

August 20, 2018



United States Federal Trade Commission
Office of the Secretary
600 Pennsylvania Avenue NW, Suite CC-5510
Washington, DC 20580

Re: Competition and Consumer Protection in the 21st Century Hearings, Project Number P181201

Thank you for this opportunity to provide input into the Federal Trade Commission's forthcoming hearings on competition and consumer protection in the 21st century. We commend the Commission for undertaking an open process to evaluate the agency's mandate and responsibilities in the modern world. The internet has had, and continues to have, a transformative impact on our society and our economy. In many ways the legal and regulatory frameworks built decades ago for communications and information systems still serve admirably; but in others, they have fallen short. We welcome this timely public discussion of the many complex elements of promoting competition and consumer protection online.

The Mozilla Corporation produces the Firefox web browser and the family of Firefox products, including Firefox for iOS, Firefox for Android, Firefox Focus, and Rocket, used by hundreds of millions of individual internet users around the world. Mozilla is also a foundation that focuses on fueling the movement for a healthy internet. Finally, Mozilla is a global community of technologists, thinkers, and builders, including thousands of contributors and developers who work together to keep the internet alive and accessible.

Our filing will focus principally on the Commission's oversight over competition in technology and the internet, drawing from the agency's core authority to review proposed mergers and to evaluate single-firm conduct under the Federal Trade Commission Act and the Clayton Act. The need for government engagement to promote competition online is readily apparent today, and the economic consequences of inaction or inadvisable action have never been greater.

The Federal Trade Commission has been a strong leader within the United States government in protecting internet users and promoting competition online, and we encourage that leadership to continue as we enter a new era of challenging market environments and complex business practices. We look forward to working with the Commission and other stakeholders as these discussions progress. We remain at your disposal for any information or clarification of these points or other contributions we can provide.

1. Centralization online is heading in the wrong direction.

Throughout the history of the internet, many have held as a fundamental assumption that today's big companies won't be the same as tomorrow's, because the internet is inherently

disruptive. That assumption can no longer be taken for granted. Today five technology companies—Alphabet (parent company of Google), Amazon, Apple, Facebook, and Microsoft—have all achieved substantial market capitalization, and in fact are often the five largest companies in the world, in any industry, by that measure.¹ Farhad Manjoo in the *New York Times* calls them “[a new superclass of American corporate might](#).”² It seems plausible that they will still have those industry leading positions a decade, even multiple decades, from now.

Big isn't inherently bad, either under competition law or general policy considerations. However, significant competitive problems can arise where software or services with substantial market presence are technically interconnected with other software or services operated by the same business—vertical integration in competition terms, typically powered in the internet context through the exchange of data and/or the remote calling of services through Application Programming Interfaces (APIs). Several high-profile mergers over recent years have increased the number of vertically integrated businesses even further.³

Vertical mergers that involve large user bases at one part of a stack of technologies pose a particular risk of competitive harm because of the nature of these combinations. In this context, the harm arises where future innovation in one layer or a subset of layers in the vertical stack becomes impeded by the practical necessity of functional integration with a key technology (often but not necessarily a “platform”) anchoring that stack. To put it more bluntly, new and superior services could be squashed by inferior competitors who receive special technical treatment by one or more platforms (perhaps because they're operated by the same business), conferring advantages through their superior integration that can become quasi-permanent given the difficulty of reverse-engineering interoperability into established technology stacks. Investment dollars and market entry into that sector then decline and disappear, resulting in a permanent loss of user choice and competition.

APIs are the fundamental connective tissue of the internet.⁴ They're also a powerful tool for efficient, rapid scaling market entry, when a new app or service developer can reach users through existing APIs offered by platforms that have already achieved significant economies of scale. Yet, platform operators that have already hit a critical mass (and are thus less dependent for network effects on interconnection with others) face natural incentives to restrict the use of APIs by third parties. Some of these incentives are anti-competitive in intent and effect, for example if a platform operator obstructs a downstream market of services to its own detriment in order to prevent the growth of an emergent competitor. Others are driven by privacy and security concerns, for example shutting down third-party access to user data via an API rather

¹ Quarterly rankings of top ten publicly traded companies by market capitalization worldwide, from Wikipedia: https://en.wikipedia.org/wiki/List_of_public_corporations_by_market_capitalization

² Farhad Manjoo, “Tech Giants Seem Invincible. That Worries Lawmakers.” *New York Times* (Jan. 4, 2017), at:

<https://www.nytimes.com/2017/01/04/technology/techs-next-battle-the-frightful-five-vs-lawmakers.html>

³ Facebook's mergers with Instagram and WhatsApp, and Microsoft's with LinkedIn, are illustrative examples.

