



Study on the Mechanism of Cross-border Movement of Personal Information in the Guangdong-Hong Kong-Marco Greater Bay Area

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Abstract. With the rapid development of the digital economy, the cross-border flow of personal information is becoming more and more frequent, and the construction of a mechanism for the cross-border flow of personal information is imperative. Guangdong, Hong Kong and Macao have different jurisprudential foundations, legislative status, and safeguard mechanisms for personal information protection. Based on the excellent experience of foreign countries and the clear direction of change, the Greater Bay Area is facing the problems of personal information rights and pricing, the convergence of protection systems, and the regulation of cross-border flows as well as synergistic governance issues. In this regard, the Greater Bay Area should improve the mechanism of cross-border flow of personal information in Guangdong, Hong Kong and Macao through four paths: clarifying the mechanism of personal information rights determination and pricing, formulating unified rules for cross-border flow, improving the regulatory mechanism, and interacting with collaborative governance. improve the mechanism of cross-border flow of personal information in the Guangdong-Hong Kong-Marco Greater Bay Area, and promote the high-quality development of personal information protection in China.

Keywords: Personal information Cross-border flow Guangdong-Hong Kong-Marco Greater Bay Area Co-governance

1 Introduction

The Outline of the Plan for the Development of the Guangdong-Hong Kong-Marco Greater Bay Area ("Outline") was issued in February 2019, which accords the Guangdong-Hong Kong-Marco Greater Bay Area five strategic positions, establishes the goal of the Greater Bay Area to become a world-class city cluster, and proposes that the Greater Bay Area should actively explore new modes of co-ordinated development among the three places, and facilitate the convenient and orderly flow of people, materials, capital and information among the three It is proposed that the Greater Bay Area should actively explore new modes of co-operative development among the three places, and promote the convenient and orderly flow of people, materials, capi-

tal and information among the three places. Guangdong, Hong Kong and Macao have frequent circulation of personal information among the three places. While there is frequent circulation of personal information, personal information infringement cases are also multiple, which hinders the intelligent development of the Greater Bay Area. In order to give full play to the advantages of the Guangdong-Hong Kong-Macao Greater Bay Area and promote the development of intelligence, it is necessary to break down the barriers in the legal system of personal information among the three places in the Guangdong-Hong Kong-Macao Greater Bay Area and establish a unified personal information protection system.

The construction of personal information protection system in Guangdong-Hong Kong-Macao Greater Bay Area is of great economic, national security, development, legal and theoretical significance. This project is based on the construction of intelligence and the rapid development of digital economy in the Greater Bay Area, and focuses on the protection mechanism of cross-border flow of personal information in the Greater Bay Area, based on the characteristics of the personal information protection systems in Guangdong, Hong Kong and Macao are different, and takes the personal information protection mechanisms in the European Union, the United States and Russia as the reference. Based on the different characteristics of the legal protection systems for personal information in Guangdong, Hong Kong and Macao, and taking the personal information protection mechanisms of the European Union, the United States and Russia as reference, the study attempts to seek an effective way to break down the barriers of the legal systems among the three places through relevant theoretical and empirical research from the perspective of low cost and high efficiency, so as to provide suggestions and ideas for the construction and improvement of the mechanism of cross-border flow of personal information in Guangdong-Hong Kong-Macao Greater Bay Area.

2 Current situation and assessment of the mechanism for cross-border flow of personal information of Guangdong, Hong Kong and Macao

2.1 Legislative Models for the Protection of Personal Information in the Three Places

There are two main model about the current personal information protection legislation model: one is the United States law model based on the theory of privacy, and the other is based on the theory of personality rights of the European law model, and China's academics on the personal information of the attributes of the right to the boundary is still controversial.

Hong Kong: A Model Based on Privacy Protection.

The common law system, represented by the United States, lacks a personality rights system and therefore adopts a privacy-based approach to the protection of personal information.^[1] Inheriting the influence of English law, Hong Kong also adopts

the right to privacy theory for the protection of personal information, which is also reflected in the title of the Personal Data (Privacy) Ordinance ("the Ordinance") . Starting from the basis of privacy protection, the Ordinance provides for six data protection principles, gives natural persons the right to decide under whose control their information is to be placed, and emphasises the protection of while at the same time focusing on the collection and use of personal data.

The 1999 judgement of the Hong Kong Court of Appeal in the case of *East Week Magazine v. Privacy Commissioner* has had a significant impact on this issue. In that judgement, the Court cited the Law Reform Commission of Hong Kong's 1994 report's four divisions of privacy, namely, informational privacy, territorial privacy, personal privacy, and communications and surveillance privacy, and held that the Ordinance protects only informational privacy, confirming and reaffirming, by way of the judgement at , the Law Reform Commission's legislative thinking by way of the common law with guiding effect.^[2]

Macao: A model based on the protection of personality rights.

Mainland legal systems, represented by Germany, have a narrower definition of the right to privacy and a more complete system of personality rights, and thus Mainland legal systems tend to protect the right to personal information as a specific personality right, juxtaposing it with the right to privacy. Macao belongs to the Mainland legal system and adopts the European law model based on the theory of personality rights . The Macao Civil Code places the "protection of personal data" and the "right to truthfulness of personal data" under the chapter of "personality rights". Although The Personal Information Protection Law of Macao incorporates "respect for the privacy of private life" as a general principle, it is generally based on the theory of personality rights, protecting citizens' right to control their personal information, the right to request the non-dissemination of their personal information and the right to request the non-processing of highly personal data.^[3]

Mainland: controversy exists.

Chapter 6 of the Personal Rights Section of the Civil Code, entitled "Privacy and Protection of Personal Information", avoids the discussion of whether personal information is a protected interest or a civil right, while there is also disagreement among academics as to whether personal information is a personality right or a property right .

The author believes that defining personal information as personality rights is more in line with China's legislation. First of all, the Civil Code and Personal Information Protection Law have set up a clear appearance of rights for personal information. Taking the Personal Information Protection Law as an example, it has made specific provisions on a series of personal information rights, such as the right of access and the right of copying, around the right of self-determination of personal information. Secondly, the protection of personal information is included in the Civil Code under the title of personality rights, which shows that personal information already has the basic attributes of personality rights. In addition, the Personal Information Protection

Law adopts the concept of personal information rights and interests, implicitly indicating a tendency to protect personal information on the basis of the theory of personality rights.

2.2 Comparison of the Cross-border Movement of Personal Information Regimes in the Three Places

Hong Kong's regime for the cross-border flow of personal data.

