Overcoming Trade-Offs in Tech Regulation

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Share the Data: Overcoming Trade-Offs in Tech Regulation

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Executive Summary

Large tech companies and their customer-centric business models have led to gains in efficiency that have benefitted consumers and businesses worldwide. At the same time, the cross-sectoral nature of these companies exposes the world to new forms of risk by linking traditionally independent sectors, either directly by doing business in them or indirectly by providing infrastructure to third parties. If unmonitored, these risks could accumulate and destabilize the financial system, markets, and, more broadly, societies.

So far, regulators and legislators' responses focus on data privacy, antitrust, cybersecurity and financial stability issues. These issues are not new. European Union regulators have been focusing on some of them for quite some time. The European Commission has announced a major overhaul of the current EU's legal framework, the Digital Services Act package, which will include imposing rules on platforms indispensable for companies to reach consumers and access online markets. The novelty for 2021 is that the US and China have recently entered the regulatory arena too. It matters as both countries are home to most of the largest Tech companies.

This report summarizes the recent key regulatory changes in the US, Europe, and China. It shows these jurisdictions have different regulatory approaches while being confronted with similar challenges. They all seek the right regulatory balance between:

- promoting market efficiency while minimizing antitrust issues,
- strengthening financial inclusion while ensuring financial stability, and
- improving consumers' welfare while limiting data usage misconduct.

But can these approaches be reconciled under the umbrella of an inclusive and flexible global framework?

While global coordination seems unlikely on many policy issues such as antitrust or government access to data, it works for technical standards. The coherence they bring to the regulatory landscape will benefit all countries, consumers, and firms.

We identify data sharing as a necessary technical standard to restore consumer choice and strengthen competition in tech companies' different economic sectors. We define data sharing as the combination of (i) data portability, (ii) platforms' interoperability, and (iii) data reciprocity.

In highly innovative markets such as those in the digital space, these requirements ensure low entry barriers. They also provide convenient and cost-effective alternatives to customers, allowing them to sanction firms' poor behavior or quality of services by switching to another. Ultimately these requirements will favor competition, innovation, and consumers' privacy.

Introduction

The 15-month period beginning in January 2020 marks a turning point in the US and China's regulatory approach to tech companies, including BigTech. Their initial laissez-faire approach favored these companies' growth, focusing on the positive spillovers their innovation had on the population and the countries' economy. However, recent scandals, especially regarding data mismanagement and privacy issues, shifted public opinion in both countries, triggering a change in regulatory stance.

For the first time, Europe, the US, and China share similar concerns regarding large tech companies' activities. They all seek the right regulatory balance that will help them develop digital and physical infrastructure while supporting healthy competition. This combination will facilitate financial inclusion while strengthening the financial systems' resilience and improve consumer welfare while protecting consumer data.

So far, each jurisdiction has developed its regulatory approach without global coordination. At the same time, tech companies' expansion has grown beyond their home countries' jurisdictions. Pursuing this segmented global regulatory trend can only become counterproductive, especially in achieving sustainable and equitable economic growth. While policy coordination seems unlikely on antitrust issues or government access to data, there is a need and space for global technical standards.

This report identifies data sharing as a necessary technical standard to restore customer choice and strengthen competition in the different economic sectors tech companies are entering. Data sharing has to be a convenient, cost-effective, and safe process to migrate personal data. Customers could then sanction firms' poor behavior or quality of services by switching to another service provider. By freeing the consumers' choices, data sharing enhances competition and innovation. For this to occur, the customers should be able to move their personal data and obtain similar services on other platforms, and in some sectors, from other service providers. In other words, effective data sharing requires data portability, digital platform interoperability, and in some sectors, data reciprocity. We discuss these notions further in the section "Data Sharing Requires Portability, Interoperability, and Reciprocity."

We first summarize the recent key regulatory changes in the US, Europe, and China toward large digital platforms.[1] Then, we identify three categories of challenges that countries have, and will continue to face, when regulating digital platforms and other tech companies driving the economy's digitalization: (i) market structure, which includes the trade-off between market efficiency and antitrust issues; (ii) access to capital, which includes the trade-off between financial inclusion and financial stability; and (iii) consumer experience, which includes the trade-off between the consumer welfare and data usage misconduct. This classification helps to clarify the policies' impact and emphasizes the importance of data and their portability. Finally, we

1. See Figure 1 & https://miresearch.github.io/Tech-Regulation/ for an up-to-date timeline of the major regulatory milestones of each jurisdiction.

discuss the requirements that will enable customers to share their data effectively across digital platforms or service providers: data portability, digital platforms' interoperability, and data reciprocity. Ultimately these requirements will benefit competition, innovation, and consumers' privacy.

Three Approaches to Tech-Related Regulation

Most of the US, Europe, and China initiatives target large tech companies, Big Tech, as direct responses to the disruptions they have caused in several sectors. It is also a reaction to their size and atypical business models. These companies have access to large amounts of customers' data, benefit from positive network effects derived from their platform's size, and derive a unique understanding of their customers' behaviors and preferences from their interwoven business activities (BIS 2019).

Figure 1: Timeline of Key Regulatory Events in the US, Europe, and China

Source: Milken Institute (2021)

United States

Since their creation, large tech companies in the US have invested, innovated, and operated with minimal interference from the federal government. However, recent concerns related to their size and power in different markets have reignited a debate on antitrust enforcement.

The consumer welfare standard has defined the application of US antitrust law since the late 1970s. It qualifies anti-competitive conduct as leading to lowered economic prospects for consumers, usually seen through higher prices (Wu 2018). Such an interpretation of antitrust "underappreciates the risk of predatory pricing and how integration across distinct business lines may prove anti-competitive" (Khan 2017). As an alternative, recent initiatives from the Federal Trade Commission (FTC), Department of Justice (DOJ), and state attorneys general have focused on the impact of BigTech's conduct on consumers regarding the quality and innovation of its services. For example, in December 2020, the FTC and 48 state attorneys general filed a lawsuit claiming that Facebook's acquisition of Instagram and WhatsApp was anti-competitive as it limits the quality and innovation of social network advertising (FTC 2020). Similarly, the Antitrust Subcommittee produced a report in October 2020 that notes the quality of data privacy measures offered by companies such as Facebook is weaker due to a lack of competition.[2] Over the past two years, the US antitrust regulators have investigated or charged Facebook, Google, and Amazon with anti-competitive conduct.[3]