⁴ See Michael Bock, “WTF is an API? How the Internet Works Behind the Scenes”, *Hacker Noon* (Jan. 20, 2015), at: <https://hackernoon.com/apis-how-the-internet-works-behind-the-scenes-690288634c32>

than investing resources to determine how best to design the API and its policies and access controls to facilitate effective interconnection while also protecting privacy and security (and undertaking some risk of getting that balance wrong).

Many companies are already scaling back their API offerings. Facebook, most notably, has made [major changes](#) in the wake of the Cambridge Analytica scandal.⁵ Some of these changes, such as Facebook’s [deprecation of “publish_actions”](#),⁶ have had significant and detrimental impact for [smaller, independent](#) technology projects.⁷ This trajectory carries the internet ecosystem in the opposite direction of a decentralized, competitive future.

2. Existing metrics and tools are insufficient to promote competition.

As noted, a platform operator may have many different reasons for limiting or deprecating public APIs, including the legitimate protection of privacy as well as the natural evolution of technology such as replacing an older API with an improved approach. But it’s unclear what mechanism, process, or authority can be invoked to challenge harmful practices regarding APIs. The Federal Trade Commission would be a sensible regulator to consider such a claim. The Department of Justice and private right of action also represent viable sources of potential legal authority.

Traditional antitrust metrics used to evaluate potential harm will struggle to measure the effects of API decisions. They depend on cognizable market definitions, a challenging task in the fluid world of modern technology. They often focus on user-facing prices, which makes little sense with so many services offered free to the user and supported by advertising. And they struggle to measure the [impact of innovation](#) and the lost economic benefits of foreclosed innovation.⁸

The most plausible worst-case scenario for the future of the internet is a market in which users choose from among a few silos of technology stacks, fully vertically integrated with no interoperability across them. If the choice we face as consumers was solely among single-firm, homogenous internet companies rather than the heterogenous experiences we can choose today, what would antitrust law think? The only cognizable “market” would be something like “internet services”, and we could have five companies at roughly 20% market share each (give or take). The HHI measure for that market would be 2000—far short of the threshold for significantly concentrated. It might qualify as a competitive market, and market forces would presumably work to keep the price of the package low; but it certainly wouldn’t be the internet.

⁵ Josh Constine, “Facebook restricts APIs, axes old Instagram platform amidst scandals”, *Tech Crunch* (Apr. 4, 2018), at: <https://techcrunch.com/2018/04/04/facebook-instagram-api-shut-down/>

⁶ Josh Constine, “Facebook shuts down custom feed-sharing prompts and 12 other APIs”, *Tech Crunch* (Apr. 24, 2018), at: <https://techcrunch.com/2018/04/24/facebook-api-changes/>

⁷ See “What happened to Facebook”, *Bridgy*, at: <https://brid.gy/about#rip-facebook>; and “[Publish] Facebook Profiles can no longer be connected to Buffer Publish”, *Buffer*, at: <https://faq.buffer.com/article/985-publish-facebook-api-changes>

⁸ Kevin W. Caves and Hal J. Singer, “When the Econometrician Shrugged: Identifying and Plugging Gaps in the Consumer Welfare Standard”, *George Mason Law Review*, 2018, available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3205518

The technology sector is significant for many reasons, but the sheer size of the biggest businesses, and the 2-sided nature of many of the markets, do not fundamentally distinguish the internet from other industries, which also have big businesses and 2-sided markets. One unique feature of tech in the context of competition is the nature of the vertical integration of distinct and interconnecting digital services, and the fine-grained ability to control that interconnectivity through product and business decisions around integrating code bases and offering APIs—and how the outcomes those decisions can produce run counter to long-standing assumptions of interoperability and openness on which the internet was built. Even before the term platform came into common parlance, that was how tech was designed—not in the two-sided market economic sense, but from the technical perspective that software and services are often built on top of other software and services built by others, relying on well-settled norms of openness and the mutual benefits of interoperability. Unfortunately, those norms are no longer settled, nor the mutual benefits guaranteed, in the digital economy prisoner’s dilemma we have today.