In 1995, the Hong Kong Legislative Council passed the Ordinance, becoming the first in Asia to enact a law specialising in personal data protection.²⁰²¹ The Hong Kong Legislative Council amended the Ordinance; however, the rules on cross-border transfers of data in the Ordinance (section 33) have not been implemented to date.²⁰²² In 2014, the "Safeguarding of Personal Data: Guidelines on Cross-border Data Transfer" ("the Guidelines") was published to provide specific regulatory instructions on section 33. "Guidelines") was published to provide specific regulatory instructions on section 33. In 2022, the Commissioner's Office published "Guidelines on Cross-Border Data Transfer: Recommended Model Contract Stripes" to provide specific guidance on the standard contract referred to in section 33(2)(f).

The Office of the Privacy Commissioner for Personal Data (PCPD) is the statutory cross-border regulator of personal data in Hong Kong. Established on 1 August 1996, the PCPD is an independent body responsible for monitoring, supervising, promoting and ensuring compliance with the PDPO. When the security of Hong Kong people's personal information is threatened, members of the public may lodge a complaint with the Privacy Commissioner, who, after reviewing the complaint, will take different measures to deal with it depending on the nature of the behaviour of the person being complained against; and the Privacy Commissioner will also take the initiative to investigate incidents that have a significant impact on the public.

Macao's system of cross-border flow of personal information.

In 2005, was promulgated. On the basis of the basic law and civil law provided by the Basic Law of the Macao Special Administrative Region and the Macao Civil Code for personal data protection, the Law has fully absorbed and learnt from many excellent experiences and cases, and it has carried out a rigorous, systematic and comprehensive regulation on personal data protection, and it enjoys the reputation of being the "strongest personal data protection law in the Asia-Pacific region". Macau Law 8/2005 embodies a comprehensive and rigorous systematic regulation of personal data protection. Macau Law 8/2005 reflects Macao's position of "strict limitation" on the cross-border transfer of personal information, as Article 19 of the Law stipulates the principle of exit of personal information, and Article 20 of the Law stipulates the exceptions to the exclusion of the application of Article 19.

The Office for the Protection of Personal Data (OPPD) is the statutory regulatory body for the protection of personal data in Macao. Established on 12 March 2007, it is a department of the Macao SAR Government that operates independently under the supervision of the Chief Executive, and is responsible for overseeing and coordinating

compliance with, and the implementation of, Macau Law 8/2005 as well as for setting up and overseeing the implementation of the relevant regime, such as the confidentiality regime. The Office for the Protection of Personal Data receives enquiries, complaints or reports from Macao citizens regarding the protection of personal data, and opens investigation files to investigate and impose administrative penalties for violations of Macau Law 8/2005

System for cross-border flow of personal information in the Mainland.

In recent years, with the introduction of the Personal Information Protection Law in 2021, the mainland's system for the cross-border flow of personal information has continued to improve, and has gradually formed a system centred on Article 38 of the Personal Information Protection Law, with "the Measures for the Security Assessment of Data Exit", "the Guidelines for Declaring the Security Assessment of Data Exit", "the Guide to the Practice of Cybersecurity Standards - the Specification for Security Certification of Cross-border Processing Activities of Personal Information", "Announcement on Certification of Personal Information Protection", "Rules for the Implementation of Certification of Personal Information Protection", and "Measures for Standard Contracts for Personal Information Exit", which are important components of the system for cross-border flow of personal information.

The Mainland has not yet set up a specialised agency for the protection of personal information, and the national Internet information department and people's governments at all levels have assumed certain responsibilities for the protection and supervision of personal information.

2.3 Practical Basis for the Construction of a Shallow Assessment Mechanism

Generally speaking, in terms of jurisprudence, the personal information protection system of Guangdong, Hong Kong and Macao has been established in accordance with the legal basis of each of the three jurisdictions, and the right to personal information in Hong Kong and Macao is protected as the right to privacy and the right to personality, while the attributes of personal information in the Mainland are still controversial; in terms of legislation, the three jurisdictions have issued special laws and regulations on the protection of personal information, so that there is an initial legal basis for cross-border flow of personal information in the Greater Bay Area. In terms of implementation mechanism, Hong Kong and Macao have set up governmental specialised agencies for personal information protection, which effectively guarantee the implementation of personal information protection laws and regulations in the two places. However, from the perspective of the coordinated development of the three regions and the intelligent construction of the Greater Bay Area, although the protection of personal information in Guangdong, Hong Kong and Macao has achieved certain development, there is still a lack of a unified and efficient mechanism for the flow of personal information within the Greater Bay Area, which hinders cross-border

transactions of personal information within the Bay Area, mainly due to the following two reasons:

From the perspective of the Mainland's own system, Guangdong has not yet developed an independent and comprehensive personal information protection system. Firstly, the attributes of the right to personal information in the Mainland are still unclear, and the judgement of the legal basis of personal information protection in the three places has an important impact on the articulation of the relevant systems of the three places. Secondly, the introduction of rules for the management of cross-border flow of data in the Mainland is relatively lagging behind that of Hong Kong and Macao. On 28 September 2023, the State Internet Information Office issued the *"Provisions on Regulating and Promoting Cross-Border Flow of Data (Draft for Public Comments)"*, which improves and amends the rules for cross-border transmission of personal information as stipulated in the *"Measures for Security Assessment of Data Exit"* and the *"Measures for Standard Contracts for the Exit of Personal Information"*, among other things. However, the regulations have not yet been formally finalised, and China still lacks implementation rules related to cross-border flow of data, for example, the existing laws and regulations only provide a broad definition of important data, without specifying the specific scope of . And China's regulations have not been aligned with the law in a timely manner, For example, the Data Security Law and the Personal Information Protection Law have only provided general guidance on cross-border flow of data in China, but they have not yet revised the original industry-specific data management regulations in a timely manner, so that departmental rules and administrative regulations have not been aligned with the law.^[4]

From the perspective of synergy, Guangdong, Hong Kong and Macao have different political systems and social cultures, making it difficult to promote synergistic governance. The fact that the Mainland has yet to set up a specialised agency for personal information protection will undoubtedly make it more difficult for the Mainland to coordinate with Hong Kong and Macao in governance. The establishment of a unified governmental personal information protection agency is a collaborative safeguard measure in the administrative field, and under the special conditions of "one country, two systems" in China, the establishment of a coordinated and unified administrative safeguard agency is an important task with a long way to go. In contrast, it is easier to establish a judicial assistance mechanism at . However, Guangdong, Hong Kong and Macao do not yet have a specialised judicial body to deal with disputes over the cross-border flow of personal information, and in the absence of both administrative and judicial safeguards, it is difficult to carry out the coordinated governance of cross-border flow of personal information in the Greater Bay Area in a unified and efficient manner.