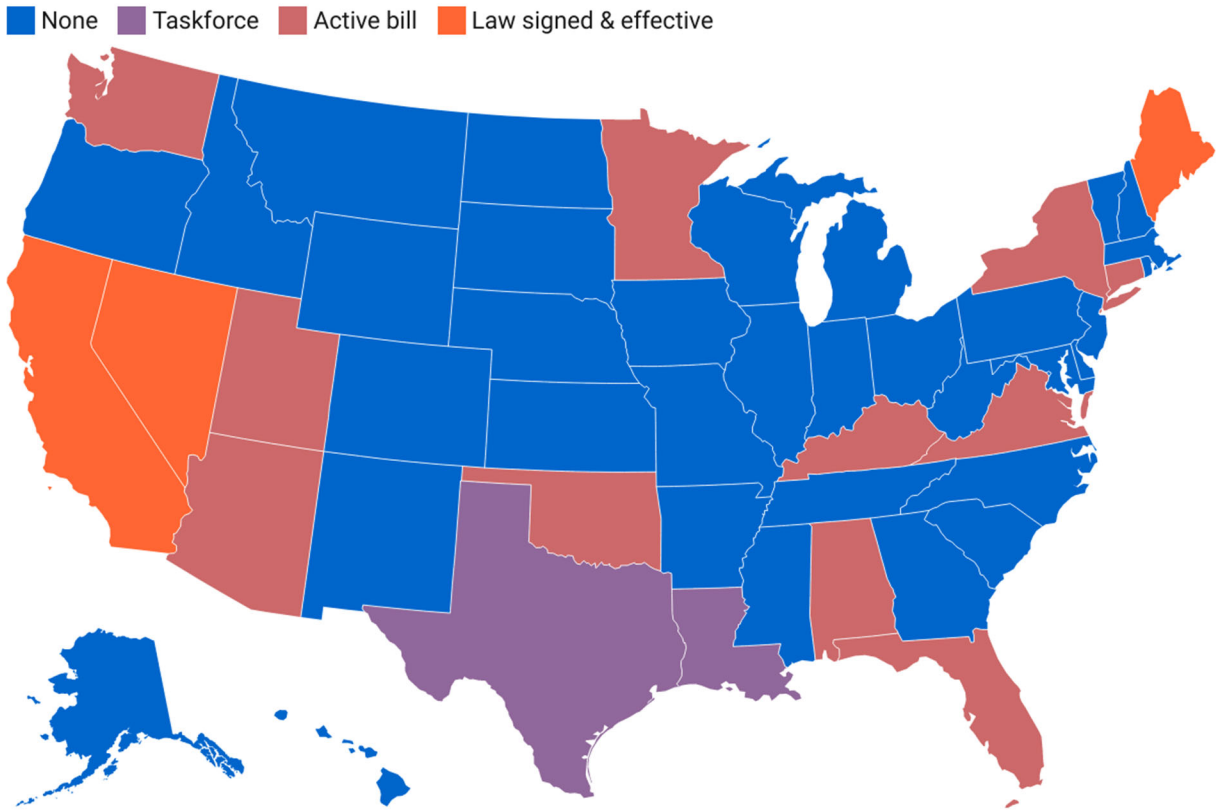
The Cambridge Analytica data scandal in March 2018 undeniably contributed to bringing broad awareness of the challenges related to consumer data treatment and protection. It led to widespread condemnation of Facebook's behavior from US legislators that resulted in its CEO's appearance before two separate Congressional hearings and several fines from the FTC—the de facto US privacy regulator—and the Securities and Exchange Commission (SEC).[4]

This scandal led to the strengthening of a few states' consumer data protection rules, with many others still in the process of passing new legislation (see Figure 2). In July 2018, California passed the California Consumer Privacy Act (CCPA), which gives the state's citizens the right to: 1) request a record of their personal data; 2) request companies delete their personal information; 3) opt out of the sale of personal information; and 4) access their data in a readily available format that allows for transfer to third parties. In May 2019, Nevada also passed a data privacy law. The only similarity the Nevada Privacy Law and CCPA have is the provision giving its citizens

2. "Investigation of Competition in Digital Markets," US House Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, October 6, 2020, https://judiciary.house.gov/news/documentsingle.aspx?DocumentID=3429.
3. Facebook has been charged by the FTC and 48 state attorneys general; Amazon is under investigation by the FTC; Google has been charged in three separate cases by the DOJ and a variety of state attorneys general.
4. The FTC's investigation resulted in a $5 billion fine against Facebook in July 2019. The company also agreed to a separate $100 million settlement with the SEC over claims it misled investors regarding the thoroughness of its privacy processes.

the right to opt out of the sale of their personal information.[5] In June 2019, Maine passed a privacy law that only applies to internet service providers (ISPs).[6]

Figure 2: Status of US State Privacy Legislation



Note: Includes bills determined to be a comprehensive approach to governing the use of personal data in a state (as of February 28, 2021).

Source: Adapted from IAPP (2021) • Created with Datawrapper

Comprehensive data privacy legislation remains a patchwork at the state level while a federal law is wholly absent. Despite several attempts to pass legislation since March 2018, two main issues have prevented bipartisan support for legislation: 1) whether federal privacy legislation would preempt (supersede) existing state privacy laws and 2) whether individuals would have the right to sue companies over alleged privacy violations. The first point became even more

5. "The Nevada Privacy Law (SB-220) vs. The California Consumer Act (CCPA)," One Trust, September 17, 2019, https://www.onetrust.com/blog/the-nevada-privacy-law-sb-220-vs-the-california-consumer-privacy-act-ccpa/.
6. "Maine and Nevada's New Data Privacy Law and the California Consumer Privacy Act Compared," Baker McKenzie, June 20, 2019, https://www.bakermckenzie.com/en/insight/publications/2019/06/maine-and-nevada-new-data-privacy-laws.

contentious when California amended the CCPA with stricter privacy rules for companies: the California Privacy Rights Act (CRPA), passed in November 2020 (Kerry and Chin 2020).

In the absence of federal standards, several large US technology companies, including Microsoft, have decided to use the CCPA standards for all US consumers rather than just in California.[7]

The US population supports these data privacy changes. In 2019, 70 percent of survey respondents felt they did not benefit in any meaningful way from the data collected about them and that more government regulation of data privacy was needed (see Figures 3 and 4). This trend has strengthened in recent years: In January 2021, 57 percent of US adults favored increased regulation for Amazon, Google, and Facebook, a nine-point increase compared to August 2019 (see Figure 5).

