INTEROPERABILITY AS A LENS ONTO REGULATORY PARADIGMS

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As the world increasingly considers antitrust as a tool for governing and shaping large internet companies, we ask whether traditional antitrust analysis and remedies are well-suited to current regulatory challenges. We examine interoperability as a potential remedy, suggesting that a proper understanding of its objective and outcome is greater diversity of user experience and an increase in user agency rather than direct improvements in more traditional price or access metrics. Regulating interoperability from that perspective will involve practical challenges in balancing effectiveness with clarity of obligation. As a result, new models of co-regulatory governance including extensive engagement from all stakeholders should be explored.
Throughout the early days of the internet ecosystem, antitrust was rarely used as a means of investigating allegations of harm from a single company. In the late 2010s, that began to change. In the European Union, antitrust actions were brought against Google, Facebook, Apple, and Amazon, followed by the United States with federal and state antitrust suits against both Google and Facebook. Academic and government studies in the United States, the United Kingdom, and the European Union have now led to major legislative proposals: the Judiciary Committee report in the House of Representatives, the Final Report of the Competition and Markets Authority in the UK, and the EU’s Digital Markets Act. These proposals aren’t focused solely on the mechanics of antitrust litigation, but rather include new theories of harm and new obligations for companies perceived to be operating as anticompetitive gatekeepers beyond the boundaries of traditional single-firm monopoly injury. Interoperability is among these obligations, and examining it in depth reveals deeper underlying tensions in how regulators are viewing the internet market today. The push for greater interoperability shows the limits inherent in understanding the internet ecosystem through traditional regulatory paradigms.

Interoperability is best understood as something quite different from traditional antitrust. While it bears some similarity to the essential facilities doctrine, it simultaneously bears a resemblance to communications regulatory frameworks and common carrier expectations, like must-carry and the obligation to offer interconnection on reasonable terms. Neither of these paradigms fit perfectly, though, and creative thinking and care will be needed when governments intervene to advance interoperability.

The core objective of this article is not to engage in the merits of interoperability as a policy objective; rather it is to explore the tensions that arise between interoperability and regulatory paradigms. This includes differences in the promoted values as well as the challenges of achieving the clarity necessary for existing regulatory paradigms to succeed. These complexities in applying traditional regulatory structures coupled with conditions that change at the pace of technology counsel in favor of two precautionary principles: restraint in the adoption of ex ante restrictions on specific behavior and a flexible, iterative approach to applying remedial regulation. In service of both caution and iterative flexibility, multi-stakeholder engagement could add value in the near term, in particular through a collective effort that includes the contributions of industry, civil society, and government actors. Such engagement could help develop a better understanding of challenges to, and opportunities to improve, interoperability and a meaningful diversity of online experiences.

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2 The Microsoft case in the 1990s is the exception that proves the rule. The Department of Justice ultimately settled its anti-monopoly suit against Microsoft in a settlement approved on appeal to the U.S. Court of Appeals for the D.C. Circuit. United States v. Microsoft Corporation, 253 F.3d 34 (D.C. Cir. 2001).


10 Competition and Markets Authority, Online platforms and digital advertising market study, CMA CASES (July 1, 2020), https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study#final-report.


I. THE INTERNET DOESN’T FIT WELL WITH EXISTING REGULATORY PARADIGMS

The concept of interoperability harks back to the earliest days of communications networks. Interoperability is the characteristic of telephone systems that ensures phone calls can be placed between customers of different carriers within the United States, and between customers in the United States and the United Arab Emirates. But interoperability as a principle is broader and more fluid than the sometimes narrow technical definitions used to characterize it. In practice, internet services “interoperate” whenever they exchange information, a process that can take place either through shared communications protocols (languages and formats, such as Internet Protocol or “IP”) or through asymmetric one-way interfaces known as Application Programming Interfaces (“APIs”) or other means. Traditional network engineering tends to refer to interoperability to mean specifically the former, the use of a shared static language by multiple services, such as email. However, public policy conversations embrace both shared protocols and APIs under the umbrella of interoperability,\(^{15}\) and in this article “interoperable” means the broader concept.

