



INTERCONNECTION REGULATION FOR DIGITAL PLATFORMS: THE NEW CHALLENGES AND LESSONS FROM THE U.S. TELECOMMUNICATIONS INDUSTRY



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Interconnection Regulation For Digital Platforms: The New Challenges and Lessons from the U.S. Telecommunications Industry By Kun Huang, Ziyi Qiu & Zhaoning Wang

In this article, we bring the discussion of potential interconnection regulation for digital platforms. By reviewing the lessons from the U.S. telecommunication industry and the distinctive features of digital platforms, the article explores the new challenges of interconnection regulation for digital platforms. With varying degrees of network effects across platform types and market segments and different levels of interconnection preferred by platforms and consumers, a single threshold of regulatory intervention may not serve the purpose of improving consumer welfare and economic efficiency. Given the more innovative business nature and dynamic competition faced by digital platforms, the costs on innovation incentives and consumers' long-term well-being should be given full consideration when deciding whether and how to establish an interconnection regulation regime for digital platforms.

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01

INTRODUCTION

Digital platforms are usually defined as a commercial network that enables transactions in the form of business-to-business (“B2B”), business-to-customer (“B2C”), or customer-to-customer (“C2C”) exchange.¹ When digital platforms carry different networks, connection of multiple networks for the mutual exchange of traffic is often considered as a common form of platform interconnection.²

In the era of the digital economy, whether to impose interconnection regulation for digital platforms has been an important debate. With an increasing number of policy proposals, investigations, and lawsuits targeting digital platforms, the current debate revolves around whether interconnection regulation is necessary, what the regulation (if any) should entail, and how much any potential regulation may benefit and cost consumers and the overall economy.

One potential way to find answers to these questions is to look back at the experience of industries where interconnection regulation has been imposed. For example, it has been asked whether and to what extent the mandatory interconnection regulation framework established in the U.S. telecommunication industry can and should be applied to digital platforms. In this article, we argue that while the lessons from the telecommunication industry can shed light on the potential interconnection regulation for digital platforms, the distinctive features of digital platforms make the interconnection regulation for digital platforms a much more complex topic.

This article explores the new challenges of interconnection regulation for digital platforms. To proceed, the rest of the article is organized as follows. In Section 2, the article reviews the economic reasoning behind regulations. In Section 3, the article reviews the development and impact of interconnection regulation in the U.S. telecommunication

industry. In Sections 4 and 5, the article discusses the distinctive features of digital platforms and considerations around interconnection regulations for digital platforms. The article concludes in Section 6.

02

THE ECONOMICS OF REGULATION

The main objective of regulation is to correct market failures and promote economic efficiency. Market failures may occur when the market lacks the conditions to achieve a competitive market outcome. Commonly observed causes of market inefficiency include monopoly power, negative externalities, and asymmetric information.³ When these conditions are present, incentives of self-interested market participants may cause the equilibrium prices and quantities to deviate from the socially optimal levels. Under such circumstances, the market forces may lead to inefficient market outcomes and cause potential market failures.⁴

Regulation can be used as a tool to correct the deviation from the socially optimal outcomes, prevent market failures and promote economic efficiency.⁵ In particular, regulation can help maintain market competition by restraining the abuse of monopoly power, internalizing the negative externalities to mitigate overconsumption of economic activities, and correcting the adverse selection by providing market participants symmetric information. It is generally observed that industries such as telecommunication, airlines, trucking, buses, railroads, natural gas, electricity, cable television, banking, and insurance are among the ones which have been heavily regulated, at least in part due to the presence of the aforementioned market conditions.⁶

Despite its potential benefits, regulation may also come at a cost. Regulation has been debated as a source of distort-

¹ Ahmad Asadullah, Isam Faik & Atreyi Kankanhalli, “Digital Platforms: A Review and Future Directions,” PACIS 2018 Proceedings (2018), available at <https://aisel.aisnet.org/pacis2018/248/>.

² “Terms and definitions,” U.S. Electronic Code of Federal Regulations, title 47 (2021) CFR §51.5, available at <https://www.law.cornell.edu/cfr/text/47/51.5> (defining interconnection as “the linking of two networks for the mutual exchange of traffic”).

³ Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* (Boston: Pearson/Addison Wesley, 2005).

⁴ Joseph E. Harrington, Jr., John M. Vernon & W. Kip Viscusi, *Economics of Regulation and Antitrust*, fourth edition (The MIT Press, 2005).