The July 2020 congressional hearing of the CEOs from Amazon, Google, Facebook, and Apple sent a clear signal regarding enhanced scrutiny to come. In March 2021, Tim Wu's appointment as the head of technology and competition policy at the National Economic Council and the nomination of Lina Khan as a commissioner at the Federal Trade Commission confirmed that trend with the Biden administration.[8] Both Wu and Khan are vocal critics of the behavior of BigTech and the consumer welfare approach to antitrust.[9]

Figure 3: US Public Opinion on Benefits from Data Collection, (June 3-17, 2019)

Source: Adapted from Pew Research Center (2019) • Created with Datawrapper

Figure 4: US Public Opinion on Need for Increased Data Privacy Regulation, (June 3-27, 2019)

Note: Those who did not give an answer are not shown.

Source: Adapted from Pew Research Center (2019) • Created with Datawrapper

7. Jule Brill, "Microsoft Will Honor California's New Privacy Rights throughout the United States," Microsoft, November 11, 2019, https://blogs.microsoft.com/on-the-issues/2019/11/11/microsoft-california-privacy-rights/.
8. "President Biden Announces His Intent to Nominate Lina Khan for Commissioner of the Federal Trade Commission," The White House, March 22, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/22/president-biden-announces-his-intent-to-nominate-lina-khan-for-commissioner-of-the-federal-trade-commission/.
9. Gilad Edelman, "Biden Is Assembling a BigTech Antitrust All-Star Team," *Wired*, March 9, 2021, https://www.wired.com/story/lina-khan-ftc-antitrust-biden-administration/.

Figure 5: Change in US Public Opinion on Need for Big Tech Regulation

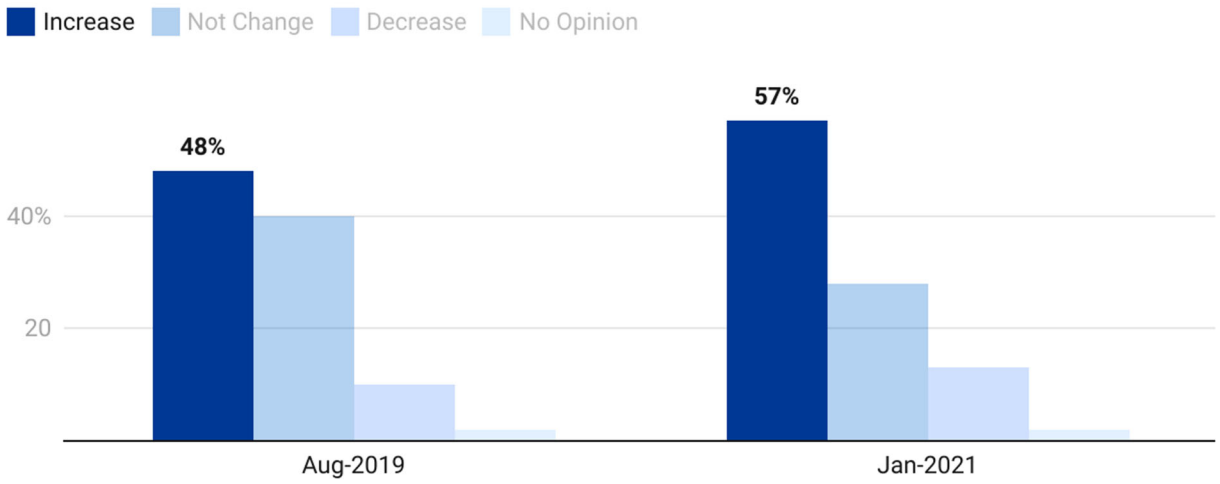


Chart: Adapted from Gallup (2021) • Created with Datawrapper

Finally, Big Tech's expansion to financial services has recently led to more scrutiny from the sector's regulators. Initially, Big Tech became partners with incumbent financial institutions for activities that require entity-specific licensing, attracting very little interest from the regulators. For example, Apple partnered with Green Dot Bank to release its peer-to-peer payment service Apple Cash in December 2017 and with Goldman Sachs to release a credit card in August 2019. Google announced in August 2020 that it would be partnering with eight different banks and credit unions to offer checking and savings accounts in 2021, including Citi, BMO, and BBVA.[10] Since 2018, Amazon has partnered with Synchrony Bank, Bank of America, and American Express to offer various lending services to small businesses.[11]

But things changed with Facebook's Libra project, a digital currency pegged to the value of a fiat currency basket. It triggered a decisive reaction from regulators. In 2019, both the Fed and SEC expressed concern over the project.

The SEC wanted to understand whether Libra should be subject to its oversight and approval due to its close resemblance to an actively managed exchange-traded fund (ETF). Indeed, the

10. "Google to Offer Co-branded Accounts with Eight US Banks," Finextra, August 3, 2020, https://www.finextra.com/newsarticle/36330/google-to-offer-co-branded-accounts-with-eight-us-banks.
11. "Everything You Need to Know about What Amazon Is Doing in Financial Services," CB Insights, accessed March 9, 2021, https://www.cbinsights.com/research/report/amazon-across-financial-services-fintech/#rumor.

Libra white paper proposed using a group of authorized resellers to control the liquidity of the basket fiat currencies in the Libra Reserve.[12] This approach seemed similar to the authorized participants that control ETF shares' supply to represent the underlying securities' value.[13]

The Fed focused on the potential impact of Libra on the financial system's stability. Unlike other cryptocurrencies that have a limited number of users, Facebook's platform could create widespread adoption. In that case, a mass exodus of deposits could create adverse effects for incumbent financial institutions and on the broader financial system if a lapse in operational resilience caused a significant redemption event (FSB 2020).

As of March 2021, Libra—now renamed Diem—will no longer be pegged to a basket of fiat currencies and will instead be pegged 1:1 to a single fiat currency.

Europe

Europe has been widely credited as the standard-bearer of Big Tech regulation.[14] Beginning with Google in 2010, the European Commission (EC)—the bloc's executive body—has opened antitrust investigations into and brought charges against all the major US technology companies over alleged anti-competitive conduct. Penalty enforcement has come in the form of large fines and, in some cases, a mandated change to the company's policy or conduct. For example, the three antitrust cases brought against Google between 2010 and 2019 resulted in over $9 billion in fines and, among other things, led to a change in how Google treats rivals in search advertising.[15] To deal with data privacy and protection issues, the EU passed the General Data Protection Regulation (GDPR) in April 2016. Since becoming effective in May 2018, the GDPR has regulated how companies treat user data and give Europeans more control over whether their data are sold or shared. Notably, the GDPR was used to fine Google $56 million in January 2019 over its failure to adequately disclose to users how data are collected.[16]

Yet European regulators' success in pursuing anti-competitive conducts of Big Tech companies did not significantly improve competition. For example, the European Competition Commissioner Margrethe Vestager conceded in November 2019 that the outcome of the first antitrust case against Google did not result in more traffic for rival shopping price comparison

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[12] Libra White Paper. 2019. https://www.diem.com/en-us/white-paper/

13. Dave Michaels and Lalita Clozel, "SEC Weighs Whether to Regulate Facebook's Libra," *The Wall Street Journal*, July 13, 2019, https://www.wsj.com/articles/sec-weighs-whether-to-regulate-facebooks-libra-11563015601.

