in real-time public diplomacy and crisis communication (MANOR, 2020). Yet, this openness has also generated vulnerabilities,

particularly in the form of disinformation campaigns, cyber threats, and the erosion of diplomatic confidentiality.

The conceptual foundations of digital diplomacy are rooted in both public diplomacy and network diplomacy. Public diplomacy traditionally aimed at influencing foreign publics through cultural programs, media, and educational exchanges. Digital diplomacy extends this aim through online platforms where messaging can be tailored and amplified instantly. As Melissen (2021) notes, digital diplomacy enables foreign ministries to "listen, engage and influence" across borders in a networked global environment, blurring the boundaries between domestic and international audiences. In this context, diplomacy becomes less about elite-to-elite communication and more about state-society interaction, visibility, and credibility in the digital sphere.

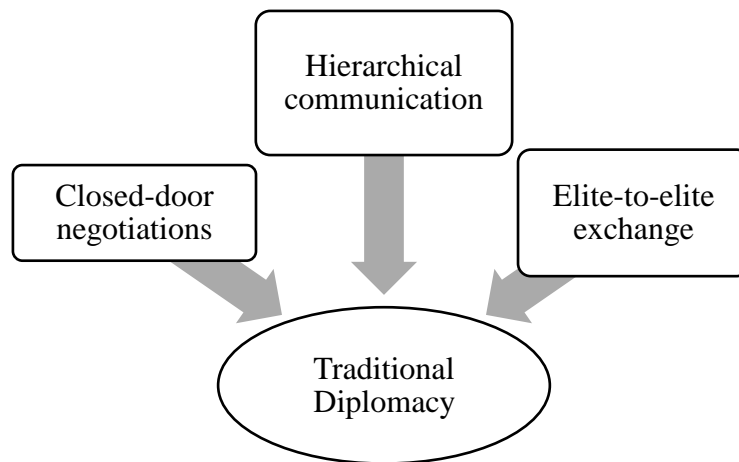
Moreover, digital diplomacy is increasingly shaped by algorithmic mediation, where diplomatic content and engagement are filtered, ranked, and distributed by algorithms that determine visibility and reach. This introduces a new layer of complexity, as noted by Manor and Crilley (2023), who suggest that digital diplomacy must now adapt to an attention economy governed by algorithmic logics. They argue that states must learn to manage engagement through data analytics and algorithmic calibration to remain visible and relevant in digital spaces.

This evolution has led to a redefinition of diplomatic competencies. The digital diplomat must now be proficient in data literacy, cybersecurity, content creation, and digital engagement strategies. Training programs in several countries, including the UK, Estonia, and the UAE, have begun incorporating these skills into foreign service curricula (KURBALIJA, 2022). Furthermore, the rise of virtual embassies, AI-assisted negotiation simulations, and blockchain-based verification mechanisms exemplifies how digital tools are reshaping the infrastructure and logic of diplomatic operations.

However, the digitization of diplomacy also raises ethical and normative questions. Who controls the data? How is diplomatic speech monitored, manipulated, or misused? As Meyer (2022) cautions, digital diplomacy must be grounded in principles of transparency, accountability, and human rights to avoid becoming a tool for surveillance, misinformation, or digital authoritarianism. He stresses the importance of establishing international norms and ethical frameworks to govern state behavior in cyberspace.

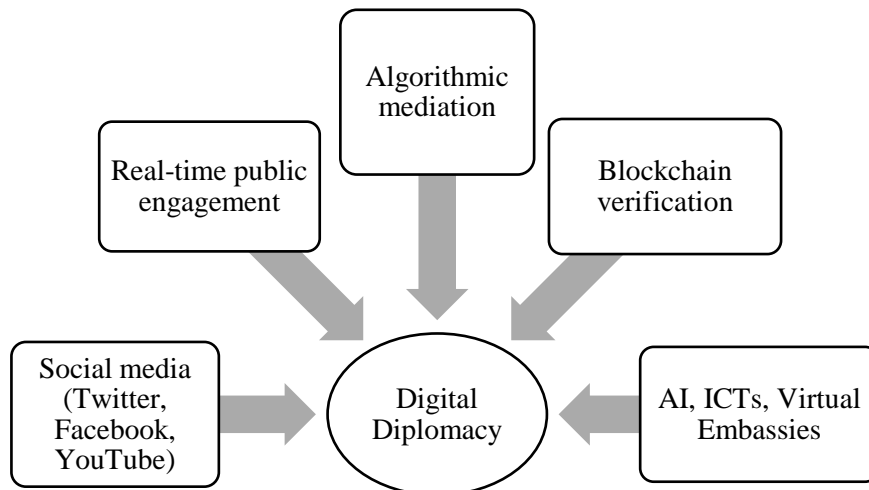
In conclusion, digital diplomacy is not simply a technical innovation but a paradigmatic shift in how states communicate, negotiate, and represent themselves in the international system. Its evolution reflects broader transformations in global governance, where diplomacy must adapt to the realities of digital interdependence, algorithmic influence, and contested information spaces.