The internet is something new against the history of interoperability as a remedy for problems involving competition,\(^{16}\) and yet it is still generally examined through old frames of reference. Large, successful businesses engage in actions perceived by smaller competitors to limit market entry and fair competition, who then raise antitrust concerns. While antitrust is not irrelevant, it doesn’t tell the full story, and the antitrust toolkit may well not have the right metrics or remedies to evaluate and redress the underlying harms.\(^{17}\)

Take structural separation, which is a powerful intervention with rising calls for use in tech. Often, advocates for structural separation continue to follow the logic of industrial supply chain integration and concentration, advocating, for example, for the reversal of historical mergers of companies with different user-facing services such as Facebook and Instagram.\(^{18}\) From a classic corporate mergers perspective, this is logical. And in the context of an action filed under current law, it is the logical remedy to put in the complaint.

At the same time, an entirely different concept of structural separation is equally viable: popular user-facing internet services seamlessly integrate components that feel like infrastructure or basic services — such as cloud computing — with end-user facing social and retail experiences. In some circumstances separating these components would lead to the most potential for encouraging competition across different levels of the internet’s modern stack of services. Technical segregation is quite different from splitting two combined corporate structures each of which contained integrated infrastructure and end-user facing components prior to merging. Neither type of separation is necessarily better or more apt from an antitrust perspective; however, casting both of them as “structural separation” illustrates the challenge of applying traditional logic to the modern internet, as well as the possibility that optimizing for technical and for economic ends might lead to different conclusions.

No matter which approach to structural separation one takes, both boil down to reshuffling market participants in the hopes that competing with each other will force them to offer better consumers a more palatable consumer product. In the tech industry, though, where the advertising revenue model is overwhelmingly dominant, none of this reshuffling changes the incentives of digital platforms. Even medium-sized platforms tend toward lock-in, optimize for advertising dollars instead of privacy, and provide only desultory or self-serving interoperation. When applied to the tech sector, competition law is founded on the theory that it is better for a hen to be eaten by a pack of coyotes than by a lone wolf.

The problem is that antitrust is mostly about the power of market participants. Government intervention changes the amount of power held by different companies, but these interventions happen far from the consumers that regulation tries to protect. Competition analysis assumes that shifting the balance of power between competitors will trickle down to benefit consumers. Too often, though, competitive concerns simply don’t apply to the problems that consumers want to solve.

In addition to the principles and practices of competition intervention, some commentators look to communications regulations for inspiration. Such regulations function, in part, by accepting the market positions of incumbents who offer communications services. They mitigate the


\(^{16}\) See, e.g. the final judgment in the DOJ’s Microsoft suit, which required disclosure of APIs. Department of Justice, *Second Revised Proposed Final Judgment: U.S. v. Microsoft Corporation*, https://www.justice.gov/atr/second-revised-proposed-final-judgment-us-v-microsoft-corporation-0.


potential for harm through specific structural and behavioral obligations derived from classical common carriage principles. While less frequent than calls for competition reform, such utility regulation is considered at times for application to the internet under a similar spirit. Often, these calls relate to the perception of bias in the operation of online services, a perception that is widely held though not supported by clear evidence. It is difficult to find strong, thorough arguments for applying common carriage to large digital platform businesses. One reason for this lack is that, like traditional competition frameworks, common carriage access analysis is often a poor lens through which to view modern internet services.

II. DIVERSITY OF EXPERIENCE IS A NEW GOAL, AND INTEROPERABILITY HELPS

First and foremost, competition is a tool for improving quality and reducing the consumer-facing price of products and services. Common carriage, on the other hand, focuses on improving access for users and for broader interconnectivity. On the internet, meanwhile, prices are low and every service dreams of scaling to a billion users. The internet is an ecosystem of high-quality, low-or-no-cost goods, with substantial openness and readily available access. Certainly, there may be room for improvement but the intensity and urgency of calls for reform would be unsubstantiated if they were grounded in objections to consumer-facing costs or lack of access to existing products.

The divergence in principle here comes about because the driving value for interoperability in particular, and possibly for other forms of gatekeeper restrictions, is a desire for diversity. In this context, diversity means a diversity both of voices and venues with different providers offering different experiences that serve different user preferences and collectively offering real options and meaningful agency to choose among them.

From this perspective, the biggest problem with the internet today isn’t the size of major services per se, nor the number of people who shop at Amazon or use Facebook to connect with friends and family. Similarly, it’s not a challenge of protecting user access to new services or ensuring they can conduct their businesses over the internet. Rather, problems arise when individual internet users feel constrained agency — when they feel like they are forced to use certain services, and unable to take advantage of a true diversity of experiences. Those constraints pinch especially hard when users find themselves locked into services they perceive as selling their privacy, restricting their speech, invisibly steering them to certain content, and encouraging discord.