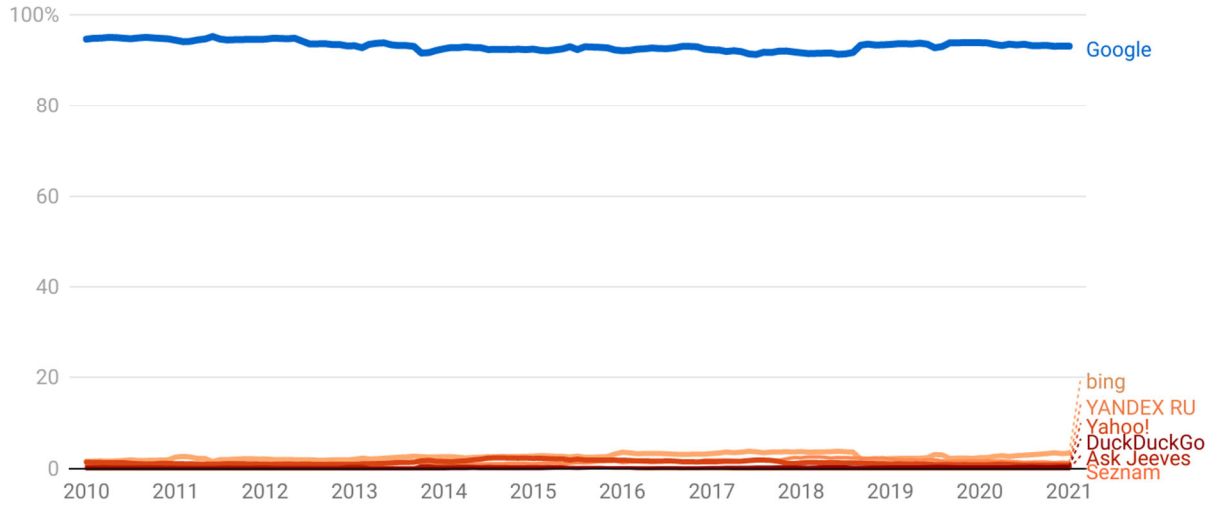
14. Sarah Lyall, "Who Strikes Fear into Silicon Valley? Margrethe Vestager, Europe's Antitrust Enforcer," *The New York Times*, May 5, 2018, https://www.nytimes.com/2018/05/05/world/europe/margrethe-vestager-silicon-valley-data-privacy.html.

15. Aofie White, "After $9 Billion in Fines, EU Says Something Nice about Google," *Bloomberg*, September 16, 2020, https://www.bloomberg.com/news/articles/2020-09-16/after-9-billion-in-fines-eu-says-something-nice-about-google.

16. Adam Satariano, "Google Is Fined $57 Million under Europe's Data Privacy Law," *The New York Times*, January 21, 2019, https://www.nytimes.com/2019/01/21/technology/google-europe-gdpr-fine.html.

companies.[17] Former officials have also pointed to Google's unchanged share of the broader search engine market as evidence of a sub-optimal outcome for European regulators.[18] Google's share of the European search engine market has remained at more than 90 percent since the EC's first antitrust investigation in 2010 (see Figure 6).

Figure 6: European Search Engine Market Share, January 2020-January 2021

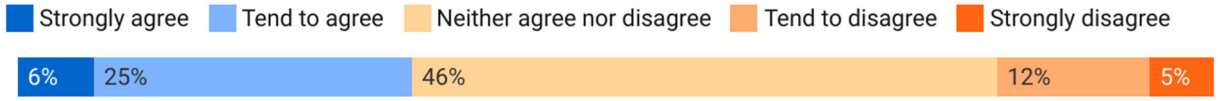


Source: Adapted from Statcounter (2021) • Created with Datawrapper

The GDPR compliance costs have been particularly prohibitive for small and medium-sized businesses. As a result, some firms have limited their digital advertising purchases to Big Tech firms, trusting their ability to comply with the new rules and future changes.[19] Public opinion has also been mixed on the effectiveness of GDPR: One year after the introduction of GDPR, almost half of those surveyed in the UK felt that the legislation had made no difference to them, while 17 percent claimed it had made their experience with companies using their data worse (see Figure 7). Another survey shows that UK adults were among the most active in their use of GDPR data rights, with 19 percent of adults responding that they had exercised their right to data portability, compared with just 13% across all 28 European countries (see Figure 8).

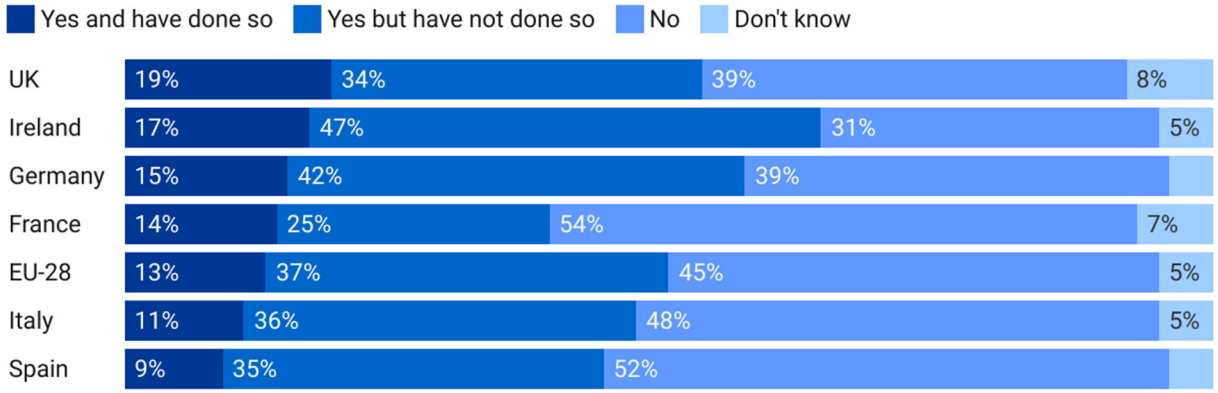
17. Foo Yun Chee and Victoria Waldersee, "EU's Vestager Says Google's Antitrust Proposal Not Helping Shopping Rivals," *Reuters*, November 7, 2019, https://www.reuters.com/article/us-eu-alphabet-antitrust/eus-vestager-says-googles-antitrust-proposal-not-helping-shopping-rivals-idUSKBN1XH2I8.
18. Tommaso Valletti, "How It Started… How It's Going," Twitter, October 16, 2020, https://twitter.com/TomValletti/status/1317110154328932353.
19. Nick Kostov and Sam Schechner, "GDPR Has Been a Boon for Google and Facebook," *The Wall Street Journal*, June 17, 2019, https://www.wsj.com/articles/gdpr-has-been-a-boon-for-google-and-facebook-11560789219.

