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## The metaverse as a tool and domain of economic diplomacy: governance, systemic risk and competitiveness

### *Abstract*

**RESEARCH OBJECTIVE:** The aim of this article is to analyse the role of the metaverse as a tool and domain of economic diplomacy, as well as to assess its impact on global economic cooperation.

**RESEARCH PROBLEM AND METHOD:** The study explores the application of modern technologies in economic diplomacy, with a particular focus on the metaverse. The research employs an analytical-descriptive method, literature analysis, case studies, and a review of diplomatic practices.

**THE PROCESS OF ARGUMENTATION:** The article discusses the significance of economic diplomacy tools in the context of contemporary international economic theories. It then presents the specifics of the metaverse as a new arena for diplomatic interactions. The analysis also covers the challenges, opportunities, and risks associated with implementing digital technologies in diplomatic practice, with particular emphasis on risk management and an interdisciplinary approach to the training of diplomatic personnel.

**RESEARCH RESULTS:** The author addresses the question of how the metaverse can enhance the effectiveness of economic diplomacy, what factors determine the success of its implementation, and what implications this has for contemporary international relations.

**CONCLUSIONS, INNOVATIONS, AND RECOMMENDATIONS:** Modern digital technologies, including the metaverse and artificial intelligence, can significantly improve the effectiveness of diplomatic activities, fostering the internationalization of economies and the development of global cooperation.

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Systematic risk management, an interdisciplinary approach and proper diplomat training, encompassing technological, analytical, and strategic competencies, are crucial.

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**KEYWORDS:**

economic diplomacy, metaverse, digital technologies, diplomatic effectiveness, systemic risk management, competitiveness

## INTRODUCTION

Since the 1990s, economic diplomacy has evolved both as theoretical and practical concept becoming an influential component of both international relations and the global economy. Modern approaches to economic diplomacy extend beyond the traditional realist paradigm, which saw diplomatic activity as the exclusive domain of nation-states. Increasing emphasis is now placed on international cooperation and the active participation of non-state actors, including corporations, non-governmental organizations, and academic institutions (Garbacz, 2017, Bayne & Woolcock, 2017, Shrestha, 2021).

Technological innovation is one of the features of modern economic diplomacy, which enables adaptation to the dynamic nature of the global economic environment. Among the emerging tools of the modern diplomacy, the metaverse – a virtual, interactive environment that merges physical and digital realities, stands out as both promising and controversial. The metaverse provides a platform for conducting negotiations, fostering economic relations, and shaping the international image of states and organizations. It may also serve as a strategic domain for achieving national goals, especially in the context of hybrid warfare and technological competition (Marsili, 2023, Herath, Mittal, & Kataria, 2024).

The primary objective of this article is to explore the application of the metaverse in economic diplomacy, with a particular focus on its potential, associated challenges, and the multifaceted risks. The analysis adopts an interdisciplinary approach, drawing on insights from international economics, international relations, institutional theory, and management, particularly in the context of systemic risk management.

The main theses of the article, which will be developed in the subsequent sections, are as follows:

1. The metaverse is not merely a new tool of economic diplomacy but is emerging as a distinct domain of economic and regulatory activity which, under specific institutional, competency-based, and legal conditions, can enhance the effectiveness of states' economic diplomacy.
2. The metaverse's application for realisation economic diplomacy's goals generates new systemic risks that require coordinated governance at both national and supranational levels.

Existing research on the metaverse has focused primarily on its technological, cultural, and business dimensions, whereas its role in economic diplomacy – understood both as an instrument and as a domain of state activity, remains insufficiently explored. This article addresses that gap by proposing a conceptual model for the use of the metaverse in economic diplomacy and by identifying the key conditions and risks associated with its implementation.

The topic discussed herein is of substantial significance to the development of modern economic diplomacy and warrants careful attention from policymakers, the private sector, and civil society organizations. Accordingly, the article's conclusions and recommendations are aimed primarily at these stakeholder groups, with the intention of supporting strategies conducive to economic development, competitiveness and enhancement of national prosperity.

The article is structured as follows. First, it conceptualizes the metaverse within the theoretical framework of economic diplomacy and outlines its technological and economic characteristics. Second, it analyses the opportunities and systemic risks associated with the use of the metaverse as both a tool and a domain of economic diplomacy. Third, it presents comparative case studies of selected countries and the European Union, systematized through a comparative analytical matrix, in order to identify differing governance logics and institutional approaches. The discussion section interprets these findings in light of systemic risk management and multilevel governance. Finally, the article concludes by formulating policy recommendations and outlining directions for further research.

## METHOD

This article adopts a conceptual-analytical approach grounded in qualitative analysis of secondary sources. The research framework comprises: (1) a literature review of peer-reviewed articles and scholarly monographs published between 2012 and 2024 in the fields of economic diplomacy, technology governance, and metaverse studies; (2) analysis of institutional documents, including European Union materials, publications of international organizations, and publicly available governmental communications; and (3) comparative case studies, selected based on official public-sector involvement, relevance to economic diplomacy objectives, and diversity of institutional and developmental contexts.

A SWOT analysis was employed as a synthesizing analytical technique, and an original conceptual model was developed as the theoretical outcome of the study, focusing on the role of the metaverse in enhancing competitiveness within economic diplomacy. Validation was ensured through source triangulation and cross-referencing literature-based insights with documented institutional practices. The qualitative methodology supported both analytical inquiry and the formulation of policy-oriented recommendations.