⁵ Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* (Boston: Pearson/Addison Wesley, 2005). See also Joseph E. Harrington, Jr., John M. Vernon & W. Kip Viscusi, *Economics of Regulation and Antitrust*, fourth edition (The MIT Press, 2005); Joseph Stiglitz, *Government Failure vs. Market Failure: Principles of Regulations* (Cambridge University Press, 2010).

⁶ OECD, “Regulatory Reform and Innovation,” available at <https://www.oecd.org/sti/inno/2102514.pdf>.

ing firms' incentives to innovate and invest.⁷ For example, a study conducted by the OECD finds that regulation can have both positive and negative impacts on innovation. While it can maintain a certain level of openness which provides the necessary conditions for research and innovation, regulation can discourage firms' R&D efforts, distort choices of technologies that are explored and adopted, and erect barriers to innovation by increasing the uncertainty and costs of the development process.⁸

03

LESSONS FROM INTERCONNECTION REGULATION IN THE U.S. TELECOMMUNICATIONS INDUSTRY

It has long been recognized that the U.S. telecommunication industry benefits significantly from network effects and has historically been highly concentrated.⁹ In 1986, the three largest companies — AT&T (81.9 percent), MCI Communications (7.6 percent), and Sprint (4.3 percent) — accounted for a total share of 93.8 percent in the long-distance service market.¹⁰

As a market leader in providing the long-distance service, AT&T refused to interconnect with independent telephone companies, citing the quality standards of independents as a concern. The lack of an interconnected long-distance network forced many businesses to subscribe to multiple telephone companies with disconnected and incompatible networks.

Moreover, as subsidiaries of AT&T, the regional Bell operating companies (“RBOCs”) also patented and deployed improved technology that often prevented the independent telephone companies from interconnecting with their “long-distance” service.¹¹ In addition, by acquiring its equipment from an exclusive provider — Western Electric — AT&T only allowed its or Western Electric’s equipment to be connected to its network and charged high prices for such equipment.¹²

With the observed market power and a lack of interconnection, the U.S. Department of Justice (“DOJ”) filed a lawsuit against AT&T in 1974, alleging that AT&T monopolized the long-distance service market and that its refusal to interconnect telecommunications competitors and consumers’ premises equipment is liable for a “refusal to deal.”¹³

In 1996, the U.S. officially passed the Telecommunications Act (hereafter, the “1996 Act”), which, among other things, mandated interconnection of telecommunication networks.

“*The main objective of regulation is to correct market failures and promote economic efficiency. Market failures may occur when the market lacks the conditions to achieve a competitive market outcome*

Built upon regulation by the Federal Communications Commission (“FCC”), the 1996 Act outlined a regulatory regime of duties to connect, of parity in quality between connections offered to the incumbent’s own affiliates and competitors, and of rates and contract terms that were just, reasonable, and nondiscriminatory.¹⁴

7 Philippe Aghion, Antonin Bergeaud & John Van Reenen, “The Impact of Regulation on Innovation,” NBER Working Paper No. 28381, January 2021, available at https://www.nber.org/system/files/working_papers/w28381/w28381.pdf.

8 OECD, “Regulatory Reform and Innovation,” available at <https://www.oecd.org/sti/inno/2102514.pdf>.

9 Kurtis DeMaagd, Erik D. Goodman, Johannes M. Bauer, Kendall J. Koning, Tithi Chattopadhyay & Nicolas Friederici, “A Complex Systems Model of Industry Concentration and Broadband Infrastructure Investment,” TPRC 2011, September 24, 2011, available at <https://ssrn.com/abstract=1985745>.

10 FCC, “Trends in Telephone Service,” Industry Analysis Division Common Carrier Bureau, August 2001, available at https://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/trend801.pdf.

11 Robert W. Crandall, “The Failure of Structural Remedies in Sherman Act Monopolization Cases,” *Oregon Law Review* 80 (2001): 109-198, available at https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/4590/80_Or_L_Rev_109.pdf?sequence=1&isAllowed=y.

12 “The Break-up of AT&T and the Story of MCI,” Cybertelecom, November 13, 2020, available at https://www.cybertelecom.org/notes/att_antitrust.htm.

13 Nicholas Economides, “Telecommunications Regulation: An Introduction,” in Richard R. Nelson (ed.), *The Limits and Complexity of Organizations* (2005), available at http://neconomides.stern.nyu.edu/networks/Economides_Telecommunications_Regulation.pdf.