Figure 7: UK Public Opinion on GDPR Improving Consumer Experience, (April 5-9, 2019)



Source: Adapted from Marketing Week and Ipsos Mori (2019) • Created with Datawrapper

Figure 8: European's Awareness and Usage of Their Right to Data Portability



Source: Adapted from Kantar and European Commission (2019) • Created with Datawrapper

Stalled progress led to a new regulatory toolkit in December 2020 that comes in two parts:

1. The Digital Services Act (DSA) deals with the liability of information posted on digital platforms and tasks platform providers with ensuring content posted on their sites is not harmful to users. The DSA modernizes existing EU liability provisions and clarifies legal ambiguities, particularly related to illegal content and bots' use to influence elections (EC 2020).
2. The Digital Markets Act (DMA) focuses on enabling competition by regulating the conduct of so-called digital gatekeepers—companies that, among other things, have an annual turnover above €6.5 billion and at least 45 million monthly active users in Europe (Blankertz and Jaursch 2021).

Unlike existing EU antitrust law, the DMA's *ex-ante* framework obligates and prohibits digital gatekeepers' practices. As a result, large tech companies must proactively ensure that the whitelisted and blacklisted practices included in the DMA are met or face fines up to 10% of their total annual turnover, see Figure 9 (EC 2020). However, the EU's *ex-ante* approach to antitrust raises concerns. With rules based on companies' size and not behavior, it would unfairly

target large US companies, violating World Trade Organization rules and having a chilling effect on investment and innovation (Broadbent 2020).

Figure 9: Examples of Whitelisted and Blacklisted Practices Included in the EU Digital Markets Act

	Whitelisted practices	Blacklisted practices
	Allow third parties to inter-operate with the gatekeeper's own services in certain specific situations	Treat services and products offered by the gatekeeper itself more favorably in ranking than similar services or products offered by third parties on the gatekeeper's platform
	Allow their business users to access the data that they generate in their use of the gatekeeper's platform	Prevent consumers from linking up to businesses outside their platforms
	Provide companies advertising on their platform with the tools and information necessary for advertisers and publishers to carry out their own independent verification of their advertisements hosted by the gatekeeper	Prevent users from un-installing any pre-installed software or app if they wish so
	Allow their business users to promote their offer and conclude contracts with their customers outside the gatekeeper's platform	Restrict the ability of end users to switch between and subscribe to different software applications and services

Source: Adapted from the European Commission (2020) • Created with Datawrapper

In the absence of an alternative, the GDPR provides a comprehensive framework for other jurisdictions to follow. Yet, countries around the globe have fundamental differences in how they approach data protection, making such a harmonization challenging.

California's CCPA data protection legislation illustrates this point. On the one hand, GDPR and CCPA share key components, such as "giving individuals rights to access and delete their personal information, require transparency about information use and necessitate contracts between businesses and their service providers."[20] On the other hand, the GDPR highlights a fundamental difference between how the EU and US approach data protection, namely the extent to which national security concerns subordinate protection rules. The Court of Justice of the European Union's (CJEU) decision in July 2020 exemplifies such a difference. It ruled that the EU-US Privacy Shield (an arrangement that facilitates data transfer between the two jurisdictions) no longer provides adequate rights for European users' data in the US equivalent to those included in the GDPR.[21] Specifically, the ruling refers to the US government's access to user data for national security purposes as being incompatible with the rights included in the GDPR (Meltzer 2020).

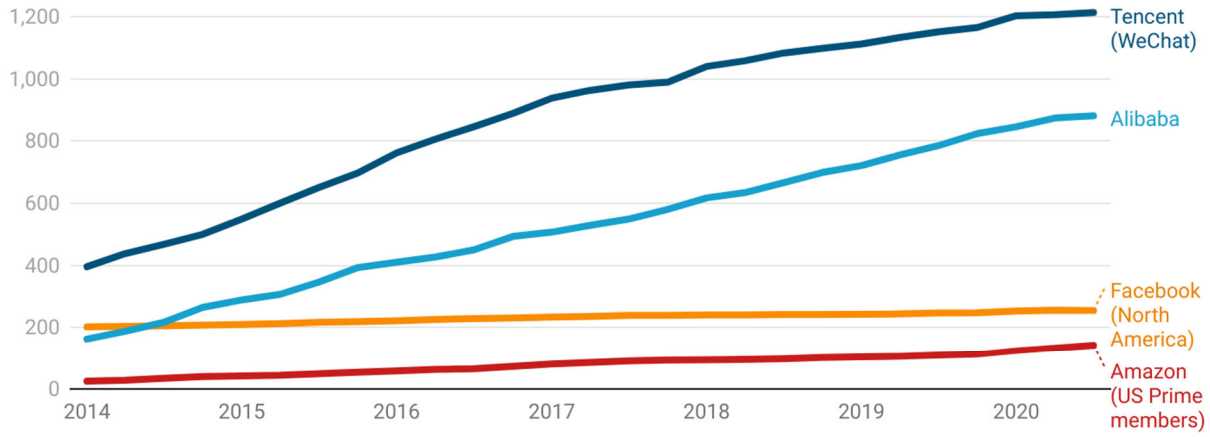
20. Carol A. F. Umhoefer, "CCPA vs. GDPR: The Same, Only Different," DLA Piper, April 11, 2019, https://www.dlapiper.com/en/us/insights/publications/2019/04/ipt-news-q1-2019/ccpa-vs-gdpr/.
21. Schrems and Facebook Ireland v Data Protection Commissioner, CJEU Case C-311/18, InfoCuria, July 16, 2020, http://curia.europa.eu/juris/liste.jsf?num=C-311/18.

As an alternative to the EU-US Privacy Shield, companies can use special contracts, Standard Contractual Clauses, to transfer data between the two jurisdictions. More than 5,000 companies had to readjust their privacy policies due to the court's decision. While this new requirement may have had a limited impact on large companies such as Facebook, Google, and Amazon, it is not the case for 70 percent of the companies concerned—small and medium-sized businesses with fewer resources.[22]

China

Over the past decade, Chinese regulators have prioritized Chinese technology companies' growth over regulatory oversight.[23] From 2014 to 2020, the Chinese firms Alibaba and Tencent grew their monthly active users (MAUs) by 718 million and 817 million, respectively (see Figure 10). This growth is primarily attributable to their domestic market. In comparison, Facebook and Amazon's MAUs increased by 53 million and 117 million over the same period in the US.

