

Regulating the Metaverse: Putting the Meta-Cart Before the Meta-Horse

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**European Commission Call for Evidence, ‘Virtual Worlds
(Metaverses) – A Vision for Openness, Safety and Respect’**

Comments of the International Center for Law &
Economics, 3 May 2023

Introduction

We welcome the opportunity to comment on the European Commission’s call for evidence on “Virtual worlds (metaverses) – a vision for openness, safety and respect.”¹

The metaverse is an exciting and rapidly evolving set of virtual worlds. As with any new technology, concerns about the potential risks and negative consequences that the metaverse may bring have moved policymakers to explore how best to regulate this new space.

In its call for evidence, the commission suggests that preemptive regulatory steps may be needed to avoid the metaverse becoming “a more closed ecosystem with the prevalence of proprietary systems and gatekeepers.”² But this diagnosis rests on dubious premises.

From the outset, it is important to recognize that simply because the metaverse is new does not mean that it is unregulated. Existing regulations may not explicitly or exclusively target metaverse ecosystems, but a vast regulatory apparatus already covers most aspects of business in virtual worlds. As we explain in greater detail (**Section I**), this includes European competition law, the Digital Markets Act (“DMA”), the General Data Protection Act (“GDPR”), the Digital Services Act (“DSA”), and many more. Before it enacts any new rules, the commission should carefully consider whether there are any metaverse-specific problems not already addressed by these legal provisions.

This sense that the metaverse is already adequately regulated is reinforced by two important factors.

The first is that competition appears particularly intense in this space (**Section II**). There are currently multiple firms vying to offer compelling virtual worlds. At the time of writing, however, none appears close to dominating the market. In turn, this intense competition will encourage platforms to design services that meet consumers’ demands, notably in terms of safety and privacy. Nor does the market appear likely

¹ *Virtual Worlds (Metaverses) – A Vision for Openness, Safety and Respect*, EUROPEAN COMMISSION, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13757-Virtual-worlds-metaverses-a-vision-for-openness-safety-and-respect/feedback_en?p_id=31962299H (hereafter, “Call for Evidence”).

² *Id.*

to fall into the hands of one of the big tech firms that command a sizeable share of more traditional internet services. Meta notoriously has poured more than \$3.99 billion into its metaverse offerings during the first quarter of 2023, in addition to \$13.72 billion the previous calendar year.³ Despite these vast investments and a strategic focus on metaverse services, the company has, thus far, struggled to achieve meaningful traction in the space.⁴

Second, the commission's primary concern appears to be that metaverses will become insufficiently "open and interoperable".⁵ But to the extent that these ecosystems do, indeed, become closed and proprietary, there is no reason to believe this to be a problem. Closed and proprietary ecosystems have several features that may be attractive to consumers and developers (**Section III**). These include improved product safety, performance, and ease of development. This is certainly not to say that closed ecosystems are always better than more open ones, but rather that the commission is wrong to assume that one model or the other is optimal. Instead, the proper balance depends on tradeoffs that markets are better placed to decide.

Finally, timing is of the essence (**Section IV**). The commission's call for evidence appears to assume that, by acting preemptively, it can shape the metaverse industry according to its idiosyncratic preferences:

It is crucial for the EU to be present in the development of virtual worlds and their governance, and lead the way through important challenges

³ Jonathan Vaian, *Meta's Reality Labs Records \$3.99 Billion Quarterly Loss as Zuckerberg Pumps More Cash into Metaverse*, CNBC (Apr. 26, 2023), <https://www.cnbc.com/2023/04/26/metaverse-reality-labs-unit-records-3point99-billion-first-quarter-loss.html>.