## RESULTS

### The Metaverse in the Context of Economic Diplomacy

The term metaverse combines the Greek prefix *meta* (meaning “beyond” or “transcending”) with “universe”, denoting a space that extends beyond physical reality. In contemporary technological discourse, the metaverse refers to an immersive, multidimensional digital environment that integrates physical and virtual realities (Mystakidis, 2022, p. 486). Although the concept was introduced by Neal Stephenson in Snow Crash (1992), its transformation from speculative fiction into a subject of policy, business, and academic debate accelerated following Meta Platforms’ strategic rebranding announcement in October 2021 (Meta, 2021a). This development marked a shift from conceptual imagination to institutional and corporate investment, positioning the metaverse as a potential infrastructure for future digital interaction.

Technologically, the metaverse constitutes a persistent three-dimensional virtual environment enabling real-time interaction through avatars and immersive interfaces, including virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) (Ritterbusch & Teichmann, 2023). Its functioning depends on advanced communication infrastructures such as 5G/6G networks, high-speed connectivity, blockchain systems, and interoperable digital platforms (LSE Consulting, 2024). While often used interchangeably with “immersive technologies”, the latter represent a broader category encompassing extended reality (XR), mixed reality (MR), AI, and the Internet of Things (IoT), all of which enhance user presence and interaction within digital environments. Increasingly, the metaverse is discussed as a core component of the anticipated Web 4.0 paradigm, characterized by deeper integration of physical, digital, and cognitive systems (LSE Consulting, 2024).

Beyond its technological dimension, the metaverse has evolved into an economically significant environment with cross-sectoral applications. This transformation situates it within the analytical framework of economic diplomacy, understood as a set of policies and institutional mechanisms designed to advance national economic priorities through both adaptive and proactive engagement with global economic dynamics (LSE, 2021, p. 9). Conceptualizing the metaverse as both an instrument and a domain of economic diplomacy reflects its embeddedness in market processes. As Odell (2000) argues, markets are not external to economic diplomacy but constitute an endogenous element of its operation. Consequently, the emergence of new digital markets necessitates corresponding adaptation of diplomatic instruments and governance mechanisms. Innovation thus becomes a structural component of economic diplomacy, enabling responsiveness to evolving international and domestic conditions and fostering competitiveness (Czarnecka-Gallas, 2012).

The metaverse is relevant to economic diplomacy for two principal reasons. First, it functions as a technological tool facilitating novel forms of negotiation, promotion, and international economic engagement. Second, it represents an emerging economic space in which production, exchange, branding, and investment activities occur, thereby requiring regulatory oversight and institutional coordination. As its economic significance increases, the metaverse becomes not merely

a medium of communication but a structured environment shaping transnational economic interactions. This development underscores the necessity of examining governance models, regulatory strategies, and mechanisms of intergovernmental cooperation capable of balancing innovation with systemic risk mitigation. In this context, the metaverse should be analysed not only as a supportive instrument of economic diplomacy but as a transformative domain influencing the architecture of contemporary international economic relations.

### Opportunities and Risks of Using the Metaverse as a Tool of Economic Diplomacy

The metaverse demonstrates cross-sectoral applicability, which positions it simultaneously as an instrument of economic diplomacy and as an emerging domain of economic activity subject to diplomatic engagement. Its multifunctional character enables both short-term promotional objectives and long-term strategic economic positioning. A review of academic literature, industry reports, and institutional materials indicates that immersive digital environments may enhance competitiveness by increasing operational efficiency, stimulating innovation, and reducing transaction and coordination costs across multiple industries.

One of the most advanced areas of application concerns industrial simulation and digital twin technologies. Digital replicas of production systems enable the optimization of industrial processes prior to physical implementation. For example, BMW employs digital twins of manufacturing facilities via Nvidia Omniverse, General Electric applies similar solutions to improve jet engine performance, and Amazon and PepsiCo use virtual modelling to optimize distribution centre design. These cases illustrate how immersive technologies can reduce operational risk, enhance productivity, and support strategic investment decisions. Similarly, immersive collaborative platforms (e.g., Teamflow, Gather) create interactive digital workspaces that may improve coordination efficiency in distributed teams (World Economic Forum, 2023). In Poland, Orange Polska has developed the “Orange Business Metaverse,” a virtual environment allowing corporate clients to explore Smart City solutions and 5G campus networks through immersive simulations. Such initiatives demonstrate how metaverse-based

platforms may function not only as promotional tools but also as environments for co-design, technological experimentation, and Industry 4.0 collaboration (Business Insider, 2024).

Beyond industrial and administrative functions, the metaverse constitutes an alternative communication infrastructure that complements traditional diplomatic instruments. Although it does not replace physical interaction, immersive engagement may enhance participation, visibility, and stakeholder interaction in conferences, trade fairs, and investment promotion events. The expansion of immersive ecosystems has also generated new professional categories that integrate digital and physical environments, including virtual world designers, immersive experience architects, cybersecurity specialists, and digital compliance officers. Forecasts suggest that the metaverse economy could generate substantial employment effects in the coming decade, further reinforcing its economic relevance (Acciona, 2025). According to Bloomberg, over 24 million jobs may be created in the metaverse by 2030 (Acciona, 2025).

From the perspective of economic diplomacy, the metaverse contributes to trade and investment promotion in both physical and digital domains. In the physical economy, virtual trade fairs and immersive “try-before-you-buy” simulations may support the internationalization of domestic enterprises and enhance export promotion strategies. In the digital economy, immersive commerce (i-commerce) enables transactions involving virtual goods, digital services, NFTs, advertising spaces, and virtual real estate within platforms such as Decentraland or Roblox. Investments in immersive hardware and software infrastructures further integrate metaverse development into global value chains (Riezqia, 2023).

