

Impact Pathways of the European Union's Technological Sovereignty Strategy on China–EU Digital Diplomatic Interactions

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Abstract: With the rapid development of digital technology and the intensification of global technological competition, technological sovereignty has gradually become an important component of the EU's digital strategy and profoundly influenced the digital diplomacy interaction mode between China and Europe. This article takes the EU's technology sovereignty strategy as the research object, focusing on its connotation evolution, policy system, and strategic characteristics, analyzing the interaction status of China EU digital diplomacy in the fields of digital governance, data flow, technology standards, and platform governance. It further explains the role path of the EU's technology sovereignty strategy in influencing China EU digital diplomacy interaction from four dimensions: rule output, technology standard reshaping, security narrative, and cooperation space rebalancing. The aim is to provide theoretical references for deepening China EU digital cooperation, improving digital governance coordination mechanisms, and promoting the development of the global digital governance system.

1. Introduction

With the rapid development of digital technology and the deepening of a new round of technological revolution, emerging technologies such as digital economy, artificial intelligence, big data, and cloud computing have become important areas of international competition. Digital diplomacy has gradually become an important way for countries to participate in global digital governance and shape international rules. In recent years, the EU has focused on enhancing its strategic autonomy, continuously promoting its technology sovereignty strategy, and actively enhancing its institutional influence in global digital governance by improving digital governance rules, strengthening independent innovation in key technologies, and optimizing the security layout of the industrial chain^[1]. This strategy not only reshapes the internal digital governance system of the European Union, but also has a profound impact on China EU digital cooperation and diplomatic interaction. As an important global economy and a major player in the development of the digital economy, China and Europe have extensive cooperation needs in areas such as digital governance, data flow, technical standards, and platform regulation, as well as differences in institutional concepts, governance models, and security concerns. Therefore, exploring the internal

logic and path of the impact of the EU's technology sovereignty strategy on China EU digital diplomacy interaction is of great theoretical value and practical significance for accurately grasping the development trend of China EU digital relations, improving digital diplomacy cooperation mechanisms, and promoting the construction of a global digital governance system.

2. The connotation and evolution of the EU's technology sovereignty strategy

2.1 Theoretical sources of the concept of technological sovereignty

The concept of technological sovereignty is a new governance concept formed on the basis of the continuous integration of national sovereignty theory, strategic autonomy concept, and digital governance theory. Its core lies in enhancing key technological innovation capabilities, improving the digital governance system, and strengthening the independent controllability of the industrial chain to safeguard the strategic interests of countries or regions in global technological competition^[2]. For the EU, technological sovereignty is not the traditional concept of technological isolation, but rather the enhancement of independent decision-making and risk prevention capabilities within an open market and global cooperation framework, in order to reduce dependence on external key technologies, digital infrastructure, and core supply chains. With the rapid development of the digital economy and increasing international technological competition, technological sovereignty has gradually become an important theoretical basis for the EU to promote digital transformation, maintain economic security, and enhance international influence, providing value guidance for its digital strategy and foreign technological cooperation.

2.2 Construction of the EU Digital Strategy Policy System

The EU's technology sovereignty strategy is not a single policy, but a systematic policy system gradually constructed around multiple fields such as digital economy, data governance, artificial intelligence, cybersecurity, and chip manufacturing. In recent years, the European Union has launched a series of policy measures based on the construction of a digital single market, including data strategy, digital market regulation, digital service governance, artificial intelligence regulation, and semiconductor industry support. Through a combination of legal rules, industrial policies, and financial support, the EU has enhanced its independent capabilities in key digital technologies^[3]. At the same time, the EU emphasizes the use of common rules to promote coordinated development among member states, transforming the advantages of a unified market into digital competitive advantages, and forming an institutional framework that balances innovative development, security governance, and international rule shaping, providing a relatively complete policy support system for the implementation of the technology sovereignty strategy.

2.3 Gradual Evolution of Technology Sovereignty Strategy

The EU's technology sovereignty strategy has gone through a development process from the construction of digital markets to the strengthening of strategic autonomy, and then to the comprehensive improvement of security governance, reflecting obvious phased characteristics. Early policies mainly focused on the construction of a digital single market and the integration of the digital economy, emphasizing the enhancement of the competitiveness of the European digital industry; Subsequently, driven by factors such as global supply chain adjustments, intensified international technological competition, and rising digital security risks, the EU gradually shifted its strategic focus to independent innovation of key technologies, resilience building of industrial chains, and protection of core digital infrastructure; In recent years, with the continuous upgrading

of competition in fields such as artificial intelligence, semiconductors, and data governance, technological sovereignty has been further integrated into the overall security and diplomatic strategy of the European Union, presenting a development trend of economic competition, security governance, and geopolitics intertwined, laying a new strategic foundation for its digital diplomacy practice.