14 Federal Communications Commission, “S.652 - 104th Congress (1995-1996): Telecommunications Act of 1996,” S.652, 104th Congress, January 31, 1996, available at <https://www.congress.gov/bill/104th-congress/senate-bill/652>.

While the objective of the 1996 Act was to promote competition and facilitate entry, reduce prices, and increase the quality of telecommunication services, and encourage innovation in the telecommunication industry,¹⁵ the realized outcome, however, was not deemed desirable by many critics.

As discussed in Economides (2005), the 1996 Act allowed the RBOCs to enter the long-distance call market and leverage a classic vertical price squeeze strategy, which caused some long-distance rivals to be marginalized or even driven out of the long-distance call market. He further considers the 1996 Act as an “immense” failure, noting that residential and small-business customers were faced with few choices and high prices for many telecommunication services.¹⁶ In addition, another study published in 2006 finds that, with the persistence of long-term contracts, early termination fees, and stagnating prices, the 1996 Act was not effective in reducing the costs of long-distance services for consumers.¹⁷

Importantly, the 1996 Act has been deemed by some as one reason for a reduction in innovation and investments across the telecommunication industry. For example, critics of the 1996 Act point out that innovation and investment “took a backseat to the short-term goal of rapidly increasing the number of new entrants into the market.”¹⁸ Pociask (2004) finds that telecommunication capital spending by the incumbent local exchange carriers, including descendants of the original RBOCs and by newly formed competitive local exchange carriers, fell by about 50 percent from a peak in 2000.¹⁹

“*Importantly, the 1996 Act has been deemed by some as one reason for a reduction in innovation and investments across the telecommunication industry*”

Moreover, academic studies also point to substantial costs associated with telecommunication regulation. Hausman (1993) finds that regulating the telecommunication industry in the U.S. leads to significant costs in forgone consumer surplus and may ultimately slow productivity to the extent of billions of dollars in losses.²⁰ Depending on calculation mechanisms, Ellig (2006) estimates that the regulations in the telecommunication industry cost anywhere from \$25 to \$100 billion a year in lost consumer surplus due to factors such as prices above or below competitive levels, and reduced innovation and entrepreneurship.²¹

Overall, the lessons from the U.S. telecommunication industry suggest that mandatory interconnection regulation may not necessarily serve the goal of promoting market efficiency and consumer welfare. The regulation implementation can come at significant costs, particularly in undermining firms’ innovation and investment incentives.

04 DISTINCTIVE FEATURES OF DIGITAL PLATFORMS RELEVANT TO THE DEBATE OF INTERCONNECTION REGULATION

A. Varying Degree of Network Effects Across Platform Types and Market Segments

A key feature of digital platforms is that they often benefit from network effects, meaning a platform becomes more attractive for the users on one side of the platform if the number of users

¹⁵ Federal Communications Commission, “S.652 - 104th Congress (1995-1996): Telecommunications Act of 1996,” S.652, 104th Congress, January 31, 1996, available at <https://www.congress.gov/bill/104th-congress/senate-bill/652>. See also “Telecommunications Act of 1996,” June 20, 2013, available at <https://www.fcc.gov/general/telecommunications-act-1996>.

¹⁶ Nicholas Economides, “Telecommunications Regulation: An Introduction,” in Richard R. Nelson (ed.), *The Limits and Complexity of Organizations* (2005), available at http://neconomides.stern.nyu.edu/networks/Economides_Telecommunications_Regulation.pdf.

¹⁷ Gene Kimmelman, Mark Cooper & Magda Herra, “The Failure of Competition Under the 1996 Telecommunications Act,” *Federal Communications Law Journal* 58, no. 3 (2006): Article 9, available at <https://www.repository.law.indiana.edu/fclj/vol58/iss3/9>.

¹⁸ Adam D. Thierer, “UNE-P and the Future of Telecom ‘Competition’,” Cato Institute, TechKnowledge No. 48, February 1, 2003, available at <https://www.cato.org/techknowledge/une-p-future-telecom-competition>.

¹⁹ Stephen Pociask, *A Failure to Communicate: Reforming Public Policy in the Telecommunications Industry*, (Economic Policy Institute, 2004), available at https://www.epi.org/publication/books_failure/.

