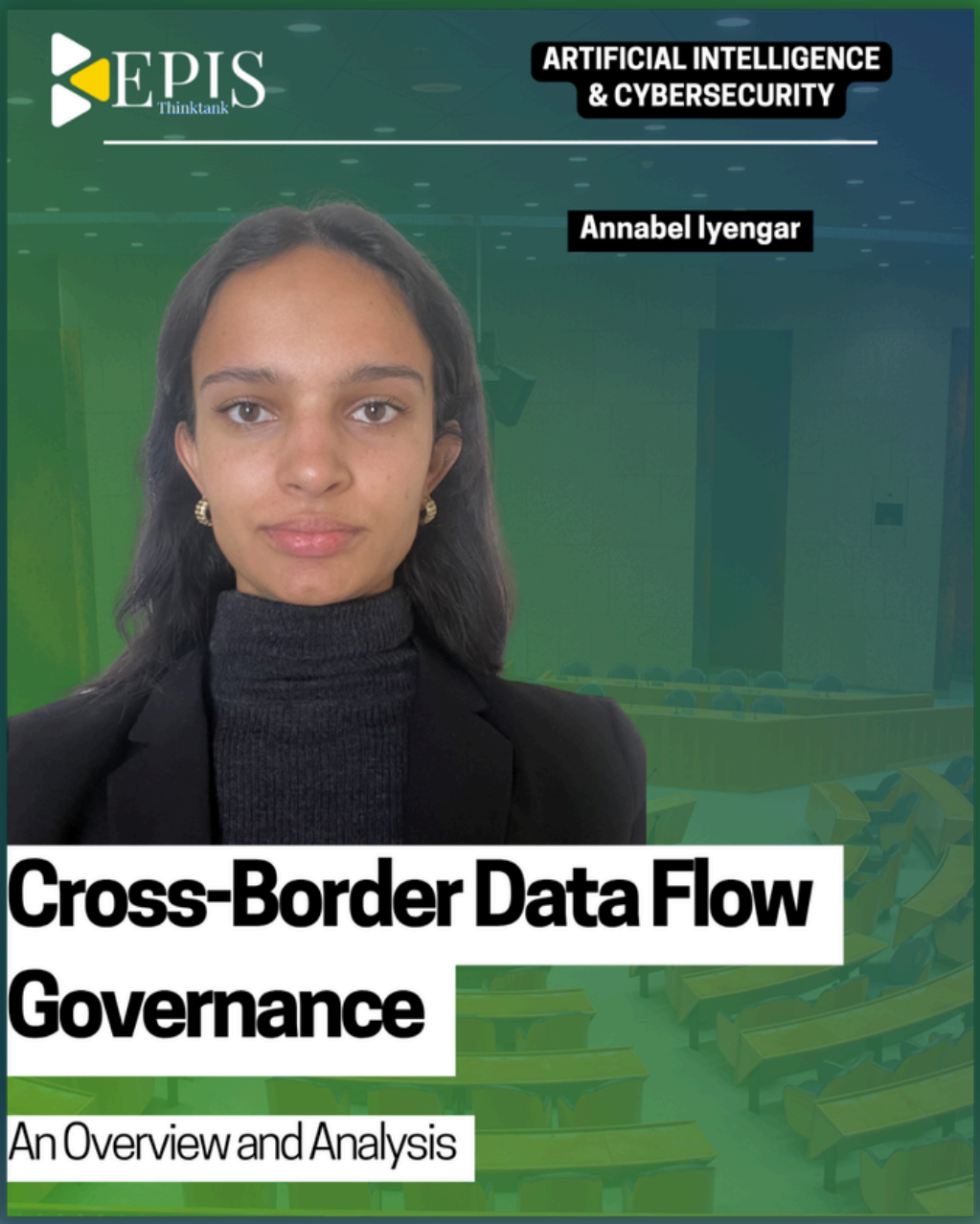

About the Article

How do different national frameworks (EU, US, China, India) govern cross-border data flows while balancing economic benefits with digital sovereignty?

Divergent regulatory approaches create a fragmented global system, prioritising sovereignty differently and causing legal complexity, data localisation, and barriers to digital trade.

Greater international alignment and interoperable standards are needed to reduce fragmentation, protect data, and enable efficient, scalable global digital trade.