However, the integration of the metaverse into economic diplomacy raises substantial legal, regulatory, and ethical challenges. Existing international legal frameworks, including the founding Vienna Convention on Diplomatic Relations (1961) and the Vienna Convention on Consular Relations (1963), were developed in a pre-digital era and do not explicitly address virtual diplomatic spaces. The legal status of digital embassies remains ambiguous, including the identification of a “host state” for diplomatic missions operating on globally distributed digital platforms (Gupta, 2023). Competing interpretations, whether jurisdiction should depend on user nationality or

server location, illustrate structural regulatory gaps that complicate diplomatic immunity and accountability mechanisms.

Technological risks further complicate governance. Immersive technologies such as AR and VR have demonstrable persuasive and behavioural effects (Slater et al., 2020), raising concerns related to data privacy, algorithmic bias, cognitive manipulation, and psychographic profiling (Christopoulos et al., 2021). Deepfake technologies and identity manipulation threaten the credibility of diplomatic communication, while open virtual environments may facilitate harassment, misinformation, and cybercrime (Li et al., 2023; Mystakidis, 2022). Moreover, existing legal systems remain insufficiently adapted to crimes occurring in immersive environments, generating complex human rights and jurisdictional dilemmas (Gupta, 2023).

At the societal level, extended immersion in virtual environments may contribute to social isolation, dependency, and adverse health outcomes, raising questions about the long-term sustainability of metaverse-based diplomatic engagement. These multidimensional risks underscore the necessity of integrating systemic risk management, regulatory coordination, and ethical oversight into any strategic deployment of the metaverse within economic diplomacy.

Consequently, while the metaverse offers measurable advantages in terms of competitiveness, innovation, and investment promotion, its sustainable incorporation into economic diplomacy requires coherent governance frameworks capable of balancing technological opportunity with institutional resilience and regulatory safeguards.

Table 1. SWOT Analysis of the Use of the Metaverse in Economic Diplomacy

Strengths	Weaknesses
Versatile applications in sectors such as manufacturing, trade, education, and investment promotion.	Regulatory issues and lack of uniform standards.
Innovation and reduction of operational costs.	Risk of social isolation and addiction.
Creation of new digital professions.	Inequalities in access to digital infrastructure.
Alternative communication channels that enhance engagement.	Weak institutional coordination.
Synergy between the public and private sectors.	Low level of awareness among decision-makers.

Opportunities	Threats
Development of economic diplomacy through virtual trade fairs, digital twins of cities, and cultural promotion.	Violations of privacy and data security.
New markets, including i-commerce, digital real estate investments, and NFTs.	Fake identities, disinformation, and trolling.
Increased competitiveness of economies.	Algorithmic bias and information manipulation.
Enhanced economic efficiency.	Deepening social and digital inequalities.
Education and development of digital competencies.	Risk of financial fraud and cybercrime.

Source: own work.

### Cross-country analysis of Metaverse's application in Economic Diplomacy and Policy

The growing interest in immersive technologies as means of communication or instrument of promotion and competitiveness has led to their incorporation into national and supranational domestic and foreign policies. The metaverse is becoming to be perceived not only as a technological innovation but as a strategic policy domain situated at the intersection of economic modernization, digital governance, and international positioning. Public – private synergy plays a central role in this process, as innovation ecosystems in immersive technologies require coordination between regulatory authorities, technological firms, and institutional actors. In this context, states that are lagging behind in developing coherent regulatory approaches and holistic innovation ecosystems may draw lessons from international experiences, also in context of integrating the metaverse into economic and diplomatic strategies.

Comparative evidence suggests that states have adopted heterogeneous implementation models as far as metaverse is concerned. Early European experiments with virtual diplomacy illustrate a primarily symbolic and image-oriented approach. Sweden and Estonia established virtual embassies in the Second Life platform in 2007, prior to the current wave of metaverse-related policy debates. These initiatives focused on cultural promotion, public diplomacy, and technological branding rather than on delivering full diplomatic or consular functions. Estonia additionally used its virtual presence to reinforce

its identity as a digitally advanced state and to facilitate diplomatic outreach in regions lacking physical representation. However, limited user engagement and declining platform relevance constrained the institutionalization of such initiatives. As a result, many governments redirected digital diplomacy efforts toward more widely used social media platforms. These cases illustrate the experimental, rather symbolic and non-systemic character of early metaverse engagement.

State-led metaverse initiatives often remain fragmented and demonstrative. Using a more modern immersive platforms as the technology matured, Barbados and the Maldives established virtual diplomatic presences in Decentraland and Second Life, respectively. Again these efforts were primarily for symbolic representation and image-building. More multifaceted approach has been demonstrated by South Korea's "Metaverse Seoul" project that integrates immersive platforms into digital public service delivery, or Saudi Arabia that incorporates metaverse applications into large-scale urban mega-projects such as NEOM. Also, Indonesia and Vietnam have turned to metaverse as tool of enhancing competitiveness by adopting hybrid models combining cultural promotion, technological sector development, and tourism branding through immersive platforms and NFT-based initiatives. These cases illustrate varying degrees of integration between immersive technologies and public governance structures. Nevertheless, the majority of state-led initiatives remain limited in scope and do not substitute for traditional diplomatic functions. As noted in recent scholarship, non-physical embassies cannot fulfil core diplomatic and consular mandates, underscoring the supplementary, rather than substitutive, nature of metaverse diplomacy.