3 International Experience and Insights on Cross-Border Movement of Personal Information

3.1 Foreign experience in cross-border flow of personal information

EU: "free movement + restricted movement" model of internal and external differentiation.

The EU's cross-border regime for personal information is based on the right to personal data, with different rules for data flows within members and to other countries, emphasising the balance between individual privacy and information flows. The European General Data Protection Regulation ("GDPR"), implemented in 2018, establishes a unified set of personal data protection standards for EU member states and the countries with which they cooperate. The GDPR is based on the principle of Opi-in principle, it emphasises the lawful basis for personal data to cross borders, gives individuals more control, requires businesses to obtain explicit consent to process personal data, and requires businesses to provide transparent privacy policies. For the transfer of personal information to EU member states, the GDPR takes the position of encouraging the free flow of international data under the same rule system, providing a relaxed and orderly environment for the cross-border movement of personal information. For the transfer of personal data to non-EU countries, the GDPR adopts a "full protection" and "restricted movement" model, prohibiting in principle the exit of personal data from the EU, and ensuring the rights of the data subject in relation to the processing of personal data only in the country or region where the personal data was imported. The transfer of personal data is permitted only when the country or region where the personal data is to be imported ensures the rights of the data subject regarding the processing of the personal data and freely applies a level of protection equivalent to that of the European Union, i.e., the standard of "adequate protection". In the case of third countries that do not meet the aforementioned criteria and are not on the "white list", the transfer of data from the EU to third countries may be affected through the adoption of appropriate security safeguards, authorisation on the basis of EU law or on the basis of exceptional circumstances.

In terms of jurisdiction, in order to meet the need to protect the data security protection of the EU as a whole, the GDPR expands the jurisdiction, adds personalism and protective jurisdiction, and establishes its unique "long-arm jurisdiction" regulatory system.

From the experience of the EU, on the one hand, the EU has established a data jurisdiction centred on personalism, with an emphasis on the individual's right to privacy, so that the data rights of data subjects within the EU can be protected extraterritorially to the greatest extent possible. On the other hand, through the GDPR, the EU has established uniform standards for all member states to ensure a consistent level of protection for personal information in the context of cross-border data flows, and this harmonisation has helped to facilitate cross-border data exchanges and reduce conflicts of law, contributing to the development of regional economies within the EU.

The United States: a liberal position oriented towards the national interest.

The United States has adopted the "free flow + ex post facto regulation" model of cross-border governance of personal information, and strongly advocates the free flow of global data. The U.S. governance of cross-border flow of personal information is based on the protection of economic interests of market players and national security interests. It has not implemented a comprehensive law similar to the GDPR, but relies on industry regulators and state-level privacy regulations. For example, California has adopted the California Consumer Privacy Act ("CCPA"), which protects individuals' right to choose and control their data.

The U.S. has adopted lax data inflow standards to minimise barriers to U.S. companies' access to data resources outside the country, such as the CCPA, which does not make specific restrictive provisions for personal information across borders, and the Clarifying Lawful Overseas Use of Data Act ("CLOUD Act"), which empowers public authorities to access personal information of U.S. citizens outside the country.

With regard to the flow of personal information, the United States has adopted a dual regulatory system of "decentralised legislation and industry self-regulation". Privacy-certified data companies are free to collect, process and transfer citizens' personal information under certain industry regulations. For special data types, such as children's privacy, medical protection and other data, the industry self-regulatory system is difficult to achieve the required strength of protection, then decentralised legislation is adopted to enhance the protection of special and sensitive data .

From the experience of the United States, on the one hand, the United States emphasises the protection of users' rights, and its privacy laws and regulations focus on individuals' right to control their data, and emphasise users' right to choose and transparency. On the other hand, the U.S. cross-border legal framework for personal information is relatively flexible and can be adapted to different needs in different industries and regions, and its decentralised legislative model by industry and region reveals that China can conduct early and pilot tests by industry.

Russia: localisation strategy with strict exit control.

Russia emphasises the local storage and processing of personal data and strictly controls the export of personal data. Under the Russian Federation Personal Data Act, personal data must be stored in the Russian Federation and are allowed to leave the country only if the country of entry meets the same protection requirements or if the subject of the personal data has consented in writing to the departure of his or her personal data from the country or to the fulfilment of a contract to which he or she is a party. At the same time, Russia has an independent data protection supervisory authority at , which is responsible for the supervision and protection of personal data. Russia is relatively conservative in the cross-border flow of personal data, and its anti-globalisation protection mechanism has been jointly opposed by international Internet giants such as Microsoft and Google , but it has also provided opportunities for the development of the local Internet industry, protected the security of its citizens' personal information and the sovereignty of the state's information, and mitigated the damages caused by Western economic sanctions.

From Russia's experience, on the one hand, the localisation strategy is conducive to the protection of personal information security in the country, but its limits have to be determined by weighing the needs of privacy protection and data flow, avoiding excessive restrictions on cross-border data flow, and adapting to the development trend of globalisation. On the other hand, the establishment of an independent data protection regulator and a corresponding complaint handling mechanism can help ensure the security of personal data and compliance.

3.2 Direction of change in cross-border flow of personal data from Guangdong, Hong Kong and Macao

Russia, the United States, and the European Union represent three gradients of strict, loose, and moderate control of personal information out of the country, respectively. Among them, Russia strictly controls the export of data, emphasises local security, takes localised data storage as the basic principle, and personal information can only be transferred out of the country under specific circumstances. The U.S., which emphasises freedom and economy, is the representative of the "lax type", which adopts the "free flow + ex post facto regulation" model as the principle, and adopts a lax inflow policy and a dual-regulation outflow policy. The European Union (EU) and emphasise the balance between personal privacy protection and information flow, and the rules of "free flow" internally and "full protection + strict restriction" externally adopted by the EU are the best learning target for the Greater Bay Area to explore the mechanism of cross-border flow of personal information at this stage. Firstly, in terms of regional characteristics, the EU consists of 28 member states, while the Greater Bay Area consists of Guangdong, Hong Kong and Macao, and both the EU and the Greater Bay Area have a real need for a high degree of integration on the basis of respecting the differences of each place. Secondly, in terms of legal basis, the legal basis of personal information protection in China favours the extension of personality rights. The Personal Information Protection Law is closer to the GDPR in the definition of "personal information" and pays more attention to the protection of personal privacy, and is even stricter than the GDPR in terms of the consent mechanism, etc. In addition, a unified data code is more suitable for China's legislative system, and the "data code" is more appropriate for the development of China's personal information system. In addition, a unified data code is more suitable for China's legislative system, and "data rights doctrine" is more in line with the basic concept of socialism, thus, drawing on the experience of the GDPR is more in line with China's legal system. Again, from the perspective of development process, the Greater Bay Area of Guangdong, Hong Kong and Macao is committed to promoting economic cooperation within the Bay Area and building a world-class economic platform, and conforming to the trend of digital globalisation is an inevitable requirement for its development, and Russia's localised strategy of strictly controlling the exit of the country is contrary to the needs of the economic development of the Greater Bay Area. However, at this stage, the Greater Bay Area and even China have just started to build a mechanism for the cross-border flow of personal information,^[5] and if we draw on the liberal-based regulatory model of the U.S. and substantially liberalise the control, it may lead to a

large-scale flow of data to developed countries, weakening the competitiveness of the domestic market players in the digital industry and threatening the economic security.^[6] The EU's cross-border flow of personal information mechanism is more "balanced" and more in line with the development needs of the Greater Bay Area.