At some level, the size of internet giants has translated into effective ubiquity. That ubiquity is reinforced with two different kinds of lock-in: network effects (where the value of a service grows geometrically with increased use by virtue of increased connectivity) and switching costs (the practical effort required to port various data and communications pathways to new services). Interoperability offers the potential to help with both of these lock-in factors as an efficient pathway to promoting diversity. Interoperability builds on the ubiquitous presence of existing services while enabling the creation and operation of new downstream services that can provide end users with different social and retail experiences that are nevertheless connected to critical networks and functions.

This functionality presents a new kind of goal. In particular, it doesn’t seek to rearrange the underlying networks and infrastructure as traditional competition intervention would, although it can limit the ability of those services to internalize all of their downstream benefits.

For reform advocates, applying and extending traditional competition regulation frameworks to stretch towards this new goal might be the fastest and most politically viable route to regulatory progress. Such frameworks would succeed at keeping prices low and maintaining wide

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19 In a recent concurrence, Supreme Court Justice Thomas wrote, “There is a fair argument that some digital platforms are sufficiently akin to common carriers or places of accommodation to be regulated in this manner.” Bielen v. Knight First Amendment Institute at Columbia Univ., 593 U.S. ____ (2021) (Thomas, J., concurring). See generally John Bergmayer, What Makes a Common Carrier, and What Doesn’t, PUBLIC KNOWLEDGE (January 14, 2021), https://www.publicknowledge.org/blog/what-makes-a-common-carrier-and-what-doesnt/ (theorizing that common carrier regulations make more sense the more proximate a service is to infrastructure). Note that no commentator has given the argument for common carriage full retreatment, though some have taken it up to refute it.

20 Paul M. Barrett & J. Grant Sims, False Accusation: The Unfounded Claim that Social Media Companies Censor Conservatives, NYU STERN CENTER (February 2021), https://bhr.stern.nyu.edu/bias-report-release-page.

21 See, e.g., David Morar & Chris Riley, A guide for conceptualizing the debate over Section 230, BROOKINGS TECHSTREAM (April 9, 2021), https://www.brookings.edu/techstream/a-guide-for-conceptualizing-the-debate-over-section-230/ (describing a lack of meaningful agency as one of the problems motivating calls for Section 230 reform).

22 See Kashmir Hill, I Cut the ‘Big Five’ Tech Giants From My Life. It Was Hell, GIZMODO (February 7, 2019), https://gizmodo.com/i-cut-the-big-five-tech-giants-from-my-life-it-was-hell-1831304194 (focusing on the technical ubiquity of services, including back-end infrastructure, in online life, and the difficulty of removing all traces of connectivity from large companies).

23 Cory Doctorow, Why it’s easier to move country than switch social media, WIRED (April 12, 2021), https://www.wired.co.uk/article/social-media-competitive-compatibility.
access to products and services. Those frameworks, in other words, are meant to solve problems that don’t currently exist. At the same time, they are not a great fit for the new challenges facing the internet ecosystem. The analysis they foster has too little to say about achieving a diversity of online experiences.

None of this is to say the old frames and regulations must be rejected categorically. Antitrust remains a useful hammer, and the regulatory toolbox would be poorer without it. Yet, that toolbox needs other tools and must be smarter and more diverse than a box of hammers. To get there, more “net-native” theories of governance are needed, grounded in a vision of providing individual internet users with the power to choose among a diversity of online experiences. Interoperability might be exactly the right tool for the purpose if approached through new paradigms.

III. REGULATION IS HARD

In many circumstances, interoperability is a positive for the platforms that implement it, and requires no intervention to be maintained. Offering effective interoperability can be a valuable prerequisite for gaining scale when services are new and have not yet attracted a critical mass of users, as it encourages the creation of new user value between the service and existing popular services and platforms. However, large and vertically integrated platforms often face different incentives, in that the positive externalities generated from interconnection are easier to internalize when they develop or acquire their own downstream services as opposed to third party offerings.24

Many reform advocates view the status quo of interoperability as insufficient25 and call for proactive, mandated interoperability on a going-forward basis. Typically viewed as a complement to economic remedies within the traditional domain of antitrust law, such as changes to standards for merger review, interoperability as a competition remedy would require internet services of various forms to make technical interfaces to their systems available to third parties, often explicitly under fair, reasonable, and nondiscriminatory terms and conditions.26