Figure 1 - The main components of traditional diplomacy.



Source: Created by the author.

Figure 2 - The main components of digital diplomacy.



Source: Created by the author.

4 STRATEGIC APPLICATIONS OF AI AND BIG DATA IN DIPLOMACY

The integration of artificial intelligence (AI) and big data analytics into diplomatic practice marks a significant transformation in how foreign policy is conceived, implemented, and evaluated. These technologies offer unprecedented capacities for information processing, strategic forecasting, and operational efficiency, enabling diplomats to navigate complex geopolitical environments with enhanced precision and agility. As Tsvetkova *et al.* (2021) point out, the deployment of big data analytics allows governments to monitor global developments in real time, forecast crises, and design more responsive and adaptive diplomatic strategies.

One of the most impactful applications of AI in diplomacy lies in predictive analytics. Through the aggregation and analysis of massive datasets—including social media posts, economic indicators, satellite imagery, and cybersecurity logs—diplomatic institutions can anticipate conflict escalation, monitor public sentiment, and assess the stability of partner or adversary regimes. For instance, machine learning algorithms are increasingly used to detect early warning signals of political unrest or disinformation campaigns that may undermine international negotiations or regional stability (KURBALIJA, 2022).

In multilateral diplomacy, AI is also being utilized to assist in negotiation simulations and language processing. Natural language processing (NLP) technologies can analyze diplomatic discourse, detect inconsistencies in treaty drafts, and even generate policy scenarios. These tools are especially relevant in complex negotiations involving multiple parties, where tracking linguistic nuance and ideological alignment is critical. According to Bjola and Pamment (2021), such tools not only enhance efficiency but also contribute to strategic framing and agenda-setting in international forums.

The use of AI-enabled decision support systems is another area of growing interest. These systems synthesize structured and unstructured data to offer actionable insights to diplomats and policymakers. In security diplomacy, for example, AI models help in mapping cyber threats, evaluating the credibility of intelligence sources, and optimizing resource allocation for diplomatic missions abroad. As Falk (2024) notes, the strategic use of AI in diplomacy must be balanced with strong institutional oversight, as

over-reliance on algorithms can obscure the human judgment and contextual sensitivity that are essential to effective diplomacy.

Beyond decision-making, big data also plays a critical role in public diplomacy and reputation management. Governments increasingly rely on data-driven insights to tailor their messaging to diverse international audiences. Manor and Crilley (2023) argue that digital platforms---powered by AI---enable real-time feedback loops where states can measure the resonance of their messages and adjust their communication strategies accordingly. This has led to the emergence of "algorithm-informed diplomacy," where engagement strategies are optimized based on audience behavior, sentiment analysis, and platform analytics.

However, the strategic use of AI and big data also raises profound concerns regarding ethics, bias, and accountability. Diplomatic decisions based on flawed algorithms or biased data inputs can exacerbate tensions or result in misrepresentation of foreign publics. Meyer (2022) emphasizes that algorithmic diplomacy must be guided by transparent governance frameworks and international standards that ensure fairness, explainability, and human oversight.

Moreover, in the absence of internationally agreed-upon norms, the use of AI in diplomacy may become a site of geopolitical contestation. The deployment of autonomous systems in foreign policy settings---such as AI-driven surveillance or cyber retaliation---could destabilize existing diplomatic norms and erode trust among nations. The lack of regulation in the global digital space has already led to diplomatic conflicts over data sovereignty, misinformation, and digital espionage (FALK, 2024).