China's current regulatory model for cross-border adoption of personal information is more similar to that of emerging countries such as Russia and India, which adopt more restrictions on cross-border activities of personal information. Changes to the mechanism of cross-border flow of personal information in the Guangdong-Hong Kong-Macao Greater Bay Area should be more flexible and reduce the cost of information flow on the premise of building a good framework for data protection and privacy protection, so as to encourage the legal cross-border flow of personal information and promote the economic development of the Guangdong-Hong Kong-Macao Greater Bay Area. On the one hand, with the establishment of the "Digital Bay Area", exchanges between cities in the Greater Bay Area have become more frequent, which has facilitated the growth of cross-border flow of personal information. On the other hand, although Guangdong, Hong Kong and Macao have different systems, under the framework of "one country", the three places are highly interconnected and complementary in terms of economy and culture, and flexible policies can provide more opportunities for enterprises and innovators to promote the development of the digital economy, technological innovation and cross-border cooperation. According to McKinsey's forecast, every 10 per cent increase in data flows will drive GDP growth of 0.2 percent. Since the issuance of the Outline, in the face of a complex internal and external economic environment, the total economic output of the Greater Bay Area has grown steadily, demonstrating the vitality and high growth of the regional market, while also reflecting the importance of flexible policies to promote factor mobility and synergistic governance among the Greater Bay Area.

To sum up, changes to the mechanism for cross-border flow of personal information in the Guangdong-Hong Kong-Macao Greater Bay Area need to seek a balance between flexibility and restriction. It is necessary to be based on China's national conditions, focus on solving the challenges of coordinated development in the Bay Area, draw on the experience of absorbing the governance models distinguished within and outside the European Union, and develop an institutional mechanism with the characteristics of the Greater Bay Area, in order to promote the Bay Area to accelerate towards the goal of building a first-class Bay Area and a world-class urban agglomeration.

4 Challenges in building a mechanism for cross-border flow of personal information from Guangdong, Hong Kong and Macao

4.1 Personal information rights and pricing

The first is the difficulty of establishing the right to personal information. Personal information is different from other ordinary information, which naturally has the at-

tributes of private rights and a certain exclusivity. If the ownership of personal information is dealt with in a broad-brush manner, and the rights of personal information processors such as enterprises are strictly limited or even denied, it is easy to block the exchange of information and hinder the development of the data era. As for the attributes of the rights of personal information processors to the user data under their control and the rules of protection, there are many controversies in both academia and judicial practice. "In the case of *Dianping v. Baidu*, the court held that the user data in question was not a legal property right; while the case of *Taobao v. Meijing* clarified the boundaries between the original user data and the enterprise's data through the judgement, and for the first time affirmed the enterprise's independent property rights and interests in its user data by the theory of labour empowerment. The case of *Taobao v. Meijing* clarified the boundary between original user data and enterprise data through the judgement. There is a certain inherent contradiction between the rights of enterprises over user data and the protection of personal information. How to balance the relationship between the original owner and the processor of personal information, and how to solve the problem of the attributes and boundaries of the rights of enterprises and other processors of personal information over personal information in their possession is a major challenge in the governance of cross-border flow of personal information.

The second is the difficulty of pricing personal information. Difficulties in data pricing have hindered the establishment of pricing mechanisms for data transactions and cross-border data transactions; personal information, because of its special characteristics, is even more difficult to assess its value. On the one hand, in personal information transactions, operators often use "free and gratuitous" to attract consumers, but in essence, they use consumers' consent to the use of their personal information as the consideration for the provision of services, and under the sugarcoat of gratuitousness of single service, the paid nature of the contract is covered, which prompts personal information to undergo the transformation of the consideration.^[7] On the other hand, the transaction of personal information is closely related to the application scenarios, and there is a lack of uniform standards for determining the value of personal information. In the era of data economy, we must face up to the valuation function of personal information, which raises urgent questions for the improvement of cross-border personal information trading mechanism: how to balance the relationship between personal information infringement protection, merit law regulation and contractual freedom? How to define the limits of privacy protection and commercial use of data under different application scenarios?

4.2 Convergence of personal information protection systems

In order to ensure the free and secure flow of personal information within the Greater Bay Area, and to prevent data leakage and abuse, it is particularly important for the personal information protection regimes of Guangdong, Hong Kong and Macao to converge. For example, in the European Union, the "free flow" of personal information within the EU is based on a high level of harmonised data protection regimes and strict enforcement and monitoring mechanisms. In this regard, changes to the

mechanism for the flow of personal information in the Greater Bay Area should be learnt from the experience of , so as to facilitate the formation of rules for the cross-border flow of personal information in Guangdong, Hong Kong and Macao that are interconnected and have comparable levels of protection.

Articulation of the scope of protection of personal information.

The definitions of "personal data" in Hong Kong and Macao and "personal information" in the Mainland are different, and the scope of protection of personal information in the three places is not consistent.

The Hong Kong Ordinance defines personal data as any information that can be accessed and processed in a manner that directly or indirectly establishes the identity of a living individual. Macau Law 8/2005 defines personal data as any information, including voice and image, relating to an identified or identifiable natural person, who is the data subject. According to the Personal Information Protection Law of the Mainland, personal information refers to all kinds of information, other than anonymised information, relating to an identified or identifiable natural person, recorded by electronic or other means. It can be seen that the concept of "personal data" in Hong Kong and Macao focuses on certainty and specificity, whereas the concept of "personal information" in the Mainland emphasises identifiability, including specific personal identification information and personal related information.^[8]

The Mainland and Macao have more stringent regulations on sensitive personal data , while Hong Kong does not specifically define sensitive personal data. The Mainland's definition of sensitive personal data highlights the danger to personality, person and property caused by its disclosure and covers a wide range of areas, with special emphasis on the protection of personal data of minors. Macao, on the other hand, defines sensitive information by means of an exhaustive enumeration, which emphasises the specificity of the scope covered and does not refer to the harm caused by its disclosure.

