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# US Leadership in Digital Platform Policy

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MARCH 2023

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A M E R I C A N   E N T E R P R I S E   I N S T I T U T E

# Executive Summary

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Digital platforms have made tremendous direct and indirect contributions to innovation and economic growth. However, during the past decade, growing concerns about anticompetitive behavior and irresponsible business practices have affected the positive image of Big Tech companies as engines of innovation. At the same time, trust in the unregulated, market-driven model of entrepreneurship that has propelled the digital economy for decades is declining. Governments are searching worldwide for ways to better align the digital economy with the broader public interest.

This report explores how the United States government and nongovernmental players could contribute to these policy discussions more proactively than in the recent past. The domestic search for a coherent approach to digital platform policy offers the US an opportunity to regain the initiative on international policymaking. With renewed engagement, the US could help clarify the conditions that warrant policy interventions and the instruments that are best suited to the conditions of the digital economy. Moreover, US support for a multicentric governance model would reduce the risk of a global drift toward a dysfunctional fragmentation of the internet.

# US Leadership in Digital Platform Policy

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**Johannes M. Bauer**

The cards have changed in digital platform policy. Within a decade, Big Tech companies lost much of their luster as vanguards of the digital transformation. There is a sense that Big Tech companies have not met the responsibilities that come with size and ubiquitous presence. Now, the public considers them contributors to fragmentation, polarization, and other social ills that plague the United States and other countries. In a 2021 Gallup survey, 57 percent of Americans felt the government should increase Big Tech regulation.<sup>1</sup>

Despite concerted efforts and improvements during the Biden administration, technology policy collaboration between the United States and the European Union is tenuous. These sector-specific developments are intertwined with other geopolitical tensions and stressors, such as changing relations with China. Economic policy measures, such as domestic efforts to combat inflation, are affecting the US position globally. Consequently, after decades during which US high-tech and communications policy was viewed with envy, the appeal of the US market-based approach is gradually fading worldwide.

Internationally, the General Data Protection Regulation (GDPR)<sup>2</sup> of 2016 and legal cases, such as Schrems I and II,<sup>3</sup> sent a strong signal of the willingness of EU players to chart their own course of stronger privacy protections, with ramifications for the global digital economy. GDPR not only created a different regime for EU member states but also is structured in ways that force other countries to adapt to its key provisions.<sup>4</sup> The Digital Markets Act (DMA)<sup>5</sup> and Digital Services Act<sup>6</sup> show a similar resolve in

matters of competition policy, innovation policy, and trade policy.

Countries such as Australia, Japan, and South Korea have adopted a stronger pro-regulatory stance. Similar discussions are emerging among Brazil, Russia, India, and China and a growing number of countries in the global south, where there is rising concern about the negative repercussions of a digital economy dominated by companies from the global north.

That its market-oriented technology policy approach is increasingly met with suspicion or outright rejection will have implications for the United States' role in the world and technology ecosystem. The United States has historically relied more than other countries and regions on limited regulation and free trade. That model has generated numerous benefits, but its limitations are showing. Given the difficulties of passing legislation in a divided US Congress, the benefits have not yet resulted in appropriate adjustments of relevant competition and communication laws. Consequently, regulatory agencies, executive orders, state legislatures, and community initiatives have become areas of innovative policy experiments, but they are often second- or third-best instruments without appropriate enabling legislation.

The more interventionist values embraced in GDPR and DMA resonate with countries that historically have relied on stronger state involvement in telecommunications. Therefore, these countries will likely emulate and imitate such interventionist policies. GDPR had differential effects that likely benefited large players.<sup>7</sup> In contrast, DMA and similar initiatives in other countries are designed to target a select set of US companies.

The US position is weakened by its difficulties updating existing legislation and passing new legislation governing the digital economy. Alternative approaches in the US that could serve as blueprints for the global discussion are mainly discussed by competition policy and regulatory agencies. Most likely, these policies will be subject to numerous court challenges.

How then should the United States engage to shape global developments in platform policy and regulation? Can it do so effectively, and, if so, how could this be accomplished? The remainder of this report explores these issues and sketches multiple areas for constructive engagement, with an emphasis on US-EU relations.

### Shaping Digital Platform Policy

American players, including the US government, private companies, business associations, civil society, and researchers, have historically influenced platform policy via direct and indirect channels. Private companies were a strong driving force contributing to standards development—for example, in wireless communications. In emerging high-tech areas, these companies often set de facto standards as leaders of technology development. Together with government and civil society representatives, private companies also deeply shaped internet governance.

During the past decade, however, a new dynamic emerged as digital platforms began to invest more aggressively in global infrastructures. Companies such as Amazon, Apple, Facebook, Google, and Microsoft have developed data centers, cloud infrastructure, and network facilities. This rapidly growing private internet coexists and coevolves with the public internet.<sup>8</sup> It can support the security and quality-of-service differentiation needed by many advanced services better than the public internet can.