Another unique feature of the internet economy is the role played by data, including data collected from users and data generated about them. Some European competition authorities have taken the position that data itself can indicate market power.⁹ Data can improve the quality of a service and the revenue that it can generate in ways that may be impossible to replicate without achieving a comparable data set. Compared to number of users as a measure of size, data is potentially far more robust. When users leave the network, their data and the power that comes with it may stay behind, particularly as a component of aggregated data powering improved machine learning.

Market definitions, user-facing prices, the role of data, and the benefits of innovation all contribute to challenges faced by competition regulators charged with evaluating corporate mergers and single-firm conduct in the tech sector through the lens of advancing consumer welfare. Against this backdrop, the toolkit of potential interventions must be broadened.

3. Interoperability is a powerful, ready-to-use key to unlock competition in the tech sector.

Alongside existing remedies, the Commission should consider how it can incorporate interoperability into its toolkit. In particular, interoperability may prove to be a useful tool to address harms arising from vertical mergers that involve one more more significant digital platforms, and should also be considered in the review of single-firm conduct where specific business actions or practices impede effective interoperability in a manner that harms consumer welfare.

In the vertical merger context, interoperability plays a factor in considering how the merging companies are likely to intersect their operations. Where both companies offer software or services that are capable of being technically integrated in the sense of sharing data or

⁹ Bruno Lasserre and Andreas Mundt, “Competition Law and Big Data: The Enforcers’ View”, Italian Antitrust Review (2017), available at: https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Fachartikel/Competition_Law_and_Big_Data_The_enforcers_view.pdf?__blob=publicationFile&v=2

functionality, the manner of that integration may change following a merger. Perhaps before the merger there is no effective integration, or there may be transparent, third-party accessible public APIs offered by the respective parties to allow for the integration. The combined business units will certainly explore efficiency and value benefits that could be derived by increasing the degree of integration, whether through new APIs, new data or functionality for existing APIs, or through the more laborious task of integrating code bases.

In practice, greater technical integration post-merger is likely to occur via the creation of new, private APIs made available only to the other party. Private APIs have their place in the overall technical ecosystem, but they offer limited interoperability, by design. However, they create an opportunity for effective, targeted, pro-competitive merger intervention: require APIs developed for or made available to the other merging party to also be made available to third parties under fair, reasonable, and nondiscriminatory terms and conditions. Such a constraint ought to impose minimal or no limitations on the merging parties' abilities to realize the efficiency benefits of the merger; however, those benefits can imbue to third parties at the same time, resulting in a greater economic output.

Single-firm conduct practices regarding APIs represent a similar, though somewhat murkier, view into the relationship between competition and interoperability. Where a platform shuts down an existing API, limits the data and/or functionality made available through the API, or changes the terms or policies associated with use of the API, the outcome of the decision may be a substantial net reduction in consumer welfare. Again, many of these actions are motivated by legitimate interests including privacy and security considerations; but the potential and the incentives exist for anti-competitive practices as well. The Commission should make clear its authority to receive complaints from parties affected by a change to a platform's APIs, and to review and sanction platform operators who engage in such anti-competitive practices.

The question of "what" lingers over the principle of interoperability: What data and/or functionality must be included in order to reach a standard of effective interoperability? The answers to this question are very context-specific based on the products of the two interoperating parties, and the policy consequences of erring on either side of the balance can be significant—restricting competition and innovation in one direction, and potentially putting privacy and security at risk in the other. There's no general articulation of sufficiency that could cover all use cases. But all would be covered by the same basic principle: enable effective interoperability while preserving user control.

That principle was not met in the original version of Facebook's Graph 1.0 API.¹⁰ Users did not have effective control over how their information was made available via Facebook's APIs, and the consequences of that poor design led to substantial data breaches and high-profile Congressional inquiry. But the reaction to the Cambridge Analytica controversy must not be to

¹⁰ For context on problems with the Graph 1.0 API, see, e.g., Jonathan Albright, "The Graph API: Key Points in the Facebook and Cambridge Analytica Debacle," at: <https://medium.com/tow-center/the-graph-api-key-points-in-the-facebook-and-cambridge-analytica-debacle-b69fe692d747>

shut down the offering of core data and functionality necessary for effective interoperability, or competition will suffer greatly.