Therefore, while AI and big data provide powerful tools for enhancing the strategic capacity of diplomacy, their responsible application requires a combination of technological competence, ethical foresight, and institutional safeguards. As Tsvetkova *et al.* (2021) contend, the future of diplomacy will depend on the ability of states to integrate digital innovation into foreign policy without compromising democratic values and international stability.

5 DISCUSSION

5.1 Ethical and institutional challenges in the age of digital diplomacy

As artificial intelligence (AI), big data, and algorithmic tools become embedded in the fabric of modern diplomacy, they bring not only transformative potential but also profound ethical and institutional challenges. These issues demand serious attention from scholars and practitioners alike, as the unchecked expansion of digital technologies risks undermining key diplomatic principles such as transparency, accountability, inclusivity, and trust.

One of the most pressing concerns involves algorithmic opacity---the difficulty of understanding how automated systems arrive at certain outputs or decisions. In diplomatic contexts, this lack of explainability may hinder the accountability of decision-making processes, especially when foreign policy actions are justified based on AI-generated forecasts or assessments. Meyer (2022) warns that without proper oversight mechanisms, the use of opaque algorithms could lead to misjudgments in high-stakes international negotiations or conflict mediation. Moreover, this opacity can erode public trust and provoke skepticism among diplomatic counterparts, potentially weakening international cooperation.

A related concern is algorithmic bias, which arises when AI systems trained on historical or unbalanced data reproduce discriminatory patterns or flawed assumptions. In the realm of diplomacy, such biases may distort intelligence assessments, misrepresent foreign populations, or prioritize certain narratives over others in public diplomacy campaigns. As Bjola and Zaiotti (2021) emphasize, ensuring the fairness and neutrality of digital tools used in diplomatic practice is vital for preserving the legitimacy and credibility of international engagement. This also involves the critical task of auditing AI systems and implementing bias mitigation strategies.

The question of digital sovereignty also figures prominently in current debates. The growing reliance on digital infrastructure---much of it developed and maintained by private tech companies or foreign governments---raises concerns about national autonomy in shaping foreign policy. Falk (2024) argues that digital diplomacy increasingly operates within contested technological ecosystems, where geopolitical

rivalries play out over data access, platform governance, and cyber norms. For smaller states or those with limited digital capacities, this asymmetry can result in dependency and vulnerability, making it imperative for global governance institutions to develop equitable digital frameworks.

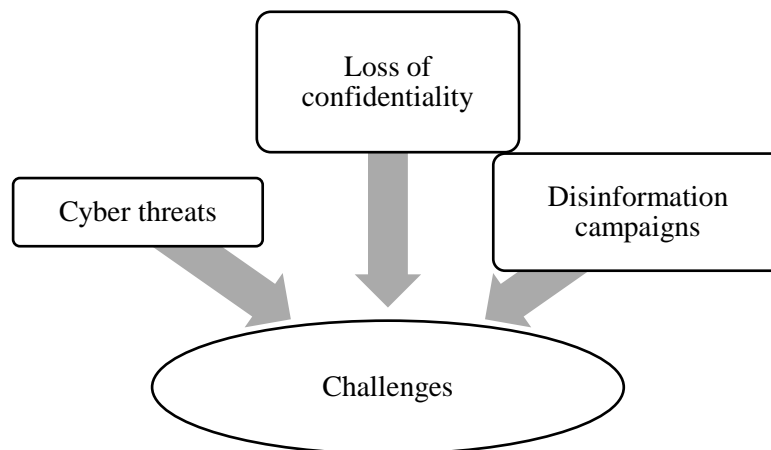
From an institutional standpoint, the adaptation of diplomatic services to the digital age remains uneven. While some foreign ministries have established digital diplomacy units and invested in digital skills training, many still lack the infrastructure, expertise, or strategic vision to fully engage in algorithmic governance. As Kurbalija (2022) notes, traditional diplomatic institutions must undergo structural reforms to incorporate digital innovation responsibly, including the development of ethical charters, interdisciplinary task forces, and partnerships with technology experts and civil society.

The issue of cybersecurity and disinformation adds another layer of complexity. Digital platforms used for diplomacy are often targeted by cyberattacks, surveillance, and coordinated disinformation campaigns. This not only disrupts diplomatic communication but also challenges the authenticity and security of official narratives. As Manor and Crilley (2023) observe, diplomats must now engage in real-time information verification and narrative defense while operating in a decentralized and fast-moving digital environment.