3. Main areas and structural characteristics of China Europe digital diplomacy interaction

3.1 Consultation and Competition on Digital Governance Rules

The interaction between China and Europe in digital diplomacy is primarily reflected in the negotiation and competition of digital governance rules. The EU has long emphasized the promotion of global digital governance based on rules, focusing on the protection of individual rights, fair market competition, and platform responsibility constraints, and attempting to transform its internal regulatory experience into international rule influence. China places greater emphasis on the right to digital development, sovereignty in cyberspace, and national governance capacity building, emphasizing digital cooperation based on respecting the differences in development stages and systems among countries^[4]. As a result, there is both dialogue space and differences in values and institutional paths between China and Europe on issues such as data protection, artificial intelligence ethics, cybersecurity, and platform regulation, forming an interactive pattern of cooperation and competition.

3.2 Cross border data flow and institutional differences

Cross border data flow is a key issue in the digital diplomacy interaction between China and Europe, and it is also an area where institutional differences between the two sides are relatively concentrated. The EU focuses on high-level personal data protection and adequacy assessment mechanisms, emphasizing that data flow must be based on privacy protection, legal remedies, and regulatory transparency. China, on the premise of ensuring data security, personal information protection, and national security, is gradually improving its data export security assessment, standard contracts, and certification mechanisms^[5]. There are differences between the two sides in terms of data sovereignty, regulatory boundaries, corporate compliance obligations, and security review standards, which makes cross-border data cooperation face high institutional costs. However, it also promotes limited coordination space through policy communication and rule docking between the two sides.

3.3 Collaboration on Digital Infrastructure and Technical Standards

Digital infrastructure and technological standards are important areas of cooperation and competitive pressure in China EU digital diplomacy interactions. Both sides have strong industrial complementarity in areas such as 5G, IoT, cloud computing, artificial intelligence, intelligent manufacturing, and green digital technology, as well as common interests in standard setting, market access, and supply chain security. However, as the EU strengthens its awareness of technological sovereignty and supply chain security, Chinese companies' participation in European digital infrastructure construction faces more security scrutiny and political restrictions. At the same time, China and Europe can still maintain technical communication in areas such as international standard organizations, green digital transformation, and connectivity construction, reduce institutional friction through standard negotiations, and expand practical cooperation space.

3.4 Interaction between Digital Economy and Platform Governance

The digital economy and platform governance form an important practical foundation for China Europe digital diplomacy interaction. China has a vast digital market, rich platform economy practices, and rapidly developing digital industry system, while the European Union has a mature regulatory framework, unified market rules, and strong institutional shaping capabilities. There is a need for cooperation between the two sides in areas such as e-commerce, digital trade, financial technology, platform regulation, and consumer protection, but friction has also arisen due to issues such as market access, fair competition, algorithm governance, and responsibility of large platforms. After the EU strengthens platform regulation and digital market rules, both Chinese and European enterprises need to adapt to a more complex compliance environment, which gradually shifts the digital diplomacy between the two sides from simple economic cooperation to a composite interaction that emphasizes rule coordination, risk management, and competition governance.

4. The impact path mechanism of the EU's technology sovereignty strategy on China EU digital diplomacy interaction

4.1 Rule output and institutional constraint path

The primary impact path of the EU's technology sovereignty strategy on China EU digital diplomacy interaction is reflected in the formation of institutional constraints through the output of rules. The EU has long regarded normative power as an important resource for participating in global governance, and in the digital field, it is manifested in shaping external behavior boundaries through rules and systems such as personal data protection, platform responsibility, artificial intelligence regulation, cybersecurity, and fair competition in digital markets. With the continuous advancement of the technology sovereignty strategy, the EU is no longer satisfied with internal market regulation, but is attempting to rely on a unified market, legal system, and standard setting capabilities to extend its digital governance rules to international cooperation, economic and trade exchanges, and technological exchanges. For China, this rule output provides a relatively clear institutional framework for China Europe digital cooperation, which helps to enhance corporate compliance awareness and promote rule communication; On the other hand, it has also increased the institutional costs for Chinese digital enterprises to enter the European market, making issues such as data processing, algorithm transparency, platform responsibility, and supply chain security high-frequency topics in digital diplomacy. As a result, the interaction between China and Europe in digital diplomacy has gradually shifted from project cooperation and industrial complementarity to a complex process that emphasizes both rule coordination, institutional adaptation, and regulatory games. The EU's strengthening of technological sovereignty through rule exports has not only changed the agenda structure of digital cooperation between the two sides, but also reshaped the power relationship of China EU digital diplomacy to a certain extent, making institutional rules a key variable affecting the depth of cooperation, competition boundaries, and level of mutual trust.