Figure 10: Comparative Growth of Alibaba and Tencent (monthly active users, millions)



Note: Alibaba figures include the number of worldwide users who used one of the Alibaba smartphone apps in a single month. Tencent figures include the number of worldwide users who used Weixin/WeChat. Facebook figures only include users from the US and Canada. Amazon figures are estimated based on available US Amazon Prime data.

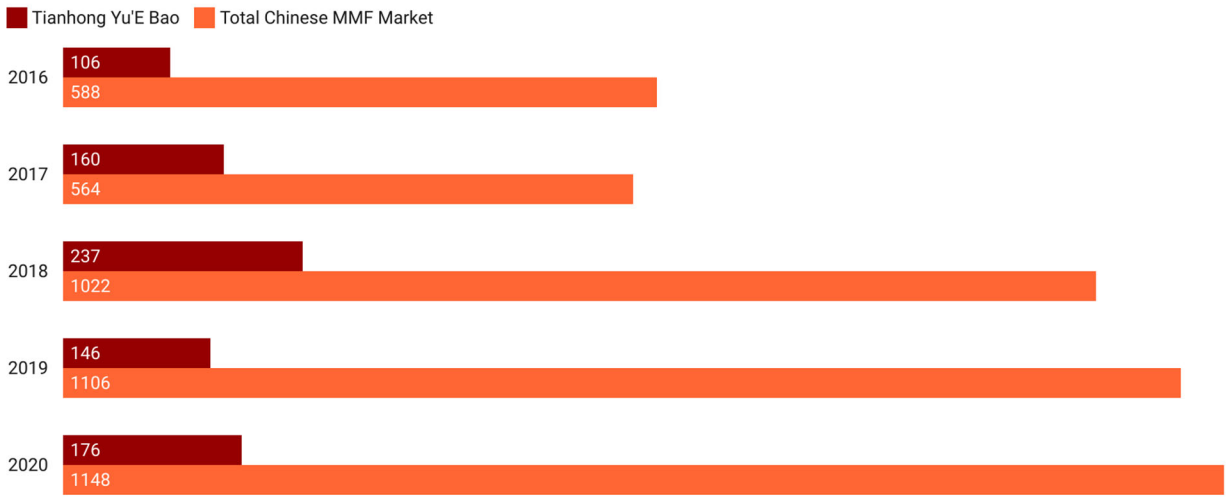
Source: Adapted from Marketplace Pulse and Statista (2021) • Created with Datawrapper

22. Emily Birnbaum, "Tech Companies Are 'Scrambling' after the EU's Top Court Shot Down the EU-US Privacy Shield," *Protocol*, July 16, 2020, https://www.protocol.com/privacy-shield-struck-down.
23. Celia Chen, "China's 'Wild Era' of Internet May Be Ending as New Personal Data Protection Law Seeks to Curb BigTech's Control over User Data," *South China Morning Post,* November 26, 2020, https://www.scmp.com/tech/policy/article/3111337/chinas-wild-era-internet-may-be-ending-new-personal-data-protection-law.

Financial services played a key role in both companies' growth by expanding their customer base to underserved or untapped populations. Their subsidiaries offer services in payments, money market funds, insurance, and credit to rural populations and small and medium-sized enterprises, making financial services more inclusive (BIS 2019; Frost et al. 2019). Ultimately, these developments have contributed to the Chinese economy's growth.

Scandals related to Anbang and Tomorrow Group ushered in a new approach. They triggered a restructuring of Chinese financial regulatory oversight. Financial stability became the primary focus with three institutions in charge: the Central Bank, the Banking and Insurance Regulatory Commission, and the Securities Regulatory Commission.[24] One of their first initiatives focused on the resilience of the fast-growing money-market fund market. Alibaba's fund had received widespread attention as the world's largest with $165 billion assets under management (AUM) in April 2017 (see Figure 11). The new rules set caps on consumers' withdrawals from money-markets funds, minimizing the systemic risk associated with a potential mass redemption event.

Figure 11: Alibaba's Popular Money-Market Fund, 2016-2020 (AUM, USD billions)



Note: All AUM figures are as of March each year.

Source: Adapted from Wind and Asset Management Association of China (2021) • Created with Datawrapper

Data privacy issues became a focus of the government as it became clear that the Chinese public were dissatisfied with how frequently their data had been hacked, sold illegally, and leaked (Horsely 2021). In October 2020, after a year-long process, it introduced a comprehensive data privacy law. The Personal Information Protection Law (PIPL) takes inspiration from both the EU and the US approaches to data governance—giving consumers greater data protection

24. Matthew Miller and Engen Tham, "China Seizes Control of Anbang Insurance as Chairman Prosecuted," *Reuters*, February 22, 2018, https://www.reuters.com/article/us-china-anbang-regulation/china-seizes-control-of-anbang-insurance-as-chairman-prosecuted-idUSKCN1G7076; Alexandra Stevenson, "China Is Dismantling the Empire of a Vanished Tycoon," *The New York Times*, July 18, 2020, https://www.nytimes.com/2020/07/18/business/china-xiao-jianhua.html.

rights while maintaining the government's surveillance rights for national security purposes (Lee 2021). The government also directly targeted China's large tech companies by drafting a separate set of rules to limit mobile app providers' ability to collect user data.[25]

Finally, the Chinese authorities implemented new antitrust legislation in November 2020, soon after a highly critical speech toward Chinese financial regulators delivered by Alibaba Founder and Chairman Jack Ma at the Bund Summit in Shanghai (Zhang 2021). Less than two weeks after that speech, the planned IPO of Alibaba's subsidiary Ant Group was canceled.[26] That same week, China's antitrust regulator—the State Administration for Market Regulation (SAMR)—drafted new anti-monopoly guidelines. Soon after, it began an investigation into Alibaba over alleged anti-competitive conduct.[27] Since then, other Chinese Big Tech firms have been under investigation. SAMR fined Tencent, Baidu, and Alibaba for failing to report previous acquisition deals for approval.[28] In January 2021, the Central Bank issued an antitrust directive that gave SAMR the authority to break up any non-bank financial institution with a market share greater than 50 percent, or 67 percent for two companies—a standard that Alibaba's Ant Group and Tencent's Tenpay both meet.[29]

Commonalities in a Segmented Regulatory Landscape

To date, regulators worldwide, including the US, Europe, and China, have differences in their regulatory approach to large tech companies, including Big Tech. Yet, moving forward, they will face similar challenges: finding the right balance between innovation-driven growth and regulation. The trade-offs are country-specific, based on physical and digital infrastructure needs, the level of capital access, population preferences, and the other country's needs. Below we sort the different policy challenges around three main questions:

- How to promote market efficiency while minimizing antitrust issues?
- How to strengthen financial inclusion while ensuring financial stability?
- How to improve consumers' welfare while limiting data usage misconduct?