Finally, the lack of global regulatory consensus on digital technologies poses a major challenge. While international legal frameworks exist for many areas of diplomacy, there is currently no comprehensive set of rules governing the use of AI in foreign affairs. This regulatory vacuum creates uncertainty and opens the door to technological misuse. Several scholars, including Meyer (2022) and Tsvetkova *et al.* (2021), call for the creation of international treaties or soft law mechanisms that define ethical standards, accountability mechanisms, and shared responsibilities for digital diplomacy actors.

In conclusion, while digital technologies offer substantial benefits for enhancing diplomatic capacity and responsiveness, they also require a careful balancing of innovation with normative and institutional safeguards. The future of diplomacy in the algorithmic age will depend on how effectively global actors manage these ethical and institutional challenges, ensuring that technological tools are used not to dominate or divide, but to build dialogue, understanding, and peace.

Figure 3 - Challenges of digital diplomacy.



Source: Created by the author.

5.2 Capacity-building, multilateral cooperation and future trajectories in digital diplomacy

As the global diplomatic landscape continues to evolve under the influence of digital transformation, one of the most critical dimensions is the need for comprehensive capacity-building among states, especially in the Global South and emerging economies. Digital diplomacy, while promising, demands technological infrastructure, skilled personnel, and institutional readiness—elements not evenly distributed across the international system. Without strategic investment in digital literacy and technological infrastructure, a growing diplomatic digital divide may reinforce global inequalities and marginalize less-resourced actors in international decision-making processes.

Numerous scholars, including Kurbalija (2022), emphasize that digital diplomacy should be embedded in broader development agendas. This entails offering technical assistance, digital training programs, and intergovernmental support through institutions like the United Nations, UNESCO, and regional bodies such as the African Union or ASEAN. These initiatives can help states develop the capabilities to effectively participate in algorithmic negotiations, defend their interests in cyber diplomacy, and counter digital misinformation campaigns.

Simultaneously, the emergence of multilateral digital platforms and governance frameworks is reshaping how diplomacy is conducted. Initiatives such as the UN's High-

Level Panel on Digital Cooperation, the Global Partnership on Artificial Intelligence (GPAI), and the EU's Digital Services Act exemplify efforts to build consensus on ethical standards, transparency, and algorithmic accountability. These platforms provide important opportunities for dialogue, norm development, and policy convergence in a fast-evolving digital landscape.

However, multilateral digital diplomacy also faces obstacles, particularly geopolitical fragmentation and conflicting national interests. As Falk (2024) points out, tensions between digital authoritarianism and democratic digital governance models have intensified, influencing how states perceive international cooperation in the digital realm. Bridging these normative divides will require diplomatic innovation and trust-building mechanisms that acknowledge cultural and political diversity while upholding shared principles of transparency, inclusivity, and rule of law.

Looking ahead, the future trajectory of digital diplomacy hinges on three interrelated pathways:

1. **Institutional resilience and reform:** Foreign ministries must undergo systemic reforms to accommodate AI and digital engagement. This includes revising bureaucratic workflows, integrating interdisciplinary expertise, and embedding ethical review mechanisms in policy design.
2. **Public-private diplomacy:** As digital infrastructure is often owned or managed by private tech giants, new models of public-private cooperation in diplomacy are needed. Companies such as Google, Meta, and OpenAI play increasingly central roles in shaping public discourse, cybersecurity, and cross-border data flows---raising questions about their diplomatic responsibilities and accountability.
3. **Citizen-centric diplomacy:** The digital public sphere has transformed ordinary citizens into diplomatic audiences and sometimes even actors. Therefore, diplomats must learn to engage citizens through interactive, real-time communication strategies while also protecting democratic values against manipulation and disinformation.

In sum, the next generation of digital diplomacy must be adaptive, inclusive, and cooperative, embracing technological innovation without abandoning foundational diplomatic norms. Investments in digital capacity, institutional modernization, and

multilateral norm-setting are not only desirable but essential to maintaining peace, stability, and effective global governance in the 21st century.