The global presence and dominant role of US digital platforms have further altered the geopolitical constellation of interests. It had already begun to shift with initiatives by a group of countries that sought to strengthen the role of the International

Telecommunication Union (ITU) in internet policy. At the 2012 World Conference on International Telecommunications in Dubai, a majority of nations supported proposals to amend the International Telecommunications Regulations, but a group of more than 80 countries joined the dissent by the United States and effectively invalidated the proposed amendments. Even though these tensions were less visible at the 2022 ITU Plenipotentiary Conference in Bucharest, divisions among countries about approaches to internet policy persist.

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New tensions and differences in approaches have reappeared. One manifestation is the intense lobbying efforts by European network operators and the European Telecommunications Network Operators' Association in Brussels. Ignoring that content is requested by end users and not “caused” by the sender, these players argue that large content providers, such as Amazon, Facebook, Google, and Netflix, should contribute to the cost of infrastructure investment.<sup>9</sup> The two main concerns articulated in this context are asymmetric bargaining power between European national players and digital platforms and asymmetric regulatory treatment of network operators and Big Tech companies. The Body of European Regulators for Electronic Communications has reiterated its positions that such termination charges are unnecessary and undesirable. Nonetheless, European policymakers are expected to start hearings on “fair share” payments in 2023.<sup>10</sup>

Similar debates and policy demands are emerging in other countries, including Australia, Japan, and South Korea. They have long been in the playbook of countries such as China.<sup>11</sup> They are growing in the global south as well, where they are also framed as an effort to mitigate “digital colonialism.”<sup>12</sup>

The United States can no longer rely on the wide acceptance of the Washington Consensus. Trust in this framing of an efficient approach to economic and technology policy has faltered. Thus, the questions arise of whether the United States should seek more proactively to influence foreign national debates on platform policy and whether it has the credibility to do so.

International relations theory suggests that a country has four principal options available to influence policy choices by others. Such influence can be either accepted voluntarily or imposed involuntarily. Moreover, it can rest in policy visions or in practice. The resulting two-by-two matrix includes consensus (voluntary, vision), exemplification (voluntary, practice), hegemony (nonvoluntary, vision), and dominance (nonvoluntary, practice). During the past decades, the United States derived strong credibility and leadership in technology policy from consensus and exemplification, and the other modes assumed auxiliary roles.

These two dominant mechanisms have been weakened considerably with the increasingly hostile stance toward digital platforms in the United States and abroad. Several strategies could help the United States regain momentum and influence.

First, the country would gain stature if it clarified the principles that should be applied to platform policy in the United States. Many domestic policymakers are critical of digital platforms, but for vastly different economic, political, and ideological reasons.<sup>13</sup> Given the political divisions, developing the innovative policy frameworks needed may not be possible. However, as a diverse polity, the country is positioned to develop agile and adaptive forms of policy that may work well in the digital economy.

As a second contribution, the United States could help clarify the conditions under which policy interventions are desirable and which instruments are

best suited to address a problem. The DMA introduced an untested governance model located institutionally between regulation and antitrust policy; other countries are considering similar responses. Much of the current policy debate and many of the proposed remedies are based on static economic models that do not fully capture the interdependencies in platform ecosystems. Dynamic frameworks for the design of competition policy toward digital platforms are available but have not been widely embraced by policymakers.<sup>14</sup> The United States could advance this cause.

Third, the United States could help shape a forward-looking view of platform governance. The pervasive adoption of digital technologies in all realms of life has changed the global governance dynamics toward a multicentric system. Clear leadership can and must ensure that the centripetal forces outweigh the centrifugal forces, so that such multicentric differentiation does not result in undesirable, dysfunctional fragmentation. This will require acceptance of value and policy differentiation combined with strong efforts to develop a common base of widely shared foundational values and principles.

### **Sound Principles of Platform Policy**

Two-sided and multisided platforms have existed since the late 19th century. They were examined by media economists long before the current surge in interest.<sup>15</sup> Digital technology has facilitated new business models that allow businesses to scale in new ways and accelerate processes of dynamic change. The term “platform” is increasingly used generically, as indicated in the far-ranging discussion about the “platformization”<sup>16</sup> of the economy. It obfuscates the major differences among companies, such as Amazon, Apple, Facebook, Google, Netflix, and diverse other businesses that are commonly classified as platforms.

The management literature groups platforms into transaction platforms, innovation platforms, and hybrid platforms, which combine aspects of the first two.<sup>17</sup> Because both types of platforms

generate innovations, Steven Wildman refers to the first type as transaction-coordination platforms and the second as technology-coordination platforms.<sup>18</sup> Within the first group, one can further distinguish among product-purchase platforms (e.g., Amazon Marketplace and Etsy), service-provision platforms (e.g., Uber and DoorDash), social media platforms (e.g., Facebook and YouTube), and apps-acquisition platforms (e.g., Apple App Store, Google Play, and Aptoide). The first three types pursue specific business models, whereas the last type orchestrates more sprawling app innovation and business ecosystems.