It can be seen that the scope of personal information regulated in the Mainland is wider than that of Hong Kong and Macao, and there are differences in the scope of regulation of cross-border flow of personal information among the three places; and for sensitive personal information, the Mainland and Macao have made more stringent requirements for the protection of sensitive personal information as compared with Hong Kong; the differences in the definition of the scope of the three places have increased obstacles to the convergence of the mechanisms for the flow of personal information among the three places.

Regulatory Barriers to Cross-Border Transfers of Personal Information.

Guangdong, Hong Kong and Macao have significant differences in the specific rules for the exit of personal information, and the regulatory barriers to the cross-border transfer of personal information raise questions and challenges for the construction of a mechanism for the cross-border flow of personal information in the Greater Bay Area.

Article 38 of the Mainland's Personal Information Protection Law stipulates that there are five ways to provide personal information to Hong Kong and Macao: firstly, through the security assessment organised by the State Internet Information Technology Department; secondly, certification of personal information protection in accordance with the regulations; thirdly, by entering into a contract with the offshore recipient in accordance with the standard contract and agreeing on the rights and obligations of the two parties; fourthly, by complying with the laws, administrative regulations or other conditions stipulated by the State Internet Information Technology Department; and fifthly, by complying with the fifth is in line with the provisions of international treaties and agreements concluded or participated by China. It should be noted that operators of critical information infrastructure, data processors that handle personal information of more than 1 million people, data processors that have cumulatively provided 100,000 people's personal information or 10,000 people's sensitive personal information outside China since 1 January of the previous year, as well as other circumstances stipulated by the State Internet Information Technology Department that require the declaration of the security assessment of data exit, must carry out the personal information exit through the Route One.

Under section 33(2) of the Hong Kong Ordinance, the transfer of personal data outside Hong Kong is in principle prohibited unless conditions (a) to (f) are met. Section 33 of the Ordinance, together with the Guidelines, builds in specific rules for the exit of personal data: firstly, it is examined whether the destination to which the data are to be exported complies with (a), i.e. belongs to a jurisdiction which has been assessed and notified by the Commissioner as having legislation on personal data protection equivalent to that of the Ordinance. If it is not, it needs to be further examined whether it complies with condition (b), i.e. whether the destination has data protection legislation comparable to that of Hong Kong. If the destination does not comply with condition (a)(b), the personal data may also be allowed to leave the territory if the written consent of the data subject can be obtained, i.e. condition (c) is complied with. Condition (d) is designed to cater for special cases where the transfer of data is necessary to protect the interests of the data subject and it is not practicable for the data user to obtain the data subject's written consent before the transfer, and there are reasonable grounds to believe that the data subject will give his consent. Exemptions under condition (e) include use for domestic purposes, avoidance of crime, preservation of health, use in pursuance of legal proceedings, use for journalistic, statistical and research purposes or use in response to a threatened situation in which the data user may invoke an exemption to carry out the transfer. If none of the conditions (a) - (e) is met, the data user may also engage in the exit of the data if it has exercised reasonable care and taken reasonable precautions to safeguard against contravention of the Ordinance, i.e. using contractual or non-contractual means^[9] to comply with condition (f).

Macao follows a position of "strict limitation" on the cross-border transfer of personal data, as stipulated in article 19 of Macau Law 8/2005, which provides that personal data may be transferred outside Macao only in compliance with the provisions of the Law and if the legal system of the place where the transferred data are received ensures an adequate level of protection. The aforementioned "appropriate level of

protection" is considered by the public authorities in the light of all the circumstances of the transfer or the totality of the transferred data. However, up to now, the Macao Personal Data Protection Office has not recognised the "appropriate level" of protection of personal data under the relevant laws of any country or territory.^[10] Article 20 of Macau Law 8/2005 provides for exceptions to the exclusion of the application of Article 19: "Exit of personal data after fulfilment of one of the statutory circumstances and after notification to the competent authority for the protection of personal data", "Exit of personal data after fulfilment of the statutory circumstances and after examination and authorisation by the competent authority for the protection of personal data" and "Cross-border exit of personal data for specific purposes regulated by special laws or international law instruments applicable to the Region and interregional agreements".

Guangdong, Hong Kong and Macao do not converge on the rules of cross-border flow of personal information, and there is a practical dilemma in legislating to promote the formation of the same rules and standards. The laws of Hong Kong are enacted by the Legislative Council of Hong Kong, and it is more difficult to pass new personal information laws in Hong Kong as compared with those of the Mainland and Macao, e.g. section 33 of the Ordinance has not yet been implemented due to concerns of enterprises in Hong Kong about its impact after implementation. As a result, the smart development of the Guangdong-Hong Kong-Macao Greater Bay Area faces the practical barriers posed by the differences in the rules governing the cross-border transfer of personal information.

4.3 Regulation of cross-border flow of personal information

Lack of harmonised regulation of data classification and categorisation.

Appropriate classification is an important part of scientific data management, and for the Greater Bay Area, it is an important prerequisite for whether the regulation of cross-border flow of personal information can be implemented on the ground.^[11] The cross-border trading of personal information involves complex data application scenarios and high classification difficulties, but it is closely related to data pricing and the construction of stable and unified trading rules, so it is necessary to formulate unified rules for the management of personal information classification and categorisation. Although in recent years there have been preliminary provisions on data classification in many fields, there is still a lack of a formal national industry-wide data classification scheme, and the Guangdong-Hong Kong-Macao Greater Bay Area has yet to introduce relevant regulations, so there are many obstacles to the regulation and collaborative governance of cross-border flow of personal information in the Bay Area.

Lack of establishment of regulatory bodies and difficulties of synergy.

Hong Kong and Macao have set up specialised authorities to implement and oversee their personal data protection laws, a move that can effectively ensure the implementation of the relevant laws at , and prevent the protection of the laws from being

shelved and reduced to a mere formality. However, it should be noted that the jurisdiction of the Office of the Privacy Commissioner for Personal Data in Hong Kong is limited to the use of data within Hong Kong, while Macao takes a "strictly limited" stance on the cross-border transfer of personal information, i.e., although there are specialised agencies for the protection of personal information in Hong Kong and Macao, they are more concerned with the security and protection of personal information within the region, and there is a lack of regulation of the cross-border flow of personal information in Macao. The two places have specialised agencies for personal information protection, but they are more concerned with the security and protection of personal information within the region, and there is a relative lack of regulation of the cross-border flow of personal information.