6 AZERBAIJAN'S STRATEGIC ENGAGEMENT IN DIGITAL DIPLOMACY

Azerbaijan's engagement with digital diplomacy exemplifies the broader shift among emerging economies toward technologically enabled foreign policy frameworks. As a country situated at the nexus of Europe and Asia, Azerbaijan has prioritized digital transformation not only as a vehicle for domestic governance reform but also as a strategic instrument in its international relations. In recent years, Azerbaijan's Ministry of Foreign Affairs has institutionalized digital tools for strategic communication, consular service automation, and digital crisis response. Initiatives such as the expansion of the ASAN service model---a hallmark of e-governance recognized by the United Nations for its transparency and efficiency---have created digital linkages between the state and its citizens, while also enhancing Azerbaijan's global reputation as a digitally progressive state (MAMMADOV, 2022; OECD, 2023).

In parallel, the use of AI-based analytics in public diplomacy and foreign media monitoring has allowed Azerbaijan to respond more rapidly to regional geopolitical developments and information warfare, particularly in the post-conflict environment following the Second Karabakh War (ALIYEV, 2021; RAHIMOVA; GASIMOV, 2023).

A defining moment in Azerbaijan's digital diplomacy trajectory came with the official approval of the Artificial Intelligence Strategy of the Republic of Azerbaijan for 2025--2028, signed into effect by President Ilham Aliyev on March 19, 2025. This landmark policy document lays out a national roadmap for developing AI capacities across public and private sectors, with specific emphasis on human capital development, ethical standards, and sectoral applications---including in diplomacy and international cooperation (TREND NEWS AGENCY, 2025). The strategy proposes the establishment of a national Artificial Intelligence Academy, intended to serve as a central institution for training, research, and international collaboration in AI technologies. This academy is designed to close the skill gap in the AI and data science sectors while ensuring that Azerbaijani experts are equipped to participate in global digital innovation (APA NEWS AGENCY, 2025a). Furthermore, the strategy mandates the development of state

standards and ethical regulations for AI, with a strong focus on algorithmic accountability, transparency, and data protection---particularly relevant as digital diplomacy becomes increasingly automated and data-driven (APA NEWS AGENCY, 2025b).

These developments are significant for multiple reasons. First, they reflect Azerbaijan's deliberate positioning as a regional hub of digital diplomacy and innovation diplomacy, underscoring its ambition to shape---not merely adapt to---global trends in AI governance. Second, by proactively aligning its domestic digital infrastructure with international ethical standards, Azerbaijan contributes to the ongoing global discourse on digital sovereignty and algorithmic responsibility. Third, the integration of AI into its foreign policy architecture enables Azerbaijan to act more strategically in multilateral forums, including within the Organization of Turkic States, the Non-Aligned Movement, and various EU--Eastern Partnership digital dialogue platforms (GURBANOV, 2024).

Moreover, the country's digital diplomacy initiatives align with broader geopolitical objectives, such as energy diplomacy, regional connectivity, and post-conflict reconstruction. In territories liberated after the Second Karabakh War, digital infrastructure is being deployed alongside green energy and smart city initiatives, thereby transforming these regions into testing grounds for integrated governance and AI-enabled development (ISAYEV; VALIYEV, 2023). These multifaceted strategies reinforce the notion that digital diplomacy, in the Azerbaijani context, is not a standalone policy silo but part of a comprehensive national effort to build technological capacity, project normative influence, and contribute meaningfully to international digital governance.

7 CONCLUSION

The results of this study allow us to make several comprehensive conclusions regarding the impact and future trajectory of digital diplomacy in the era of advanced technologies:

1. The integration of AI, big data analytics, and algorithmic governance signifies a paradigm shift in diplomatic practice. Traditional diplomacy, which focused primarily on human-to-human interaction and message dissemination, is evolving toward a model that emphasizes data-driven decision-making and algorithmically

informed engagement. This demands a rethinking of diplomatic theory to accommodate new modes of interaction that blur the lines between automated processes and human agency (BJOLA; ZAIOTTI, 2021; MANOR; CRILLEY, 2023).