⁴ Alan Truly, *Horizon Worlds Leak: Only 1 in 10 Users Return & Web Launch Is Coming*, MIXED NEWS (Mar. 3, 2023), <https://mixed-news.com/en/horizon-worlds-leak-only-1-in-10-users-return-web-launch-coming>; Kevin Hurler, *Hey Fellow Kids: Meta Is Revamping Horizon Worlds to Attract More Teen Users*, GIZMODO (Feb. 7, 2023), <https://gizmodo.com/meta-metaverse-facebook-horizon-worlds-vr-1850082068>; Emma Roth, *Meta's Horizon Worlds VR Platform Is Reportedly Struggling to Keep Users*, THE VERGE (Oct. 15, 2022), <https://www.theverge.com/2022/10/15/23405811/meta-horizon-worlds-losing-users-report>; Paul Tassi, *Meta's 'Horizon Worlds' Has Somehow Lost 100,000 Players in Eight Months*, FORBES, (Oct. 17, 2022), <https://www.forbes.com/sites/paultassi/2022/10/17/metaverse-horizon-worlds-has-somehow-lost-100000-players-in-eight-months/?sh=57242b862a1b>.

⁵ Call for Evidence, *supra* note 1.

such as setting standards, building infrastructure, and addressing legal, economic, societal and ethical aspects.⁶

The commission has further expressed hopes that this will enable European firms to thrive:

The initiative is expected to create more opportunities for EU industrial players along the value chain, such as for EU providers of hardware and software components, system integrators and content creators.⁷

But intervening so early in a fledgling industry's life cycle is like shooting a moving target from a mile away. New rules might end up being irrelevant. Worse, by signaling that metaverses will be subject to heightened regulatory scrutiny for the foreseeable future, the commission may chill investment from the very firms it purports to support. In short, the commission should resist the urge to intervene so long as the industry is not fully mature.

I. Old Rules for a New Frontier

The commission's call for evidence appears to be premised on the idea there is something new and unique about metaverse ecosystems that warrants industry-specific rules and regulations.

Against this backdrop, Frank Easterbrook's seminal piece "Cyberspace and the Law of the Horse" seems more relevant than ever.⁸ In his article, Easterbrook analogized the then-emerging field of cyberspace law to the "law of the horse." He argued, in essence, that legal incidents involving horses are best understood by studying general legal disciplines like torts and property law, rather than studying all the legal incidents involving horses:

Lots of cases deal with sales of horses; others deal with people kicked by horses; still more deal with the licensing and racing of horses, or with the care veterinarians give to horses, or with prizes at horse shows. Any effort to collect these strands into a course on "The Law of the Horse" is doomed to be shallow and to miss unifying principles.

⁶ *Id.*

⁷ *Id.*

⁸ Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207 (1996).

From a policy standpoint, Easterbrook's intuition is clear. Policymakers should be less worried about developing new bodies of law to regulate legal disputes in cyberspace and, instead, concentrate their efforts on understanding how traditional rules apply to the disputes that arise in this space:

When asked to talk about "Property in Cyberspace," my immediate reaction was, "Isn't this just the law of the horse?"... This leads directly to my principal conclusion: Develop a sound law of intellectual property, then apply it to computer networks.⁹

Easterbrook's intuition would appear even more appropriate to law in the metaverse. Policymakers often assume that, because the metaverse is new and not covered by specific regulations, it must surely be a lawless area where few rules apply and companies are free to exclude their competitors and exploit consumers. As the commission puts it, drawing an analogy to the emergence of the first big tech companies:

The **first wave of the Internet developed mostly in an uncoordinated and unregulated manner** leading to a more closed ecosystem with the prevalence of proprietary systems and gatekeepers.

Although virtual worlds and the transition to Web 4.0 are still in the early stages, we are witnessing the dawn of a similar situation, where global corporations are massively investing in core technologies, filing trademarks, and setting de facto standards as early movers...¹⁰

A. The Internet Was Never an Unregulated World

Unfortunately, this assertion both rewrites the history of the internet and ignores the plethora of regulations that currently apply to metaverse services, particularly when they operate in the European Union.

For a start, it is important to recognize that digital platforms fall under several pieces of European legislation. Chief among these is European competition law, which has long applied to tech firms. After all, the Microsoft competition cases date back to the early 2000s and the commission opened its competition cases against Google way

⁹ *Id.* at 208.

