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A Basic Overview of Interoperability as a Remedy for Digital Social Platforms

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Introduction

Digital platforms are increasingly subject to antitrust scrutiny by US and European regulators.[1] This comes as no surprise: the largest digital platforms exhibit a level of dominance that seems insurmountable. Core to these trends are the special barriers of entry that digital platforms are particularly sensitive to, namely, network effects. These effects—where each new user amplifies the platform's overall value—have resulted in "winner-take-all" outcomes that stifle competition, even when those rivals might offer superior technology.[2] Traditional antitrust remedies such as divestitures and behavioral constraints may mitigate some aspects of dominant platform power, but they do not directly address the core problem of network effects.[3] Interoperability, by contrast, offers a targeted strategy to neutralize these barriers: if platforms are required to share their user bases and features with competitors through open standards, the competitive playing field can be leveled.[4] This paper explores a broad overview of network effects, an introduction to interoperability, and how interoperability can serve as a meaningful remedy for digital platforms' network-effect-driven dominance.

Traditional Remedies Fail to Address Network Effects

Among the slew of entry barriers that digital platforms benefit from, network effects are the most potent. Network effects describe the phenomena where the value of a given network increases with each marginal user.[5] The more users a network has, the higher its value relative to other networks. To illustrate, imagine a potential user choosing between Instagram or a given general photo-sharing platform, Z. In this case, Instagram commands a user base of over two billion while platform Z has a user base several orders of magnitude smaller.[6] Instagram's user base is likely to capture the vast majority of the potential user's friends, family, colleagues, and public persons of

[1]Sorkin, Andrew Ross, Ravi Mattu, Bernhard Warner, Sarah Kessler, Michael J. de la Merced, Lauren Hirsch, and Ephrat Livni. 2024. "How Google's Antitrust Defeat Might Transform Big Tech." The New York Times, August 6, 2024, sec. Business. https://www.nytimes.com/2024/08/06/business/dealbook/google-antitrust-tech.html

[2] Subcommittee on Antitrust, Commercial, and Administrative Law of the Committee on the Judiciary. 2019. "Investigation of Competition in Digital Markets." U.S. House of Representatives.

[3] Scott Morton, Fiona M., and Michael Kades. 2021. "Interoperability as a Competition Remedy for Digital Networks." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network.

[4] Ibid.

[5] Supra note 2

[6]Brian Dean. 2025. "Instagram Users: How Many People Use Instagram in 2024?" Backlinko

interest, whereas Z will only cover a fraction. This discrepancy creates obvious complications for user experience on platform Z. These range from reduced content variety as fewer users result in less diverse and regularly uploaded content; weaker economic value due to lower advertising, monetization, and promotion capacity; decreased social capital, since users gain fewer opportunities for building influence and reputation; and immense relationship costs due to fewer meaningful and personal user interactions.[7] Of course, one may argue that potential users may prioritize other qualities when picking platforms such as feature-richness and ease of use. However, the literature has consistently found that network externalities are a decisive factor when consumers choose which platforms to participate in, or at the very least, one of the most important factors that influence all others.[8]

Network effects create strong barriers to entry which cannot be easily beat. Entrants seemingly require an already established base of users to overcome the advantages enjoyed by incumbents. Without such a base, the marginal user is likely to continue joining larger platforms, perpetuating the concentration of network externalities and the incumbent's dominant power. This creates a scenario where entrants fail due to reasons entirely unrelated to the merit of the technology they offer. Indeed, it is possible that entrants may offer a flatly superior product to the incumbents and still fail. For regulators, this creates challenges as firms may reconsider joining the market potentially harming entry, innovation, long-term competitiveness, and consumer welfare. Only under extraordinary circumstances are firms able to overcome these barriers. Consider how Zoom's ascendance seems implausible without a black swan in the form of the pandemic while Bluesky's growth can be uniquely traced to the bizarre acquisition of Twitter by Elon Musk. If liability is found, the remedy to restore competition is not immediately obvious.[9] Traditional remedies employed by the court may not be suited for digital markets. Consider divesture: though it may succeed in reducing an incumbent's market power, network effects are likely to persist leaving marketplace competition unaltered. For example, if Meta were forced to divest from Facebook and Instagram, although Meta's market power in areas such as advertising would decrease, divesture would be unable to target the network externalities enjoyed by the platforms. In other words, Instagram and Facebook's userbases are likely to be left intact. In fact, divesture may cause consumers harm in the long term due to loss of integration and data sharing which improves critical technologies such as ranking algorithms.

[7]Supra note 2

[8]Martin Kauschinger, Albert Letner, Maximilian Schreiieck, and Nils Urbach. 2022. "Individual Enterprise Social Network Adoption: The Influence of Perceived Network Externalities and Perceived Social Capital Advantage." In . https://www.researchgate.net/publication/356604857_Individual_Enterprise_Social_Network_Adoption_The_Influe

[9]Guggenberger, Nikolas. 2020. "Essential Platforms." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network. https://doi.org/10.2139/ssrn.3703361.