Sound principles of platform governance must start from the recognition that the system of digital value creation has changed multiple times over the past century. In the 1960s, the historical model of vertically integrated providers of telecommunication services gradually morphed into the horizontal architecture of the early internet. By the late 20th century, with the ubiquitous adoption of Internet Protocol networking principles, value generation became organized around the horizontally layered model of the internet.

This layered, modular model was highly generative and spawned a tremendous wave of edge innovations, such as applications and services, that can be configured via software on the logical “edges” of the internet. Because most of these innovations do not require changes in the hardware of the network infrastructure, they have lower initial costs, which stimulates innovation activity.

However, the internet’s decentralized organization is also related to instances of governance failure. Most notably, the absence of mechanisms to implement protocols across the more than 60,000 autonomous systems created challenges, such as the implementation of reasonable quality-of-service differentiation and information security. In response, digital platforms began to organize and manage the space differently, not least by investing tremendous resources into building a global infrastructure of data centers and high-capacity connectivity. Software-defined networks and institutional reforms, such as localized spectrum allocations, have further contributed to the emergence of a hybrid network architecture.<sup>19</sup>

This emerging, matrix-like architecture combines horizontal and vertical aspects (e.g., network virtualization and network slicing). The analysis of the economics of this new value system is bifurcated between experts who rely on traditional industrial organization and those who value antitrust approaches. From this antitrust perspective, they regularly observe the presence of pervasive market power and dominance.<sup>20</sup> Management and business strategy scholars often emphasize the concept of agile, yet fragile, business ecosystems in which even the largest businesses cannot rest on their laurels but need to succeed continuously in the innovation game.<sup>21</sup>

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Both perspectives contribute important insights, but they also have shortcomings. Traditional economic analysis fails to capture the nonlinear interdependencies in platform ecosystems. On the other hand, ecosystem approaches may be overly vague about the conditions under which innovation flourishes. To identify those conditions, a better theory of dynamic competition and innovation in digital ecosystems is needed. Such a framework can be created by adapting elements from evolutionary and systemic approaches to innovation.<sup>22</sup>

From this conceptual vantage point, novelty is a combinatorial process, in which information and

knowledge are combined and recombined to form new components, modules, subassemblies, assemblies, and entire systems that provide new products and services.<sup>23</sup> Complementarities between different players require the coordination of technical and business solutions. In highly modular systems, such coordination is possible with technological interfaces, such as open and standardized application programming interfaces (APIs).

Modular innovation is one of the generative engines of the digital era. However, the system's overall architecture typically enables and constrains modular coordination.<sup>24</sup> Thus, the end-to-end architecture of the public internet stimulated edge innovations but also imposed limitations on innovation opportunities that could not be realized within that architecture. Architectural innovations that can overcome such limitations are riskier and hence happen less frequently, except when they can be achieved incrementally in a cumulative innovation process.

Platforms orchestrate the major architectural components of digital ecosystems. By reducing the combinatorial complexity of the innovation space for other players, they reduce coordination costs in the system. However, they are subject to potentially ambiguous incentives. If they are not myopic, they will realize the benefits to the innovation ecosystem generated by complementors and grant access to the resources these players need. This might include access to technological features, but often it also includes access to data that the platform has harvested from across areas of operation.

However, important caveats are in order. First, without further exploration of the dynamics of platform competition and innovation, one cannot assume that platforms always behave in non-myopic ways. Dominant platforms may try to extract rents from complementors, or they may restrict access to platform resources in the knowledge that such behavior may not unleash competitive responses. Such behavior resembles the problem of moral hazard in markets with asymmetric and incomplete information.<sup>25</sup>

Second, not all participants in platform ecosystems are complementors. Some firms offer services that are full or partial substitutes for services also offered

by the platform. This changes platforms' incentives and may influence the incentives toward complementors that might develop into competitors. A set of principles would be desirable to address such situations. These problems are not entirely new, because similar vertical industry constellations have existed throughout the history of electronic communications.

### **Dynamic Competition and Innovation in Platform Ecosystems**

Interventions into digital platforms would ideally be based on a dynamic model of competition and innovation. The model of complementary innovation offers a conceptual framework to address these matters. Early formulations of this model emphasized the synergistic interdependence of players. For example, innovation in platform capabilities would expand the innovation opportunities of complementors. In turn, more complementary innovation would boost incentives for platforms to improve their capabilities.<sup>26</sup>

Information markets often exhibit high concentration because of network effects on the supply and demand side and advantages of agglomeration. Dominant platforms may have biased incentives to grant access to the resources complementors need. Because the platform designs the digital architecture of the transactions it offers, it has great discretion in the market environment in which it operates. Knowing that complementors may have no or few other options, the platform may share a suboptimally low level of resources or may extract a price above a market rate.