¹⁰ Call for Evidence, *supra* note 1.

back in 2011.¹¹ These early cases were followed by investigations into online platforms like Apple’s iPhone and App Store, as well as Amazon’s online marketplace.¹² It is simply not true that the internet emerged in an unregulated environment (at least in terms of competition policy). EU oversight of digital platforms has also grown steadily more capacious, including through the recent passage of the DMA, which will arguably apply to metaverse worlds when they reach a certain size.¹³

And it is not just competition law that has directly shaped the European internet as we know it today. The e-Commerce Directive has governed how online platforms conduct business since it entered into force in 2000.¹⁴ Oversimplifying, the directive shields online intermediaries from liability when illegal content is hosted on their platforms, conditional on them fulfilling certain limited obligations.¹⁵ In turn, this has enabled online platforms to grow without fear of being held liable for their users’ behavior, while guaranteeing some level of safety and compliance with existing laws. More recent legislation, such as the DSA, will only reinforce the extent to which online markets (including virtual worlds) must maintain high standards of safety and content curation.¹⁶

¹¹ See Case COMP/C-3/37.792, *Microsoft*, OJ L 32 (May 24, 2004); see also, Case COMP/39.530, *Microsoft (Tying)*, OJ C 120 (Apr. 26, 2013); Case AT.39740, *Google Search (Shopping)*, 2017 E.R.C. I-379; Case AT.40099 *Google Android*, 2018 E.R.C.

¹² See European Commission Press Release IP/20/1073, *Antitrust: Commission Opens Investigations into Apple’s App Store Rules* (Jun. 16, 2020); European Commission Press Release IP/20/1075, *Antitrust: Commission Opens Investigation into Apple Practices Regarding Apple Pay* (Jun. 16, 2020); European Commission Press Release IP/19/4291, *Antitrust: Commission Opens Investigation into Possible Anti-Competitive Conduct of Amazon* (Jul. 17, 2019).

¹³ Regulation (EU) No 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32022R1925>.

¹⁴ Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on Certain Legal Aspects of Information Society Services, in Particular Electronic Commerce, in the Internal Market (hereafter, “eCommerce Directive”), <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32000L0031>.

¹⁵ *Id.* art. 12 to 15.

¹⁶ Regulation EU 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and Amending Directive 2000/31/EC (Digital Services Act), <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32022R2065> (hereafter, “DSA”).

B. Metaverse's Regulatory Framework Is Already in Place

Existing laws and regulations that govern such areas as intellectual property, contracts, consumer protection, and online safety are equally applicable to the metaverse. The metaverse is not a separate and unique realm, but rather an extension of the physical world we already inhabit. Or, to put it differently, the metaverse is populated by real consumers and firms who are bound by the laws that are applicable in their jurisdictions.

The commission's call for evidence appears to recognize this much, although it doesn't appear to consider the possibility that—given this large body of existing laws—more regulation might not be the answer:

Furthermore, the EU already has a strong regulatory framework to address potential impacts that virtual worlds may have on aspects such as competition, cybersecurity, artistic creation and privacy. EU legislation such as the General Data Protection Regulation, Digital Services Act, Digital Markets Act, Net Neutrality Regulation and the Unfair Commercial Practices Directive will ensure that users are protected in relation to several aspects and that EU small and medium-sized enterprises are not driven out of the market. The revised Directive on Security of Network and Information Systems will strengthen supply chain cybersecurity while the upcoming EU Digital ID will give full control to users over their identity and data.¹⁷

To put this in more concrete terms, a virtual item or avatar created within the metaverse is subject to the same copyright and trademark laws as a physical product. Property over those creations may be transferred, subject to the metaverse platform's terms of service, which are governed by existing contract and consumer-protection laws. For example, the terms of use governing Decentraland (a blockchain-based virtual world) include a detailed section on how ownership of copyright-protected works may or may not be transferred from users to the platform.¹⁸ In turn, these terms are subject to the same consumer-protection laws that apply to the physical world.

Of course, the application of existing laws to the metaverse is not always straightforward. There are some unique challenges and complexities that arise in this new space.

¹⁷ Call for Evidence, *supra* note 1.

¹⁸ *Terms of Use*, DECENTRALAND, <https://decentraland.org/terms> (last visited May 2, 2023).

The enforceability of some existing laws may, for example, be complicated in virtual worlds (like Decentraland) that rely on blockchain technology. Indeed, blockchains often have characteristics—such as immutability, decentralized ownership, and a reliance on pseudonymity or anonymity—that complicate legal enforcement.¹⁹ These potential obstacles are specific to blockchain technology, however, not to metaverses.