²⁰ Jerry Hausman, Timothy Tardiff & Alexander Belinfante, “The Effects of the Breakup of AT&T on Telephone Penetration in the United States,” *The American Economic Review* (1993), available at <https://www.jstor.org/stable/2117661>.

²¹ Jerry Ellig, “Costs and Consequences of Federal Telecommunications Regulations,” *Federal Communications Law Journal* 58, no. 1 (2006): Article 3, available at <https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1422&context=fclj>.

on the same side (i.e. direct network effect) or the other side (i.e. indirect network effect) of the platform grows.²²

Economic theories of network effects present mixed views of their impacts on market competition. One potential concern is that network effects may give rise to market concentration and potentially result in the so-called “winner-takes-all” market outcome.²³ That is, as a growing number of users makes a firm more valuable, it will in turn attract more users. This positive feedback loop could result in a consolidation of the marketplace and may ultimately lead to one firm dominating the market.²⁴ On the other hand, economists find that network effects can also constrain digital platforms’ incentives to increase prices.²⁵ For example, if a platform raises the price charged to one side of the market (e.g. merchants), such price increase may lead to not only a loss in the same side of the markets (e.g. merchants leave the platform), but also a loss in the other side of the markets (e.g. more consumers leave the platform due to indirect network effect), which can further reduce the attractiveness of the platform to merchants. Consequently, both the platform’s tendency to increase its price and the extent of the price increase will be lower than in the absence of network effects.²⁶

Despite the depth of research on network effects and their impact on competitive outcomes, economic studies suggest that the influence of network effects appears to be increasingly complex across markets and a more comprehensive understanding of these dynamics is required.²⁷ One study by

Sun & Tse (2007) argues that the “winner-takes-all” outcome is most likely seen when participants tend to single-home, while the network co-existence can happen if multi-homing is prevalent.²⁸ A more recent work by Boudreau & Jeppesen (2015) suggests that one needs to assess conditions including the presence of strong network effects, the stickiness and/or switching costs of the installed base, and low and/or declining costs of adding more complementors to determine the consequence of platform network effects.²⁹

While the presence of network effects is often observed for digital platforms, the magnitude of network effects often varies depending on different platform types and market segments.³⁰ For example, direct network effects are often high for social networks such as LinkedIn and WhatsApp. Indirect network effects are typically significant for platforms that facilitate transactions such as Amazon and platforms with an advertisement-based revenue model like YouTube. Different degrees of network effects can lead to different strengths of self-reinforcing feedback loops, which further leads to different growth rates of user bases.

B. Heterogeneous Preferences Toward Platform Interconnection

It is observed that digital platforms have heterogeneous preferences in the levels of interconnection for their products or services, to satisfy their unique business models and profit maximization objectives. On one hand, a higher degree of

²² Armstrong, “Competition in Two-Sided Markets.” *The RAND Journal of Economics* 37, no. 3 (2006): 668–91, available at <http://www.jstor.org/stable/25046266>. See also Michael L. Katz & Carl Shapiro. “Systems Competition and Network Effects.” *The Journal of Economic Perspectives* 8, no. 2 (1994): 93–115, available at <http://www.jstor.org/stable/2138538>.

²³ Olga Batura, Nicolai van Gorp & Pierre Larouche. “Online Platforms and the EU Digital Single Market,” November 23, 2015, available at https://ec.europa.eu/information_society/newsroom/image/document/2016-7/nikolai_van_gorp_-_response_e-economics_to_the_uk_house_of_lords_call_for_evidence_14020.pdf. See also David S. Evans, “How Catalysts Ignite: The Economics of Platform-Based Start-Ups,” in Annabelle Gawer (ed.), *Platforms, Markets and Innovation* (Cheltenham, UK and Northampton, MA, US: Edward Elgar, 2009), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1279631; David P. McIntyre & Asda Chintakananda, “Competing in network markets: Can the winner take all?” *Business Horizons* 57, no. 1 (2014): 117–125, available at <https://www.sciencedirect.com/science/article/abs/pii/S0007681313001407>.

²⁴ Friso Bostoën, “Regulating Online Platforms Lessons from 100 Years of Telecommunications Regulation,” *Technology Review* 335 (2019): 335–40, available at https://www.ptc.org/PTC20/Proceedings/Paper_YS_1_21_Bostoën_Friso.pdf.

²⁵ Howard Shelanski, Samantha Knox & Arif Dhilla, “Network Effects and Efficiencies in Multisided Markets,” *127th meeting of OECD Competition Committee*, 2017, available at [https://one.oecd.org/document/DAF/COMP/WD\(2017\)40/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)40/FINAL/en/pdf).