About the Author

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1. Introduction

In an increasingly digitalised world, the value of personal data has been new oil of the internet and the new currency" of the digital sphere (Hoofnagle, Sloot, & Borgesius, 2019, p. 65). International digital trade is proving particularly lucrative, with global e-commerce sales totalling around $26.7 trillion in 2019, incentivising policymakers globally to facilitate cross-border data flows; the movement of digital information across national borders (Bergsen, Caeiro, & Moynihan, 2022) (Mehmet & Hamza, 2025, p. 222). However, the rise in cross-border data flows entails enacting sufficient regulatory and safeguarding systems which also allow states to ensure the privacy of citizens' data, safeguard their critical digital infrastructure from foreign interference, and seek legal accountability for incursions on digital standards (Du, 2022). Recognition of the value of citizens' data has led states to value digital sovereignty; their capacity to regulate, control, and protect digital information, infrastructure, and technologies within their jurisdiction (Mehmet & Hamza, 2025, p. 222) Balancing data-flows with digital sovereignty means a patchwork of rules governing cross-border data flows has materialised, the global misalignment of which complicates both the enforcement of public policy goals and the ability of multinational firms to operative cohesively on a global scale (Casalini, López-González, & Nemoto, 2021, p. 1)This article will thus examine four distinct regulatory approaches to cross-border data benefit flows, and the global impact of existing misalignment between regulatory frameworks. This critical evaluation will then inform policy recommendations concerning potential paths to achieving an interoperability between frameworks which maximises economic benefit whilst honouring desire for digital sovereignty.

Digital sovereignty; their capacity to regulate, control, and protect digital information, infrastructure, and technologies within their jurisdiction

2. Four Existing Data Governance Frameworks:

2.1 EU Framework for Cross-Border Data Flows

The first regulatory framework is that of the EU, called the General Data Protection (GDPR), which came into effect on May 25th 2018. Founded on EU Privacy Directives, the GDPR prioritizes fundamental rights to privacy and data protection in the regulation of cross-border data flows (Mehmet & Hamza, 2025, p. 222). Importantly, the GDPR imposes strict requirements on international data transfers, namely that such transfers are only permitted when the recipient state has adequate data safeguards in place that are functionally equivalent to digital standards within the EU's framework (Mehmet & Hamza, 2025, p. 222). This means that the GDPR requires 'adequate' protection to follow data, around the globe if necessary. Companies that use the personal data of EU citizens must vet service providers, regardless of how long their chains are, for compliance with the demands of the GDPR framework (Hoofnagle, Sloot, & Borgesius, 2019, p. 68). As a result, multinational corporations

must ensure that all service providers using any data belonging to EU citizens have made, and abide by, the requisite contractual agreements (Hoofnagle, Sloot, & Borgesius, 2019, p. 68). The GDPR also further centres user privacy by seeking to improve the requisite quality of consent for sharing personal data with companies, making clear policy preferences for "human-in-the-loop systems" (Hoofnagle, Sloot, & Borgesius, 2019, p. 68). Stricter conditions on cross-border data transfers and consent conditions also expand the notion of 'data breaches' subject to penalisation and in 2022 GDPR fines reportedly totalled 832 million euros (Hoofnagle, Sloot, & Borgesius, 2019, p. 68) (Bologa, 2023). These reasons, amongst others, mean attitudes towards the GDPR framework vary as it boosts data privacy but complicates global data chains and penalises all companies equally, regardless of company size (Bologa, 2023).

Figure 1: Map of key dates in GDPR progression and issuance. Source: GDPR, When Did GDPR Become Law? A Complete History and Timeline of General Data Protection Regulation https://www.gdpreu.org/when-did-gdpr-become-law-a-complete-history-and-timeline-of-general-data-protection-regulation/

2.2 US Framework for Cross-Border Data Flows

The second regulatory environment around cross-border data flows is that of the United States. The primary feature of the US's data regulation and safeguarding framework is that there currently exists "no comprehensive law concerning data privacy on the internet similar to the GDPR" (Tran, 2021). Instead, the US has its own patchwork of legislation concerning more specific sub-categories of data privacy and safeguarding, as well as emerging privacy statutes enacted by individual states on behalf of their state citizens. In March 2018, the US introduced the Clarifying Lawful Overseas Use of Data (CLOUD) Act (Daskal, 2018, p. 221). The first key feature of this act comprises US extraterritorial data access; US law enforcement can access data held by US-based service providers, even if the data is stored abroad (Daskal, 2018, p. 222). Secondly, by CLOUD the US can sign agreements with trusted foreign governments whereby the foreign governments governments are then permitted to bypass the standard, and lengthy, mutual legal assistance treaty (MLAT) procedure (Daskal, 2018, p. 222). Furthermore, in December 2024, the US issued 'the final rules' "Preventing Access to Americans' Bulk Sensitive Personal Data and United States Government-Related Data by Countries of Concern" (Clyde&Co, 2025). Whilst these 'final rules' represent the first US regulatory move concerning cross-border data flows, they do not cover data transfers to all jurisdictions, as the GDPR does, only transfers to 'countries of concern' (Clyde&Co, 2025). Whilst these rules exemplify a push towards strategic governance of dataflows, the US still lacks a comprehensive data governance framework. As a result, states such as Texas, California, Oregon, and Colorado have begun to enact their own regulatory consumer privacy statutes (HIPAA, 2021). Overall, whilst US regulation marks an important push towards data privacy and protection, the lack of a comprehensive framework distinguishes it from the GDPR.

