



Promoting Open, Collaborative and Mutually Beneficial Global Data Cooperation







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Foreword

Data is a fundamental strategic resource and a key production factor in the era of the digital economy. Its rapid global flow and worldwide resource allocation have exerted profound influence on the digital development of the economy and society around the globe. Therefore, it is of crucial significance to achieve global digital development by promoting consultation and cooperation among various stakeholders in data-related activities and working together to maximize the economic and social value of data.

Global data cooperation can facilitate major international cooperation, promote inclusive and sustainable global growth, accelerate economic digital transformation, and enhance the well-being of human society. However, challenges are posed in the current global data cooperation. Specifically, global data rules are prone to fragmentation due to the different policy propositions of various countries. There are incomplete standards for data interconnection, while weak cross-domain data interoperability exists. In addition, global governance capacities are relatively insufficient, and there is an urgent need for a global data cooperation and consultation platform. Furthermore, as technological innovation magnifies the value of data, the difficulty of global data governance increases.

To embrace opportunities and address challenges, it is necessary to promote global data cooperation under the principle of openness and inclusiveness, respect the diversity of data governance propositions, and establish a policy framework for global data cooperation. It is necessary to make data technology standards more interoperable and establish technical standards for cross-domain data interaction under the principle of interconnectivity. It is necessary to promote the joint construction and sharing of data infrastructure and explore innovative models of global data governance under the principle of multi-stakeholder collaboration. It is crucial to release data resource value and establish a platform for the development of global data cooperation under the principle of mutual benefit and development.



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I.

Overview of Global Data Cooperation

Data is one of the most important factors in the era of digital economy, with its status as a fundamental strategic resource becoming increasingly prominent. The existing and growing global data resources are enormous. The International Data Corporation (IDC) predicts that global data production may reach 159.2 ZB¹ by 2024. Currently, the majority of countries and regions have introduced laws and regulations related to data security and development. However, a consensus on principles and international rules regarding data factor utilization and data security governance is still under development. Therefore, promoting global data cooperation is crucial for advancing the global digital economy.

(A) Description of Global Data Cooperation

Participants in global data cooperation include governments, enterprises, academic institutions, non-governmental organizations, and technical communities. These collaborations revolve around different stages –

including data collection, transmission, storage, processing, development, and sharing – and result in specific collaborations within internal enterprise management and cross-border business scenarios. The aim is to achieve efficient utilization and secure management of data resources. Cross-border data flow is the most representative form of global data cooperation. Global data cooperation must take into account the specific application scenarios, the foundation of cooperation and benefits for all participants, and mutual influence between external stakeholders and cooperation networks. Macro policies and cultural awareness also have an impact on cooperation goals and value orientations. To achieve fair, impartial, and sustainable development, global data cooperation should attract a broader range of participants, encourage interactive consultations among them, and seek solutions that benefit of all participants.

¹ IDC: "Worldwide IDC Global DataSphere Forecast, 2024 – 2028: AI Everywhere, But Upsurge in Data Will Take Time", <https://www.idc.com/getdoc.jsp?containerId=US52076424>

(B) The Value of Global Data Cooperation

Facilitating Major Global Cooperation. International standards and specifications for data description, security protection and cross-border flow would be established to enable the circulation and sharing of cross-domain data. This provides informational support for major data-based international collaborations, efficiently addressing common challenges faced by humankind, such as global natural disasters, public health crises, and environmental and climate changes.

Promoting Inclusive and Sustainable Global Growth. As data is a new type of production factor, its cross-domain flow and processing can create new value and inject new momentum into economic growth. For small and micro-sized enterprises and emerging markets with insufficient capacity to leverage data for development, global data openness and cooperation help bridge the data divide and offer new opportunities for integrating into the global market and pursuing innovative development.

Accelerating Economic Digital Transformation. Global data cooperation will push forward innovation in technologies related to the full data lifecycle and promote the digital transformation of economy. By leveraging global data resources through the Internet, industries can optimize production efficiency, make decision-making more accurate, and find market opportunities. This accelerates the digital transformation and intelligent upgrading of the value creation process, fostering new areas of economic growth.

Enhancing the Well-being of Human Society. Rational and orderly utilization of data can have a positive impact on economic and social development. Strengthening global data cooperation helps various countries conduct profound cooperation in healthcare, education, poverty reduction, and other fields related to people's

livelihood. Data-driven improvements in public service quality and refined social governance help address global social issues, significantly enhancing the well-being of humankind.

(C) Ecosystem of Global Data Cooperation

The ecosystem of global data cooperation refers to a dynamic, interconnected, and collaborative system formed by various participants and the external environment in the context of global data cooperation. Building such an ecosystem depends on various participants in data innovation applications. This involves different nodes throughout the full data lifecycle including collection, transmission, storage, processing, sharing, and eventual deletion; the supporting role of digital infrastructure; the regulating role of policy standards, as well as the relationships among different participants at different levels and in different fields (Figure 1).

Digital infrastructure includes network infrastructure dedicated to data collection and transmission, such as the Internet of Things (IoT), network switching, and transmission services. It also includes computing infrastructure for data storage and computation, such as data centers, cloud services, and intelligent computing centers. Additionally, data infrastructure for data identification, rights confirmation and authentication is also included, such as domain name systems, blockchain, and privacy computing. Data innovation applications involve various fields that utilize data resources to render social services and promote economic development, particularly data-driven intelligent applications in areas such as digital economy, digital government, digital society, digital culture, and digital ecosystem.

Under global data cooperation scenarios, cross-border data flow is an important cornerstone. The participants in global data cooperation include government agencies, enterprises, academic communities, non-governmental organizations and technical communities, with operational data from multinational enterprises and scientific data from academic communities being typical examples. Cross-border data flow of operational data is generally driven by two needs: first, upstream and downstream business activities in the supply chain; second, internal management and operational requirements during multinational operations. Cross-border scientific data flow is dominated by the aggregation of scientific research data and the sharing of scientific and technological achievements, which are also significant driving forces for the iterative development and continuous evolution of the Internet.

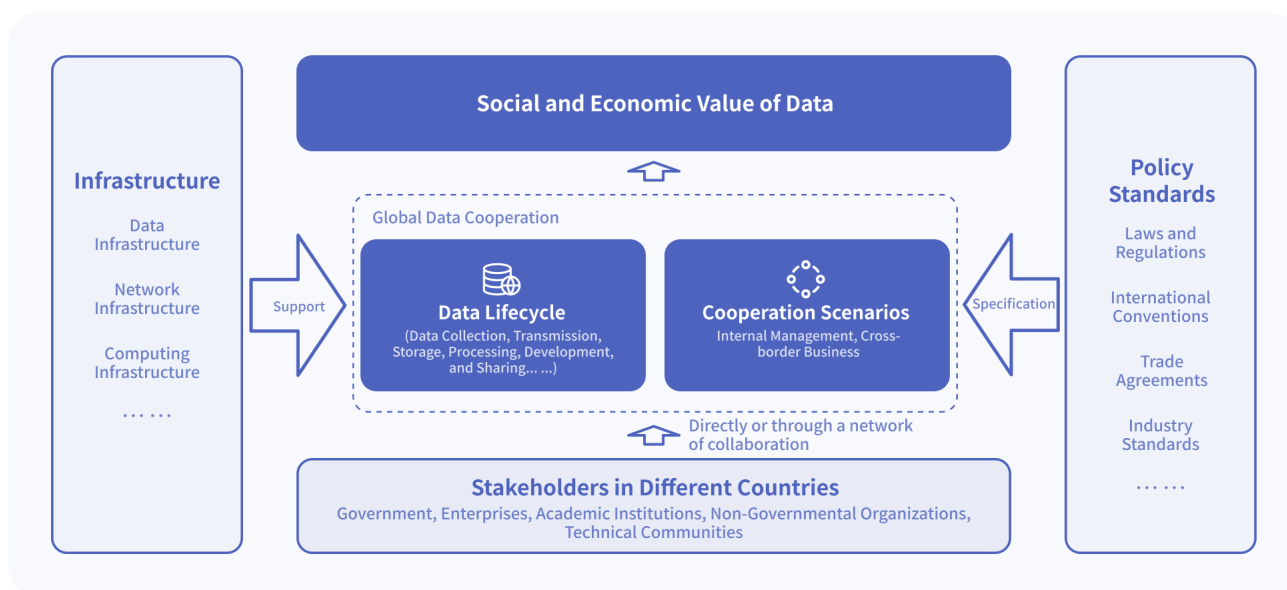


Figure 1: Global Data Cooperation Ecosystem Factors



II.