On the other hand, there are initiatives illustrating the metaverse's potential role in addressing global challenges, including environmental displacement and identity preservation. The best example is provided by climate-vulnerable states such as Tuvalu that have explored the metaverse as a tool of digital preservation and climate diplomacy, creating virtual replicas of national territory to safeguard cultural and legal heritage.

In contrast, the European Union has adopted a more institutionalized and regulatory-oriented approach, framing "virtual worlds" within the broader Digital Decade 2030 agenda. Rather than treating the metaverse as a promotional instrument, the EU conceptualizes it as

an emerging economic ecosystem requiring coordinated governance. The launch of the Virtual and Augmented Reality Industrial Coalition (2022), the European Citizens' Panel on Virtual Worlds (2023), and the subsequent Strategy on Web 4.0 and Virtual Worlds (July 2023) demonstrate an attempt to embed immersive technologies within a comprehensive policy framework. This strategy emphasizes openness, interoperability, inclusiveness, and regulatory standard-setting, thereby aligning technological innovation with normative and institutional objectives.

Given projections of substantial market growth in virtual worlds, the EU strategy identifies four strategic pillars: (1) skills development and digital literacy enhancement; (2) support for business ecosystems through Horizon Europe partnerships and regulatory sandboxes; (3) investment in digital twin infrastructures (e.g., Destination Earth, CitiVerse) for governance and scientific applications; and (4) promotion of global standards and participation in internet governance processes to prevent technological monopolization. This approach reflects a systemic governance model, prioritizing regulatory coordination, multilevel institutional engagement, and strategic competitiveness.

The private sector, however, remains the primary driver of technological development and capital investment in immersive ecosystems. Major corporations in the United States, East Asia, and Europe are shaping platform architectures, software standards, and digital marketplaces. The metaverse economy thus reflects a structural asymmetry between state regulatory capacity and private technological leadership. Public-private partnerships—particularly in cultural preservation, education, and smart city projects—demonstrate increasing interdependence between governmental objectives and corporate innovation strategies.

Overall, the empirical cases reveal three distinguishable governance patterns: (1) symbolic-promotional engagement, focused on image-building and public diplomacy; (2) pragmatic-administrative implementation, oriented toward digital public services and pilot projects; and (3) systemic-regulatory integration, exemplified by the EU model, emphasizing multilevel governance, standard-setting, and ecosystem development. These patterns differ in their degree of institutionalization, regulatory coordination, and long-term strategic embedding.

Table 2. Comparison of selected case studies of metaverse application in economic diplomacy

Country/ Actor	Type of Initiative	Instrument Example	Economic Diplomacy Objective	Governance Logic	Observed/Expected Effects	Specific Institutional Conditions
<b>Barbados</b>	Virtual embassy	Embassy in Decentraland	Investment promotion; technological branding	Symbolic-promotional	Increased international visibility; reputational gains	Governmental initiative; limited regulatory framework
<b>Maldives</b>	Virtual embassy	Embassy in Second Life	National branding; cultural diplomacy	Symbolic-promotional	Cultural promotion; soft-power signalling	Governmental initiative; limited institutional continuity
<b>Estonia/ Sweden</b>	Virtual embassy	Second Life embassy	Digital-state positioning; diplomatic outreach	Symbolic-promotional; Experimental; innovation-driven	Reputational gains; Short-term visibility; no long-term institutionalization	Strong e-governance background (esp. EST)/ innovation ecosystem
<b>Tuvalu</b>	Digital twin	Digital state replica (Future Now)	Climate diplomacy; sovereignty preservation	Existential-strategic	Strengthened climate negotiation narrative	Strong political leadership; technological constraints
<b>South Korea</b>	Urban metaverse project	Metaverse Seoul	Public-service efficiency; digital innovation	Pragmatic-administrative	Digital service enhancement; pilot validation	Advanced infrastructure; coordinated implementation
<b>Saudi Arabia</b>	Urban megaproject	Neom; New Murabba	Technological modernization; diversification	Strategic-state-led	Global positioning as innovation hub	Strong centralized governance
<b>China/ Japan</b>	Standard-setting & Web 4.0 investment	National tech standards; immersive tech R&D	Technological sovereignty; industrial leadership	Strategic-state-led	Strategic positioning in digital economy esp. In emerging markets	Strong industrial policy capacity
<b>Indonesia/ Vietnam</b>	Tourism & culture promotion	Jagat Nusantara; NFT initiatives	Cultural export; digital economy growth	Strategic-state-led; Developmental-innovation-oriented	Increased tourism visibility; tech-sector branding	Emerging digital ecosystems; unsatisfactory cyber security indicators
<b>European Union</b>	Governance strategy; digital twins; business support	Web 4.0 Strategy; Destination Earth; regulatory sandboxes	Competitiveness; standard setting; ecosystem building	Systemic-regulatory	Long-term ecosystem development; regulatory leadership; competitiveness	High multilevel governance capacity

Source: own work.

To systematize these examples, a comparative analytical matrix (Table 2) was developed, enabling structured identification of similarities and divergences in national and supranational approaches to integrating the metaverse into economic diplomacy. This analytical framework highlights that the effectiveness of metaverse utilization depends less on technological adoption per se and more on institutional capacity, regulatory coherence, and coordinated governance structures.