2.3 Chinese Framework for Cross Border Data Flows

Digital Sovereignty is a core aspect of China's

Digital Sovereignty is a core aspect of China's framework for cross-border data governance ((Jiang, 2022, p. 22). Not only is this considered fundamental for equal global order, but it is also allegedly a response to America's pursuit of data hegemony (Jiang, 2022, pp. 24-25). Beijing also adopts a development-oriented approach, championing safe and organised data flows over involvement in debate around data access or localisation (Jiang, 2022, p. 25). In regulatory measures, this is exemplified by the Measures for Certification of Cross-Border Personal Information Transfer (Measures) which took effect on January 1st, 2026 (Zhou, 2025). These measures complete China's Personal Information Protection Law (PIPL) regulations for cross-border data flows of personal information, under which three legal pathways are outlined for the transfer of personal data overseas (Zhou, 2025). These pathways are either by security assessment, by obtaining a certification for the relevant dataflows, or through signing a standard contract for foreign parties ensuring alignment with conditions set out by the Cyberspace Administration of China (CAC) (Zhou, 2025). In the recent past, China's approach to cross-border data flows and protection has been subject to wide criticism from the West, facing accusations of insufficient legal protection of data coupled with excessive measures against multinationals which unduly hamper data flows (Jiang, 2022, p. 22). However, the CAC's issuance and completion of the PIPL have been internationally recognised as a relaxation on cross-border data flows in the name of greater investment, development and data governance (Gou & Li, 2025). Prioritisation of economic growth has therefore prompted China to better position itself for digital trade through cross-border data flows (Gou & Li, 2025).

2.4 Indian Framework for Cross-Border Data Flows

A final emerging governance framework for data privacy and protection is India's treatment of personal data protection. In 2025 India published the Digital Personal Data Protection Rules, and in November 2025 began operationalising the 2023 Digital Personal Data Protection Act (DPDP) (Kumar, 2025). As an approach to cross-border data transfer governance the DPDP Act marks a divergence from existing global regulatory frameworks as it operates on a "negative list" system rather than the "adequacy" or "whitelist" system of the GDPR and other governance systems (Kumar, 2025). This means that the default position for cross-border data transfers to other jurisdictions is that they are permitted, and only when transfers to certain jurisdictions are explicitly disallowed does this stop being the case. Whilst this less restrictive "blacklisting" method facilitates cross-border data flows, there is continued uncertainty and opacity around the criteria for being 'blacklisted' (Reddy, 2023). It is also the case that, whilst the existing DPDP regulations establish a governance framework for personal data, non-personal data lacks similar guidance (Reddy, 2023). India's emerging data governance framework aims to address several policy initiatives including protecting privacy rights, enhancing governmental control over data, warding off data colonialism, and nurturing domestic digital investment (Mishra, 2023, p. 240). However, India's current stance has been criticised for over-prioritising data protection from international actors to the detriment of playing a proportionate role in shaping the digital economy (Mishra, 2023, p. 240).

3. Analysis of Cross- Border Data Flow Frameworks:

3.1 Strengths

Having outlined above four of the main existing global frameworks for data governance, I will now outline some key strengths of said frameworks, but more notably I will highlight how misalignment between governance systems is proving an increasing hinderance to interoperability in digital trade. Firstly, many of the existing cross-border data flow frameworks align at least partially with the concept of 'data free flow with trust' (DFFT). This concept was introduced by Japan at the World Economic Forum Annual Meeting in 2019 and was later endorsed by G7 leaders at the 2023 G7 Digital and Tech Minister's Vision for Operationalising DFFT and its Priorities (OECD, 2023). Designed to drive economic and social prosperity whilst managing associated risks and challenges, DFFT is reflected in existing governance frameworks via established pathways through which data can be shared across jurisdictions such as the GDPR's adequacy framework, China's three pathways for data transfers, or India's 'blacklist' mechanism. Furthermore, the emergence of comprehensive and even patchwork governance systems represent development in accountability mechanisms through which the misuse of personal data can be addressed. For example, in 2024 Meta was fined £75 million by the Irish Data Protection Commission for inadequate protection of user passwords against GDPR regulations (BBC, 2024). Furthermore, Texas won its citizens a $1.04 billion settlement against Meta in the largest state data privacy settlement to date (NG, 2024). These cases exemplify how both comprehensive and non-comprehensive governance frameworks for data trade and protection are advancing digital trade policy to better shield citizens from exploitation of personal data.