Multiple Challenges for Global Data Cooperation

National governments fully recognize the fundamental and critical role of data in economic development and have introduced a variety of policies, rules and technical standards, laying the groundwork for data security governance and the utilization of data as a production factor. However, differences in economic development stages, social governance frameworks, political systems and mechanisms, cultural traditions, and values pose multiple challenges to global data cooperation.

(A) Fragmentation in Global Data Rules Due to Different Policy Propositions of Various Countries

Different countries uphold varying propositions for data development and governance. Leading digital economies, such as the United States, China, and the European Union, have been highly active in data legislation in recent years. According to statistics from United Nations agencies, more than 130 countries worldwide

have enacted laws on data and privacy protection². In terms of content, there are some consensuses on data propositions, such as emphasizing the data value and its role in economic development, as well as strict protection of personal information and privacy. There are also commonalities in specific rules, such as definitions of personal information, basic processing principles, and scope of rights. However, countries have different policy orientations toward cross-border data flow, data sovereignty, and data property rights, leading to overall trend and risk of fragmentation in global data rules.

Diverse cross-border data rules exacerbate the fragmentation risk. The most typical example of this fragmentation trend is the diversification of cross-border data flow rules. Countries share some common basic conditions for data utilization and protection, laying a foundation for the formulation of cross-border data rules. However, due to the differences in specific national conditions and policy orientations prevent these commonalities from reversing the fragmentation trend. Based on

² UNCTAD: "Data Protection and Privacy Legislation Worldwide", <https://unctad.org/page/data-protection-and-privacy-legislation-worldwide>

leading technological capabilities in data governance, the United States tends to support the global free flow of data. While implementing strict personal data protection policies, the European Union endeavors to achieve free data flow among its member states. Regions with less developed digital economies and infrastructure often adopts conservative policies due to worries about data security and privacy breaches. According to a report by the United Nations Conference on Trade and Development (UNCTAD), "Among the major economic and geopolitical players in the digital economy, the approaches for governing data flows – and the digital economy more broadly – vary considerably, and there is, with few exceptions, little consensus at the regional and international levels."³

The misalignment of normative systems calls for the establishment of international data rules and mechanisms. Cross-border data flow is making an increasing contribution to global economic growth year after year, reshaping international trade patterns and incubating new industry chains based on data value. High-level openness in the digital era urgently calls for the facilitation of cross-border data flow. However, the misalignment of data normative systems is setting obstacles to data circulation and posing challenges to the development of the global digital economy and digital cooperation. According to a report by the United Nations System Chief Executives Board for Coordination, the absence of a robust international mechanism to manage and utilize data blocks the full realization of data value⁴. Multinational enterprises, driven by upstream and downstream business activities in the industrial chain and supply chain, as well as their own management and operational needs, often strengthen compliance by intensifying internal audits, building cross-border data technology platforms, and implementing data classification and grading. There is a widespread consensus on the necessity to formulate internationally consistent data rules and coordination mechanisms, exemplified by practices and

explorations in some countries and regions. However, this requires a deep understanding of and adaptation to different national data governance systems, as well as the creation of a flexible framework, which will eventually lead to higher compliance costs.

(B) Incomplete Standards for Data Interconnectivity with Weak Cross-Domain Interoperability

The lack of unified data identification and format standards makes it difficult to interconnect across domains. The value of data is increasingly recognized by countries and various entities. However, different data formats are used in the data collection stage, and especially, the diverse data identifiers lead to inconsistent namespaces. For instance, there are the International Data Spaces (IDS) standard advocated by Europe⁵, the Data Transfer Project (DTP) initiated by the US⁶, the SoLiD specification⁷, as well as a series of data sharing identifiers and cross-domain exchange systems based on the Digital Object Architecture (DOA). Although these systems and specifications have attempted to standardize various issues related to cross-domain data exchange and international interconnectivity, their interoperability remains weak, and the standards and specifications are not yet compatible with each other.

Inconsistent data rights confirmation and authorization standards make it difficult to exchange and share across domains. In the context of fragmented global data interconnectivity standards, differences in national policies on data protection and privacy security, along with cultural disparities in understanding and definitions of data, cause the data to be segmented into "isolated islands", known as data silos. These data silos not only restrict the free flow and sharing of data but also weaken the efficiency of data utilization and hinder the development of the global digital economy.

³ UNCTAD: "Digital Economy Report 2021", <https://unctad.org/page/digital-economy-report-2021>

⁴ UNCEB: "International data governance – Pathways to progress", <https://unsceb.org/international-data-governance-pathways-progress>

⁵ IDSA: "Innovating the future of data exchange in Europe and beyond", <https://internationaldataspaces.org/we/>

⁶ "Data Transfer Project Overview and Fundamentals", <https://datatransferproject.dev/dtp-overview.pdf>

⁷ "Solid Protocol#notifications", <https://solidproject.org/TR/2021/protocol-20211217#notifications>

Non-standardized data security exchange standards make it difficult to dispel misgivings about data interconnection. To achieve the secure exchange of data, it is necessary to address issues related to data governance, such as data classification, grading, and algorithm management, which are crucial steps for enforcing data governance rules in the international data interconnectivity process. However, the different data governance rules across countries and the lack of a unified and trustworthy data exchange algorithm management mechanism undermine cross-domain data flow compliance and security. This raises concerns among all parties involved in data interconnectivity, suppressing the demand for international data interconnection.

(C) Relatively Insufficient Supply of Global Governance Capacities and Lack of Consultation Forums for Global Data Cooperation

Current global data governance policy innovation is inadequate, and it is difficult to fully adapt to increasingly complex real-world scenarios. Mainstream global governance models fall into multilateral governance model and multi-stakeholder governance model.

· **Multilateral Governance Model:** This model emphasizes the pivotal role of governments in governance, facilitating governmental cooperation between sovereign states and playing an important role in stabilizing global security. However, this model relies heavily on government leadership, insufficiently expressing the interests of other stakeholders. Its decision-making speed and flexibility cannot keep pace with the rapidly changing market demands. It is ineffective in addressing non-public and civilian affairs.

· **Multi-stakeholder Governance Model:** It advocates for non-governmental organizations, internet companies, technical communities and other parties to jointly and equally participate in and make bottom-up decisions. Representative institutions include the Internet Corporation for Assigned Names and Numbers (ICANN). Although a multilateral data governance model is expected by the international community, global political factors hinder the establishment and implementation of such a model. Multi-stakeholder governance model often lacks sufficient representation of ordinary consumers and users, and developing countries have limited opportunities to express their views on the existing governance order. Additionally, in dealing with issues involving national security and sovereignty conflicts, the multi-stakeholder governance model is ineffective because the non-governmental sector has no sufficient organizational coordination capacity and enforcement power.

Both multilateral and multi-stakeholder governance models feature their own advantages. With the increasing complexity and diversity of issues in cyberspace and the data sphere, hybrid governance models involving multiple stakeholders⁸ have gradually attracted attention, although substantial progress has yet to be made. It is necessary to conduct international consultation and reach a consensus on innovative applications of these models.