## DISCUSSION

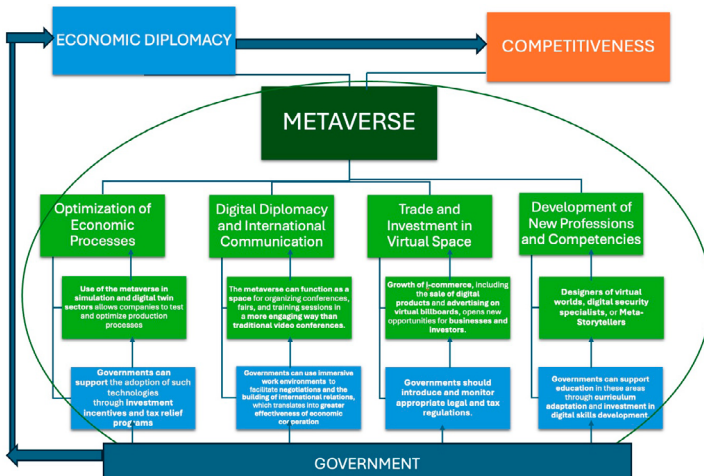
The findings of the study support conceptualization of the metaverse not merely as an innovative digital tool but as an emerging institutional domain within economic diplomacy. Countries can use this technology as a platform to build their image and national brand, promote various sectors (e.g., tourism) and industries, primarily the creative industry, but not exclusively and attract investors. By integrating it with traditional tools of economic diplomacy, which are typically focused on organizing and supporting activities aimed at promoting domestic enterprises and their products and services in both bilateral and multilateral markets, fostering the internationalization of domestic companies, initiating or implementing projects supporting innovation, and conducting informational activities (Molendowski, 2018), the metaverse offers unique opportunities for establishing international cooperation and enhancing global competitiveness. In the same time, in line with Odell's (2000) understanding of markets as endogenous to diplomatic processes, immersive digital environments are not external arenas in which diplomacy operates; rather, they increasingly constitute integral components of economic interaction, value creation, and strategic positioning. In this sense, the metaverse reflects a structural transformation in the operational environment of economic diplomacy.

The use of the metaverse in economic diplomacy can not only support innovation and the development of key sectors but also increase the investment appeal of countries, strengthening their position and enhancing competitiveness.

Its applications include:

1. optimization of economic processes – through digital twins, which enable simulation and improvement of production and logistics processes; modern work environments – immersive platforms such as Teamflow or Gather enhance the effectiveness of remote teams,
2. Digital Diplomacy and International Communication – serving as alternative communication channel, increasing participant engagement in meetings, conferences, and trade shows, facilitating business interactions
3. Trade and investment promotion – virtual trade fairs, immersive “try-before-you-buy” experiences, i-commerce enable the promotion of both physical products and the growth of the digital economy (e.g., virtual real estate sales, NFTs, advertising in the metaverse)
4. Development of new professions and competencies – creation of new roles (virtual world designers, cybersecurity specialists, VR event organizers).

Figure 1. Model of Metaverse Utilization in Economic Diplomacy



Source: own work.

The comparative cross-country case analysis confirms, however, that the effectiveness of metaverse utilization does not derive from

technological adoption per se but from its institutional embeddness within coherent regulatory, organizational, and competency-based frameworks. This finding aligns with neo-institutional theory, which emphasizes that technological innovation yields durable outcomes only when supported by stable institutional arrangements and governance capacity.

Cases such as Barbados, the Maldives and Tuvalu illustrate a symbolic-promotional model of engagement, where virtual embassies and digital replicas primarily serve visibility and branding functions. While such initiatives may strengthen narrative positioning in international discourse, they lack the regulatory and organizational infrastructure required for long-term institutionalization and sustainability. Similarly, Swedish or Estonia's early experimentation with virtual diplomatic presence in Second Life demonstrates innovation-driven adoption without sustained regulatory consolidation, illustrating the phenomenon of institutional misalignment between technological novelty and governance structures. On the other hand, South Korea's pragmatic-administrative model shows that metaverse adoption can enhance public service delivery when embedded within existing digital governance capacities. Pilot-based implementation reduces uncertainty and aligns with incremental institutional adaptation, a mechanism frequently observed in technology-driven policy domains.

In contrast to cited state-led strategies and initiatives, the European Union's approach reflects what institutional theory would describe as a systemic governance model. Through the Strategy on Web 4.0 and Virtual Worlds, regulatory sandboxes, skills development initiatives, and digital twin investments (e.g., Destination Earth), the EU embeds immersive technologies within a structured policy ecosystem, integrating the metaverse into broader competitiveness and digital sovereignty strategies. The EU's emphasis on interoperability, regulatory coordination, and multilevel governance supports the argument that long-term effectiveness requires institutional coherence rather than isolated experimentation. It focuses on creating and sustaining the proper conditions for public but mainly private actors to operate and develop metaverse-related projects.

The metaverse technology, although neutral, carries numerous risks that may impact the effectiveness of economic diplomacy.

The most significant threats include mass collection of personal data, abuse and fraud in the digital space, fake identities and avatars, systemic security breaches, artificial intelligence algorithm bias, as well as manipulation by bots and trolls (Riezqia, 2024, pp. 2852–2853). Additionally, the metaverse may enhance social inequalities, foster social isolation, and negatively affect users' mental and physical health. Riezqia highlights that such innovations may deepen the divide between developed and developing countries, especially where access to necessary infrastructure remains limited (Riezqia, 2024). Furthermore, the development of blockchain technologies and digital currencies poses threats related to financial fraud, cybersecurity, and vulnerability to speculation (Brol, 2023). The analysis further confirms the second thesis: the metaverse generates systemic risks that transcend sectoral boundaries and require coordinated multilevel governance. Risks associated with data extraction, algorithmic bias, cybersecurity vulnerabilities, financial speculation (Brol, 2023), and identity manipulation demonstrate the interconnectedness of digital infrastructures and diplomatic credibility.