On the contrary, in the Mainland, the decentralised regulatory model is the main measure adopted by the Mainland in the field of data. Apart from the Personal Information Protection Law, prohibitions on the cross-border flow of various types of personal information are scattered everywhere, and personal information regulation is carried out by the National Internet Information Department, the Development and Reform Commission, the State Council and the people's governments at or above the county level, etc., so that the functions of the decentralised agencies are blurred and the distribution of powers and responsibilities is unclear, resulting in mutual shirking of responsibilities among the agencies, lack of regulation and difficulties in implementation. As a result, the various organisations have shifted responsibilities to each other, and the lack of supervision has made it difficult to implement the law. The lack of specialised agencies for personal information protection in the Mainland to interface with Hong Kong and Macao not only brings many risks to the implementation of personal information protection laws in the Mainland, but also makes the collaborative governance of cross-border flow of personal information in the Bay Area inefficient, exploring the setup of the regulatory agencies in the three places, the interface, and the hierarchical relationship of the interface subjects as an important issue facing the governance of the cross-border flow of personal information in the Greater Bay Area at the present time.

The Greater Bay Area also lacks a unified body for cross-border regulation of personal information. For any cross-border regulation, the consistency of enforcement measures in the process of implementation is the key to the effective functioning of cross-border co-ordination mechanisms. For example, the EU, in order to unify the implementation of the GDPR established the EU Data Protection Commission, which is responsible for co-ordinating and leading the EU data regulation work, co-ordinating the differences between the regulatory authorities of member states, and in fact acting as the superior authority of the data regulatory authorities of member states within the EU, effectively improving the efficiency of the EU's internal digital synergistic governance. While the Greater Bay Area lacks a unified regulatory body, the work of cross-border flow of personal information lacks a unified leading authority, joint regulatory work is difficult to carry out.

4.4 Collaborative governance of cross-border flow of personal information

The unique geographical condition of "one country, two systems and three jurisdictions" in the Guangdong-Hong Kong-Macao Greater Bay Area makes collaborative governance in the Greater Bay Area inevitably face legal barriers, while the cross-border flow of personal information, as an emerging product in the data era, has not yet formed a mature and effective coordination mechanism in this area, and the cross-border flow of personal information poses difficulties and challenges for collaborative governance.^[12] In addition to the legislative and law enforcement co-ordination difficulties mentioned above, judicial and dispute resolution areas also face co-ordinated governance challenges.

In the judicial aspect, the three places have relatively independent judicial systems, and there are differences in the rules of jurisdiction, prosecution, and proof in the protection of cross-border circulation of personal information, and the phenomenon of different judgements in the same case due to the lack of convergence of the laws of the three places and is prominent. And China's legalisation of inter-regional judicial assistance is an arduous and complex task. Although some progress has been made, there is still a long way to go, for example, 10 years after the handover of Hong Kong, there has been no progress in the consultations on the arrangements for the mutual surrender of fugitive offenders. The lack of an effective mutual legal assistance mechanism will add obstacles to the investigation, collection of evidence and arrest of cross-border crimes, exacerbating the difficulties in bringing offenders to justice and enforcing effective judgements, and hindering the development of personal information governance in the Greater Bay Area.

In addition, in recent years, Guangdong, Hong Kong and Macao have gradually cooperated in the non-litigation resolution of personal information disputes, the co-development of data platforms, and the joint construction and governance of the industry. For example, Guangdong and Macao have collaborated to support the development and operation of the Guangdong-Macao cross-border data validation platform, and the relevant companies in Zhuhai, Shenzhen, and Macao have acted as the platform's operator, and technical supporter, respectively, to collaborate in the creation of the platform. However, this kind of co-operation is still in the initial stage, such as the aforementioned validation platform is only applied in the banking and financial sector, and there is a long way to go in the cross-border co-operation of Guangdong, Hong Kong and Macao on personal information.

5 Progress of the Mechanism for Cross-border Movement of Personal Data from Guangdong, Hong Kong and Macao

5.1 Clarify the mechanism for determining the rights and pricing of personal information.

First, the boundaries of the ownership of personal information are clarified. Personal information can be divided into original information and derivative information according to whether it has been processed or not. The so-called original information refers to personal information that has not been processed. According to the Personal Information Protection Law, original information belongs to the natural person, and qualified personal information processors must obtain the consent of the individual or process personal information for specific purposes. Derivative information refers to data containing personal information that is processed by the operator through algorithms and other processes. According to the theory of labour empowerment and the rule of creation,^[13] the operator invests costs and pays labour to create the derivative information, therefore, the ownership of the derivative information should be given to the operator, so as to motivate the operator to create further and revitalize the data assets. However, personal information is naturally highly personal in nature, so the operator's right to the derivative information should still be limited by the natural person's informed consent, i.e., to examine whether the business operator, before handling personal information, has notified the individual of the scope of his/her authority over the derivative information in a conspicuous and easily understandable language by means of a privacy policy, risk alerts, and so on, and has given him/her a fair opportunity to choose whether or not to provide the personal information. At the same time, a processor of personal information shall, in principle, be prohibited from using derivative information containing sensitive personal information because the reuse of such information would put the personality, person, and property of natural persons in serious danger.

Secondly, the pricing mechanism for elements of personal information should be unified. China currently has no unified data pricing standards, and the formulation and implementation of unified data pricing rules will be conducive to improving the efficiency of cross-border data transactions. In the future, may set up a Guangdong-Hong Kong-Macao Greater Bay Area data platform, drawing on the evaluation methods of other elements, integrating factors such as cost, market price of fair trade, and expected return of the elements, etc., and calculating the value of personal information according to the classification criteria of the personal information involved, so as to alleviate the disadvantageous position of the consumers of in the pricing of personal information, and enhance the safety and security of. With the gradual improvement of the data platform, it may also be possible to make use of the platform to With the gradual improvement of the data platform, it can also be used to review the legality of the form contracts of personal information transactions, and provide a convenient and safe online transaction channel for both parties of cross-border transactions.

5.2 Establishment of uniform rules for the cross-border flow of personal information

Early and pilot implementation and exploration of the special mechanism for cross-border flow of personal information in the Bay Area.

As the Greater Bay Area straddles three jurisdictions on both sides of the Taiwan Strait, the construction and improvement of the mechanism for cross-border flow of personal information in the Greater Bay Area cannot be achieved in one go, and it should follow the development strategy of "Early and Pilot Tests", whereby innovation and pilot tests are carried out in some cities and industries, so as to accelerate the realisation of high-quality development and explore the way forward.