⁸ Multi-stakeholder co-governance refers to that in the process of social governance, multiple players, such as the governments, markets, social organizations and citizens, participate together, coordinate, interact and form a multi-level and multi-form cooperative governance mechanism. Specifically, on the basis of equality and cooperation, all players jointly formulate and implement public policies, address public issues, and achieve governance goals.

In current global data cooperation, there is no consultation and collaboration platform suited to the governance model, resulting in slow progress. First, slow progress is made in reaching international consensus on data cooperation principles, and there is an urgent need to enhance the influence and inclusiveness of the global data cooperation. Differing propositions are given in proposals submitted by various countries to the United Nations for developing a "Global Digital Compact", revealing the differences in the core interests and stances of all parties regarding the foundational institutions of the digital economy, obstructing progress in developing consensus and rules through multilateral mechanisms. Similarly, the "Convention 108"⁹ aims to establish a global framework for cross-border data flow, but its member states are mainly in Europe without global reach. The Global Cross-Border Privacy Normative System, promoted by the United States, aimed to facilitate data protection and free flow, shutting out developing countries. This system primarily brings together developed nations, and its loose regulatory framework and limited participant base fail to meet the regulatory requirements of various countries. Therefore, it is necessary to establish high-level, inclusive consultation and collaboration platforms. **Second, coordination of global data cooperation is challenging under bilateral and multilateral mechanisms.** The cautious negotiation and practical attitude of the World Trade Organization (WTO), the cautious exploration in such regional agreements as the *Regional Comprehensive Economic Partnership* (RCEP) and the *Digital Economy Partnership Agreement* (DEPA), as well as the stringent data protection levels defined by *General Data Protection Regulation* (GDPR) of the EU, reflect the cautious and complex attitude towards cross-border data flow rules. The standard contractual clauses of the GDPR and the interoperability of personal information protection systems required by the DEPA provide useful references for forming international cooperation mechanisms but are currently difficult to promote widely. Addi-

tionally, significant differences in data regulatory concepts and cybersecurity laws pose challenges to data protection and transmission agreements between the US and the EU, between China and the EU, and between India and other countries. Moreover, setbacks in US-China data cooperation and security issues, such as the US concerns over data security from Chinese high-tech enterprises, further complicate global data cooperation.

(D) Technological Innovation Magnifies Data Value, Resulting in Greater Difficulty in Global Data Governance

The rapid development of new technologies, represented by AI, is increasingly demanding in terms of data volume, data ownership and data inclusiveness, posing new challenges to global data governance.

First, the development of new technologies continually expands the spectrum of issues to be addressed in the data sphere, making data governance more complicated. The first aspect is the impact on the volume, quality and type of data. The American consulting firm McKinsey & Company has pointed out that with the global deployment of Internet of Things (IoT) devices, global IoT devices are expected to generate 79.4 ZB of data by 2025¹⁰. AI applications are becoming increasingly widespread, further accelerating the generation and collection of various types of data. Moreover, as generative AI technology applications become more popular, the uncertainty of data quality and data ownership of AI-generated content (AIGC) will further challenge the existing data governance systems. For example, insufficient data inclusiveness led to bias and discriminatory value transmission, greatly aggravating the difficulty of data governance and amplifying the development risks of the data industry. **The second aspect concerns data protection and privacy issues.**

⁹ Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data ("Convention 108" for short) was signed in Strasbourg in 1981. It is the world's first international convention dedicated to the protection of personal data, which is aimed to ensure the protection and privacy of personal data in cross-border flow. Source: Council of Europe, "Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data," <https://www.coe.int/en/web/data-protection/convention-108>. UNCTAD, "Data Protection and Privacy Legislation Worldwide," <https://unctad.org/page/data-protection-and-privacy-legislation-worldwide>

¹⁰ McKinsey & Company, "The Internet of Things: Mapping the value beyond the hype".

With the development of AI technology, the use of personal data has become more extensive and in-depth. While AI applications fully exploit the value of data, they also increase the risk of privacy breaches. Especially with the trend of intelligence and interconnection of all things, more and more smart terminals continuously collect users' behavioral data and personal information for user profiling and behavior prediction, which may aggravate the risk of privacy breaches. According to Gartner's research report, more than 40% of worldwide enterprises faced data privacy compliance issues due to AI applications in 2020¹¹. **The third aspect is the increased difficulty of implementing the right to be forgotten.** The right to be forgotten refers to the individual's right to request the deletion of data about themselves. However, in the context of AI and big data, the feasibility of "deleting" data is challenging. Once used to train AI models, even if the original data is deleted, the "memory" of the data may remain.

Second, the development of new technologies may consolidate the prevailing trend of cross-border data governance in various countries, having a double-edged impact on data industry development. The first impact is that data security regulation may be continually strengthened. Under the premise of the continuous expansion of the scope and quantity of global data security legislation, the frequency and detailed requirements of regulatory implementation by national authorities are also increasing accordingly. The EU has focused on data protection technologies, database management and data ownership, indicating significantly increasing complexity of data governance. For example, according to the Artificial Intelligence Act (AI Act), officially approved by the European Council on May 21, 2024, AI systems shall meet high EU standards when processing data, promote innovation and technological development, and protect the rights of consumers and citizens¹². **The second impact is that cross-border data flow rules are increasingly divided**

along geopolitical lines. Due to concerns about national security, public policies are intervening in data security governance, coupled with the lack of trust between countries. Data security issues are often broadly interpreted. An increasing number of countries and regions are attempting to form alliances for free cross-border data flow in order to establish global data protection standards. AI's reliance on and efficient use of data may provoke worries about data security issues in various countries.

¹¹ Gartner, "Predicts 2020: Data and Analytics Strategies — Invest, Influence and Impact".

¹² EU: "EU Artificial Intelligence Act- The Act Texts", <https://artificialintelligenceact.eu/the-act/>



III.

Consensuses and Principles for Promoting Global Data Cooperation

In order to address the multiple challenges of global data cooperation and advance open, interconnected, collaborative and mutually beneficial global data cooperation, it is necessary to clarify the basic principles of global data cooperation and reach core consensus on data cooperation in policy and governance, technical standards, infrastructure, and innovative applications, etc.

(A) Respecting the Diversity of Data Governance Propositions Based on the Principle of Openness and Inclusiveness

It is essential to advocate for an open and inclusive perspective on different data governance propositions. First, it is necessary to respect the differences in data governance rules and systems. Data governance propositions carry various political, cultural and economic characteristics, and the levels of digital devel-

opment vary across regions. Consequently, differences in governance rules are inevitable. Discrimination or unfair measures against countries and regions that implement different data governance rules should be avoided. **Second, it is necessary to respect the diversity of data governance entities.** Respect should be given to different political systems and institutional settings. Fair and equal negotiation and conversation among different governance entities should be encouraged, and each governance entity's right to manage the security of its data must be respected. **Third, it is necessary to respect the differences in understanding core concepts.** Every country has the responsibility and right to protect its important data and personal information security, but differences in cultural values lead to varying understandings of core concepts, such as important data. These differences should be respected.

Proactively advancing communication and collaboration to seek the greatest consensus among diverse rules is crucial. First, it is necessary to promote international discussions on data governance.

Every country has the right to choose its path of digital development and governance model in light of national conditions. Various countries should improve mutual understanding and recognition of each other's data governance rules and systems, resolve ambiguities and misunderstandings caused by conceptual differences, learn from each other and draw on successful experiences. **Second, it is necessary to jointly support and propel the formulation of international data rules.** Efforts should be made to align with the general will of the international community and support multiple entities to seek common ground within diverse rules. The development of globally unified international data rules under the framework of the United Nations should be supported. **Third, it is necessary to support a multi-level, structured approach to global data governance.** All entities – including governments, enterprises, academic institutions, non-governmental entities, and technical communities – should work together to promote cross-border data governance. A structured multi-level approach to international governance is also crucial. Different levels of governance entities should play various roles in global data governance. Through consultation, collaboration, and sharing benefits, all entities should participate in the process of cross-border data governance.