Fortunately, competition authorities have a long history of working case-by-case to interpret and apply high-level principles. Technical and economic expert input in the context of specific mergers or single-firm conduct can help the Commission make individual determinations as to how best to promote interoperability and competition.

Interoperability is a related concept to data portability.¹¹ While both promote user choice and competition, they do so in different ways and to different effect. Interoperability depends on real-time exchanges of data and functionality with digital platforms; in that sense, while a user may face broader choices of interfaces and applications to communicate, they would still be exchanging data with the original platform and thus be beholden to it. Data portability, in contrast, is designed to extract the key elements of a user's experience in a manner that can free the user entirely. Both have their appeal, but as a tool to promote competition, data portability is limited in a world of network effects. Other services must acquire a minimum viable threshold of users to scale network effects enough to be true competitors to existing platforms, and the advantage of existing services is tough to overcome when their user counts number in the billions. Interoperability mitigates this advantage by allowing users of one service to reach users of another, and thus benefit from the other platform's scale and network effects.

4. Agency processes can be faster and more targeted than litigation.

High-profile antitrust enforcement actions, in the American legal system, proceed through litigation before the federal courts, brought either by the government or by private parties. The scale of the effort that goes into these trials is staggering, requiring many years and substantial resources to prosecute. This timetable is notoriously inconsistent with the internet—generations of technologies are dreamed of, implemented, deployed, and acquired or shut down during the course of such a process. If a tech competitor requires an antitrust victory in court to survive, they need unusual funds and patience to see the course.

Certainly such large-scale interventions have played a significant role in the history of antitrust in tech, and will again in the future, when cases can be brought. And a private right of action, in particular, serves as a powerful check on potential political obstruction. But as a complementary piece, the Commission has the potential to engage in competition investigations and set out guidelines and policies on a far more rapid timetable. Norms and best practices can have a very substantial impact on industry behavior, particularly against a backdrop of heightened public awareness, and with the hammer of full antitrust enforcement looming alongside. We encourage the Commission to consider how its investigatory procedures and processes can be conducted most efficiently and with most impact for the ecosystem as a whole.

¹¹ For more on this distinction, see Chris Riley, "Using interoperability for horizontal competition and data portability," at: <https://medium.com/@mchrisriley/using-interoperability-for-horizontal-competition-and-data-portability-6706906ce699>

The Commission also has a unique institutional capacity to engage technologists in its work. Although more historically engaged on the consumer protection side of the agency's technology work prosecuting digital privacy and security issues, understanding the inner workings of complex technologies to make effective determinations as to the harms that could result from their greater integration in the course of a merger, or to evaluate single-firm practices that affect downstream markets, is just as critical. The Commission should expand its use of technologists in competition cases, and invest further in grounding its work in deep technical understanding.

5. Changes to law, policy, and practice regarding internet competition should be grounded in technology and built to benefit all internet users and businesses.

Antitrust in the United States is on the verge of change, with calls for action coming from many corners including advocacy organizations, think tanks, academics, major national media, and high ranking political officials.¹² Meanwhile, European officials in the European Union and several member states show no hesitation to intervene and are setting norms for competition. Change of some form seems inevitable.

The Commission must consider the impact of any changes to established antitrust law and policy on technology and the internet ecosystem. We encourage the Commission to consider in particular effects on smaller companies and non-traditional technology development, not merely the most visible market players. And we urge the Commission to ground policies and practices relevant to the internet in a thorough technical understanding of that ecosystem, and work to support, not stymie, the internet's fundamental characteristics of openness and interoperability.

We are pleased to see the Commission seek broad comment from stakeholders at such an important point in time. The Commission has a key role to play in overseeing the tech industry on both consumer protection and competition grounds, for the long-term benefit of the entire ecosystem, including the internet's users and small businesses. We would be pleased to continue discussing these critical issues.

Sincerely,



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¹² For more on these calls and their context, see Chris Riley, "Antitrust and its discontents," at: <https://medium.com/@mchr isriley/antitrust-and-its-discontents-88f3ed80130a>