However, the design and implementation of an interoperability legal remedy is not an exercise to take lightly.27 It’s not technically feasible to determine today what specifically must be done, both now and in the future, for a platform to be considered to be offering sufficient interoperability. Early interoperability legislative attempts in the US and Europe have by and large recognized that when it comes to regulation, it’s not clear yet how and when to apply interoperability requirements. The Senate’s 2019 ACCESS Act delegates the Federal Trade Commission to undertake a rulemaking process to consider interoperability obligations in more depth.28 The European Commission’s Digital Markets Act similarly places interoperability-related obligations for gatekeepers into its category of rules “susceptible of further specification.”29

Traditional regulatory models, particularly in the American legal context, must describe specific actions required of companies. This description must be sufficiently clear that businesses can take these actions with confidence with no need to seek specific review or permission from a government agency. Such a standard is difficult if not impossible in the broad and constantly evolving tech sector. Specifying particular interoperability outcomes is virtually certain to be either over- or under-inclusive, even if done sector by sector such as by starting with messaging services only, for instance. Solutions will inevitably over-restrict behavior in ways that limit flexibility, innovation, and growth. Alternatively, restrictions will leave gaps that prevent third parties from realizing sufficient opportunities for value generation in the face of first party advantages.

24 A good example of this in action is Twitter’s shift over time from a platform that welcomes third-party clients to one that restricts them. See, e.g., Yoel Roth and Rob Johnson, New developer requirements to protect our platform (July 24, 2018), https://blog.twitter.com/developer/en_us/topics/tools/2018/new-developer-requirements-to-protect-our-platform.html.


28 ACCESS Act of 2019 sponsored by Warner (D-VA), Hawley (R-MO), and Blumenthal (D-CT), introduced in Senate October 22, 2019.

Deferring on details to subsequent processes and potentially to adaptive regulatory bodies that can make changes as technical circumstances change could help with the concerns of an overly rigid framework. However, deferring clarity in obligation risks a lack of clarity for platforms required to provide robust interoperability as well as a lack of clarity for downstream services seeking to build with reliance on forward-looking interoperability. And politically, even as a transatlantic convergence develops to include shared principles for government intervention such as the promotion of interoperability, the deferral of details means uncertain outcomes and thus uncertain alignment between the rules established in the United States, United Kingdom, and European Union.

One conservative approach to tackle this challenge would be to take advantage of the natural market dynamics of interoperability, and assume that the initial state of an API or other interoperability interface is sufficient when it is introduced. The focus of regulation could then shift to the review of subsequent changes to such interfaces that have the effect of restricting or limiting interoperability. Under this theory, it may prove sufficient to give government actors authority to hear complaints by competitors that a change to an API or other interface is anticompetitive, and to perform case-by-case evaluations (with the capability to investigate internal corporate justification and analysis), rather than engage principally in proactive rulemaking. This approach is unlikely to satisfy reform advocates calling for more forward-looking mandates for interoperability, and particularly for those concerned by the current practices of large services perceived to be dominant gatekeepers. It has the advantage, though, of nudging large, mature services to interoperate more like they did when they lacked the lock-in advantages of network effects and high switching costs.

For forward-looking interoperability mandates in particular, it will be important to resolve concerns that effective enforcement may require extensive new government resources and intervention. Some amount of monitoring for potential violations must be assumed to be privatized, and this can happen without limiting the impact of remedies. In other words, if an API isn’t offering effective interoperability in practice, but its limitations are not actually felt by any third parties to a degree where they raise complaints, perhaps the lack of interoperability does not justify government involvement.

**IV. MULTI-STAKEHOLDER ENGAGEMENT IS THE NEXT STEP**

This paper suggests two shortcomings in current conversations around interoperability, first that the legal system currently lacks the right tools and remedies to reach optimal outcomes and second that interoperability must be understood and framed beyond the bounds of competition in its traditional interpretation. Beyond that, many possibilities remain for how to make progress. These possibilities should be explored further through multi-stakeholder engagement that yields narrowly-tailored remedies susceptible to flexible, iterative improvement.