(B) Enhancing the Interoperability of Data Technology Standards Based on the Principle of Interconnectivity

To achieve global data interconnectivity, it is necessary to achieve interoperability among international data silos, develop unified international standards, and establish globally universal systems for data identification,

data ownership confirmation, identity authentication, access authorization, classification and grading, and algorithm management.

In terms of data identification systems, a global namespace for data should be established to ensure that each identifier can only point to a single data object, which is the foundation of data interoperability. **In terms of data rights confirmation systems,** a global system for data rights confirmation should be established to ensure that the legitimate rights and interests of all data stakeholders are recognized in a single confirmation process and universally applicable around the globe. **In terms of identity authentication systems,** a standardized distributed identity authentication capability should be provided for cross-domain data usage to ensure the uniqueness and non-falsifiability of identities. This enables single authentication that is globally recognized. **In terms of access authorization systems,** authorized protection should be given for the rights and interests of data accessors. This enables single authorization with global protection. **In terms of classification and grading systems,** we should establish a global, operational, and enforceable standard for data classification and grading based on grading frameworks of core data, important data, and general data and classification rules across public and personal dimensions, public management dimensions, information dissemination dimensions and industry-specific dimensions. This ensures compliant cross-domain data interoperability. **In terms of algorithm management systems,** unified management and certification of trusted algorithms should be conducted to combine existing privacy protection technologies and realize the value of data without the need for data to leave its domain.

(C) Promoting the Joint Construction, Sharing, and Governance of Infrastructure Based on the Principle of Multi-stakeholder Collaboration

The development of data infrastructure contributes to the robust growth of the application ecosystem based on high-quality international data interconnection. First, data interoperability technology supports the construction of data infrastructure. Promoting the high-quality, sustainable development of the digital economy is the goal of constructing digital infrastructure. Data factors are the most dynamic growth factors in digital economy development, and digital infrastructure should support the efficient flow of data throughout its lifecycle. Network infrastructure is primarily used for data collection and transmission, computing infrastructure focuses on data storage and computation, and application infrastructure mainly works in data analysis and application. Data infrastructure connects and integrates network infrastructure, computing infrastructure, and application infrastructure through data interoperability technology, facilitating a seamless data resource system and promoting smooth data circulation to unleash the value of data factors. **Second, data infrastructure supports the application ecosystem for digital development.** On one hand, new problems and new demands in internet development will drive the growth of data infrastructure and related industries. On the other hand, the well-developed data infrastructure will support continuous breakthroughs in higher-layer applications.

The construction of data infrastructure should not only meet data interoperability technical standards to achieve cross-domain interconnectivity but also depend on the joint construction, sharing and governance of global data cooperation partners. First, it is necessary to support the joint construction of

data infrastructure. Data infrastructure is one of the foundations for all countries to support digital economy development. However, no single entity can independently advance regional or even global system construction; multi-stakeholder co-construction is essential. Given the varying levels of development among countries, their construction capacities for data infrastructure differ. To push forward global data cooperation in a satisfactory manner, developed countries need to provide support and assistance to developing countries, enabling them to participate more in global data cooperation, thereby expanding the cooperation scale and achieving win-win outcomes. **Second, it is necessary to encourage the sharing of data infrastructure.** The goal of joint construction is to achieve the open sharing of data infrastructure. This will not only promote broader data sharing but also motivate various countries to conduct more in-depth cooperation in such fields as data transmission standards, data governance rules, and data trading platforms. **Third, it is necessary to advocate for the joint governance of data infrastructure.** Joint construction introduces various demands and concerns from all parties. This approach addresses their concerns, pools diverse entities (including government and non-governmental participants), gives full play to their respective strengths, and engages in collaborative governance, reaching a broader consensus on global data cooperation. This will promote more extensive data interconnectivity and the efficient utilization of data resources.

(D) Promoting the Release of Data Resource Value Based on the Principle of Mutual Benefit and Development

It is necessary to respect the experiences and capabilities formed by enterprises in practical work. Governments and relevant institutions should ensure the supply of public services, to achieve mutual benefit and development between the governments and enterprises. First, it is necessary to create an open development environment. Led by the governments and industry associations, various support measures, such as subsidies, tax incentives, credit preferences, establishment of Public-Private Partnerships (PPP)^{13/14}, talent cultivation, market promotion and establishment of pilot zones, can be taken to promote cross-domain data integration and facilitate cross-border data cooperation among enterprises. **Second, it is necessary to improve a sound market mechanism.** By formulating a series of rules, promoting accurate matching of supply and demand in the data resource market, supporting the efficient allocation of various types of data resources in industries, guiding the setup of third-party institutions, and ensuring a series of services (such as clearing, settlement, audit supervision, and dispute arbitration) in an orderly manner, a favorable ecological environment will emerge for industrial data cooperation, and technological innovation and integration will gain ground in the data cooperation industry.

It is necessary to guide the promotion of mature experience in enterprise data cooperation, promote innovation in global data cooperation industries, and achieve mutual benefit among enterprises. First, it is necessary to encourage the formation of non-governmental exchange mechanisms. It is necessary to launch appropriate exchange platforms, encourage dialogue and cooperation among governments, enterprises, international organizations and industry associa-

tions of various countries, jointly formulate rules and standards for cross-border data flow, and explore the establishment of non-governmental cooperation and exchange mechanisms. **Second, it is necessary to make more efforts to spread data cooperation practical experience.** It is necessary to uphold the principle of combining system perfection with practical implementation, explore promotable and sustainable data cross-border cooperation experience in data cooperation practices, align with the corresponding rules, guidelines, organizational measures and technical tools, and form a virtuous cycle from industrial practice, experience summary to promotion at mature stage. **Third, it is necessary to encourage enterprises to actively participate in the process of international data governance.** While spreading bottom-up practical experience, we should also integrate multi-level international governance and jointly promote innovation in global data cooperation industries.

Within the framework of global data cooperation, it is necessary to prioritize unleashing the value of data factors. First, it is necessary to emphasize development and security equally. Development is the goal and driving force of cooperation, and security is also crucial for development. Cooperation strategies and policies should take into account development and security, prioritize the effective flow and value unleashing of data on the basis of data security, personal privacy, and national security, improve economic operation efficiency, and contribute to economic growth, social progress, and technological innovation. **Second, it is necessary to promote the release of data value.** It is necessary to encourage countries to formulate and improve policies on data openness and sharing, promote the commodification and capitalization of data resources, pave the way for market-oriented allocation of data factors, strengthen scenario-driven demands, stimulate various entities to actively participate in the de-

¹³ PPP Americas 2023: Public-Private Partnerships to Spur Economy and Sustainability, July 11, 2023, The Inter-American Development Bank Group, <https://www.iadb.org/en/news/ppp-americas-2023-public-private-partnerships-spur-economy-and-sustainability>

¹⁴ China Construction Infrastructure Corp., Ltd. Current Projects, <https://ccic.csecc.com/gsyw/dqxm/>

velopment and utilization of data factors, thereby helping the high-quality development of the economy. **Third, it is necessary to support technological innovation and application**, especially encourage cross-border technical exchanges and cooperation in AI and other advanced technology fields, foster new productive forces through technological innovation, and solve social problems, thereby promoting overall social progress. **Fourthly, it is necessary to adopt dynamically adaptive action plans in policies.** It is necessary to adjust policies in a timely manner to keep pace with technological developments to better cope with the ever-changing data environment and promote practical global data cooperation.





