The Impact on International Law and Response Strategies of Artificial Intelligence Technology Development in the Context of Digital Economy: Taking WTO as a Research Perspective

Wenxin He[1], Yangyifei Hu[2], Yijia Lu[3], Yu Zhou[4,a,*]

[1]High School Affiliated to Shanghai Jiao Tong University, IB Center, New Jiangwan City street, Shanghai, China

[2]Nord Anglia Chinese International School Shanghai, 1399 Jinhui Road, Minhang District, Shanghai, China

[3]Hefei No.1 High School, Xizang Street, Hefei, China

[4]Xishuangbanna NO.1 Middle school, Jinghong Street, Xishuangbann, Jinghong, China

a. Z2163577742@outlook.com

*corresponding author

Abstract: The rapid development of digital technology has made international interactions more convenient and frequent, and nowadays, the rapid change and development of artificial intelligence has brought unprecedented challenges to the international law. The international community has put forward an urgent demand for the improvement and development of the international law system. On the one hand, the wide application of AI in international trade has had a great impact and influence on the global value management; on the other hand, the development of AI has put forward new challenges to the relevant rules of the WTO, which include, but are not limited to, whether the existing World Trade Organisation (WTO) treaties are applicable to AI in the context of the digital economy, such as the GATT, GATS; whether existing WTO rules are formulated with the application of AI, such as GATT, GATS; whether emerging technologies are taken into account in the formulation of existing WTO rules; and the challenge of AI to the existing legal system system. The World Trade Organisation (WTO), as the most important intergovernmental trade organisation in the world and the international community today, still plays an important role in regulating and deploying the development of AI technologies in the international trading system. Based on this, this paper takes the WTO as the research perspective to explore the impact of the digital economy and the development of artificial intelligence technology on international law, combining the existing rules system of the WTO and the characteristics of the development of artificial intelligence technology, research and argumentation to deal with the impact of the strategy, with a view to guaranteeing better development of artificial intelligence technology for the WTO, better service to mankind to offer advice.

Keywords: Artificial intelligence technology, WTO, international law, digital economy.

1.   Introduction

In the context of the digital economy, artificial intelligence, as an emerging technology, has assumed a role that cannot be underestimated in the global pattern of international economic change. The cross-national, cross-regional and cross-cultural characteristics of AI bring opportunities for the global economy to flourish. However, at the same time, challenges and opportunities coexist, and it brings unprecedented impact and challenges to the existing international legal system, especially the rule system under the WTO framework.

Starting from three typical papers, this paper will overview the governance of the international law system of AI and the regulation of cross-border data flow in the context of digital economy, aiming to analyse the international law challenges currently faced by AI technologies globally, the policies and response strategies introduced by the WTO and various countries, and China's role in them.

With the rise of the digital economy, international competition has gradually evolved into a struggle for technological hegemony, and artificial intelligence, as one of the key technologies, has seen its governance issues increasingly iterated. The International Law Governance of Artificial Intelligence in the Dual Context of Digital Economy and Digital Gaming provides an in-depth analysis of the international law governance challenges faced by AI technology when it is applied globally, for example, the existing legal system appears to be incompetent in the face of AI technology, in particular, the non-compulsory nature of the soft law, which makes it difficult to constrain the disorderly development of AI technology. Not only that, the exclusive sovereignty tendency of AI has exacerbated the unbalanced development in the international, creating an unbalanced digital fragmentation phenomenon [1]. The piece is dedicated to suggesting suggestions for achieving global governance of AI. For example, to create a collaborative governance model with the participation of multiple subjects, and to find a balance between national sovereignty and international cooperation. However, the difficulty of balancing the interests of various countries and avoiding the formation of a new digital macro in practice has not been further analysed and explained, and has become an urgent problem to be solved.

Legal regulation of cross-border trade is given by GATT and GATS under the WTO framework. These two provisions support the free flow of data and play a positive role in regulating cross-border data flows [2]. Practice and Suggestions on WTO Regulation of Cross-border Data Flows points out that in the face of the rapid development of AI technology, WTO legal regulation still has obvious gaps in cross-border data flows and e-commerce taxation. Based on this, this paper also provides some suggestions, including drawing on Regional Trade Agreements (RTAs), etc. It emphasises that the WTO, as the core of the trading system, should uphold the constraints of seeking common ground while reserving differences, and strengthen the legislative work in the context of the digital economy, so as to respond to the challenges of the emerging technologies in a flexible and inclusive manner.