Indeed, there is no reason to believe that all, or even most, successful metaverse services will be blockchain-based. In fact, two of the most successful virtual worlds do not rely on the blockchain.²⁰ The upshot is that enacting metaverse-specific rules to deal with blockchain-specific issues is almost certainly the wrong way to proceed.

C. New Rules Are Not Always the Best Path Forward

More fundamentally, even if metaverses do give rise to legal blind spots, this does not necessarily mean that new regulation is warranted.

In his seminal rebuttal to Easterbrook’s “Law of the Horse”, Lawrence Lessig cited two examples of cyberspace law that, in his opinion, fell under the radar of existing legal provisions and necessitated the creation of internet-specific laws: the widespread accessibility of pornographic content and firms’ ability to track users’ behavior online.²¹ No champion of free markets, Lessig nonetheless argued that blinds spots of this sort do not *necessarily* warrant the adoption of new regulations (though, in those two cases, that is largely what the European Union decided to do²²). Instead, he argued four main factors constrain firms’ behavior in cyberspace. Legal provisions are only one of those four constraints—the others being norms, markets, and code.²³

¹⁹ Andrew N. Choi & Cynthia A. Gierhart, *Intellectual Property Enforcement in the Metaverse, Part 2*, HOLLAND & KNIGHT (Oct. 13, 2022),

<https://www.hklaw.com/en/insights/publications/2022/10/intellectual-property-enforcement-in-the-metaverse-part-2>; see, more generally, THIBAUT SCHREPEL, BLOCKCHAIN + ANTITRUST (ELGAR, 2021).

²⁰ Aron Garst, *Fortnite and Roblox Are Dueling for the Future of User-Built Games*, THE VERGE (Apr. 7, 2023), <https://www.theverge.com/23674121/fortnite-roblox-user-generated-games>.

²¹ Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 510 (1999).

²² Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation); DSA, *supra* note 16; eCommerce Directive, *supra* note 14

²³ Lessig, *supra* note 21, at 507 (“Behavior, we might say, is regulated by four kinds of constraints. Law is just one of those constraints. Law (in at least one of its aspects) orders people to behave in certain ways; it

If other constraints are operating, then what may appear to be a legal blind spot may not, in fact, give rise to problematic behavior or outcomes. And because regulation may sometimes be over-inclusive, it will sometimes be better for regulators to adopt a *laissez-faire* approach.²⁴

This intuition is perhaps best understood with reference to Ronald Coase. In his Nobel-winning work on “The Problem of Social Cost”, Coase essentially argued that governments need not worry about the initial allocation of rights (and, by extension, externalities) when they are well-delimited and transaction costs are low:

It is always possible to modify by transactions on the market the initial legal delimitation of rights. And, of course, if such market transactions are costless such a rearrangement of rights will always take place if it would lead to an increase in the value of production.²⁵

This has important ramifications for the regulation of business in the metaverse. Even if it were true that existing laws were inapplicable in the metaverse, this is not sufficient justification for passing new regulations. Instead, the real question is whether various frictions prevent consumers and businesses from reaching agreements that grow the value of these online ecosystems. If these agreements can take place, then the scope for beneficial government intervention is more limited. As

threatens punishment if they do not obey. The law tells me not to buy certain drugs, not to sell cigarettes without a license, and not to trade across international borders without first filing a customs form. It promises strict punishments if these orders are not followed. In this way, we say that law regulates. But not only law regulates in this sense. Social norms do as well. Norms control where I can smoke; they affect how I behave with members of the opposite sex; they limit what I may wear; they influence whether I will pay my taxes. Like law, norms regulate by threatening punishment *ex post*. But unlike law, the punishments of norms are not centralized. Norms are enforced (if at all) by a community, not by a government. In this way, norms constrain, and therefore regulate. Markets, too, regulate. They regulate by price. The price of gasoline limits the amount one drives - more so in Europe than in the United States. The price of subway tickets affects the use of public transportation - more so in Europe than in the United States. Of course the market is able to constrain in this manner only because of other constraints of law and social norms: property and contract law govern markets; markets operate within the domain permitted by social norms. But given these norms, and given this law, the market presents another set of constraints on individual and collective behavior. And finally, there is a fourth feature of real space that regulates behavior - "architecture."").