Such a classification helps assess the impact of a policy holistically: A better understanding of the different dimensions may minimize unexpected consequences such as the initial negative

25. "China Drafts Rules on Mobile Apps' Collection of Personal Data," *Reuters*, December 1, 2020, https://www.reuters.com/article/us-china-cyber-apps/china-drafts-rules-on-mobile-apps-collection-of-personal-data-idUSKBN28B5CZ.
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29. "Market Share of Leading Third-Party Mobile Payment Providers in China in 2019," Statista, accessed March 1, 2021. https://www.statista.com/statistics/323473/china-leading-third-party-mobile-payment-providers/.

impact of GDPR on small and medium-sized businesses. Finally, it emphasizes how important data governance is for all countries facing these policy challenges.

Market Structure: Market Efficiency and Antitrust

Large tech companies are often credited for bringing efficiencies to domestic markets by developing the necessary infrastructure to lower costs and improve the quality of goods and services. Their ability to invest large amounts of capital into new technologies, such as artificial intelligence and machine learning, allows them to increase their offering of products and services while controlling the associated costs (Zingales and Lancieri 2019; Digital Competition Expert Panel 2019). There are numerous illustrations. Alibaba was essential in expanding the freight and logistics infrastructure to rural China, which was necessary to gain access to their mostly untapped consumer base (IIF 2018). In the US, cloud computing services lower costs for existing firms, including small and medium-sized businesses, leading to greater flexibility and scalability in their business models (FSB 2019; Stigler Committee on Digital Platforms 2019; Digital Competition Expert Panel 2019).

However, the companies' dominant position in some markets raises concerns. The lack of alternatives may lead to a systemic failure in case of disruption; this is especially relevant in the context of financial stability, as discussed in the next paragraph. Other antitrust issues include killer acquisitions (Digital Competition Expert Panel 2019), limitations of consumer freedom, and manipulations of the consumer decision-making process (Zingales and Lancieri 2019).

Capital Access: Financial Inclusion and Financial Stability

Large tech companies' access to consumers' data from e-commerce or search engines and their ability to include it in their assessment of customers' credit risk, among other things, allows them to provide financial services to the untapped or underserved population. MercadoLibre in Latin America, Alipay and WeChat in China, and M-Pesa in Africa illustrate how consumers can use smartphones and free internet access to open bank accounts, pay for goods electronically, and apply for loans. (BIS 2019; IIF 2018; Adrian and Mancini Griffoli 2019). In the US, Jagtiani and Lemieux (2019) find evidence that Lending Club provides better lending conditions to lower-income borrowers than traditional lending channels.

But financial inclusion goes hand in hand with financial stability. In the US, strategic partnerships between large tech companies and incumbent financial institutions raise concerns for several reasons. We saw previously that tech companies can provide a third-party service to a financial institution or offer a financial service through their digital platforms with a financial institution managing the back-end delivery. In both cases, a single disruption to the tech company, from a cyberattack or other event, could have downstream effects on the financial institutions, magnifying the risk to the broader financial ecosystem (FSB 2019; Allen, Gu, and Jagtiani 2021). Similarly, suppose these companies dominate financial services in some markets, such as

WeChat and Alipay in China. The lack of alternatives makes their failure a potential systemic risk (FSB 2019; IIF 2018).

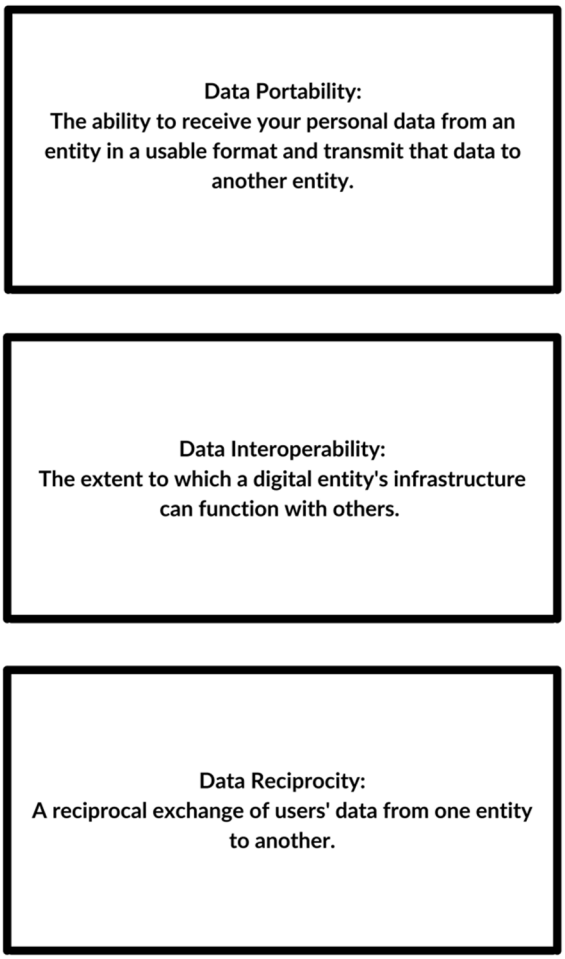
Consumer Experience: Consumer Welfare and Data Usage

The contribution of digital platforms to both capital access and market structure relies on access and process of the data collected from the customer. The benefits are unquestionable: from increased capital access to lowering the remittance system's cost and increasing transaction speed (BIS 2019), and from helping compliance to identifying fraud and other criminal activities (IIF 2018).

But as seen in the previous section, tech companies' usage and management of consumer data have concerned regulators for quite some time. The issues raised include digital authoritarianism, the spread of misinformation, cyberattacks, systematic bias in the financial services sector, data privacy, and data ownership rights (IIF 2018; Stigler Committee on Digital Platforms 2019; ICMBS 2019).

Data Sharing Requires Portability, Interoperability, and Reciprocity

Figure 12: Technical Standards for the Digital Economy



Sources: European Commission, Hert et al. 2018, Di Porto & Ghidini, 2020

The competitive edge of digital platforms lies partly in the data they collect on their network. Defining ways to share those data in a useable form by other companies is at the heart of the solution. Data sharing promotes competition by reducing entry barriers to some markets and facilitating the switch between providers. It also empowers consumers by giving them more control over their data and fosters innovation in data-based services as it expands the pool of data a firm can access, independently of its size.