Platforms may have incentives to take over potential competitors to reduce the intensity of competition and slow the emergence of future rivals; however, the evidence for this is weak. Although the existence of kill zones (areas in which platforms directly or indirectly eliminate competitors) is widely believed, supporting empirical evidence is often based on a relatively small number of observations.<sup>27</sup> In contrast, venture capitalists and founders believe that takeovers facilitate innovation by either offering

opportunities for venture capitalists to realize a return on an initial investment or allowing the platform to absorb technologies into its operation. Moreover, there is evidence that platform acquisitions stimulate further venture capital investment.<sup>28</sup>

The economics of innovation permits the expansion of this idea. Innovation activities by each player in the complementary innovation system are affected by the accessible technical, economic, and regulatory innovation opportunities; the intensity of contestability in the market; the appropriability of innovation rents; and other strategic options that a player has available (e.g., an option to wait or innovate incrementally). Similar factors influence innovation by complementors. In addition, the strength of complementarities and the relevance of coordination costs affect the level of innovation activity.<sup>29</sup>

The available innovation opportunities and the appropriateness of innovation rents are positively related to innovation activities. Contestability is in a nonlinear relationship with the strengths of innovation incentives: Both weak and hyper-contestability are associated with lower innovation rates. In between, innovation incentives are strongest, resulting in an inverted U-shaped relationship between contestability and innovation. Empirical evidence suggests that the specific shape of the relationship is contingent on the sector and the type of innovation (e.g., modular, architectural, incremental, and radical).<sup>30</sup>

Coordination costs also have ambiguous effects on innovation. They will often reduce the expected profits from an innovation. Thus, platforms that lower coordination costs by, for example, offering standardized, open APIs will typically boost innovation. At the same time, high coordination costs may initiate a search for innovative solutions to avoid such costs and hence stimulate innovation. The net effect depends on the relative size of these two forces.

In a similar way, complementarities will have ambiguous effects. Often, innovation incentives will be positively associated with the strengths of complementarities (positive spillovers). However, high complementarities could reduce the breadth of innovation searches.

Innovation in platform ecosystems, therefore, is the outcome of numerous positive and negative feedbacks that are difficult to analyze. In contrast to the partial equilibrium models currently used in much of regulation and competition policy, analyzing innovation in platform ecosystems would require applying a nonequilibrium systems model or at least adopting a general equilibrium framework.

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## **Innovation in platform ecosystems, therefore, is the outcome of numerous positive and negative feedbacks that are difficult to analyze.**

This discussion shows that the ecosystem dynamic could lead to undesirable and inefficient outcomes. Some of these outcomes resemble traditional forms of market failure, but more often they must be analyzed from a broader systemic perspective. This allows the identification of cases of moral hazard, externalities, and public-good situations when the systemic process of platform coordination reaches suboptimal outcomes. Much is needed to advance a program of research to do this reliably.

Tools to do this, such as computational modeling and simulation models, are available. They are not sufficiently developed, however, to be readily applied to specific cases. An ecosystem perspective of market failure often leads to more cautious conclusions regarding the effects of market concentration. And it will result in different policy recommendations for remedies that could address forms of market failures in platforms.

For example, almost any regulatory intervention will have differential, positive, and negative effects



on relevant stakeholders. Often, the policy design ignores these effects. However, interventions can only achieve their stated goals if these positive and negative feedbacks do not prevent the desired outcome. Information about these feedbacks is often incomplete. To overcome this problem, one option is to design policies that can activate self-healing forces in the ecosystem.

An example of such a design could impose obligations on dominant players to engage in good-faith negotiations, backed by mediation by a regulatory agency, combined with a most-favored-nation clause that allows other players to opt for similar conditions. Such generic, and often symmetric, general obligations have worked well to govern vertical relations in other market segments, such as wireless communications.

### **Toward a Multicentric Digital Platform Governance Model**

A key insight from dynamic models of ecosystem competition is that, rather than specific forms of (often rigid) ex ante regulation or (often slow) ex post regulation, establishing guardrails for players that support self-healing forces might be a superior approach.<sup>31</sup> Guardrails are elements of the “order” or “constitution” of digital markets. They shape players’ behavioral incentives in ways that do not overly constrain their ability to compete dynamically and explore innovation opportunities.

In the present national and global environment, such forms of governance will be multicentric by necessity. That is, they are orchestrated by government and nongovernment players that are not necessarily acting in close coordination. Such multicentricity exists at the national level and will prevail, as illustrated by states that have taken legal and regulatory initiatives that affect platforms.<sup>32</sup> It also exists and will grow at the international level, where regional and national initiatives foreshadow increasing heterogeneity.

This differentiation exists in terms of the actors and agencies that are involved and in terms of the

economic principles and values that guide interventions. Differentiation may allow the navigation of the policy challenges of digital platforms better than a homogenous system. One could look at a number of diverse policy models as natural experiments that facilitate insights about how social, technical, economic, and cultural forces interact. If properly examined, this will allow dynamic policy learning and the emulation of successful approaches.