Therefore, a comprehensive and multi-level approach to metaverse governance is important, especially in the context of economic diplomacy. Beyond the technical issues that must be resolved for the metaverse to function as an accessible tool, political aspects are equally crucial. These include the creation of a sustainable regulatory environment, the development of universally accepted standards, international cooperation, and social aspects such as counteracting digital exclusion, abuse, and manipulation. Governance of the metaverse should also be based on building digital competencies among key stakeholders and promoting civic education. In this context, it is worth considering the issue of metaverse governance through the lens of systemic risk management, which involves identifying, assessing, and managing risk as part of an organization's business strategy, including taking swift action when risks materialize (Frigo & Anderson, 2011, p. 83).

A lack of awareness among decision-makers about the potential and risks associated with the metaverse, as well as poor inter-institutional coordination, are key barriers to effectively utilizing this technology. Meanwhile, the development of strategic processes and risk management capabilities can provide a strong foundation

for improving risk governance and institutional order (Frigo & Anderson, 2011).

At the national level, a common problem identified in the literature is the lack of cooperation between ministries and institutions, preventing a cohesive approach to metaverse governance. On the international level, insufficient engagement in global initiatives, such as the “Metaverse Standards Forum” consortium, hinders the development of interoperable standards and regulatory frameworks (Riezqia, 2024). Moreover, political will, essential for ensuring sustainable funding and strategy implementation, remains a critical factor for success in this domain (Riezqia, 2024, after Harkomoyo, 2023). It is also vital in the context of sensitive data protection.

Legal regulations and risk management remain key issues. There is ongoing debate about the possibility of extending existing legal frameworks to the metaverse environment (Kalpokas & Kalpokienė, 2023). Examples of technologies requiring regulation include augmented reality (AR), virtual reality (VR), 3D content creation tools, physical simulations, and solutions supporting social interactions and servicing millions of users simultaneously (Flores-Galea, 2023). On the other hand, the metaverse is subject to the specific nature of technology markets. As Szpringer notes, due to excessive expectations associated with new technologies, there is often a tendency to underestimate risks and overestimate opportunities, which, from a regulatory perspective, reinforces the need for a holistic and systemic view of conflicts and synergies between norms from different legal subsystems (Szpringer, 2024, pp. 7–21).

In the context of using the metaverse in economic diplomacy and diplomacy in general, regulations under international diplomatic and consular law are critically important. These include defining the “territory of the receiving state,” the status and location of diplomatic missions in the metaverse, the obligations of host states, and the protection of diplomats’ and consuls’ rights in the metaverse. These tasks are made more complex by the absence of physical spaces that could be protected like diplomatic buildings, potentially limiting the enforcement of immunities and the application of rules against the misuse of diplomatic and consular missions (Gupta, 2023). Equally important are issues concerning human rights protection and managing international law violations in the metaverse, including

developing new mechanisms to enforce international law and protect individuals from abuse in this new environment.

Therefore, a model for using the metaverse in economic diplomacy – one that fully harnesses key benefits such as process optimization, digital diplomacy, international communication, trade and investment, and the development of new skills and professions – must include the essential role of the state and its institutions. This is particularly true in terms of regulation, support for key areas, technological adaptation, and education, which plays a crucial role not only in developing digital competencies but also in combating disinformation and increasing societal resilience to threats in the world of immersive technologies. Managing the metaverse in the context of economic diplomacy requires a strategic approach that includes the development of digital competencies, coordination of actions at both national and international levels, and effective risk management. Building a sustainable ecosystem based on shared standards and regulations is crucial to avoiding disinformation, cyber threats, and other negative consequences. Political will and active participation in global initiatives are the foundation for effective metaverse governance and its use in economic diplomacy.

It is also important to integrate systemic and strategic risk management into the operating model of economic diplomacy utilizing the metaverse. To this end, the Kaplan-Norton model (2008) can be employed, emphasizing six key elements: a) Strategy development – identifying risks related to the metaverse (e.g. cybersecurity, regulation, platform stability) as an integral part of the strategic analysis of economic diplomacy; b) Translating strategy into action – developing a risk map, objectives, measures, and indicators that account for risks arising from, for instance, immersive commerce (i-commerce), digital investments, or identity theft, as well as risk scoreboards; c) Organizational alignment – which may involve creating a cooperation platform between economic diplomacy institutions (or even specific internal units) and digital risk, blockchain, and international law experts; d) Operational planning – incorporating risk monitoring mechanisms within specific activities in the metaverse, such as virtual trade fairs and investment platforms, using tools like risk dashboards; e) Monitoring and analysis by conducting regular reviews of risks associated with the use of

the metaverse in diplomacy, including through crisis simulations and early warning systems; f) Testing and adaptation, that means ongoing evaluation of emerging risks, such as regulatory changes or new technologies, to adjust the risk management strategy to the dynamic metaverse ecosystem.

Such an approach reflects what institutional theory identifies as dynamic capability, the ability of organizations to reconfigure resources and competencies in response to environmental transformation. Without this adaptive capacity, metaverse initiatives remain symbolic and vulnerable to systemic disruption.

## CONCLUSIONS

The article demonstrates that the metaverse functions simultaneously as: an instrument of economic diplomacy, an ecosystem embedded within global value chains, and an institutional domain requiring governance and regulatory coordination. It constitutes an emerging domain of economic diplomacy whose effectiveness depends on states' ability to integrate technological innovation with risk management, regulatory frameworks, and competence development. The article confirms the validity of the thesis that the metaverse should not be regarded merely as a new tool of economic diplomacy (often reduced to its communicative dimension), but rather as a distinct sphere of economic and regulatory activity which, under specific institutional, competency-based, and legal conditions, can enhance the effectiveness of states' economic diplomacy as part of a broader economic and institutional ecosystem.