²⁶ See, for example, Lapo Filistrucchi, Tobias J. Klein & Thomas O. Michielsen, “Assessing unilateral merger effects in a two-sided market: an application to the Dutch daily newspaper market,” *Journal of Competition Law and Economics* 8, no. 2 (2012): 297–329, available at <https://core.ac.uk/download/pdf/6633221.pdf>.

²⁷ David S. Evans & Richard Schmalensee, “Why Winner-Takes-All Thinking Doesn’t Apply to the Platform Economy,” *Harvard Business Review*, May 4, 2016, available at <https://hbr.org/2016/05/why-winner-takes-all-thinking-doesnt-apply-to-silicon-valley>.

²⁸ Mingchun Sun & Edison Tse, “When does the winner take all in two-sided markets?” *Review of Network Economics* 6, no. 1 (2007), available at <https://www.degruyter.com/document/doi/10.2202/1446-9022.1108/html>.

²⁹ Kevin J. Boudreau & Lars B. Jeppesen, “Unpaid crowd complementors: The platform network effect mirage,” *Strategic Management Journal* 36, no. 12 (2015): 1761–1777, available at <https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/smj.2324>.

³⁰ David P. McIntyre & Asda Chintakananda, “Competing in network markets: Can the winner take all?” *Business Horizons* 57, no. 1 (2014): 117–125, available at <https://doi.org/10.1016/j.bushor.2013.09.005>.

interconnection allows firms to offer more flexibility and a larger set of choices to their customers. On the other hand, some firms may opt for a lower level of interconnection to provide customers with a more streamlined user experience, as more interconnection may be associated with higher risks in terms of reliability, security, and data privacy.³¹

One eminent example to illustrate such heterogeneous preferences is to compare the different interconnection choices made by Apple and Google. Apple takes the approach of building a closed ecosystem that only allows individual software applications to be interconnected in a limited and restricted manner.³² Specifically, apps can only be downloaded from the App Store on Apple devices.³³ If a developer would like to develop an app for Apple devices, he or she must pay a developer fee and then distribute the app through the App Store.³⁴ This streamlines the process for app development and download across all Apple devices. The near-perfect control of the developer and customer experience with a closed ecosystem offers consistency and predictability in terms of upgrades, performance, and operation across different generations of Apple devices.³⁵ Apple's closed ecosystem has been seen as one key reason why Apple can provide better user experience, higher product quality and security, and constant innovation.

Google, on the other hand, chooses to build an open ecosystem that allows individual software applications to be interconnected more freely and broadly.³⁶ Specifically, Google's Android operating system runs on a wide variety of phones made by a variety of original equipment manufacturers.³⁷ Android is open source, meaning that individual developers can go into the code and change it as they see fit to tailor to certain needs. Such open architecture allows customization and flexibility.³⁸

Having open-source code means that if there are issues with the code, many people not even part of the development team will be looking at the source and can help find solutions, leading to more efficiency and collaboration. Also, Android's open-source nature means that one can download apps from not only the Google Play store but also third-party app platforms.³⁹

“*One eminent example to illustrate such heterogeneous preferences is to compare the different interconnection choices made by Apple and Google*”

Both the Apple and Google platforms have been successful, with substantial adoption by developers and consumers. Bresnahan et al. (2014) note that Android and iOS are roughly equally attractive as platforms to U.S. developers and that neither platform has attracted significantly more applications than the other.⁴⁰ With both platforms and users having heterogeneous interconnection preferences and platforms of various interconnection levels co-existing and well-accepted by the markets, it is not clear whether a single threshold of “optimal” interconnection level necessarily exists and should be implemented for all digital platforms.

C. Innovative Business Nature and Dynamic Competition of Digital Platforms

Even in markets that are concentrated, digital platforms often have a highly innovative business nature. It is found that digital platforms often involve a much higher level of

31 Wolfgang Kerber & Heike Schweitzer, “Interoperability in the Digital Economy,” *Journal of Intellectual Property, Information Technology and E-Commerce Law* 8 (2017): 39, available at <https://www.jipitec.eu/issues/jipitec-8-1-2017/4531>.

32 “‘Open’ vs. ‘Closed’ Software Ecosystems: A Primer,” LeasePilot, available at <https://leasepilot.co/blog/open-vs-closed-software-ecosystems-a-primer/>.