There are downsides to such diversity among models. The biggest risk is that diversity turns into the fragmentation that is associated with increased coordination costs. Given the negative effects of escalating coordination costs on how platform ecosystems work, there is a need for strong efforts to agree on common-ground rules both domestically and internationally. Within an integrative framework of common principles, differentiation can actually improve the ecosystem’s performance.

Research on the governance of common-pool resources shows that polycentric solutions to the management of such resources are often effective. These may include natural resources such as forests, water resources, and fisheries; broader environmental conditions, such the global climate; or created resources, such as knowledge commons.<sup>33</sup> We know the most about how various economic interventions into such systems affect outcomes.

As the discussion in the previous section explained, the dynamic and interdependent nature of platform ecosystems suggests that instruments that constitute guardrails are particularly promising. Differentiation in technical, economic, and organizational dimensions can best serve the heterogeneity of services and the diversity of user needs in platform ecosystems. Policymakers need to ask whether the different positions held by players, typically with differential market power, impede the working of the innovation ecosystem and whether policies can improve outcomes.

The question of how to prevent large players with a high market share in one or more segments of the innovation system from sabotaging or disadvantaging other players has attracted considerable attention. Here, it is necessary to differentiate three scenarios. If the players offer complementary services,

the above analyses apply. Another scenario is one in which a large player controls resources needed by a competitor who relies on access to their resources. Here, the risk of manipulation of competition is real. Another, third scenario is a situation in which large players are trying to extract supernormal rents from complementors.

In all of these cases, however, it is possible to design policy principles (“guardrails”) that allow the ecosystem players to coordinate in workable ways. Discretionary, specific regulatory interventions are less advisable than general rules that delineate acceptable and unacceptable behaviors. For example, a general obligation to negotiate in good faith combined with transparency and most-favored-nation provisions can mitigate the exclusion of competitors.

Similar general rules could address concerns about the extraction of supernormal rents from complementors and overly restrictive conditions to join a platform.<sup>34</sup> Such rules would ideally apply generically and symmetrically to all players, unlike the approach embedded in the European DMA, which singles out specific players. In addition to such guardrails, a multicentric governance model would also recognize the benefits of institutional diversity for innovation.

As discussed, innovation is a directed, evolutionary search process—an entrepreneurial exploration of new processes, products, services, business models, and designs. The knowledge, skills, and economic and regulatory incentives under which specific innovators operate will narrow their search to a specific segment of the vast, digital, innovation-opportunities space. From a societal perspective, it is therefore desirable to explore multiple directions simultaneously, because it is not known a priori which search strategies will reveal the most promising innovations.

Workable competition among innovators is one mechanism to promote such searching. There is reason to believe, however, that players with commercial incentives will not explore all directions that might yield societally beneficial novelty—and if they do find such an opportunity, they may not realize it as part of their operations. This suggests that it would be a useful meta-strategy to support diversity of innovation

in the private sector, public-private partnerships, the public sector, and the nonprofit sector. Moreover, it would be useful to facilitate collaboration and knowledge sharing among participants in the innovation ecosystem.

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## **Innovation is a directed, evolutionary search process—an entrepreneurial exploration of new processes, products, services, business models, and designs.**

We know less about differentiation as it relates to the values that govern policies, such as different notions of privacy, different interpretations of the meaning of free speech, or different views on economic interventions, such as the behavioral provisions included in the DMA. This short list already illustrates that these may be highly contested and politically charged issues, both domestically and internationally. Finding a common base will be challenging and will require sustained effort. Thus, broad engagement by US government and nongovernment actors will be important.

Such engagement will have to be based on openness, respect for other values, and willingness to find common ground. It will also require engagement with the different types of normative frameworks that govern policy choices. These may include the “capability approach” promoted by the United Nations Development Program and the “ethics of care” and “virtue ethics,” which have experienced a strong revival

in technology policy.<sup>35</sup> Ethics are no panacea for the challenges discussed above, but they can help establish common ground while allowing differentiation.

Rather than seeking to eliminate policy differentiation, a strategy that embraces a nested system of policy experiments might be superior. Institutional and policy differentiation generate evidence of how different approaches affect outcomes. Under conditions of incomplete information and uncertainty, such differentiation is one way of learning about which policies work. Performance gaps between the American and European information and communication systems have historically generated incentives to improve policy models, and they continue to do so. Some degree of policy variation therefore creates a dynamic learning system to assist in finding technological and governance trajectories that serve the public interest.<sup>36</sup>

## Summary and Conclusion

This report examined three interrelated ideas to guide the thinking of US actors from government, industry, research, and civil society, as they engage with and influence global discussions about the proper regulation of the digital economy. That the United States has not found its own approach to platform policy is both a hindrance and an opportunity to engage with other ongoing discussions.