The development of artificial intelligence and metaverse-related technologies gives it the potential to become a significant instrument supporting economic diplomacy by enabling the international promotion of various economic sectors. Governments may use this technology as a platform for building national image and branding, promoting specific sectors (e.g., tourism) and industries, particularly the creative industries, and attracting investors. When integrated with traditional instruments of economic diplomacy, the metaverse offers new opportunities for establishing international cooperation and enhancing national/regional competitiveness. This applies to multiple

areas of economic diplomacy, ranging from information activities and the organization and support of initiatives promoting domestic enterprises and their products and services in bilateral and multilateral markets, to initiating and implementing projects that foster innovation and broader strategic economic development objectives.

Within economic diplomacy, the metaverse may play a significant role in enhancing economic efficiency by supporting innovation, cost optimization, and the development of new forms of cooperation, thereby strengthening long-term competitiveness and economic growth. Achieving these objectives requires the implementation of a strategic and systematic approach to metaverse governance at both the international level (based on sustainable development and multilateral initiatives) and the national level. This includes the development of regulations and strategies that account for the specific nature of this technology, particularly with regard to security, algorithmic bias risks, and privacy protection, as well as the development of diplomats' competencies in the digital economy and the metaverse itself. However, as demonstrated by selected case studies national economies often adopt a relatively superficial approach to the use of the metaverse, focusing primarily on image-building aspects. The absence of structured engagement in global initiatives, such as the Metaverse Standards Forum, further illustrates fragmented governance. Institutional fragmentation increases systemic exposure and weakens collective resilience.

The analysis presented in the article indicates that the effectiveness of implementation depends on institutional capacity and regulatory frameworks. Ultimately, technological innovation does not automatically produce competitiveness gains. Institutional capacity, regulatory coherence, political will, and coordinated governance determine whether immersive technologies become drivers of sustainable development or sources of systemic vulnerability. Therefore, the strategic challenge for states lies not in adopting the metaverse as an isolated innovation, but in embedding it within stable institutional architectures that balance innovation with resilience. Only under such conditions can the metaverse contribute to long-term competitiveness and effective economic diplomacy.

The findings highlight the need for further research on indicators measuring the effectiveness of diplomatic activities conducted in the metaverse, as well as on mechanisms of international cooperation

in this field. Beyond assessing benefits and costs, opportunities and threats, future research should also examine the readiness of the public sector, and especially diplomatic personnel, to adopt a systemic and holistic approach to the use of the metaverse.

#### REFERENCES

- Acciona. Innovation #hub (2025, 4th February). *Future of work in the metaverse*. <https://www.innovation-hub.com/society/metaverse-workplace-future/> (accessed on: 04.02.2025).
- Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 Coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, 5(4).
- Bayne, N., & Woolcock, S. (2017). What is economic diplomacy? In *The New Economic Diplomacy* (pp. 17–34). London: Routledge.
- BBC (2024, 25th January). *Tuvalu: The Pacific islands creating a digital nation in the metaverse due to climate change*. <https://www.bbc.com/future/article/20241121-tuvalu-the-pacific-islands-creating-a-digital-nation-in-the-metaverse-due-to-climate-change> (accessed on: 04.02.2025).
- Brol, M. (2023). Zagrożenia bezpieczeństwa związane z kryptowalutami i technologią blockchain. In W. Michalczyk (Ed.), *Ku kryptofinansom? Poszukiwanie miejsca kryptowalut we współczesnych finansach międzynarodowych* (pp. 97–110). Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.
- Business Insider (2024, 31th January). *Metawersum – wirtualne światy wkraczają do biznesu*. <https://businessinsider.com.pl/technologie/nowe-technologie/metawersum-wirtualne-swiaty-wkraczaja-do-biznesu/vh7glzw> (accessed on: 04.02.2025).
- Christensen, L., & Robinson, A. (2022). *The potential global economic impact of the metaverse*. Analysis Group. <https://www.analysisgroup.com/globalassets/insights/publishing/2022-the-potential-global-economic-impact-of-the-metaverse.pdf>
- Christopoulos, A., Mystakidis, S., Pellas, N., & Laakso, M.-J. (2021). Arlean, an augmented reality learning analytics ethical framework. *Computers*, 10(92).
- Czarnecka-Gallas, M. (2012). The role of economic diplomacy in enhancing national competitiveness. *Nierówności Społeczne a Wzrost Gospodarczy*, 28, 62–73.
- Di Dario, D., Bilott, U., Sibilio, M., Gravino, C., & Palomba, F. (2023). Toward a secure educational metaverse: A tale of blockchain design for educational environments. In *2023 49th Euromicro Conference on*