Firstly, it will be piloted by Zhuhai and Macao, Guangzhou, Shenzhen and Hong Kong. Zhuhai is adjacent to the Macao Special Administrative Region, and from the release of the "Hengqin Overall Development Plan" in 2009 to the official listing of the Hengqin Guangdong-Macao Deep Co-operation Zone in 2021, Hengqin has always acted as a forerunner in the co-operation between Guangdong and Macao, and the release of the first cross-border service APP "Qin-Macao Tong" in 2019 involves the collection and circulation of a large amount of personal information of the Zhuhai-Macao two places. The release of the first cross-border service APP "Qin-Macao Tong" in 2019 involves the collection and circulation of a large amount of personal information of Zhuhai and Macao. Shenzhen is strategically positioned as the "core engine" of the Greater Bay Area, and is tasked with carrying out a pilot project on the safe management of cross-border data transmission. The high-quality development mode of Hong Kong-Shenzhen co-operation represented by Shenzhen Qianhai Shenzhen-Hong Kong Co-operation Zone has been very fruitful, and at the same time, the Shenzhen Data Exchange inaugurated and set up in 2022, and the "Interim Measures for the Administration of Shenzhen Data Transactions" was released, laying a practical foundation for the Greater Bay Area to explore collaborative governance of personal information.

Secondly, early and pilot implementation in specific industries. In March 2022, the Guangdong-Macao cross-border data verification platform was launched, introducing a new mode of "cross-border handling" for banking credit services, through which business organisations can obtain cross-border data verification services. As a result, the industry can rely on the Guangdong-Macao cross-border data validation platform and use its existing banking and financial services interconnection as a test to take the lead in formulating Guangdong Province's administrative measures for the cross-border flow of personal information in the banking sector and its implementation rules, so as to provide a model for the unification of cross-border rules on personal information in the Greater Bay Area. In addition, Shenzhen and Zhuhai are adjacent to Hong Kong and Macao respectively, and there are a number of ports connecting Guangdong, Hong Kong and Macao, which serve as hubs for people travelling between the three places at home and abroad. Using the ports as a blueprint for the construction of the mechanism will facilitate the monitoring of the effectiveness of cross-border co-management of personal information and optimise the mode of risk regulation.

Promoting the Model Law and constructing uniform rules for the flow of personal information.

The unification of the legal framework and standards for the protection of personal information in the Greater Bay Area of Guangdong, Hong Kong and Macao is the toughest guarantee to promote the efficient and safe circulation of personal information in the Greater Bay Area. For example, the European Union has established a unified personal information protection regime with GDPR as the general rule, which effectively promotes the cooperation and development of digital governance among member states. The Greater Bay Area should also accelerate the construction of unified rules for the cross-border flow of personal information, so as to provide a strong guarantee for the security of personal information.

First, the model law should be promoted to facilitate the convergence of the rules at . Due to the special institutional characteristics of the Greater Bay Area, it would be contrary to the basic principle of "one country, two systems" for the central government to enact legislation to unify the rules for the cross-border flow of personal information. In this context, the central government can give full play to its coordinating and guiding role by setting up a special leading group for the cross-border flow of personal information in the Greater Bay Area, strengthening national planning and guidance, and organising legal experts from Guangdong, Hong Kong and Macao to collaborate with experts from various industries in the drafting of a model law, so as to provide a model for the legislatures of Guangdong, Hong Kong and Macao to follow, and then the legislatures of the three places can elevate the model law to a high level of local regulations through statutory procedures, so as to achieve the convergence of cross-border legislation on personal information in the Greater Bay Area. The convergence of cross-border legislation on personal information.^[14]

Secondly, the criteria for classifying personal information into different categories should be clarified. As mentioned earlier, the scope of defining personal information differs among the three places, and both the Mainland and Macao have classified personal information in terms of sensitivity, while Hong Kong has not specifically defined . In comparison with GDPR, the classification criteria for personal information under the The Personal Information Protection Law is limited to one dimension of sensitivity. Therefore, the formulation of rules for the classification and protection of personal information should adopt a "total division" model. Firstly, under the central special leading group, it should determine the overall criteria for the classification of personal information according to the application scenarios. Afterwards, Guangdong, Hong Kong and Macao will classify personal information according to the specific conditions of each region . Finally, the list of personal information classified by the three regions will be compiled to form a unified catalogue of personal information of Guangdong, Hong Kong and Macao in the Greater Bay Area, which will be applied in the Guangdong-Hong Kong-Macao Greater Bay Area Data Platform.

Thirdly, we should draw on the experience of foreign countries in cross-border flow of personal information . The Greater Bay Area and the EU share similar historical and economic characteristics, and both have the advantage of regional economic integration. The EU is currently committed to creating a single digital market. Under

this objective, the EU emphasises the protection of personal data security and privacy, strives to create a fair and sustainable digital copyright framework, and has already achieved results in areas such as the protection of the rights and interests of creators and intellectual property rights holders. The Greater Bay Area can draw on the ideas of the EU to explore a governance model that unifies the market for digital services, unifies the construction of digital technology facilities, and opens up the flow of personal information, so as to realise the unity of personal information protection in the Greater Bay Area. At the same time, China has signed the "G20 Osaka Declaration on the Digital Economy" and the "Regional Comprehensive Economic Partnership Agreement", for the relevant rules on data flow in the two international treaties, China needs to gradually transform them into domestic law, when exploring the construction of rules on the cross-border flow of personal information in the Greater Bay Area, we should focus on the relevant international rules, and provide a model for the convergence of domestic law and international rules.

5.3 Improvement of the regulatory mechanism for the cross-border flow of personal information

Implementation of a hierarchical system of supervision of personal information.

First, a graded and classified negative list regulatory system should be implemented. According to the sensitivity of personal information and the application scenarios in which it flows, different restrictions should be placed on the mobility of personal information, and different auditing standards and regulatory thresholds should be set. For sensitive personal information, the flow of such information should be prohibited in principle; for general personal information used in specific scenarios, the flow of such information should be permitted in principle at ; and for other general personal information, the flow of such information should be permitted with restrictions at .

Secondly, to differentiate between those within and outside the Bay Area, and to implement a differentiated management model between those within and outside the Bay Area based on the principle of "free flow + restricted flow". For personal information that is only transferred across borders to other parts of the Greater Bay Area and is not subject to re-transfer, the principle of "free flow" should be adopted, and security assessment matters should be simplified at . At the same time, the relevant procedures should be gradually simplified in line with the increasing degree of integration of the Greater Bay Area and the convergence of the personal information protection systems. For example, in the European Union, no special authorisation or approval procedures are required for the transfer of personal data between its member states, which only need to comply with the GDPR . For countries outside the Bay Area, the establishment of a "white list" system should be explored, taking into account the "adequate protection" standard of the EU. For countries that meet the personal information protection requirements of the Mainland, Hong Kong and Macao, or have signed bilateral or multilateral treaties with China, they should be added to the "white list" of countries from which personal information can be exported, and any transfer of personal information from to can be allowed to leave the country after the statutory security assessment or authentication and approval procedures. The transfer

of personal information to non-whitelisted countries outside the Bay Area should be prohibited in principle.