These discussions would benefit from stronger conceptual foundations. A better-articulated, dynamic view of competition and innovation in digital platform ecosystems would provide a critical component. To this end, the report first clarified the

principles that should guide platform policy, building on a model of innovation as a combinatorial process. Second, it identified basic criteria to assess the conditions under which interventions are reasonable. Third, it explored how such approaches could be translated to practical policy.

Platform governance, like internet governance, is already highly multicentric. These developments will likely continue, and some areas may benefit from regional and national differentiation. US engagement with global discussions, however, will benefit from a focus on finding consensus on basic shared principles of governance that are essential for an open and democratic digital economy.

The stakes are high. Some of the tussles about platform governance could result in differences that cannot be reconciled within the existing US and European legal frameworks. One way to avoid this outcome is to discuss the fundamental principles that should guide platform policy and the digital economy.

## About the Author

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# Notes

1. See Megan Brenan, “Views of Big Tech Worsen; Public Wants More Regulation,” Gallup, February 18, 2021, <https://news.gallup.com/poll/329666/views-big-tech-worsen-public-wants-regulation.aspx>.
2. See European Parliament, Regulation (EU) No. 2016/679 of 27 April 2016, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
3. The two cases are colloquially named after Austrian lawyer and privacy advocate Maximilian Schrems. The first case, *Maximilian Schrems v. Data Protection Commissioner* (Schrems I), challenged the adequacy of the US safe-harbor policies to meet the equivalency requirements under EU law. The second case, *Data Protection Commissioner v. Facebook Ireland Limited* (Schrems II), challenged the equivalence of the US successor policy, Privacy Shield. On October 7, 2022, President Joe Biden signed an executive order on Enhancing Safeguards for United States Signals Intelligence Activities, directing the steps the country will undertake to implement the commitments made in the European Union–US Data Privacy Framework that had been announced in March 2022. Although the European Commission’s first response was positive, it is widely anticipated that an adequacy determination will again be challenged in European Courts.
4. See Anu Bradford, *The Brussels Effect: How the European Union Rules the World* (Oxford, UK: Oxford University Press, 2020).
5. See European Commission, Regulation (EU) No. 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), *Official Journal of the European Union*, L 265/1 (October 10, 2022), [https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ%3AL%3A2022%3A265%3ATOC&uri=uriserv%3AOJ.L\\_.2022.265.01.0001.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ%3AL%3A2022%3A265%3ATOC&uri=uriserv%3AOJ.L_.2022.265.01.0001.01.ENG). The European Council approved the Digital Markets Act on July 18, 2022. The rules will take effect in early to mid-2024.
6. See Proposal for a Regulation of the European Parliament and of the Council on a Single Market for Digital Services (Digital Services Act) and amending Directive 2000/31/EC, COM/2020/825 final.
7. See Rebecca Janssen et al., “GDPR and the Lost Generation of Innovative Apps” (working paper, National Bureau of Economic Research, Cambridge, MA, May 2022), [https://www.nber.org/system/files/working\\_papers/w30028/w30028.pdf](https://www.nber.org/system/files/working_papers/w30028/w30028.pdf).
8. See Volker Stocker, Guenter Knieps, and Christoph Dietzel, “The Rise and Evolution of Clouds and Private Networks—Internet Interconnection, Ecosystem Fragmentation,” August 23, 2021, <https://ssrn.com/abstract=3910108>; and K. C. Claffy and David D. Clark, “Adding Enhanced Services to the Internet: Lessons from History,” *Journal of Information Policy* 6 (2016): 206–51, <https://scholarlypublishingcollective.org/psup/information-policy/article/doi/10.5325/jinfopoli.6.2016.0206/314435/Adding-Enhanced-Services-to-the-Internet-Lessons>.
9. See Axon Partners Group, “Europe’s Internet Ecosystem: Socio-Economic Benefits of a Fairer Balance Between Tech Giants and Telecom Operators,” May 2, 2022, <https://etno.eu/library/reports/105-eu-internet-ecosystem.html>.
10. See Competition Policy International, “Internet Providers Rail Against EU Plans to Make Big Tech Pay for Telco Costs,” January 3, 2023, <https://www.competitionpolicyinternational.com/internet-providers-rail-against-eu-plans-to-make-big-tech-pay-for-telco-costs>. See also the critical analysis in Volker Stocker and William Lehr, “Regulatory Policy for Broadband: A Response to the ‘ETNO Report’s’ Proposal for Intervention in Europe’s Internet Ecosystem,” October 16, 2022, <https://ssrn.com/abstract=4263096>.
11. This report mainly focuses on US-EU relations and does not discuss the tensions with China. It also does not examine the national security framing that is often brought to these discussions.
12. See Nick Couldry and Ulises A. Mejias, *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism* (Stanford, CA: Stanford University Press, 2019).
13. See Mark A. Lemley, “The Contradictions of Platform Regulation,” February 3, 2021, <https://ssrn.com/abstract=3778909>.
14. The debate on whether static or dynamic efficiency should guide policy dates to the writings of Joseph A. Schumpeter. Joseph A. Schumpeter, *The Theory of Economic Development: An Inquiry into Profits, Capital Credit, Interest, and the Business Cycle* (Cambridge,