4.2 Reshaping Path of Technical Standards and Governance Framework

The impact of the EU's technology sovereignty strategy on China EU digital diplomacy interaction is also reflected in the reshaping of technology standards and governance frameworks. Technical standards are not only the fundamental rules of industrial competition, but also an important carrier of digital governance power. In the process of promoting technological sovereignty, the EU is increasingly emphasizing the importance of enhancing its voice in areas such as artificial intelligence, 5G, cloud computing, semiconductors, network security, and green digital

technology through standard setting, and embedding value requirements such as safety, ethics, sustainable development, and market fairness into technical specifications. This approach extends the digital interaction between China and Europe beyond products, capital, and markets to competition and coordination in standard systems, certification mechanisms, and governance principles. For China, the EU standard system may become an important entry condition for Chinese enterprises to participate in the European market and international cooperation, as well as a new cooperation threshold due to differences in technical routes, regulatory concepts, and safety assessments. In this context, China Europe digital diplomacy needs to engage in deeper communication around international standard organizations, bilateral policy dialogues, and industry cooperation platforms to avoid excessive politicization and factionalism of technical standards. At the same time, the EU is reshaping its governance framework through its technology sovereignty strategy, which also prompts China to pay more attention to the linkage between digital rules, technological standards, and security governance. As a result, the interaction between the two sides has shown a trend of parallel development from simple technical cooperation to standard coordination, rule competition, and governance framework shaping. Technical standards have gradually become an important path affecting the space, competition intensity, and institutional trust of China Europe digital diplomacy cooperation.

4.3 Security narrative and strategic competition path

The impact of the EU's technology sovereignty strategy on China EU digital diplomacy interaction is also manifested in the deepening of strategic competition driven by the narrative of security. As digital technology becomes increasingly embedded in economic operations, social governance, and national security systems, the EU is gradually incorporating key technologies, data resources, network infrastructure, and supply chain resilience into its security agenda, and strengthening the identification and control of external dependency risks within the framework of technological sovereignty. This security narrative makes it easier for technical issues, market issues, and corporate behavior in China Europe digital cooperation to be elevated to strategic security issues, thereby changing the policy context of mutual interaction. For China, the EU's strengthened scrutiny in areas such as 5G equipment, cloud services, data security, artificial intelligence applications, and critical supply chains may compress the space for Chinese companies to participate in the European digital market and increase the difficulty of mutual policy trust between the two sides. At the same time, securitization does not necessarily lead to full-scale confrontation, but rather highlights the importance of risk management, transparent communication, and institutionalized dialogue in China Europe digital diplomacy. Both sides need to maintain their respective security concerns while avoiding excessive politicization of normal technological cooperation and preventing digital issues from being simply incorporated into geopolitical competition logic. From this, it can be seen that the narrative of security, by changing problem definitions, policy priorities, and cooperation boundaries, promotes the shift of China EU digital diplomacy from a development oriented approach to an interactive model that emphasizes both security and development, and makes strategic competition a key path that affects the stability of digital cooperation between the two sides.

4.4 Contraction and Rebalance Path of Cooperation Space

The impact of the EU's technology sovereignty strategy on China EU digital diplomacy interaction is ultimately reflected in the phased contraction of cooperation space and the rebalancing of relationship structure. As the EU continues to strengthen its autonomy in key technologies, supply chain security, and digital rule dominance, cooperation between China and Europe in areas

such as digital infrastructure, data flow, platform governance, artificial intelligence, and high-end chips is subject to more institutional scrutiny and security restrictions. The original interactive model based on market complementarity and industrial cooperation is facing adjustments. Chinese digital enterprises in the European market need to adapt to higher levels of compliance requirements, while EU enterprises are also more concerned about data security, policy stability, and technology dependence risks in digital cooperation with China, which increases the cost of cooperation and the difficulty of accumulating mutual trust. However, the contraction of cooperation space does not mean that China EU digital diplomacy is completely decoupled, but rather promotes both sides to redefine the boundaries of cooperation and the intersection of interests in the context of intensified competition. Green digital transformation, artificial intelligence governance, digital trade facilitation, international standard coordination, and cybersecurity dialogue are still important areas where both sides can continue to interact. Therefore, while the EU's technology sovereignty strategy compresses the space for cooperation in some sensitive areas, it also promotes the shift of China EU digital diplomacy from expansionary cooperation to selective cooperation, from single economic complementarity to a rebalancing model that emphasizes both rule coordination, risk management, and strategic communication.

5. Conclusion

In summary, the EU's technology sovereignty strategy is not only an important strategic choice for responding to global technology competition and digital governance changes, but also an important variable affecting the digital diplomacy interaction between China and Europe. With the deepening of the concept of technological sovereignty, the EU continues to reconstruct the interactive mode of China EU digital diplomacy through the output of rules, the shaping of technical standards, the strengthening of security governance, and the adjustment of cooperation boundaries, presenting the characteristics of cooperation and competition intertwined, institutional coordination and strategic game coexistence in the bilateral relationship. In the future, China and Europe should adhere to the principle of dialogue and consultation, strengthen communication on digital governance rules, coordinate technical standards, and build international cooperation mechanisms on the basis of respecting each other's institutional differences and core interests, continuously expand the space of common interests, and promote the development of China Europe digital diplomacy towards a more stable, inclusive, and sustainable direction.

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