Improvement of the system of institutions supervising the cross-border flow of personal information.

First, to improve the institutional set-up. The Guangdong-Hong Kong-Macao Greater Bay Area Committee on Cross-border Flow of Personal Information will be set up to co-ordinate the regulatory work on personal information protection in the Greater Bay Area, and its functions will include, among others, the formulation of a basic framework for the classification and categorisation of personal information. Under the committee, three regional teams of Guangdong, Hong Kong and Macao will be set up, which will interface with the authorities in charge of personal information protection in the three places and be responsible for the supervision and enforcement work in their respective regions. In contrast, the Mainland should expedite the establishment of a specialised agency for personal information protection and improve the Mainland's personal information protection system while collaborating on personal information governance in the Greater Bay Area.

While improving the institutional setup, it is necessary to formulate rules on institutional collaboration. In this regard, we can draw on the excellent experience of the European Union's "one-stop supervision" rules and "consensus" rules to clarify the division of powers and responsibilities between local regulators, and actively promote the maintenance of synergy among local regulators. (d) To clarify the division of powers and responsibilities between the regulatory bodies of different regions, and actively promote the co-operation of the regulatory bodies of different regions in exchanging information and opinions, so as to facilitate the progress of the three regions.

The model of unified supervision and regional division of management will not only enable different regions to implement differentiated control according to their specific circumstances, balancing the relationship between intra-regional governance and collaborative governance in the Bay Area, but also enable Guangdong, Hong Kong and Macao to participate fairly and fully in the process of governance, to contribute to the construction of the mechanism, and to co-ordinate the different requirements of each region for balancing information security and information flow in the cross-boundary flow of personal information.

5.4 Constructing a Collaborative Governance System for Personal Information in the Guangdong-Hong Kong-Macao Greater Bay Area

Firstly, the mechanism of mutual legal assistance should be improved. The judicial systems of Guangdong, Hong Kong and Macao are relatively independent. In this regard, should further improve the system of mutual legal assistance, strengthen judicial cooperation and exchanges among the three places, and promote the conclusion of agreements on mutual assistance in investigating and obtaining evidence, infor-

mation sharing and mutual recognition of evidence among the three places across the Taiwan Strait, so as to build a mutual legal assistance mechanism with the characteristics of the Greater Bay Area.

Secondly, establishing an extra-litigation personal information dispute resolution mechanism that is unique to the Bay Area. In response to disputes over the cross-border flow of personal information within the Bay Area, a joint mediation model has been constructed, relying on the Guozhong Civil and Commercial Mediation Centre of Hengqin New Area, Blue Ocean Legal Identification and Commercial Mediation Centre and other institutions, making full use of online platforms such as eBRAM and Guangzhou ODR, actively adopting online mediation and organising joint mediation at to provide convenience to parties involved in cross-border transactions of personal information in the three regions. For personal information disputes involving countries outside the Bay Area, the Outline calls for the establishment of a sound international commercial dispute resolution mechanism for the Bay Area, the training of specialised personal information dispute resolution personnel, and the exploration of the establishment of a specialised body for the resolution of data disputes of a high standard and international nature.

Thirdly, innovative technology and giving full play to the supporting role of the platform. Guangdong-Hong Kong-Macao Greater Bay Area as the engine of science and technology development in China. To further improve the level of digital governance, the Greater Bay Area should continue to innovate and make full use of cutting-edge technologies such as cryptography, blockchain, artificial intelligence, etc., to provide technological protection for personal information security. At the same time, under the pioneering leadership of the Guangdong-Macao Data Validation Platform and the Shenzhen Data Exchange, the Greater Bay Area should continue to incentivise the development of innovative data platforms, and continue to improve them in different industries and phases, so as to gradually form a comprehensive cross-boundary data flow platform system that is in line with international standards.

Fourthly, Guangdong, Hong Kong and Macao should actively promote the construction of industry self-regulation, motivate private entities to take the initiative to engage in cross-border compliance of personal information, and make reference to and learn from the European Union's dual normative system of "industry code of conduct + mandatory legal norms" and the dual management system of "self-regulation of data processors + governmental data supervision", to strengthen education and training on awareness of personal information protection for enterprises, organisations and the public. We will learn from the EU's dual regulatory system of "industry code of conduct + legal mandatory norms" and dual management system of "self-regulation of data processors + government data supervision", strengthen education and training on personal information protection for enterprises, organisations and the public, and reduce personal information risks at source, promote the establishment of an effective multi-governance system, and give full play to multi-governance advantages.

6 Conclusions

With the continuous construction and rapid development of the Greater Bay Area, the circulation of personal information and other important data among the three places has become more and more frequent, and the risks associated with have also become more and more obvious. Next, the Greater Bay Area should address the problems of difficulty in establishing rights and pricing of personal information, lack of convergence of rules on cross-border flow of personal information among the three regions, lack of or insufficient supervision, and difficulties in promoting collaborative governance, etc. by drawing on the excellent experience of the European Union's internal and external data governance models. clarify the mechanism for establishing rights and pricing of personal information, formulate unified rules on cross-border flow of personal information, perfect the mechanism for supervision of cross-border flow of personal information, and build a collaborative governance system for personal information in the Greater Bay Area, so as to gradually solve the problems. The Greater Bay Area's collaborative personal information governance system will gradually break down the institutional barriers among the three places and promote the digitalisation of the Greater Bay Area.

The exploration of the construction of a collaborative protection mechanism for the circulation of personal information has important theoretical value and policy significance, which not only promotes the free circulation of data in the Greater Bay Area and the construction of digitalisation , but also provides a valuable reference and institutional framework for the establishment of a mechanism for the cross-border flow of data in the whole country and the rest of the world, which will help to promote the experience of China's systematic governance and to enhance China's position in the global economic governance system.

ACKNOWLEDGMENT

We would like to give our heartfelt thanks to our supervisor, Ms. Zuo Changwu, who gave us kind encouragement and useful instruction all through the writing.

We also want to thank Guangdong Province Innovation and Entrepreneurship Training Program for Undergraduate(NO. S202310559122) for providing support to this project.

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