MA: Harvard University Press, 1934); and Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* (New York: Harper, 1942). Schumpeter made compelling arguments in favor of dynamic competition. Renewed arguments in favor of the need to use dynamic models in competition policy and regulation for information and communication industries were made by Johannes M. Bauer and Erik Bohlin, “From Static to Dynamic Regulation: Recent Developments in US Telecommunications Policy,” *Intereconomics* 43, no. 1 (January/February 2008): 38–50, <https://www.econstor.eu/bitstream/10419/42021/1/559518250.pdf>. David Teece has long argued for the need to bring dynamic capabilities analysis to public policy. For a recent update applied to Big Tech firms, see Nicolas Petit and David J. Teece, “Innovating Big Tech Firms and Competition Policy: Favoring Dynamic over Static Competition,” *Industrial and Corporate Change* 30, no. 5 (October 2021): 1168–98, <https://academic.oup.com/icc/article/30/5/1168/6363708>.

15. For an early contribution that did not yet use the term “two-sided markets” but explores many of the relevant issues, see, for example, James N. Rosse, “Estimating Cost Function Parameters Without Using Cost Data: Illustrated Methodology,” *Econometrica* 38, no. 2 (March 1970), 256–75, <https://www.jstor.org/stable/1913008>.

16. See Natascha Just, “Governing Online Platforms: Competition Policy in Times of Platformization,” *Telecommunications Policy* 42, no. 5 (2018): 386–94, <https://ideas.repec.org/a/eee/telpol/v42y2018i5p386-394.html>; and José van Dijck, Thomas Poell, and Martijn De Waal, *The Platform Society: Public Values in a Connective World* (Oxford, UK: Oxford University Press, 2018).

17. Michael A. Cusumano, Annabelle Gawer, and David B. Yoffie, *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power* (New York: Harper Business, 2019).

18. This classification is based on discussions in the context of the Quello Center Platform Innovation project and based on an internal Quello Center working paper authored by Steven S. Wildman.

19. See Hari Balakrishnan et al., “Revitalizing the Public Internet by Making It Extensible,” *ACM SIGCOMM Computer Communication Review* 51, no. 2 (April 2021): 18–24, <https://dl.acm.org/doi/10.1145/3464994.3464998>.

20. Fiona Scott Morton et al., *Committee for the Study of Digital Platforms: Market Structure and Antitrust Subcommittee Report*, University of Chicago Booth School of Business, George J. Stigler Center for the Study of Economy and State, May 15, 2019, <https://www.judiciary.senate.gov/imo/media/doc/market-structure-report%20-15-may-2019.pdf>; and Jacques Crémer, Yves-Alexandre de Montjoye, and Heike Schweitzer, *Competition Policy for the Digital Era*, European Commission, Directorate-General for Competition, 2019, <https://ec.europa.eu/competition/publications/reports/kdo419345enn.pdf>.

21. Arnoud De Meyer and Peter J. Williamson, *Ecosystem Edge: Sustaining Competitiveness in the Face of Disruption* (Redwood City, CA: Stanford University Press, 2019); and Geoffrey A. Parker, Marshall W. Van Alstyne, and Sangeet Paul Choudary, *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You* (New York: W. W. Norton, 2016).

22. One of the classic contributions to evolutionary approaches to innovation is Richard R. Nelson and Sidney G. Winter, *An Evolutionary Theory of Economic Change* (Cambridge, MA: Belknap Press, 1982). The literature on systemic approaches to innovation is vast and fragmented across multiple disciplines, ranging from innovation economics to socio-technical systems analyses. See, for example, Gerald Midgley and Erik Lindhult, “A Systems Perspective on Systemic Innovation,” *Systems Research and Behavioral Science* 38, no. 5 (2021): 635–70, <https://onlinelibrary.wiley.com/doi/full/10.1002/sres.2819>; and Frank W. Geels, “From Sectoral Systems of Innovation to Socio-Technical Systems: Insights About Dynamics and Change from Sociology and Institutional Theory,” *Research Policy* 33, no. 6–7 (September 2004): 897–920, <https://www.sciencedirect.com/science/article/abs/pii/S0048733304000496>.

23. W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (New York: Free Press, 2009); and Johannes M. Bauer and Tiago S. Prado, “Digital Innovation: An Information-Economic Perspective,” in *The Elgar Companion to Information Economics*, ed. Daphne R. Raban and Julia Włodarczyk (Cheltenham, UK: Edward Elgar, 2023).