IV.

Action Initiatives to Promote Global Data Cooperation

To address the multiple challenges in policy regulations, technical standards, platform construction and industrial development in global data cooperation, the World Internet Conference Data Working Group proposes four action initiatives to promote global data cooperation. These initiatives are based on principles of openness and inclusiveness, interconnectivity, multi-stakeholder collaboration, and mutually benefit and development, aiming to construct and optimize the global data cooperation ecosystem.

(A) Open Consultation of Participating Entities to Establish a Policy Framework for Global Data Cooperation

It is necessary to develop a global data cooperation policy framework that embraces governance diversity. Based on the principle of openness and inclusiveness, various global data cooperation entities, including

governments, international organizations, enterprises, and academic institutions should conduct policy research and rule consultation. They should respect differences in data propositions among countries, follow international practices and Internet governance traditions, and develop policy frameworks that allow flexible adaptation of various governance models. This framework will be continuously updated and improved through international discussions and consultations, epitomizing the spirit of openness and inclusiveness.

It is necessary to continuously promote the deepening and improvement of the global data cooperation policy framework. **First**, stakeholders should actively take part in data-related agendas of relevant international organizations or conferences, promote and publicize the results of the policy framework, exchange views with relevant entities, and promote the iteration of the policy framework. **Second**, we should explore ways to

enhance the transparency of global data cooperation laws and policies. For example, establishing a platform for real-time updates on policy changes can improve transparency and predictability of policies in various countries. **Third**, we should actively conduct theoretical research on international data governance, including data classification, cross-border data, and the negative list system for global data cooperation¹⁵.

(B) Iteration between Research and Practice to Build Technology Standards for Cross-Domain Data Interoperability

It is necessary to research and develop technical standards and specifications for cross-domain data interoperability. Entities participating in global data cooperation should actively promote and engage in the formulation of technical standards. Based on the principle of interconnectivity, it is necessary to form interest groups to discuss technical solutions, promote technology research and development, exchange and summarize best industry practices, submit standard proposals to standards organizations, promote cross-organizational recognition of standards and specifications, and gradually form internationally recognized technical standard recommendations.

It is necessary to promote the implementation and optimization of technical standards for cross-domain data interoperability. **First**, we should continuously advance corresponding promotion plans to ensure that standards are widely adopted by the international standards system. **Second**, we should establish an evaluation mechanism to regularly assess the effectiveness of standards and revise them as necessary based on the results, ensuring that standards adapt to changes in technology and the market. **Third**, we should develop basic application software and build network service

systems in an open-source manner to facilitate deployment and implementation by industry.

(C) Diverse Stakeholder Collaboration Scenarios to Explore Innovative Models of Global Data Governance

It is necessary to conduct research on multi-entity collaborative governance models. We should adapt to the different scenarios of global data cooperation, follow the principle of collaboration, and clearly define governance models applicable to different scenarios. For example, it is necessary to explore multilateral models suited to national data security, multi-stakeholder models suited to commercial data, mixed models suited to personal privacy data, etc. We should explore and innovate more inclusive models and systematic implementation of global data governance in a generally consistent and best practice manner, promoting and verifying them in relevant fields.

It is necessary to verify the effectiveness of multi-entity governance of data infrastructure. Data infrastructure is the key to international data governance. We should cooperate with governments, enterprises, academic institutions, and technical communities, promote the joint construction, sharing, and governance of data infrastructure. This includes providing support to resource-deficient groups, promoting transparency, accountability, fairness, and impartiality in the allocation of core critical resources, and ensuring interconnectivity, security, stability, and resilience of existing data infrastructure. The methods for verifying the effectiveness of multi-entity governance of data infrastructure include both quantitative and qualitative evaluation means. Various indicators and analytical tools are used to measure the actual effects of multi-entity governance.

¹⁵ The application of the negative list system in cross-border data and Global Data Cooperation mainly refers to clarifying data types or data flow activities which are prohibited or restricted. The data not mentioned in the negative list can flow freely. The system is aimed to achieve greater transparency and predictability to facilitate cross-border data flow for enterprises and individuals, while safeguarding national security and data privacy.

(D) Synergy of Governments, Industries, Academia, Research Institutions and Users to Build Global Data Cooperation Development Platforms

It is necessary to build global data cooperation development platforms. We should invite representatives and senior experts from the governments, well-known enterprises, educational institutions, research institutions, financial institutions, and other parties in the data sphere. By holding expert seminars and thematic forums, we can jointly develop and improve an inclusive policy framework for global data cooperation, establish and practice globally unified technical standards for cross-domain data interoperability, and conduct research and verification on multi-entity collaborative governance models. Additionally, we should offer channels for feedback on achievements, continuously encourage and attract more entities to participate in global data cooperation, and complete the construction of a global data cooperation platform.

It is necessary to promote the unleashing of the value of data resources. We should promote industrial growth with development as the main axis and improve ecological construction. We should pool governmental and industry-related resources, coordinate and promote the joint construction and sharing of data infrastructure, ensure that the construction and operation of data infrastructure comply with international standards, promote cross-border data flow, and safeguard data security. We should continuously select global data cooperation practice cases, promote effective global data cooperation solutions, summarize practical experience and explore feasible paths for international cooperation and value unleashing of data factors. We should provide training on global data cooperation, enhance capabilities in global data governance, data analysis and policy analysis, and promote global data cooperation.





Appendix 1.

Research Framework for Global Data Cooperation

The research framework for global data cooperation must encompass the vision goal, principal consensus, framework pillars and action factor of constructing global data cooperation. As shown in Figure 2, to promote open, collaborative and mutually beneficial global data cooperation, it is necessary to take the role of constructing global data cooperation as the vision goal, and take policy, technology, system and industry as the pillars of the research framework. All entities in global data cooperation should reach a consensus on relevant principles, namely, the principle of openness and inclusiveness, the principle of interconnectivity and interoperability, the principle of multi-stakeholder collaboration, and the principle of mutual benefit and development. The main action factors of global data cooperation include primary activities, such as policy research, rule negotiation, technology research and development, standard formulation, system implementation, industry development, platform construction, ecosystem building, etc.

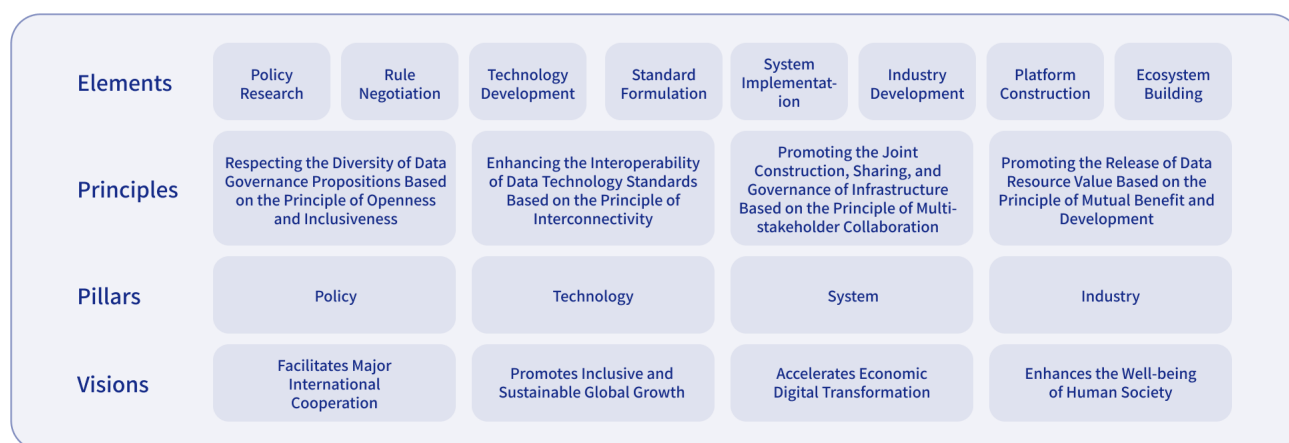


Figure 2: Global Data Cooperation Research Framework



Appendix 2.