Behavioral remedies may similarly fail due to timing. Digital markets are prone to "tipping" whereby even small advantages in network size can be reinforcing and lead to a single firm's dominance; this applies even if the market initially begins with a large number of competitors.[10] This winner-take-all nature provides platforms with extraordinary motivation to innovate in new markets. The cost of losing market share in this early stage is detrimental to a platform. It could mean the market tipping in a competitor platform's favor and losing out on monopoly rents. As such, these conditions also provide powerful incentives to practice anti-competitive conduct and limit nascent competitors through acquisition or exclusion to gain market share. During this time, regulators may not be fully appreciative or cognizant of anticompetitive behavior that is taking place. Indeed, by the time regulators recognize examples of anticompetitive behavior, the market is likely to have already tipped in favor of a single dominant firm. Consider for example how regulators did not show much resistance over Facebook's acquisition of Instagram in 2012. Regulators did not fully understand Instagram's nascent revenue scheme or the full data harvesting capacity that Instagram could provide.[11],[12]

"In terms of whether Instagram may have the potential to compete with Facebook's photo sharing app for advertising revenue, one third party told the OFT that it does not consider that Instagram provides significant marketing opportunities. The commercial opportunities are limited because consumers take and upload photos, but do not spend a significant amount of time in the app. This limits its attractiveness to advertisers for two reasons. First, eyeballs are not on the app for a significant period of time and second, limited user data is captured."[13]

At the same time, Facebook's internal documents painted an entirely different perspective on the threats posed by Instagram. Infamously, Mark Zuckerburg in a 2012 email notes how "Instagram could hurt [Facebook]"; He supplies the snowballing nature of network effects and their potential disruptiveness to Facebook's core platform as one of the primary motivations for the acquisition.[14] It is only just recently that regulators fully contextualized the gravity of the merger. Now that the markets have tipped, any

[10] Supra note 3

[11] "Anticipated Acquisition by Facebook Inc of Instagram Inc." 2012. ME/5525/12. Office of Fair Trading (UK).

[12] "FTC Closes Its Investigation Into Facebook's Proposed Acquisition of Instagram Photo Sharing Program." 2012. Federal Trade Commission (FTC). https://www.ftc.gov/news-events/news/press-releases/2012/08/ftc-closes-its-investigation-facebooks-proposed-acquisition-instagram-photo-sharing-program.

[13] Supra Note 11

[14] Newton, Casey. 2020. "'Instagram Can Hurt Us': Mark Zuckerberg Emails Outline Plan to Neutralize Competitors." The Verge. July 29, 2020. https://www.theverge.com/2020/7/29/21345723/facebook-instagram-documents-emails-mark-zuckerberg-kevin-systrom-hearing.

behavioral remedies that attempt to force the firm to curb potentially anti-competitive behavior such as serial acquisition simply come too late. Even if regulators were able to consistently capitalize on these leads, modifying acquisition criteria is likely only to reduce market power, leaving platform network externalities in place.

Interoperability is a Ubiquitous Standard and Remedy

Interoperability remedies are structured in such a way that makes them uniquely predisposed to restoring competition in digital platform markets. Interoperability remedies work by moving network externalities experienced by a single firm to potentially the entire market.[15] In doing so, the most significant barrier to entry faced by nascent competitors is removed thereby promoting entry and competition.

Interoperability is not a foreign concept to consumers. Indeed, interoperability, which can be understood broadly as cross-compatibility, exists in all varieties of goods and services.[16] Consider how users on different email providers, such as Outlook and Yahoo, are able to send and receive emails from one another. Or how users of different phone providers, such as Bell and Rogers, are able to forward and receive calls from one another. Even users playing select video games like League of Legends on different operating systems, such as Windows and MacOS, are still able to load into the same game and play with one another. Similar practices extend to SMS, Bluetooth technology, payment networks, healthcare systems, and cellular providers. This is to say that consumers and producers alike are well acquainted with interoperable systems and benefit from them.

In the legal realm, interoperability is not a novel approach to remedy. Its implementation has a storied history from Terminal Railroad Association, where the US Supreme Court first introduced interoperability as a remedy over divestiture, to remedies applied against AT&T in the late 70s to early 80s.[17],[18] The structural remedies applied to AT&T is a case particularly apt to explore for our purposes. AT&T possessed a monopoly over regional and long-distance telephone networks. Analogous to digital platforms, telephone networks were subject to network effects where the value of the network increased with each additional user. AT&T leveraged its long-distance lines to pressure small independent networks to integrate under unfavorable terms or lose access to AT&T's long-distance infrastructure.[19] Choosing to lose access to the long-distance lines would dramatically reduce the value of the local networks as they

[15] Supra note 3

[16] Staff in the Office of Technology and the Bureau of Competition. 2023. "Interoperability, Privacy, & Security." FTC Technology Blog (blog). December 21, 2023.