2. Foreign ministries and diplomatic institutions must undergo significant organizational reforms to effectively incorporate digital tools. This includes building digital literacy, establishing specialized units for algorithmic governance, and adopting AI ethics guidelines to ensure responsible use of technologies. Without such institutional adaptation, the legitimacy and effectiveness of diplomacy risk being undermined in increasingly digitalized international relations (KURBALIJA, 2022).
3. The expansion of digital diplomacy raises critical concerns around transparency, privacy, misinformation, and surveillance. Ethical frameworks must be embedded in diplomatic practices to navigate these challenges, balancing innovation with protection of fundamental rights. This requires cooperation among states and international bodies to develop binding standards and regulatory mechanisms that promote accountability in digital interactions (MEYER, 2022).
4. Governments are increasingly reliant on big data analytics to anticipate geopolitical shifts, monitor public sentiment, and counter disinformation campaigns. This strategic use of data enhances the proactive capabilities of states in foreign policy formulation but also introduces risks related to data misuse and biased algorithmic outputs. Therefore, transparency in data sourcing and analytical processes is crucial to maintain trust and reliability in digital diplomatic efforts (TSVETKOVA *et al.*, 2021).
5. The deployment of AI in diplomacy intersects with broader issues of digital sovereignty and geopolitical rivalry. States are both collaborating and competing in shaping digital norms, standards, and technologies. Without robust diplomatic frameworks to manage these tensions, there is a risk of deepening fragmentation and digital balkanization, which could destabilize international order and hinder cooperation on global challenges (FALK, 2024).
6. Digital platforms have expanded the scope of public diplomacy, enabling more direct and interactive engagement with foreign publics. However, the automation

of engagement via bots and algorithmic targeting brings new challenges, including manipulation risks and reduced authenticity in diplomatic communication. Diplomats must develop skills for managing these complexities to sustain genuine and constructive dialogue in the digital sphere (MANOR; CRILLEY, 2023).

7. The digital divide remains a significant obstacle to inclusive diplomacy. Effective digital diplomacy requires investment in capacity-building, especially in developing countries and marginalized communities, to ensure equitable participation in international discourse. Promoting digital literacy and access is essential for democratizing diplomatic engagement and preventing new forms of exclusion (KURBALIJA, 2022).
8. This study highlights the need for continued interdisciplinary research to explore the long-term impacts of digital technologies on diplomacy, including their effects on power relations, normative frameworks, and diplomatic culture. Policy recommendations include fostering multilateral dialogue on digital diplomacy norms, developing ethical AI toolkits tailored for foreign affairs, and encouraging public-private partnerships to leverage technological innovations responsibly.
9. While embracing digital transformation, diplomacy must also preserve its core values of dialogue, negotiation, and mutual respect. The challenge lies in integrating digital tools without sacrificing the human-centric and relationship-building aspects that underpin effective international relations. Achieving this balance is vital for maintaining diplomacy's relevance and efficacy in a complex, interconnected world.
10. Azerbaijan's institutionalization of digital diplomacy demonstrates how emerging economies can strategically integrate AI and digital tools to enhance both domestic governance and international influence. The implementation of the Artificial Intelligence Strategy (2025--2028) and the establishment of the AI Academy mark significant milestones in Azerbaijan's ambition to become a regional leader in digital innovation and algorithmic diplomacy. These efforts underline the country's transition from passive technology adoption to proactive digital policymaking aligned with global ethical standards.
11. By embedding digital diplomacy within broader geopolitical and developmental strategies---including energy diplomacy, post-conflict

reconstruction, and multilateral engagement---Azerbaijan positions itself as a model for the convergence of technological and foreign policy innovation. The alignment of AI governance with national priorities such as digital sovereignty, algorithmic accountability, and cross-border cooperation highlights Azerbaijan's potential to shape international norms and standards in the digital domain.

12. Azerbaijan's case illustrates the transformative potential of digital diplomacy when coupled with long-term strategic planning, cross-sectoral coordination, and international collaboration. As AI and algorithmic systems become central to foreign policy processes, Azerbaijan's experience offers critical lessons on how smaller and mid-sized states can navigate the digital transformation of diplomacy while contributing to the global digital governance architecture.

In conclusion, digital diplomacy represents a multidimensional transformation that requires holistic responses across theory, practice, policy, and education. Only through coordinated efforts can the diplomatic community harness the opportunities of digital technologies while mitigating associated risks, ensuring diplomacy remains a cornerstone of peaceful and cooperative global governance.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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