- Software Engineering and Advanced Applications (SEAA)* (pp. 159–166). Durres: IEEE.
- Diplomat Magazine (2022, 20th December). *Barbados to establish the world's first embassy in the metaverse*. <https://diplomatmagazine.eu/2022/08/30/barbados-to-establish-the-world-first-embassy-in-the-metaverse/> (accessed on: 04.02.2025).
- DiploFoundation (2025, 21th January). *Diplomacy goes virtual*. <https://www.diplomacy.edu/event/diplomacy-goes-virtual-inauguration-diplomacy-island-and-virtual-embassy-second-life/> (accessed on: 04.02.2025).
- Fiker Institute (2022, 23th January). *Metaverse diplomacy*. <https://www.fikerinstitute.org/publications/metaverse-diplomacy> (accessed on: 04.02.2025).
- Flores-Galea, A. (2023). *Journey to the metaverse*. New York: Business Expert Press.
- Frigo, M.L., & Anderson, R.J. (2011). Strategic risk management: A foundation for improving enterprise risk management and governance. *Journal of Corporate Accounting and Finance*, 22(3), 81–88.
- Garbacz, W. (2017). Dyplomacja ekonomiczna w paradygmacie realistycznym – próba konceptualizacji pojęcia. *Stosunki Międzynarodowe – International Relations*, 53(3), 123–141. DOI: 10.7366/020909613201707
- Gupta, A. (2023). Metaverse: Challenges and opportunities for diplomacy and international relations. *Journal of International Law and Politics*, 55(1), 1–15.
- Herath, H.M.K.K.M.B., Mittal, M., & Kataria, A. (2024). Navigating the metaverse: A technical review of emerging virtual worlds. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, 14(4), e1538.
- Jarczewska, A. (2024). Dyplomacja ekonomiczna. In E. Haliżak (Ed.), *Encyklopedia stosunków międzynarodowych*. Warszawa: Wydawnictwo Naukowe Scholar.
- Kalpokas, I., & Kalpokien, J. (2023). *Regulating the metaverse*. London: Taylor and Francis.
- Kaplan, R.S., & Norton, D.P. (2008). *The execution premium*. Boston: Harvard Business Press.
- Komisja Europejska (2023, 20th January). *Towards the next technological transition: Commission presents EU strategy to lead on Web 4.0 and virtual worlds*. [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_3718](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3718) (accessed on: 04.02.2025).
- Li, K., Lau, B.P.L., Yuan, X., Ni, W., Guizani, M., & Yuen, C. (2023). Towards ubiquitous semantic metaverse: Challenges, approaches, and opportunities. *IEEE Internet of Things Journal*, 10(24). DOI: 10.1109/IJOT.2023.3302159

- LSE IDEAS (2021). *The economic diplomacy framework*. In *UK Economic Diplomacy in the 21st Century: The LSE Economic Diplomacy Commission Final Report* (pp. 9–16). <https://www.lse.ac.uk/ideas/Assets/Documents/reports/LSE-IDEAS-UK-Economic-Diplomacy-in-the-21st-Century.pdf>
- LSE Policy Brief (2025, 22th January). *Unleashing European innovations for the metaverse*. <https://www.lse.ac.uk/business/consulting/assets/documents/Unleashing-European-Innovations-for-the-Metaverse-LSE-Policy-Brief-24-April-2024.pdf>
- Marsili, M. (2023). Guerre à la Carte: Cyber, information, cognitive warfare and the metaverse. *Applied Cybersecurity & Internet Governance*, 2(1), 1–11.
- Meta. (2021a, 20th December). *Facebook company is now Meta*. <https://about.fb.com/news/2021/10/facebook-company-is-now-meta/> (accessed on: 04.02.2025).
- Meta. (2021b, 20th December). *Facebook announcement video*. <https://www.facebook.com/facebook/videos/577658430179350/> (accessed on: 04.02.2025).
- Ministerstwo Spraw Zagranicznych (2024, 22th January). *Dyplomacja dla biznesu*. <https://www.gov.pl/web/dyplomacja/dyplomacja-dla-biznesu> (accessed on: 04.02.2025).
- Molendowski, E. (2018). The economic diplomacy of Poland—the origin and evolution of the organisational model and tasks during the transformation period. *International Business and Global Economy*, 37(1), 128–141.
- Mystakidis, S. (2022). Metaverse. *Encyclopedia*, 2(1), 486–497. DOI: 10.3390/encyclopedia2010031
- Odell, J. (2000). *Negotiating the world economy*. Ithaca–London: Cornell University Press.
- Riezqia, S. (2024). Exploring utilisation of the metaverse to strengthen Indonesian economic diplomacy. *International Journal of Economics Development Research*, 5(1), 394–405.
- Rijmenam, M. van. (2022). *Step into the metaverse*. Newark: Wiley.
- Ritterbusch, G., & Teichmann, M. (2023). Defining the metaverse: A systematic literature review. *IEEE Access*, 11, 12368–12377.
- Shrestha, R. (2021). Economic diplomacy for development partnership. *Journal of Foreign Affairs*, 1(1), 59–78.
- Slater, M., Gonzalez-Liencre, C., Haggard, P., Vinkers, C., Gregory-Clarke, R., Jelley, S., & Silver, J. (2020). The ethics of realism in virtual and augmented reality. *Frontiers in Virtual Reality*, 1, 512449.
- Statista (2025, 26th January). *Metaverse worldwide*. <https://www.statista.com/outlook/amo/metaverse/worldwide#global-comparison> (accessed on: 04.02.2025).

Szpringer, W. (2024). Ocena skutków regulacji w obszarze nowych technologii. *Przegląd Prawa Publicznego*, 7-8, 7–21.

World Economic Forum. (2023, 25th January). *Metaverse: What are the economic benefits?* <https://www.weforum.org/stories/2023/06/what-will-be-the-economic-benefits-of-the-metaverse/> (accessed on: 04.02.2025).

Zhahira, T., & Christiani, D.W. (2023). The establishment of a virtual embassy according to the 1961 Vienna Convention on Diplomatic Relations: The case of Barbados' metaverse embassy. *Jurnal Bina Mulia Hukum*, 8(1), 106.

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