The global governance risks accompanying the development of artificial intelligence require countries to cooperate and win-win, and building a community of human destiny is a key measure to cope with the AI windfall. The Exploration of International Law and Regulation Paths for Global Governance of Artificial Intelligence Risks from the Perspective of the Community of Human Destiny is set against the backdrop of China's Global Initiative on Artificial Intelligence Governance published in October 2023 [3]. Nowadays, international law in this field still faces many challenges, including international political security risks (e.g., strategic games, algorithmic dictatorship, technological monopoly, rule hegemony), international economic security risks (e.g., trade frictions, structural unemployment, conflicts over cross-border data flows), and international military security risks (e.g., military ethical dilemmas, human rights violations in war, and proliferation of weapons technology). The literature argues that countries should strengthen co-operation and work together to develop and improve the relevant international legal framework [4]. Not only that, the article

particularly mentions the positive responsibility China has assumed in promoting global governance. China adheres to the concept of building a community of human destiny and contributes Chinese power and wisdom to the management of AI, especially the protection of human rights in the field of weapons, for example, the Regulations on the Review of the Research, Development and Use of Artificial Intelligence Weapons etc [5].

In summary, the rapid development of AI technology has posed new challenges and higher requirements for the governance of international law and the regulation of cross-border data flows. In the face of these challenges, countries should strengthen cooperation and jointly develop and improve the relevant international legal framework. While responding positively to the international community's demand for governance of the digital economy and artificial intelligence, the development of the digital economy and artificial intelligence technology poses a serious challenge to the international law system, and the WTO, as the core institution of the multilateral trading system, needs to adapt to this change and strengthen its legislative work to fill the legal gaps. All countries should strengthen cooperation and dialogue to address global challenges under the principle of "seeking common ground while reserving differences".

2.   Content and Methodology of the Study

This paper uses comparative research method and literature research method. The research content of this paper mainly includes the definition of AI products, coping strategies and suggestions. Firstly, by collecting relevant literature on the classification and jurisdiction of products under the WTO principle of dichotomy of goods and services, the trade in services under four modes is sorted out. The ambiguity of GATS regulation in the WTO in distinguishing AI products is analysed. The problem of classification of AI on products is found and highlighted, and the ambiguity of GATS regulation in the WTO in distinguishing AI products is analysed, which leads to the questioning of the applicability of the WTO to AI products by various countries. Subsequently, relevant provisions are searched and analysed, and examples are given of the uncertainty of the specific meaning of the WTO's "public morals exception" treaty.

In the study of the WTO's policy response to the impact of artificial intelligence, the review summarises the transformation of regulatory instruments in today's society and proposes areas that should be emphasised; it also captures the different opinions of countries and shows the reasons for the difficulty of making progress in the WTO's decision-making model. In Establishing a Bilateral Framework, multiple analyses illustrate the importance of establishing a bilateral and multilateral trade framework. This is followed by listing and comparing the various modules and analysing them to build a multifaceted and multilayered understanding of the issue.

Finally, in the light of the rapid development of the global digital economy, it introduces the overview of the current international economy and China's position in the international economy, leads to the interpretation of the construction of a community of destiny, cites the example of the Belt and Road, and promotes international cooperation to promote transnational exchanges and cooperation in the digital economy and artificial intelligence technology.

3.   Assessment of the Applicability of Existing WTO Rules to AI Products

With the widespread use of AI and its related technologies globally, existing WTO agreements and commitments of WTO members that are part of the Treaty do not refer to AI or related products, thus triggering international debates on the applicability of the existing WTO regime to AI and its related products; these include, but are not limited to, the following: cross-border data flows, data localisation, tariffs on digital transfers and digital taxes, source code disclosure and algorithm disclosure, and other sensitive areas that remain highly divisive.