²⁴ *Id.* at 538-541; see also, Frank H. Easterbrook, *Limits of Antitrust*, 63 TEX. L. REV. 1 (1984); Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMP. L. & ECON. 153 (2010); Geoffrey A. Manne, *Error Costs in Digital Markets*, 3 GAI REPORT ON COMPETITION IN DIGITAL MARKETS 33 (2020).

²⁵ R. H. Coase, *The Problem of Social Cost*, 9 J.L. & ECON. 15 (1960).

things stand, there is little reason to believe that frictions of this sort prevent consumers, platforms, and content creators from concluding such deals in the metaverse context—for example, determining how the rights over metaverse creations are allocated.

Finally, even if the commission surmised that there are currently market failures in the metaverse, this does not necessarily mean that entirely new regulations are appropriate. Indeed, it may be preferable to adapt existing legal principles, rather than enact new rules. As explained in Section IV, creating new regulations that are specific to the metaverse could be counterproductive. They could create uncertainty and additional compliance costs for businesses, without necessarily achieving any meaningful improvements in consumer protection or other regulatory goals. Furthermore, new rules could stifle innovation and limit the potential of this exciting new technology.

In short, there is little to suggest that new rules are required to govern the metaverse. The existing legal framework appears largely sufficient to address most concerns that may arise in this space. Policymakers should instead focus on adapting and refining this existing framework, as necessary.

II. Competing for Consumer Trust

As suggested above, the extent to which metaverse services compete with each other (and continue to do so in the future) will largely determine whether they fulfil consumers' expectations and meet the safety and trustworthiness requirements to which the commission aspires. As even the left-leaning Lessig put it:

Markets regulate behavior in cyberspace too. Prices structures often constrain access, and if they do not, then busy signals do. (America Online (AOL) learned this lesson when it shifted from an hourly to a flat-rate pricing plan.) Some sites on the web charge for access, as on-line services like AOL have for some time. Advertisers reward popular sites; online services drop unpopular forums. **These behaviors are all a function of market constraints and market opportunity, and they all reflect the regulatory role of the market.**²⁶

²⁶ Lessig, *supra* note 21, at 508.

The commission's call for evidence implicitly recognizes the important role that competition plays, although it frames the subject primarily in terms of the problems that would arise if competition ceased to operate:

There is a risk of having a small number of big players becoming future gatekeepers of virtual worlds, creating market entry barriers and shutting out EU start-ups and SMEs from this emerging market. Such a closed ecosystem with the prevalence of proprietary systems can negatively affect the protection of personal information and data, the cybersecurity and the freedom and openness of virtual worlds at the same time.²⁷

It is thus necessary to ask whether there is robust competition in the market for metaverse services. The short answer is a resounding yes.

A. Competition Without Tipping

While there is no precise definition of what constitutes a metaverse—much less a precise definition of the relevant market—available data suggests the space is highly competitive. This is evident in the fact that even a major global firm like Meta—having invested billions of dollars in its metaverse branch (and having rebranded the company accordingly)—has struggled to gain traction.²⁸

Other major players in the space include the likes of Roblox, Fortnite, and Minecraft, which all have somewhere between 70 and 200 million active users.²⁹ This likely explains why Meta's much-anticipated virtual world struggled to gain meaningful

²⁷ Call for Evidence, *supra* note 1.

²⁸ Catherine Thorbecke, *What Metaverse? Meta Says Its Single Largest Investment Is Now in 'Advancing AI'*, CNN BUSINESS (Mar. 15, 2023), <https://www.cnn.com/2023/03/15/tech/meta-ai-investment-priority/index.html>; Ben Marlow, *Mark Zuckerberg's Metaverse Is Shattering into a Million Pieces*, THE TELEGRAPH (Apr. 23, 2023), <https://www.telegraph.co.uk/business/2023/04/21/mark-zuckerbergs-metaverse-shattering-million-pieces>; Will Gendron, *Meta Has Reportedly Stopped Pitching Advertisers on the Metaverse*, BUSINESSINSIDER (Apr. 18, 2023), <https://www.businessinsider.com/meta-zuckerberg-stopped-pitching-advertisers-metaverse-focus-reels-ai-report-2023-4>.