33 Chris Hoffman, “Android is ‘Open’, and iOS Is ‘Closed’ — But What Does That Mean to You?” How-To Geek, June 20, 2017, available at <https://www.howtogeek.com/217593/android-is-open-and-ios-is-closed-but-what-does-that-mean-to-you/>.

34 “Apple Developer Program,” Apple, available at <https://developer.apple.com/programs/>.

35 Ian Sherr & Michael Totty, “Is It Better for Businesses to Adopt Open or Closed Platforms?” *Wall Street Journal*, November 15, 2011, available at <https://www.wsj.com/articles/SB10001424052970204554204577023994194742720>.

36 “‘Open’ vs. ‘Closed’ Software Ecosystems: A Primer,” LeasePilot, available at <https://leasepilot.co/blog/open-vs-closed-software-ecosystems-a-primer/>.

37 Ian Sherr & Michael Totty, “Is It Better for Businesses to Adopt Open or Closed Platforms?” *Wall Street Journal*, November 15, 2011, available at <https://www.wsj.com/articles/SB10001424052970204554204577023994194742720>.

38 Chris Hoffman, “Android is ‘Open’, and iOS Is ‘Closed’ — But What Does That Mean to You?” How-To Geek, June 20, 2017, available at <https://www.howtogeek.com/217593/android-is-open-and-ios-is-closed-but-what-does-that-mean-to-you/>.

39 Priyadarshini, “App Development with Android or the iOS: Which One to Choose?” Simplilearn, July 6, 2021, available at <https://www.simplilearn.com/android-or-ios-app-development-which-is-the-best-article>.

40 Timothy Bresnahan, Joe Orsini & Pai-Ling Yin, “Platform Choice by Mobile Apps Developers,” February 13, 2014, available at <https://siepr.stanford.edu/system/files/multihoming%20BOY.pdf>.

R&D spending compared to other industries. The biggest R&D spenders worldwide are fairly consistently large tech companies, with Amazon and Alphabet topping the list and Apple, Microsoft and Facebook following closely.⁴¹ In 2018, 31.3 percent of technology industry spending was on R&D investment, with the total amount equal to 268.8 billion U.S. dollars. Among the top 50 companies that have the highest R&D expenses, 19 of them are in platform-related sectors, including Software, Internet or Computing and Electronics.⁴²

Moreover, the incumbent platforms can face fierce competition from young “disruptive” rivals, which challenge the incumbents with their revolutionary products or services. It is observed that many digital platform markets evolve through sequential “winner-takes-all” battles, with superior new platforms replacing the old ones.⁴³ For example, Slack, by focusing on “a new experience” and offering “the simplest and easiest way” for teams to communicate and collaborate, has taken up significant market shares from other messaging platforms. New companies like TikTok have also been able to carve out successful markets and challenge the established tech firms in those specific categories.⁴⁴ Thus, even the more successful platforms need to maintain strong innovation efforts.

05

NEW CHALLENGES OF INTER-CONNECTION REGULATION FOR DIGITAL PLATFORMS

A. Current Debates Around Interconnection Regulation for Digital Platforms

Practically, there have been past regulations and ongoing debates on interconnection regulation for digital platforms across multiple jurisdictions. However, no consensus has been reached among regulators and policymakers in terms of the benefits, costs, and optimal form of interconnection regulation for digital platforms.

In the U.S., the FCC established a regulatory mechanism for resolving Internet interconnection disputes on a case-by-case basis in 2015 and suggested that “*the best approach is to watch, learn, and act as required, but not intervene now, especially not with prescriptive rules.*”⁴⁵ The FCC later on abandoned the regulatory mechanism and deferred to the antitrust authorities to settle any such disputes.⁴⁶ In particular, the FCC noted the following benefits of the antitrust laws over interconnection regulation: “(1) *the rule of reason allows a balancing of pro-competitive benefits and anti-competitive harms; (2) the case-by-case nature of antitrust allows for the regulatory humility needed when dealing with the dynamic Internet; (3) the antitrust laws focus on protecting competition; and (4) the same long-practiced and well-understood laws apply to all Internet actors.*”⁴⁷

In Europe, the European Commission (“EC”) has also advocated for ensuring the interconnection of digital goods, services, platforms, and communication networks. In its 2010 Digital Agenda, the EC has identified the lack of interoperability as one of the significant obstacles to a thriving economy.⁴⁸ In 2020, an interoperability requirement for large online platforms has been suggested by the EC in its proposed Digital Markets Act (“DMA”), as a way to

41 Matthew Lane, “How Competitive Is the Tech Industry?” Disruptive Competition Project, July 29, 2019, available at <https://www.project-disco.org/competition/072919-how-competitive-is-the-tech-industry/>.