3.1. WTO Services-Goods Classification Issues in the Definition of Digital Tariffs

In the existing international trade rules, the attribute of whether AI and its related products are goods or services is still unclear, but the WTO still follows the traditional principle of goods-services dichotomy to classify existing AI products as goods or services in order to decide whether the product is governed by GATT or GATS, in which GATT governs trade in goods and GATS governs trade in services under the four modes of cross-border delivery, consumption, commercial presence, and movement of natural persons. GATT regulates trade in goods, and GATS regulates trade in services under the four modes of cross-border delivery, consumption, commercial presence, and movement of natural persons [6]. This regulatory logic fundamentally determines the WTO's tariff definition of AI products. At the same time, the problem of product classification of AI products exacerbates the already existing classification challenges in the WTO and raises questions among countries about the applicability of the WTO regime to AI products. Delivery in digital form can be broadly divided into two types, pure digital delivery and digital delivery involving both goods and services, where the second type of delivery and AI-embedded products or related services complicate WTO classification and simultaneously make it much more difficult to classify items based on a single criterion [7]. One example is AI-enabled self-driving cars and their related products. Firstly, it is obvious that self-driving cars are undoubtedly a commodity, but the fact that self-driving cars rely on services such as in-car and navigation services provided by AI leads to the fact that self-driving cars can be defined as a commodity and at the same time as a service of a transactional nature. As a result, the Appellate Body in the WTO has repeatedly pointed out that whether to regulate a specific item under GATT or GATS needs to be decided on a case-by-case basis. While not all AI technologies can be used as tradable services, AI-powered digital services are increasingly being promoted and sold across national borders. If the application of AI is defined only as processes and production methods, rather than a new category of services, then GATS may apply indiscriminately. This is because, as long as digital services provided by AI have a generic entry in the list of service classifications, they will be fully covered by GATS. Even if AI is classified as a service, it can bypass the established classification of services in GATS, which has sparked a debate about whether the issue should be dealt with in light of the liberalisation commitments initially made by WTO members. The development of AI has exacerbated the dispute among WTO members over the classification of goods and services, making it more difficult to define members' market access and national treatment commitments in specific services sectors under the GATS framework.

The current provisions of GATT and GATS do not adequately reflect changes in business practices. For example, a product delivered electronically could be considered a GATS Mode 1 service and thus exempted from customs duties, whereas the same product would be subject to customs duties if traded in physical form. This classification dilemma becomes even more pronounced in the age of artificial intelligence. Some scholars have suggested the creation of Mode 5 under GATS for services that are embedded in the manufacturing process of a good, such as where the value of the service in the final product exceeds the value of the physical components. While Mode 5 is considered to enhance economic efficiency and draw a clearer line between trade in goods and services, the concept is still evolving, and a widely accepted definition has yet to emerge. It is not yet clear how AI products at the application layer are characterised in existing economic and trade rules, and whether and how these rules can be extended to accommodate new circumstances. In this context, consideration could be given to categorising the various components of combinatorial AI based on existing rules before exploring regulatory standards for AI products.

3.2. Discussion of the Applicability of the WTO "Public Morals Exception" Treaty to Transnational Data Trade

The "public morals exception" is a standard clause in the international trade provisions of the WTO rules, which is designed to allow parties to derogate from their obligations on the grounds that it is necessary for the protection of domestic public morals. However, due to the high degree of ambiguity and uncertainty as to what "public morals" means, and with the rapid development of technology and the increasing reliance on artificial intelligence in various fields around the world, the emergence of artificial intelligence has led to more ethical and moral issues involving public morals that are more difficult to be resolved [8]. As mentioned above, the WTO has not yet been able to provide a clear and unambiguous classification of self-driving cars as goods or services. First, if self-driving cars are classified as a service, WTO Member A may refuse imports from Member B on the basis that the values in the design of the AI are incompatible with the public morality of the country. However, if self-driving cars are classified as goods, then Member State A may require that their design be modified to conform to its own national values, which may conflict with the WTO's Agreement on Technical Barriers to Trade (TBT). This agreement requires that technical regulations should not create unnecessary barriers to trade and that restrictions should be no more restrictive than necessary to achieve legitimate objectives, which include national security, fraud prevention, protection of human, animal and plant health, and the environment. Therefore, it is not difficult to see that with the development of AI, there are more and more issues involving disputes related to public morality in international trade; this reflects the fact that in the existing rules system of the WTO, achieving trade balance and dealing with non-trade issues on the grounds of public morality have become the major challenges it needs to face.

4. Coping Strategies for the Impact of the WTO on Artificial Intelligence

Currently, due to the rapid development of AI technology, its share in international trade is growing. However, at the same time, this emerging technology also brings great challenges to the WTO and the international trade system. On the one hand, due to the acceptance level of new technologies, the development capacity and governance level of countries there are still big differences, at the same time, the cross-border use of AI will make the international trade system in cross-border data flow, digital transmission tariffs and digital taxes will face unprecedented risks and challenges; therefore, the cross-border use of AI and the international governance of AI has become one of the issues that are still under constant discussion among the international community. On the other hand, the development of AI is also affecting the substance of international rule of law rules and strongly contributing to changes in international governance. In this process, how to ensure that international trade can still be at a level of smooth development, especially in the disclosure of source code and algorithmic disclosure, but also on the international governance rules put forward higher requirements. This also requires the international community to reflect on this and actively respond to the needs of international exchanges in digital trade.