Practical Cases on Global Data Cooperation

(A) Internal Cross-Border Data Solutions for Corporate Entities

CITIC Pacific leverages data-sharing agreements and encrypted transmissions to ensure collaboration between headquarters and its subsidiaries. After collecting financial data from various subsidiaries, CITIC Pacific, based on internal data sharing agreements, establishes dedicated network connections (MPLS tunnels, i.e., a technology used to create private networks in computer networking, allowing network operators to tag packets and route them to specific channels for efficient end-to-end data transfer). Once unified and integrated by CITIC Pacific, the data is subsequently transmitted to the headquarters for in-depth analysis and management.

(B) Cross-Border Business Data Solutions for Corporate Entities

Alibaba's international digital commerce supports cross-border e-commerce operations through localized data centers and technological platforms. Alibaba sets up a global data center in Singapore. Its regional data centers in the United States, Germany, and Russia are used to house data specific to their respective users, with other data centralized in Singapore. Partners access the data through API interfaces or integrating it into Alibaba's open platform. There are also additional cross-border data cooperation platforms, such as the AliExpress B2C platform, mainly operated by entities based in Singapore to meet regulatory requirements. Independent operating entities are also established in countries with strict legal requirements.

SAP embeds data protection and security functions into its solutions to assist enterprises in compliant international expansion. SAP aligns its products with the data privacy laws and privacy protection principles of the countries and regions where products are delivered, incorporating the concept of Privacy by Design (PbD) to ensure data privacy is integrated into every business activity. This approach forms a privacy protection management system unique to SAP cloud products, offering customers stable, reliable, secure, trustworthy, environmentally friendly, and sustainable cloud services.

IBM serves one of the world's largest independent oil and gas exploration and production enterprises, facilitating the smooth business operation data flow between the headquarters and overseas subsidiaries. This oil and gas exploration and production enterprise plans to extend its business management and service application system to more than 20 overseas subsidiaries. IBM assists this enterprise in making clear the key points of GDPR and data cross-border compliance in the target countries. Based on compliance gap evaluation and compliance risk identification items, IBM instructs the establishment of a group-level personal information protection system, a Detail Seller Rating (DSR) evaluation process, a SAP security baseline and emergency plan for data breach incidents, promotes the successful launch of the first batch of overseas systems, and establishes a collaborative working mechanism for the launch of subsequent batches of systems in the headquarters and subsidiaries. In addition, IBM has planned a series of data security implementation roadmaps for the enterprise, including data security management systems, data security classification and grading, and data security solutions for different scenarios. To meet the strong control requirements for subsequent data transmission between the headquarters and subsidiaries, IBM has also provided feasible solutions for network isolation architecture design and terminal

data security reinforcement.

China Telecom Global leverages its technical capabilities to serve customers and primarily offers comprehensive and high-quality integrated information service solutions for international operators, multinational enterprises, and overseas Chinese clients. By enhancing key capabilities such as DICT (Digital Economy, Information and Communication Technologies)¹⁶, cloud computing, data transformation, and operational security in all aspects, it supports various business scenarios, including overseas reach of the game industry, cross-border e-commerce, live streaming across borders, business data flow for multinational companies and data flow for government agencies abroad.

Cisco provides consulting services to help enterprises respond to various methods and legal regulations in a timely manner. Cisco's services are primarily based on telecommunications networks where information is internally controlled through intranets. Cisco assists clients in establishing network channels or architectures, without interfering in the specific business content of clients. Instead, Cisco offers guidance on data storage or handles data security issues.

(C) Supporting Tools for Cross-Border Data Compliance Services

eWTP collaborates with Belgian customs to establish a public service platform and provides compliance services to businesses. The platform takes technology means to realize the data authentication of different products and digitizes local regulations, making it easy for businesses to search for the product models and get the HS Code, taxes to be paid, and implementation procedures of the product in Belgium. The main purpose of this public service platform is to present rel-

¹⁶ DICT refers to the deep integration of DT (Data Technology), IT (Information Technology) and CT (Communication Technology) in the era of big data.

evant data information through the platform without actual cross-border data flow.

Alibaba Group meets compliance and approval requirements by developing technology platforms and tools. The technology arm of Alibaba Group develops corresponding technical platforms and tools for the approval process related to legal foundations and security management measures. This platform can identify data storage locations and identify the country or region based on virtual project space for data processing corresponding to every datum. Accessing data across project spaces requires permission requests that are in line with the regulatory process. The platform identifies the entities corresponding to relevant data. After scenario evaluations by the compliance department, decisions are made about whether mutual data access is permissible.

IBM has addressed the problems of data security and personal privacy protection through the IBM Guardium Data Security Platform. First and foremost, Guardium Data Security Platform provides a cross-cloud solution that automatically offers different stakeholders views based on their roles, enabling them to be immediately aware of the distribution of sensitive and important data. This lays the foundation for the issuance of internal company policies and the supervision of policy implementation. Furthermore, it offers a unified platform for global data de-identification, anonymization, and data masking, which is published in the form of a service to relevant data application teams. It centrally manages encryption-related policies and provides high-level security and manageability, allowing data to be safely circulated around the globe. Moreover, it can comprehensively and continuously monitor the access to sensitive and important data, promptly identify unauthorized and abnormal access, and continuously improve data access policies. This not only meets the requirements for compliance audits but also helps protect

data security and avoid data breaches.

The American company Domain Tools, in collaboration with partners, has built an Internet foundational data exchange platform to assist enterprises and organizations in detecting potential online threats and implementing security measures. Leveraging its own resources and partnerships with Farsight Security, Anomali Cisco, and other entities, Domain Tools has established the world's most comprehensive real-time domain foundational database. This database contains over 100 billion domain name resolution records since 2000, with updates of over 200,000 unique DNS resolution records per second. The largest global passive DNS real-time and historical database, DNSDB®, came out. These data provide a holistic internet view of global network presence and evolution modes, benefiting security vendors, security monitoring teams, and threat intelligence analysis groups. Additionally, they offer Internet foundational data solutions for enterprises and organizations to safeguard users from potential threats.

(D) Solutions to Enhance Industry Data Interoperability

SAP System supports the Catena-X Project to promote data exchange within the automotive industry and its supply chain. The cooperation operation mechanism is primarily spearheaded by the government as an incubation platform, which gradually phases out. Following the government's phaseout, a designated German company is responsible for the subsequent operation of Catena-X. By leveraging the enabling layer of the SAP System (integrating data spaces and adapting Catena-X), effective access is ensured, protecting the commercial data sovereignty of enterprises and complying with legal regulations. By using Decentralized Identifiers (DID) to create an enterprise wallet, an enterprise can conduct data exchange within this wallet through verified authentication.

State Grid Corporation of China utilizes blockchain technology to promote the internationalization of green asset standards. It has proposed an international standard of "Blockchain + Green Certificate Management." By organizing the participation model of various entities of green certificates in a decentralized manner, it standardizes such processes as issuance, trading, and destruction of green certificates to promote their wider adoption and application. It has also proposed data collection solutions of "Blockchain + Internet of Things" and "Blockchain + Collection Platform," utilizing blockchain verification to achieve consistent data sharing.