42 Skillicorn, “Top 1000 companies that spend the most on Research & Development (charts and analysis),” Idea to Value, August 28, 2019, available at <https://www.ideatovalue.com/inno/nickskillicorn/2019/08/top-1000-companies-that-spend-the-most-on-research-development-charts-and-analysis/>.

43 David McIntyre, “Beyond a ‘Winner-Takes-All’ Strategy for Platforms,” MIT Sloan Management Review, January 3, 2019, available at <https://sloanreview.mit.edu/article/beyond-a-winner-takes-all-strategy-for-platforms/>.

44 Matthew Lane, “How Competitive Is the Tech Industry?” Disruptive Competition Project, July 29, 2019, available at <https://www.project-disco.org/competition/072919-how-competitive-is-the-tech-industry/>.

45 Federal Communications Commission, “Report and Order on Remand, Declaratory Ruling, and Order,” March 12, 2015, available at https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.pdf.

46 Tim Tardiff, “Ex Ante Regulation of Digital Platforms?: Cautionary Tales From Telecommunications,” Competition Policy International, January 27, 2021, available at <https://www.competitionpolicyinternational.com/ex-ante-regulation-of-digital-platforms-cautionary-tales-from-telecommunications/>.

47 Federal Communications Commission, “Declaratory Ruling, Report and Order, and Order,” March 12, 2015, available at <https://docs.fcc.gov/public/attachments/DOC-347927A1.pdf>.

48 European Commission, “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Digital Agenda for Europe,” 2010, available at <https://eufordigital.eu/library/a-digital-agenda-for-europe/>.

encourage competition.⁴⁹ However, commentators of the DMA have also expressed concerns over possible adverse effects of the DMA in terms of innovation incentives, noting that the EC “has yet to demonstrate that the new revolution in competition law and policy proposed in the DMA will not further suppress innovation and entrepreneurship in Europe.”⁵⁰

B. Complexity with Mandatory Interconnection Regulation

Given that digital platforms have many distinctive features, regulators should consider all the factors specific to digital platforms in designing and evaluating any potential interconnection regulation for digital platforms. In addition, in light of the criticisms of the 1996 Act as discussed above, including a lack of impact on promoting market efficiency and consumer welfare in the U.S. telecommunication industry, it is unclear whether the interconnection regulation framework from the U.S. telecommunication industry should necessarily apply to digital platforms.⁵¹ While the various levels of network effects and different types of platforms and markets complicate the need of government regulation in general, whether to require mandatory interconnection regulation in particular adds additional complexity to the puzzle.

Moreover, even if there are serious market failures for digital platforms such that interconnection regulation is pursued, there may not be a “one-rule-fits-all” regime for all digital platforms. In particular, mandatory interconnection may not be the best approach given that there may not be an “optimal” level of interconnection that applies universally to all digital platforms. Given the heterogeneous interconnection preferences from both platforms and users’ perspectives, a single threshold of mandatory interconnection regulation may not necessarily serve the purpose to improve consumer welfare and market efficiency.

“Given that digital platforms have many distinctive features, regulators should consider all the factors specific to digital platforms in designing and evaluating any potential interconnection regulation for digital platforms

C. Potential Issues with Interconnection Regulation for Digital Platforms

In addition to controversies around the optimal form of interconnection regulation, it is important to note that the costs associated with interconnection regulation could be significant for digital platforms.

Interconnection regulation may suppress platforms’ innovation and investment incentives by creating a tension between static and dynamic welfare considerations, the former of which refers to the short-term benefits to consumers (e.g. additional product options due to the mandatory interconnection) whereas the latter refers to the long-term market efficiency (e.g. reduced innovation incentives and quality improvement due to the mandatory interconnection).⁵² In particular, if a large digital platform is forced to interconnect with other competitors without appropriate compensation, there may be diminished incentives for the platform to invest the necessary time and resources to innovate and further improve its network, considering that part of its R&D achievements might have to be shared with its rivals.