4.1. Like-minded Consensus of Members in the International Regulation of Artificial Intelligence

As mentioned above, the development of AI has facilitated the transformation of regulatory strategies to be able to adapt to the risks and challenges posed by the cross-border use of AI. Currently, in order to address the regulatory issues encountered in the transnational data flows and digital tariff collection of AI products and the barriers to the cross-border use of AI, the international community is progressively shifting from relying on prescriptive regulations or laws to regulate behaviours, to the use of non-prescriptive technological means of governance as a new type of regulatory approach.

Therefore, it is particularly important to enhance the flexibility of regulation in the WTO and outside the WTO, and the emergence of "super soft law" can, to a certain extent, make up for the inadequacy of the current WTO rules on AI governance. Because soft law is different from other regimes, the international community should focus less on the specificity, stability, and predictability of rules and more on their adaptability, consistency, and optimal design for the project [9]. In view of the special nature of the challenges posed by AI to the legal system and the existing regulatory system, coupled with the fact that governments still hold different positions on the perspective of "disruptive technologies", the traditional "consensus" decision-making model of the WTO has made it difficult to make effective progress in the process of regulating AI. It is difficult to make effective progress in the process of regulating AI. As a result, the consideration of exploring a system based on informal rules and standards has gradually become a new pursuit at the international level. In addition, the basis of this shift is the gradual transformation from the WTO principle of "consensus of members" to "consensus of like-minded members" . However, it is worth mentioning that the WTO Joint Declaration Initiative is an open agreement that is not explicitly defined, and it is open to all member countries and attracts the participation of as many members as possible, allowing any member country to join freely. This shift in principle greatly enhances the openness of digital trade, effectively promotes international exploration and discussion on the issue of AI and its related products in transnational data flows, and appropriately resolves the issue of the regulatory risks of AI in transnational data flows. At the same time, it also serves as a negotiating tool, mainly promoted by "like-minded" developed country members, with the aim of finding opportunities for co-operation in areas where the WTO's existing rules are imperfect and jurisprudence is lacking. In addition, the initiative does not set a specific definition of the final outcome of the negotiations, but rather allows, at a certain stage of the negotiations, for these outcomes to be expanded into a broader bilateral or multilateral consensus in order to maximise the resolution of problems encountered in their cross-border trade, and cross-border use.

4.2. Establishment of Bilateral and Multilateral Trade Frameworks

Artificial intelligence technology plays an integral part in today's trade regime, but at the same time, it also places new demands on international trade transactions and the construction of digital cooperation regulations. The construction of global digital trade rules is mainly realised through multilateral and bilateral trade frameworks. On the one hand, the multilateral trade framework is led by the WTO to formulate global universally applicable trade norms. However, rule-making in the area of digital trade in this framework is still progressing slowly, mainly due to the shortcomings of the existing WTO agreements that do not adequately cover digital trade and the differences among member states in the negotiation of plurilateral agreements on e-commerce. On the other hand, the bilateral trade framework is in the form of Free Trade Agreements (FTAs) and Regional Trade Agreements (RTAs), which are usually signed by two countries and regions to reflect their common interests and policy objectives. Compared to multilateral frameworks, bilateral frameworks have made more significant progress in the construction of digital trade rules, covering a wide range of content from traditional e-commerce to emerging high-standard digital trade rules. Despite the challenges faced by the multilateral framework in the development of digital trade rules, its central position in the global trading system remains unshakeable. The multilateral framework also provides new opportunities and platforms for source code disclosure and data openness, but nowadays, with the slow failure of pure multilateralism in the field of AI products, it has made the bilateral trade framework, with its great flexibility and relevance, become a driving force for the development of digital trade rules and accelerating the development of digital information transparency. trade rules and accelerating the transparency of digital information. These agreements often contain chapters dedicated to cross-border e-commerce or international digital trade, thus fuelling international

discussions on sensitive areas such as source code disclosure and algorithmic disclosure, and constituting the complexity of the global network of trade agreements. In addition, the templates for digital trade rules promoted by different countries and regions under these frameworks, such as the "American template", the "European template", the "Chinese template" and the "South Pacific template", have been widely adopted by the international community. The "South Pacific template" reflects the strategic interests and policy orientations of different countries and economies in the construction of global digital trade rules. Comparison and analysis of these templates help to understand the positions and strategies of countries in global digital trade governance and provide important references for further research and policy formulation [2].