²⁹ Mansoor Iqbal, *Fortnite Usage and Revenue Statistics*, BUSINESS OF APPS (Jan. 9, 2023), <https://www.businessofapps.com/data/fortnite-statistics>; Matija Ferjan, *76 Little-Known Metaverse Statistics & Facts (2023 Data)*, HEADPHONES ADDICT (Feb. 13, 2023), <https://headphonesaddict.com/metaverse-statistics>.

traction with consumers, stalling at around 300,000 active users.³⁰ Alongside these traditional players, there are also several decentralized platforms that are underpinned by blockchain technology. While these platforms have attracted massive investments, they are largely peripheral in terms of active users, with numbers often only in the low thousands.³¹

There are several inferences that can be drawn from these limited datasets. For one, it is clear that the metaverse industry is not yet fully mature. There are still multiple paradigms competing for consumer attention: game-based platforms versus social-network platforms; traditional platforms versus blockchain platforms, etc. In the terminology developed by David Teece, the metaverse industry has not yet reached a “paradigmatic” stage. It is fair to assume there is still significant scope for the entry of differentiated firms.³²

It is also worth noting that metaverse competition does not appear to exhibit the same sort of network effects and tipping that is sometimes associated with more traditional social networks.³³ Despite competing for nearly a decade, no single metaverse project appears to be running away with the market.³⁴ This lack of tipping might be

³⁰ James Batchelor, *Meta's Flagship Metaverse Horizon Worlds Struggling to Attract and Retain Users*, GAMES INDUSTRY (Oct. 17, 2022), <https://www.gamesindustry.biz/metas-flagship-metaverse-horizon-worlds-struggling-to-attract-and-retain-users>; Ferjan, *id.*

³¹ Richard Lawler, *Decentraland's Billion-Dollar 'Metaverse' Reportedly Had 38 Active Users in One Day*, THE VERGE (Oct. 13, 2022), <https://www.theverge.com/2022/10/13/23402418/decentraland-metaverse-empty-38-users-dappradar-wallet-data>; *The Sandbox*, DAPPRADAR, <https://dappradar.com/multichain/games/the-sandbox> (last visited May 3, 2023); *Decentraland*, DAPPRADAR, <https://dappradar.com/multichain/social/decentraland> (last visited May 3, 2023).

³² David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RESEARCH POLICY 285-305 (1986), <https://www.sciencedirect.com/science/article/abs/pii/0048733386900272>.

³³ Geoffrey Manne & Dirk Auer, *Antitrust Dystopia and Antitrust Nostalgia: Alarmist Theories of Harm in Digital Markets and Their Origins*, 28 GEO. MASON L. REV. 1279 (2021).

³⁴ *Roblox*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Roblox> (last visited May 3, 2023); *Minecraft*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Minecraft> (last visited May 3, 2023); *Fortnite*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Fortnite> (last visited May 3, 2023); see Fiza Chowdhury, *Minecraft vs Roblox vs Fortnite: Which Is Better?*, METAGREATS (Feb. 20, 2023), <https://www.metagreats.com/minecraft-vs-roblox-vs-fortnite>.

because these projects are highly differentiated.³⁵ It may also be due to the ease of multi-homing among them.³⁶

More broadly, it is far from clear that competition will lead to a single metaverse for all uses. Different types of metaverse services may benefit from different user interfaces, graphics, and physics engines. This cuts in favor of multiple metaverses coexisting, rather than all services coordinating within a single ecosystem. Competition therefore appears likely lead to the emergence of multiple differentiated metaverses, rather than a single winner.

Ultimately, competition in the metaverse industry is strong and there is little sense these markets are about to tip towards a single firm in the year future.

B. Competing for Consumer Trust

As alluded to in the previous subsection, the world's largest and most successful metaverse entrants to date are traditional videogaming platforms that have various marketplaces and currencies attached.³⁷ In other words, decentralized virtual worlds built upon blockchain technology remain marginal.