[17] "The Breakup of 'Ma Bell' | Federal Judicial Center." n.d. Accessed March 16, 2025. https://www.fjc.gov/history/spotlight-judicial-history/breakup-ma-bell.

[18] "United States v. Terminal Railroad Ass'n, 224 U.S. 383 (1912)." n.d. Justia Law. Accessed March 16, 2025. https://supreme.justia.com/cases/federal/us/224/383/.

[19] Supra note 17

would be unable to communicate with the rest of the country. On the other hand, AT&T denied access to its regional lines from long-distance firms which effectively locked out entry into the market.[20] One of these firms denied access, MCI, directly challenged AT&T's practices culminating in a lawsuit that forced AT&T to interconnect its regional lines at reasonable terms. This illustrates a clear example of the court lessening entry barriers through interoperable standards. Long-distance firms could now compete in the long-distance telephone market without requiring possession of an established regional line network. The scenario reads analogous to present-day digital platform firms that find it almost impossible to compete without possession of an existing user base. These themes later influenced the ultimate breakup of AT&T which saw the court mandate interoperable standards for the baby bells and long distance lines. Notably, this restructuring did not hinder innovation; metrics such as patent filings remained stable or even increased, indicating a healthy and competitive environment conducive to technological advancement.[21]

Interoperability in Practice

Interoperable standards can be extended to digital platforms. The exact features of how interoperability will look in practice depend on the nature of the digital platform. For example, interoperability applied to Google will differ from interoperability applied to a digital social platform. This paper will focus on a dynamic interoperability standard applied to Twitter. The intuition for how such a standard may look in practice is deceptively simple. In this case, a dynamic interoperability injunction would involve Twitter establishing access rights to its platform for competitors. Such a standard may allow competitors to receive and engage with tweets, likes, and follows. For example, if Meta's Threads adopted this standard, they would be able to like and comment on posts from Twitter using Threads' own platform. Likewise, users of Twitter would be able to engage with posts and creators from threads. Any platform that chooses to adopt the standard could similarly tap into Twitter's network of users (and all other platforms using the standard). Entrants need not concern themselves with network effects. The network externalities and the value they provided to users that were previously contained to a single platform now extend to all participants of the standard.[22] As such, they no longer exist as a barrier of entry to nascent competitors so long as they choose to adopt the standard. Such a remedy would require very few resources compared to the physical infrastructure used to implement the court-ordered interconnections in MCI. Likewise, the upkeep cost would also be substantially lower for the firm compelled to develop such a standard.[23]

[20]Supra note 17

[21]Schnitzer, Monika, Martin Watzinger, and Monika Schnitzer and Martin Watzinger. 2023. "How the AT&T Case Can Inform Big Tech Breakups." ProMarket (blog). February 20, 2023.

[22]Hovenkamp, Herbert. 2023. "Antitrust Interoperability Remedies." Columbia Law Review Forum, January, 1.

[23]Supra note 3

The feasibility of such a standard is not in question. The AT protocol by Bluesky, an interoperable standard that any platform can adopt, provides a commercially successful proof of concept. Still, even with the existence of the AT protocol, critical questions remain. One very foundational question involves determining what features would be core to the open standard. Basic features, such as text posts, follow like and share may be common to the standard as they form the basic backbone of microblogging platforms. However, whether features such as polls, pictures, gifs, or videos constitute a core feature of the standard would face more scrutiny. If too many features are loaded in, it's possible the dominant firm loses the incentive to innovate on the platform in fear that its technology will always be subsumed to the benefit of its competitors. There is also the management of enforcing this standard. If access to the standard is revoked, which dominant firms have every incentive to do on pretextual grounds, it may prove disastrous for competitors. It falls on the court to ensure that disputes and concerns raised by the standard participants can be resolved rapidly to prevent a dominant firm from weakening nascent competitors. Perhaps the most challenging question involves pricing. The courts must determine a fair cost for interconnection that does not chill investment and is not so high as to effectively deny entrants access.

Conclusion

Interoperability is uniquely suited to combat the entry barriers most prominently used by today's largest digital platforms. Whereas divestitures and late-arriving behavioral sanctions might reduce an incumbent's market power, they often leave the incumbent's entrenched network advantages intact, thus continuing to deter new entrants. Interoperability is able to redistribute these externalities to all firms thereby encouraging entry and competition. That said, questions of feature selection, enforcement mechanisms, and pricing fairness remain unsettled. Also, it cannot be understated that interoperability cannot alone introduce competition. Indeed, As Morton et al stress, it is much more likely that interoperability is a necessary but not sufficient requirement for restoring competition. As digital platform markets continue to evolve—and as courts and regulators grapple with competition concerns—these issues underscore the importance of crafting remedies that both promote vibrant market participation and preserve incentives to innovate.

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