(E) Projects to Promote Research and Innovation Data Sharing

Intel is taking technological means to advance medical research in rare cancers. Through a collaborative research project of Intel and the Perelman School of

Medicine at the University of Pennsylvania, Intel's Federated Learning technology and Intel® Software Guard Extensions (SGX) are applied to handle large volumes of data in a decentralized system. As a result, obstacles to data sharing, which previously hindered collaborative research on similar cancers and diseases, have been eliminated. Original data is preserved within the infrastructure of the data holders. Following the success of this research project, the Perelman School of Medicine and 71 international healthcare/research institutions have used Intel's Federated Learning hardware and software to improve the detection of rare cancer boundaries, sharing results and data.

The Institute of Microbiology at the Chinese Academy of Sciences, and other entities jointly establish a global microbial resource data-sharing platform and a globally interconnected microbial data information cooperation network. With the help of the National Microbiology Data Center, the Microbiology Data Center of the Chinese Academy of Sciences, stdaily.com, and the World Data Center of Microorganisms, the Institute of Microbiology at the Chinese Academy of Sciences takes the lead in initiating international cooperation for global microbial strain preservation catalogs by means of blockchain technology, bioinformatics, cloud service platforms, and supercomputing resources, with over 140 partners from more than 50 countries. Establishing the global microbial resource catalog enables worldwide users to access global microbial resource information in a centralized manner, effectively promoting the efficient utilization of resources.

(F) Facilitating the Exploration of Global Data Cooperation Mechanisms

In October 2023, at the International Data Economy Industry Cooperation Conference in the Lin-gang Special Area of China (Shanghai) Pilot Free Trade Zone, the Shanghai Council for the Promotion of International Trade, the Indonesian Chinese Chamber of Commerce, the Argentina (Shanghai) Innovation Center, the Hong Kong Chamber of Commerce in Shanghai, the International Data Spaces Association, the China UK Business Development Center, and many other domestic foreign trade promotion institutions and organizations jointly issued the *Initiative for the Development of International Data Economy Cooperation*. This initiative aims to build an open and win-win global cooperation pattern in the field of data, advocate for a new dialogue on global data rules, promote new integration of global data sharing and flow, build a new system for global data security supervision, create new channels for global data infrastructure, and jointly operate a new ecosystem for the global data economy industry.

The World Health Organization (WHO) joins hands with technology companies in pandemic data analysis. In the fight against the COVID-19 pandemic, WHO, in cooperation with several tech giants, including Google, Facebook, and Apple, utilizes anonymized big data to analyze trends and jointly address the public health crisis.





Appendix 3.

Advocacy and Exploration of International Community for Global Data Cooperation

(A) Stances of Major Countries and Regions on Global Data Cooperation

China advocates for building an open and win-win global cooperation pattern in the field of data. China actively takes part in global exchange and cooperation in the fields of data security governance, data development and utilization. China supports the rational development and utilization of data resources on a global scale while emphasizing the protection of data sovereignty and data security in all countries and promoting the secure and free cross-border data flow. China actively participates in the formulation of international rules and standards related to data security, proposes *Global Initiative on Data Security* to promote the establishment of a fair and reasonable global data flow mechanism, engages bilateral and multilateral global data cooperation by signing the *China-LAS Co-*

operation Initiative on Data Security, Data Security Initiative of China + Central Asia, and Memorandum of Understanding on China-Germany Cross-Border Data Flow Cooperation, and applies to join such multilateral agreements as the *Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)* and the *Digital Economy Partnership Agreement (DEPA)*. China has issued the *Action Plan to Solidly Promote High-Level Opening Up and Make Greater Efforts to Attract and Utilize Foreign Investment*, calls for support for the data flow between foreign-invested enterprises and their headquarters, improves rules for cross-border data flow, and releases *Regulations on Promoting and Regulating Cross-Border Data Flows*, improving the legality and compliance of cross-border data flow.

China's Propositions on Cross-Border Data Flow

On March 22, 2024, the Cyberspace Administration of China (CAC) released the *Regulations on Promoting and Regulating Cross-Border Data Flows* (hereinafter referred to as the "Regulations"), which came into effect from the date of promulgation.

According to relevant officials of the CAC, the cross-border data flow has become the foundation for exchanging and sharing of global resources and factors, such as capital, information, technology, talent, and goods. In order to promote the legal, orderly, and free data flow, stimulate the value of data factors, and expand high-level opening up, the Regulations optimize and adjust the outbound data systems, including data security evaluation for outbound data, standard contracts for outbound personal information, and personal information protection certification.

The Regulations clearly define the declaration standards for the security assessment of important outbound data. According to the Regulations, if data have not been notified or publicly released as important data by competent authorities or regions, data handlers do not need to apply for security evaluation for important outbound data. Moreover, the Regulations stipulate the conditions for outbound data activities that are exempt from the application of data security evaluation, the conclusion of standard contracts for personal outbound information, and the certification of personal information protection. In addition, the Regulations establish a negative list system for free trade pilot zones and clarify the conditions for two types of outbound data activities in need of data security evaluation. The Regulations also clarify the con-

ditions for outbound data activities under which a standard contract should be signed for personal outbound information or personal information protection certification should be made. The Regulations also set forth the validity period and extension application of data security evaluation for outbound data, data security protection obligations and supervision management responsibilities, and the connection and application with other provisions on data security management for outbound data.

The United States promotes global cooperation in the field of data by signing bilateral or multilateral agreements with other countries, such as the U.S.-Japan Digital Trade Agreement. These agreements typically include provisions on data transmission, data storage, restrictions on data localization, and personal data protection. The United States advocated for the free cross-border data flow and opposed to data localization requirements. However, in October 2023, during the World Trade Organization (WTO) negotiations on e-commerce rules, the United States abandoned some of its long-standing propositions on digital trade, including the requirement for free cross-border data flow. This implies a shift in the U.S. stance on global data governance. The United States may strengthen the formulation of data management rules while protecting the interests of its own companies, and it looks for the best global cooperation path in the interests of itself in the changing global landscape.

U.S. Propositions on Cross-Border Data Flow

As a leader in the global digital industry, the United States advocates to promote free cross-border data flow, lift restrictions such as data localization and reduce privacy and security exceptions, forming the "American template" in international digital trade. This template has been continuously promoted in free trade agreements, such as the *United States-Mexico-Canada Agreement (USMCA)* and the *United States-Japan Digital Trade Agreement*.

Although the United States advocates for free cross-border data flow, in recent years, its security reviews for cross-border data flow have shown a clear trend of penetration and expansion. In the field of foreign investment, the United States passed the *Foreign Investment Risk Review Modernization Act of 2019* to explicitly review foreign investments in companies that store or collect sensitive personal data of U.S. citizens. On October 25, 2023, the United States announced that it would abandon its long-standing digital trade propositions in the WTO e-commerce negotiations, including the free cross-border data flow, the prohibition of data localization, and the review of software source code. With the gradual increase in data management measures in recent years, the United States has, in fact, deviated from the early policy of completely free cross-border data flow. This adjustment in the U.S. proposition on data issues can be deemed as a general confirmation of its change in digital stance due to internal and external factors in recent years, crystalizing its efforts to rebalance the regulatory power of public interests and maintain the global advantage of the digital industry.

The European Union has proposed several policies and legislative measures in recent years to unleash the potential for the reuse of different types of data (including personal and non-personal data) and create a common European data space within the framework of the EU Data Strategy. Under this strategy, the EU advanced the *General Data Protection Regulation (GDPR)* in 2016 to strengthen strict protection of personal data; in addition, the *Data Act* has been advanced on unified rules for fair access to and use of data since November 2023. The *Data Act* sets out the rules for the use of data generated by IoT devices and facilitates a human-centric data approach and data governance act for the EU. The EU's regional data initiatives, such as the GDPR, are riding the tide and promoting interoperability by accelerating the adoption of common data governance principles. These initiatives have laid an important foundation for improving the consistency of global data policies.