3.2 Weaknesses of Existing Frameworks

Despite advances in DFFT and greater accountability measures from data governance frameworks, the existing regulatory landscape is markedly fragmented. In particular, a rise in misaligned global data governance frameworks has generated complex global digital trade regulations which hinder economic growth and inhibit international interoperability. Data localisation is one such consequence of data governance systems which seek to enhance the digital sovereignty of state, defined as "a variety of national restrictions and requirements relating to cross-border data flow, processing, and storage (Medine, 2024, pp. 3) A steady rise in countries enacting data localisation measures has been noted, with over 60 countries adopting around 144 regulations of some form (Medine, 2024, p. 2). Localisation is advantageous for governments for cybersecurity, data protection, law enforcement, retaining competitive advantage in digital trade, and combatting neocolonial risk (Medine, 2024, pp. 5-6). According to Cory and Dascoli, not only do data localisation measures reduce the volume and productivity of a nation's digital trade, but

Data localisation is one such consequence of data governance systems which seek to enhance the digital sovereignty of state

they also significantly impair cohesive and innovative global governance (Cory & Dascoli, 2021).

For large multinational companies and even small to medium enterprises (SMEs) the rising number of data localisation measures between governments and different rules concerning cross-border data flows make global business increasingly complex and fraught with legal dilemmas. Data localisation laws require specific data localisation strategy to navigate patchwork frameworks, most importantly to legally comply with data storage requirements, but also because failure to sufficiently establish regional infrastructure and adequate storage arrangements can delay entry into new markets and lead to costly regulatory catch-up on products (Chow, Sim , & Hubert, 2021). For example, under Vietnam's localisation laws 'foreign providers of online services' may have to store data in Vietnam and establish a local office, whereas in Indonesia, its 'public electronic system operators' who must set up a local data centre (Chow, Sim , & Hubert, 2021). Differences in localisation laws can thus lead to multinationals facing large fines for failing to navigate an increasingly complex regulatory environment. Linking back to the above exposition of the EU, US, Chinese, and Indian regulatory frameworks, misalignment between data transfers and access rules can mean that compliance with the rules of one jurisdiction can mean violating the rules of another, particularly as desire for data sovereignty increases. TikTok was fined €530 million in 2025 for lack of data storage compliance with the GDPR rules by failing to keep EU citizen's data stored in the EU and smaller firms could similarly suffer if they lack the manpower and resources to remain compliant across systems (Prescott, 2025). Companies with an existing and established global infrastructure will need to implement costly measures to adjust their operations around diverging demands of jurisdictions.

4. Policy Recommendations in Light of Analysis

Figure 2: Potential global policy pathway for cross-border data flows. Source: EBD Bahrain, Why Cross-Border Data Flows are Essential in the Post-Covid Era., 2020 https://www.bahrainedb.com/bahrain-pulse/why-cross-border-data-flows-are-essential-in-the-post-covid-era

The overriding consensus on the existing regulatory landscape for cross-border digital trade is thus that it is 'patchwork' and fragmented. Considering this analysis, recommendations will now be provided for how global trade could be better facilitated by regulatory measures, whilst retaining due

protection of data in storage and in transfers

1. Greater collaboration, and less protectionism, is needed concerning digital standards. Namely, digital trade actors should seek strategic alignment in their frameworks to encourage digital development rather than hinder the scaling of multinationals through complex compliance environments (Bergsen, Caeiro, Moynihan, Scheinder-Petsinger, & Wilkinson, Digital trade and digital technical standards: Opportunities for Strengthening US, EU and UK cooperation on digital technology governance, 2022).
2. An independent supervisory function be established that ensures data collectors and processors, both in the public and private sphere, abide by a global set of standards (Dewaranu, Hodgson, & Audrine, 2022).
3. Pursue an ex-post accountability method for data misuse, rather than relying on data localisation methods as ex-ante protection, which complicate and inhibit lucrative data trade (Cory & Dascoli, 2021).
4. Use OECD principles as a foundation for a global standardised governance framework which could underpin the above recommendations.

5. Conclusion:

It is by prioritising interoperability and cohesiveness that all countries, whether mentioned in this article or not, can begin to better capitalise on the ever-increasing value of data inglobal digital trade. This article has outlined four primary existing and emerging data governance frameworks to highlight both how align, and more significantly how they differ. Whilst the EU prioritises high-quality consent and adequate data protection in an overarching framework, the US has yet to enact a Package, many parts of which pertain to GDPR compliance, the global regulatory framework continues to complicate as states race to implement frameworks which protect their data from exploitation and allow them established pathways into digital trade. In the absence of greater drive behind alignment of such frameworks, trade will continue to suffer in the name of data protectionism as fractured regulatory compliance inhibits economic growth and hinders the scaling of firms and states who lack the means of navigating such an environment.

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