Phil Weiser, now the Attorney General of Colorado and leading one of the active antitrust lawsuits against Google, in his earlier career as a law professor examined the use of interoperability as a component of the remedy in two historical antitrust contexts: AT&T and Microsoft. In the case of AT&T, forward-looking compliance was implemented through an equal access requirement for competing long-distance competitors, designed to be enforced by the Federal Communications Commission. In contrast, the Microsoft case resulted in direct ex ante judgment regarding future conduct towards “middleware” platforms, essentially leaving future compliance to self-executing practices.

These cases were complex, and the complexities of the technical interconnections and business entanglements of the internet have only grown since then. As Weiser put it: “the antitrust remedial challenges of the future are likely to require more creativity, including the use of standard-setting bodies, than courts and enforcers have used to date.” Indeed, there is ample room and need for more creativity in regulation and enforcement, building on the historical success of standards processes such as the W3C and IETF in articulating and developing rules established in the United States, United Kingdom, and European Union.

31 Phil Weiser, Regulating Interoperability: Lessons from AT&T, Microsoft, and Beyond, 76 ANTITRUST L.J. 271 (2009), https://scholar.law.colorado.edu/articles/454/.
32 Id. at 275-79.
33 Id. at 284.
34 Id. at 303. For purposes of this article, the prescience of Weiser’s identification of the need for creativity outweighs the limitations of his chosen framing around antitrust.

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technical solutions that work for a range of stakeholders (although those bodies focus principally on the development of shared protocols rather than asynchronous interoperability). In particular, standards governance is designed around multi-stakeholder engagement to produce cautious, iterative improvements that reflect realistic industry conditions and promote interoperation. Whether within standards bodies or in other organizational structures, multi-stakeholder processes could help craft evolving codes of openness as a contribution to, or even substitute for, regulatory processes to promote interoperability.

While it targeted a different subject matter, the European Union’s experience with the Code of Practice on Disinformation may also prove informative here. In that process, the Commission worked directly with platforms to develop mitigation practices for the spread of disinformation, with an implicit “sword of Damocles” of intrusive regulation always present in the background. The result was a set of officially voluntary commitments that, although perhaps not perfect nor perfectly implemented, approached a very opaque policy problem and delivered measurable improvements while retaining flexibility in how exactly they achieved those results.

Similarly, in the context of interoperability, a collective effort to develop commitments from industry could allow effective tailoring of solution engineering to specific technologies and services, and could transform a difficult government challenge of developing thresholds of good behavior into an easier (though still not easy) challenge of measuring company compliance with commitments. Clear authority and resources for the Federal Trade Commission would help meet that challenge, together with the forward-looking power to adopt specific mandates if and to the degree that they become obvious (as a result of the multi-stakeholder process) or necessary (as a result of ongoing market activity), without enshrining in statute any specific obligations or immediate requirements to adopt new mandates.

Finally, for all that traditional frameworks of competition analysis match poorly with the current tech landscape, it may be possible to ground new approaches in old law. For example, lock-in structures that unduly restrict users can be an “unfair practice” and interoperability for diversity of experience could be a way to address consumer harm. Traditional competition regulation frameworks are grounded in the assumption that competition solves all problems, but statutory authority is much less prescriptive.

Politically, the internet is swinging on a pendulum between two extremes: first towards hands-off self-governance and second towards regulatory intervention that specifies particular business practices or outcomes. Neither extreme adequately facilitates responsible, transparent, adaptive innovation and growth. The opportunity is ripe to explore effective co-regulatory governance that creates incentives for an accountable tech industry, even at scale, that provides users with tremendous agency to create a diversity of experience, but without paternalism or undue ex ante restriction. Interoperability may be a compelling test case for such an approach. But it will be hard to think outside the box of hammers if the analysis remains mired in viewing modern internet challenges through classic regulatory frames.


39 For example, the first annual self-assessment of signatories to the Code highlighted greater joint efforts between platforms and other stakeholders including researchers and civil society as well as greater awareness and adoption of the Code and its commitments; though the assessment also noted lags in actions to empower users as well as asymmetries and gaps in the provision of data and search tools to researchers. European Commission, Annual self-assessment reports of signatories to the Code of Practice on Disinformation 2019 (October 2019), https://digital-strategy.ec.europa.eu/en/news/annual-self-assessment-reports-signatories-code-practice-disinformation-2019.

40 An example of an effort that approaches industry from this angle is Ranking Digital Rights, which coerces companies into transparency, then uses that transparency to coerce them toward protecting the rights of users.
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