5. China's Initiatives to Safeguard the Development of Artificial Intelligence under WTO Regulation

Against the backdrop of the current rapid development of the global digital economy, the volume of digital trade is also growing year by year. With the transformation of the global economy and international trade towards digitisation, intelligence and networking, the existing system of global digital governance and international rules is facing new challenges and needs. As the world's second largest digital economy and the world's largest e-commerce market, China has the responsibility to seize the opportunity of the WTO plurilateral negotiations on e-commerce as well as higher-level negotiations on regional trade agreements and digital trade agreements, and actively participate in global digital governance and rule-making, while at the same time promoting the deepening of domestic reforms and systematic opening.

5.1. Actively Playing its Current "Bridging Role" in Plurilateral Negotiations as the World's Second-largest Digital Economy

Currently, the WTO is not an appropriate venue for setting extremely high standards of rules, as there are still large differences in consensus formation and respective levels of development among member countries. Even in negotiations on new issues, the differences in national conditions, stages of development and institutional capacities of each party need to be taken into account to ensure a proper balance between the goals of reducing trade barriers, safeguarding national security and promoting sustainable development. Therefore, China in this form of international trade situation must strive to unite the developing members, in the negotiation process to temporarily set aside differences, and jointly reach a resistance to developed members of the unfair, unequal negotiation proposition, play a good role in the WTO e-commerce negotiations in the role of a bridge between the developed countries and the development of the country, as soon as possible to formulate a high standard of the digital trade rules, and for the formation of a more open and inclusive at an early date, fair and equitable global digital governance framework.

5.2. Further Enhance China's Voice in International Trade in the Digital Economy and Strengthen International Cooperation and Dialogue

With China's growing influence in the global digital economy and trade, China is actively building cooperation and exchanges with developing countries, emerging economies and other developed countries in the digital sphere and is committed to enhancing the level of regulatory cooperation at the global level. In this process, China should act as a bridge to help promote interaction and convergence between different national governance systems, deepen regulatory and cooperative relationships in the field of e-commerce, and make Chinese contributions to improving the governance of the global digital economy, as well as laying a solid foundation for building a global digital community of destiny.

5.3. Strengthening China's Digital Regulatory Influence in the Asia-Pacific Region

In the arena of digital governance in the Asia-Pacific region, China, based on the development position and perspective of developing countries, should endeavour to unite countries in the Asia-Pacific region that share the same or similar interests and aspirations, so as to strengthen its influence on digital regulation in the Asia-Pacific region. Taking the "Belt and Road" as an example, China should deepen its ties and co-operation with countries along the "Belt and Road" and promote the use of Chinese standards and facilities in these countries. Moreover, China should firmly grasp the principle of "digital inclusiveness" in the process of cooperation and digital governance in the Asia-Pacific region, explore the possibility and path of constructing digital trade rules in the Asia-Pacific region on its own, and at the same time, promote cross-border exchanges and co-operation in the digital economy and artificial intelligence technology.

6. Conclusion

At present, the rapid development of the digital economy and AI has brought unprecedented challenges to global trade rules, especially in the WTO, where multilateral negotiations on digital trade are progressing slowly and an effective regulatory system has yet to be formed. In the post epidemic era, each country needs to face up to the existing obstacles and find solutions to adapt to the technological changes. the WTO's existing dichotomous rules on goods and services can hardly cope with the complexity of AI products, and the positions of various countries are significantly divergent, especially on issues such as cross-border data flow, disclosure of source code, and digital taxes. The difference in technological levels between developed and developing countries has exacerbated the conflict of interests in the negotiations. In addition, the lack of clarity in the WTO's "public morals exception" provisions in the face of AI has further increased legal disputes in global trade.

To break this impasse, future negotiations should narrow the scope of topics and focus on areas where consensus has already been reached. In the relatively mature topics of spam regulation, electronic signatures and authentication, and online consumer protection, priority can be given to reaching basic agreements. And these basic agreements can be used as conditions for further negotiations, gradually promoting the formation of global digital trade rules. At the same time, the successful experiences of bilateral and multilateral trade agreements should also be learnt from. For example, major economies such as the United States, the European Union and China have made some progress in the areas of e-commerce and data flow, which can provide reference for the negotiations on the WTO multilateral framework.

As a major force in the global digital economy, China should play a more active role in this process, not only by continuing to improve the domestic digital trade environment and enhancing the construction of the regulatory rule of law, but also by promoting the formation of a global digital trade regulatory system through multilateral cooperation with developing countries at the international level. Under the "Belt and Road" framework, China can co-operate with countries along the route to help them upgrade their digital infrastructure and ensure that they have sufficient voice in the global digital trade system. Through multilateral co-operation and flexible rule-making, countries are expected to gradually build an inclusive and efficient global digital trade regulatory system and achieve sustainable development of the global digital economy.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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