For most policy initiatives, data portability is data sharing: allowing users to transfer their digital data (applications and personal data) created on one platform to another rival platform would give users more control and visibility over their data and freedom to switch services between

platforms. The EU GDPR, the US's CCPA, Australia's Consumer Data Right, India's Personal Data Protection Bill 2019, and Brazil's Article 18 all have a data-portability clause.

Large tech companies in the US are also interested in data portability. In 2018, Facebook, Twitter, Apple, Google, and Microsoft started the Data Transfer Project, whose goal is to "create an open-source, service-to-service data portability platform so that all individuals across the web could easily move their data between online service providers whenever they want."[30] It is still a work in progress.

In a customer-centric environment, the data sharing process needs to focus on the consumer experience to be successful. Its benefits, from freeing the consumers' choices to enhancing competition and innovation, will only occur if the consumers find the data migration convenient and safe. Digital platform interoperability is a necessary complement to data portability to ensure that. Interoperability is the extent to which one platform's infrastructure can work with others, ultimately providing the user comparable services with the same data. It reduces the cost of losing one network (friends, audience, customers), making the switch to other platforms easier. As Representative Ken Buck of Colorado, the Ranking Member on the House Judiciary Subcommittee on Antitrust, Commercial and Administrative Law, stated, "interoperability is a time-honored practice in the tech industry that allows competing technologies to speak to one another so that consumers can make a choice without being locked into any one technology." The subcommittee's report identifies both digital platforms interoperability and data portability as requirements. [31]

Finally, in some sectors, data reciprocity needs to complement data portability. Indeed, the traditional boundaries between sectors do not apply to digital markets. Tech firms may offer personalized products, such as a loan or utility package, based on the consumer behavior of its e-commerce platform, search engine, or social media network. Introduced in Australia Open Banking, data reciprocity forces any accredited data recipient to share comparable data with rivals at the consumers' request. Reciprocity gives banks and other financial institutions access to the non-financial data tech companies have. This symmetric access to customer data, at his/her request, facilitates competitors' emergence (Diporto and Ghidini 2020). It also forces non-tech companies to develop or acquire the tools necessary to analyze the data, supporting competition in data-processing innovation effectively.

[30] Data Transfer Project, Accessed March 31, 2021.https://datatransferproject.dev/

31. US House Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary (2020).

Conclusion

The digitalization of the economy has put customer data at the center of most business models leading to positive outcomes worldwide, including providing greater financial access to underserved populations and supporting the growth of small and medium-sized businesses. Until recently, governments have focused on the economic growth generated by digital markets; now they need to ensure its sustainability and equitability. More specifically, this fast-evolving environment requires regulatory agility to balance competing priorities such as market efficiency and competition, financial inclusion and financial stability, consumer welfare and data usage.

Large digital platforms have played a key role in transforming different economic sectors, directly or indirectly. Customers relied on them as they believed they were trustworthy while enjoying their digital services' convenience, effectiveness, and affordability. However, recent scandals related to data misconduct forced customers and authorities worldwide to recognize and understand the amount of information accumulated by these companies and the related risks.

As a result, the US, Europe, and China, among others, have strengthened their regulatory scrutiny. Their approaches differ based on their specificities, such as economic development, economic structure, and local preferences.

Pursuing this regulatory trend without any international coordination will create a segmented regulatory system. At the same time, tech companies continue to expand their activities beyond each jurisdiction's borders. This situation may inhibit the economic and social spillover tech companies tend to generate. Many differences between these jurisdictions, and others, cannot be bridged, making actual policy coordination an unrealistic goal. However, cross-border consistency in technical standards is a realistic goal and would benefit all: countries, populations, and companies/private sector. If done well, these technical standards will have positive effects on issues related to data privacy, competition, and innovation.

This report identifies data sharing as a necessary technical standard to restore customer choice and strengthen competition in the different economic sectors tech companies are entering. We define data sharing as the combination of data portability, platforms' interoperability, and data reciprocity. In highly innovative markets, such as the digital ones, these requirements ensure low entry barriers. They also provide convenient and cost-effective alternatives to customers, allowing them to sanction firms' poor behavior or quality of services by switching to another. Ultimately these requirements will benefit competition, innovation, and consumers' privacy.

Appendix: Timeline of Regulatory Milestone in China, Europe, and the US

China	Europe	United States
10/2017: China's 19th National Congress makes organizational changes to its financial regulatory body after scandals.	5/2017: EU antitrust regulator issues $122 million fine against Facebook.	3/2018: Facebook's Cambridge Analytica data scandal.
6/2018: People's Bank of China introduces cap on redemptions for money-market funds.	6/2017: EU antitrust regulator issues $2.7 billion fine against Google.	7/2019: U.S. FTC fines Facebook $5 billion over mishandling users' personal information.
10/2020: China introduces new data privacy law.	3/2018: Facebook's Cambridge Analytica data scandal.	7/2019: Facebook's Libra cryptocurrency receives criticism from U.S. financial regulators.
11/2020: Planned IPO of Ant Group is suspended by Chinese government.	5/2018: EU data privacy law is implemented.	1/2020: California's data privacy law is implemented.
11/2020: China proposes new antitrust laws.	7/2018: EU antitrust regulator issues $5 billion fine against Google.	7/2020: U.S. House Subcommittee on Antitrust holds hearing for U.S Big Tech CEO's.
12/2020: China fines Alibaba & Tencent over antitrust violations.	1/2019: Google fined $57 million under EU's GDPR	8/2020: U.S. FTC + State AG's begin antitrust investigation into Amazon.
1/2021: China's Central Bank issues new antitrust rules.	3/2019: EU antitrust regulator issues $1.7 billion fine against Google.	10/2020: U.S Department of Justice + State AG's bring antitrust charges against Google.
2/2021: Ant Group ordered to restructure as a financial holding company.	7/2020: European court overturns $14.9 billion antitrust fine against Apple.	12/2020: State AG's file two separate antitrust suits against Google.
3/2021: China fines 12 companies over antitrust violations including Tencent & Baidu.	8/2020: European Central Bank warns against the dependence of financial institutions on critical digital services.	12/2020: U.S. FTC + State AG's bring antitrust charges against Facebook.
	11/2020: EU antitrust regulator charges Amazon.	2/2021: State of Maryland imposes tax on revenue from digital advertisements.
	11/2020: UK Government unveil new Digital Markets Unit.	
	11/2020: France imposes digital tax on Google, Facebook, & Amazon.	
	12/2020: EU's Digital Services Act (DSA) & Digital Markets Act (DMA) released.	

	3/2021: UK antitrust regulator investigates Facebook, Google, & Apple	

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