The Main System for Cross-Border Data Flow in the EU

The GDPR systematically sets forth the regulatory system for cross-border data flow between the EU and those countries outside the EU. The adequacy of the level of data protection is the basic principle for the EU to decide on cross-border information flow. In general, there are three levels for the transfer of data from the EU to abroad: First, the third country is recognized by the EU as reaching the required adequate level of protection. Second, the third country falls under the exception of explicit consent from the data subject. Third, the data controller of the country, which has not been recognized as reaching an adequate level of protection, has taken the required appropriate safeguards. The specific system design includes:

Standards for adequate protection and exceptions: The GDPR points out considerations for adequate protection. Adequate protection is assessed by the European Commission based on the overall situation of data transmission. Considerations include whether the regulations are comprehensive, whether the implementation of the regulations is robust, and other factors. The basic requirements include purpose limitation, principles of data quality and proportionality, transparency, security measures, access, rectification, objection rights, implementation, relief mechanisms, etc. In addition, the nature of the data, the purpose and duration of data processing, the country of origin and country of final destination, the prevailing general laws and industry laws of the third country, and the professional rules and security measures implemented by the third country should be particularly considered in recognition of adequate protection. Member states and the European Commission should inform each other of the situations where third countries are not recognized as reaching an adequate level of protection. For third countries failing to reach an adequate level of protection recognized by the European Commission, member states must ban data transmission to such countries.

Standard Contractual Clauses (SCCs) for cross-border data transmission: SCCs are a tool under the EU laws. When using standard contracts to transmit data to other countries, member states should recognize that the other countries have reached an adequate level of protection. The EU has formulated several sets of standard contract texts to include data protection principles of the directives, making clear the obligations of the exporter and the recipient, the data subject as a

third-party beneficiary, liability, relief, supervision, and applicable law. SCCs are essentially an extension of the EU laws, promoting the information flow between countries with different data protection systems while protecting the rights and interests of the EU data subjects.

Binding Corporate Rules (BCR): BCR is a set of self-disciplined rules formulated by multinational groups to regulate cross-border data flow within themselves. BCR sets forth data protection principles, rights of information subjects, responsibilities of multinational groups, relief and dispute resolution mechanisms, etc., refining abstract legal provisions into practical rules. The headquarters of enterprises within the EU or the European enterprises authorized to fulfill data protection responsibilities must be responsible for the acts of other group members outside the EU and bear compensation liability for damages caused to data subjects. The EU allows data subjects to sue in court.

(B) Propositions of International Organizations on Global Data Cooperation

The United Nations Statistical Commission has provided national and global statistical data for the public interest since its establishment in 1947. However, with the increasing volume of data collection, some information inevitably pertains to national characteristics and has commercial value. The United Nations Statistical Commission must ensure that the collection, processing, and use of such data comply with strict privacy protection and data security standards at the time of fulfilling its responsibilities, with a view to safeguarding the

legitimate rights and interests of data subjects and avoiding the misuse of data. At the global level, national statistical bureaus and other national entities are bound by various multilateral agreements and must share statistical data with the United Nations. Similarly, humanitarian data initiatives, such as the *International Aid Transparency Initiative* or the Epidemic Intelligence from Open Sources of the World Health Organization, underscore the importance of global data sharing and interoperability.

The United Nations has been promoting global participation in the development of a *Global Digital Compact* since 2021. One of its main goals is to "promote responsible, equitable, and interoperable data governance models." It proposes to "promote the negotiation of consensus, complementarities, and divergences in data regulatory models among all stakeholders by 2030, and facilitate trustworthy cross-border data flows."

The United Nations Conference on Trade and Development (UNCTAD) strongly advocates for global data governance and cross-border data flow in its *Digital Economy Report 2021*, including agreement on rights and principles related to the digital and data spheres. Given those significant disparities in the use of data between and within countries, the digital gap related to connectivity is becoming wider because of the so-called "data gap." Therefore, UNCTAD strives to enhance inclusive growth and development through science, technology, and innovation.

The International Telecommunication Union (ITU) has a Department of Information and Communication Technology Data and Statistics and a focus group on data processing and management for the IoT and smart cities and communities. This focus group consists of ITU-T members and non-members to participate in and promote the establishment of frameworks and technical

specifications for data processing and management of IoT and smart cities and communities. The ITU Academy for Big Data and Statistics assists governments of developing countries in collecting and disseminating information and communication technology data.

The World Economic Forum (WEF) always actively gives impetus to global data cooperation issues and supports cross-industry and cross-border data cooperation to address global economic and social challenges. It advocates for the construction of a multi-stakeholder dialogue platform to discuss best practices in data policy and governance, as well as the way to balance the relationship between data flow, personal privacy protection, and national security. According to the white paper *A Roadmap for Cross-Border Data Flows: Future-proofing Readiness and Cooperation in the New Data Economy*, released in 2020, policies on cross-border data flows are a fundamental prerequisite for the normal functioning of the global data economy and national governments should take actions.

The Organization for Economic Cooperation and Development (OECD) adopted the *Recommendation on Enhancing Access to and Sharing of Data* in October 2021, which is the first set of internationally agreed principles and policy guidelines for governments to maximize the cross-sectoral benefits of all types of data while protecting the rights of individuals and organizations. In terms of cross-border data flows, the *OECD Declaration on Government Access to Personal Data Held by Private Sector Entities*, released in December 2022, is aimed at enhancing trust in cross-border data flows by clarifying how national security and law enforcement agencies can access personal data within the existing legal framework, which marks a significant political commitment from 38 OECD countries and the European Union. The Declaration is also open for other countries to join.

The Asia-Pacific Economic Cooperation (APEC) members jointly commit to creating a sound, inclusive, open, fair, and non-discriminatory digital ecosystem for enterprises and consumers. They encourage all economies to accelerate the implementation of the *APEC Internet and Digital Economy Roadmap*. To fully unleash the potential of digital technology, share the benefits of digital technology fairly and reduce risks, APEC will attempt to develop synergetic response policies, promote global cooperation in the field of digital technology, accelerate digital transformation, work together to promote data flow and enhance trust in digital transactions among enterprises and consumers. Under the APEC framework, a Data Privacy Subgroup (DPS) has been established to address data issues, play a role in improving mutual cognitive understanding among economies, and promote privacy protection technologies and cross-border data flow.

The International Data Spaces Association (IDSA) focuses on the secure data exchange and the protection of data sovereignty in the context of Industry 4.0. IDSA has published the IDS Reference Architecture Model. IDSA aims to establish a secure data exchange architecture, that allows data providers to enjoy true data sovereignty and realize the full value of their data under a secure, trustworthy, and equitable partnership.

(C) Global Data Cooperation Rules in International Trade Agreements

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) includes provisions on global data cooperation in the e-commerce chapter. According to article 14.11 of CPTPP, when enterprises electronically transmit information across borders for the conduct of business under CPTPP, each party shall allow the cross-border transfer of information (including personal information) through electronic

means. This article helps to promote cross-border data flow and minimize requirements for localized data storage. CPTPP also stipulates that no duties should be imposed on electronic transmission, and digital products should be treated without discrimination. Regarding personal privacy protection, CPTPP emphasizes that every member state should establish or maintain a legal system for protecting the personal information of e-commerce users. The principles and guidelines of relevant international organizations are also considered.

The Digital Economy Partnership Agreement (DEPA) is the first major agreement on the digital economy in the world. Its provisions on global data cooperation are similar to those of the CPTPP. DEPA is also committed to ensuring the unimpeded flow of digital products and services, explicitly opposes data localization requirements, and helps secure and efficient cross-border data transmission among members. A dedicated chapter on data issues requests members to develop mechanisms to promote compatibility and interoperability between different personal information protection systems with every effort, including mutual recognition of supervision, broader international frameworks, and appropriate recognition of similar protections provided by national trust marks or certification frameworks within their respective legal frameworks under feasible circumstances.