24. See Christopher S. Yoo, “Modularity Theory and Internet Regulation,” *University of Illinois Law Review* 1 (2016): 1–62, <https://illinoislawreview.org/print/volume-2016-issue-1/modularity-theory-and-internet-regulation>.

25. See, for example, Cusumano, Gawer, and Yoffie, *The Business of Platforms*; and Michael A. Cusumano, Annabelle Gawer, and David B. Yoffie, “Can Self-Regulation Save Digital Platforms?,” *Industrial and Corporate Change* 30, no. 5 (October 2021): 1259–85, <https://academic.oup.com/icc/article-abstract/30/5/1259/6355574>.

26. See Timothy F. Bresnahan and M. Trajtenberg, “General Purpose Technologies: ‘Engines of Growth’?,” *Journal of Econometrics* 65, no. 1 (January 1995): 83–108, <https://www.sciencedirect.com/science/article/abs/pii/030440769401598T>; Timothy F. Bresnahan,

“General Purpose Technologies,” in *Handbook on the Economics of Innovation*, ed. Bronwyn H. Hall and Nathan Rosenberg (Amsterdam, Netherlands: Elsevier, 2010), 2:761–91; and Johannes M. Bauer and Günter Knieps, “Complementary Innovation and Network Neutrality,” *Telecommunications Policy* 42, no. 2 (March 2018): 172–83, <https://www.sciencedirect.com/science/article/abs/pii/S0308596117304615>.

27. See, for example, Sai Krishna Kamepalli, Raghuram G. Rajan, and Luigi Zingales, “Kill Zone” (working paper, University of Chicago, Becker Friedman Institute for Economics, Chicago, April 27, 2020), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3555915](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3555915).

28. See Tiago S. Prado and Johannes M. Bauer, “Big Tech Platform Acquisitions of Start-Ups and Venture Capital Funding for Innovation,” *Information Economics and Policy* 59 (June 2022), <https://www.sciencedirect.com/science/article/pii/S0167624522000129>.

29. See Johannes M. Bauer, “Regulation and Digital Innovation,” in *The Future of the Internet: Innovation, Integration and Sustainability*, ed. Gunter Knieps and Volker Stocker (Baden-Baden, Germany: Nomos, 2019), 77–108.

30. See the discussion in Philippe Aghion et al., “Competition and Innovation: An Inverted-U Relationship,” *Quarterly Journal of Economics* 120, no. 2 (May 2005): 701–28, <https://academic.oup.com/qje/article/120/2/701/1933966>; Philippe Aghion, Céline Antonin, and Simon Bunel, *The Power of Creative Destruction* (Cambridge, MA: Harvard University Press, 2021); and Ulrich Heimeshoff, “What Drives Investment in Telecommunications Markets? Evidence from OECD Countries,” *Review of Economics* 64, no. 1 (2013): 7–28, <https://www.degruyter.com/document/doi/10.1515/roe-2013-0102/html>.

31. See Johannes M. Bauer, “Toward New Guardrails for the Information Society,” *Telecommunications Policy* 46, no. 5 (June 2022): 102350, <https://www.sciencedirect.com/science/article/abs/pii/S0308596122000520>.

32. See Adam Thierer, *Governing Emerging Technology in an Age of Policy Fragmentation and Disequilibrium*, American Enterprise Institute, April 29, 2022, <https://platforms.aei.org/can-the-knowledge-gap-between-regulators-and-innovators-be-narrowed>.

33. See Elinor Ostrom, “Beyond Markets and States: Polycentric Governance of Complex Economic Systems,” *American Economic Review* 100, no. 3 (June 2010): 641–72, <https://www.aeaweb.org/articles?id=10.1257/aer.100.3.641>; and Brett M. Frischmann, Michael J. Madison, and Katherine J. Strandburg, eds., *Governing Knowledge Commons* (Oxford, UK: Oxford University Press, 2014).

34. See, for example, the cases in Damien Geradin and Dimitrios Katsifis, “The Antitrust Case Against the Apple App Store,” *Journal of Competition Law & Economics* 17, no. 3 (September 2021): 503–85, <https://academic.oup.com/jcle/article-abstract/17/3/503/6210046>.

35. See Shannon Vallor, *Technology and the Virtues: A Philosophical Guide to a Future Worth Wanting* (Oxford, UK: Oxford University Press, 2016); Virginia Dignum, *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way* (Cham, Switzerland: Springer Nature, 2019); and World Economic Forum, *Ethics by Design: An Organizational Approach to Responsible Use of Technology*, December 2020, [https://www3.weforum.org/docs/WEF\\_Ethics\\_by\\_Design\\_2020.pdf](https://www3.weforum.org/docs/WEF_Ethics_by_Design_2020.pdf).

36. See René von Schomberg and Jonathan Hankins, eds., *International Handbook on Responsible Innovation: A Global Resource* (Cheltenham, UK: Edward Elgar, 2019).

The project is generously supported by the John S. and James L. Knight Foundation.

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