Moreover, mandatory interconnection could also lead to the free-rider problem and collusive behavior that have the impact of reducing innovation incentives.⁵³ In particular, smaller platforms may be able to take advantage of the shared network developed by large platforms without having to incur the costs to develop and expand their own networks. The need for standardization and coordination across competing platforms may also soften their incentive

⁴⁹ European Commission, “Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act),” December 15, 2020, available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020PC0842&from=en>.

⁵⁰ See, for example, Meredith Broadbent, “Implications of the Digital Markets Act for Transatlantic Cooperation,” September 15, 2021, available at <https://www.csis.org/analysis/implications-digital-markets-act-transatlantic-cooperation>.

⁵¹ Tim Tardiff, “Ex Ante Regulation of Digital Platforms?: Cautionary Tales From Telecommunications,” Competition Policy International, January 27, 2021, available at <https://www.competitionpolicyinternational.com/ex-ante-regulation-of-digital-platforms-cautionary-tales-from-telecommunications/>.

⁵² U.S. Department of Justice, Antitrust Division, “Chapter 7 Unilateral, Unconditional Refusals to Deal with Rivals,” available at https://www.justice.gov/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-7#N_37_.

⁵³ William B. Tye & Carlos Lauperta, “The economics of pricing network interconnection: Theory and application to the market for telecommunications in New Zealand,” *Yale Journal on Regulation* 13 (1996): 419, available at <https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1438&context=yjreg>. See also Jacques Cremer, Yves-Alexandre de Montjoye & Heike Schweitzer, “Competition policy for the digital era,” European Commission, available at <http://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>.

to compete and provide opportunities for potential collusive behavior. Therefore, taken altogether, the incentives of all digital platforms to invest and innovate may be diminished if they collectively believe that all players in the market will be mandated to share a successful innovation.

Finally, given the rapid development of technology and market conditions, it is less clear whether *ex ante* regulation is the key to interconnection-related issues for digital platforms.⁵⁴ There are competitive opportunities created by technological advancement. For example, the innovative nature of digital platforms “fosters new forms of competition against traditional, incumbent firms and services that often benefit consumer choice and prices,” which is difficult to be incorporated as part of the regulation.⁵⁵ In situations where the interconnection regulation cannot adapt quickly to new technologies or market conditions, there may be significant harms to the overall efficiency of competition in the markets of digital platforms.

Overall, although interconnection regulation may have some immediate benefits, these static benefits may come at high costs of distorting market efficiency and harming consumer welfare in the long run.⁵⁶ The costs on innovation incentives and consumers’ long-term well-being should be given full consideration when deciding whether and how to establish an interconnection regulation regime for digital platforms.

of regulatory intervention may not serve the purpose of improving consumer welfare and economic efficiency. Given the more innovative business nature and dynamic competition faced by digital platforms, the potentially significant costs on undermining platforms’ innovation and investment incentives and distorting consumers’ long-term welfare need to be cautiously examined and taken into full consideration. ■

“Overall, although interconnection regulation may have some immediate benefits, these static benefits may come at high costs of distorting market efficiency and harming consumer welfare in the long run

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CONCLUDING REMARKS

This article reviews the distinctive features of digital platforms and the lessons from the telecommunications industry and concludes that establishing a potential interconnection regulation regime for digital platforms can be a complex task. It remains an open question as to whether interconnection regulation is necessary, what the regulation (if any) should entail, and how much any potential regulation may benefit and cost for consumers and the overall economy.

With network effects varying across platform types and market segments, and different levels of interconnection preferred by platforms and consumers, a single threshold

⁵⁴ Tim Tardiff, “Ex Ante Regulation of Digital Platforms?: Cautionary Tales From Telecommunications,” *Competition Policy International*, January 27, 2021, available at <https://www.competitionpolicyinternational.com/ex-ante-regulation-of-digital-platforms-cautionary-tales-from-telecommunications/>.

⁵⁵ Justin S. Brown, “Revisiting the Telecommunications Act of 1996,” *PS: Political Science & Politics* 51, no. 1 (2018): 129-32, available at <https://www.cambridge.org/core/services/aop-cambridge-core/content/view/346386E824534B014FAB77EBFEA65910/S1049096517002001a.pdf/revisiting-the-telecommunications-act-of-1996.pdf>.

⁵⁶ U.S. Department of Justice, Antitrust Division, “Chapter 7 Unilateral, Unconditional Refusals to Deal with Rivals,” available at https://www.justice.gov/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-7#N_37_.

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