This has important policy implications. The primary legal issues raised by metaverses are the same as those encountered on other digital marketplaces. This includes issues like minor fraud, scams, and children buying content without their parents'

³⁵ Marc Rysman, *The Economics of Two-Sided Markets*, 13 J. ECON. PERSPECTIVES 134 (2009) ("First, if standards can differentiate from each other, they may be able to successfully coexist (Chou and Shy, 1990; Church and Gandal, 1992). Arguably, Apple and Microsoft operating systems have both survived by specializing in different markets: Microsoft in business and Apple in graphics and education. Magazines are an obvious example of platforms that differentiate in many dimensions and hence coexist.").

³⁶ *Id.* at 134 ("Second, tipping is less likely if agents can easily use multiple standards. Corts and Lederman (forthcoming) show that the fixed cost of producing a video game for one more standard have reduced over time relative to the overall fixed costs of producing a game, which has led to increased distribution of games across multiple game systems (for example, PlayStation, Nintendo, and Xbox) and a less-concentrated game system market.").

³⁷ *What Are Fortnite, Roblox, Minecraft and Among Us? A Parent's Guide to the Most Popular Online Games Kids Are Playing*, FTC BUSINESS (Oct. 5, 2021), <https://www.ftc.net/blog/what-are-fortnite-roblox-minecraft-and-among-us-a-parents-guide-to-the-most-popular-online-games-kids-are-playing>; Jay Peters, *Epic Is Merging Its Digital Asset Stores into One Huge Marketplace*, THE VERGE (Mar. 22, 2023), <https://www.theverge.com/2023/3/22/23645601/epic-games-fab-asset-marketplace-state-of-unreal-2023-gdc>.

authorization.³⁸ To the extent these harms are not adequately deterred by existing laws, metaverse platforms themselves have important incentives to police them. In turn, these incentives may be compounded by strong competition among platforms.

Metaverses are generally multi-sided platforms that bring together distinct groups of users, including consumers and content creators. In order to maximize the value of their ecosystems, platforms have an incentive to balance the interests of these distinct groups.³⁹ In practice, this will often mean offering consumers various forms of protection against fraud and scams and actively policing platforms' marketplaces. As David Evans puts it:

But as with any community, there are numerous opportunities for people and businesses to create negative externalities, or engage in other bad behavior, that can reduce economic efficiency and, in the extreme, lead to the tragedy of the commons. Multi-sided platforms, acting selfishly to maximize their own profits, often develop governance mechanisms to reduce harmful behavior. They also develop rules to manage many of the same kinds of problems that beset communities subject to public laws and regulations. They enforce these rules through the exercise of property rights and, most importantly, through the "Bouncer's Right" to exclude agents from some quantum of the platform, including prohibiting some agents from the platform entirely...⁴⁰

While there is little economic research to suggest that competition directly increases hosts' incentive to police their platforms, it stands to reason that doing so effectively can help platforms to expand the appeal of their ecosystems. This is particularly

³⁸ Luke Winkie, *Inside Roblox's Criminal Underworld, Where Kids Are Scamming Kids*, IGN (Jan. 2, 2023), <https://www.ign.com/articles/inside-robloxs-criminal-underworld-where-kids-are-scamming-kids>; *Fake Minecraft Updates Pose Threat to Users*, TRIBUNE (Sept. 11, 2022), <https://tribune.com.pk/story/2376087/fake-minecraft-updates-pose-threat-to-users>; Ana Diaz, *Roblox and the Wild West of Teenage Scammers*, POLYGON (Aug. 24, 2019) <https://www.polygon.com/2019/8/24/20812218/roblox-teenage-developers-controversy-scammers-prison-roleplay>; Rebecca Alter, *Fortnite Tries Not to Scam Children and Face \$520 Million in FTC Fines Challenge*, VULTURE (Dec. 19, 2022), <https://www.vulture.com/2022/12/fortnite-epic-games-ftc-fines-privacy.html>; Leonid Grustniy, *Swindle Royale: Fortnite Scammers Get Busy*, KASPERSKY DAILY (Dec. 3, 2020), <https://www.kaspersky.com/blog/top-four-fortnite-scams/37896>.

³⁹ See, generally, DAVID EVANS & RICHARD SCHMALENSEE, *MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS* (HARVARD BUSINESS REVIEW PRESS, 2016).

⁴⁰ David S. Evans, *Governing Bad Behaviour By Users of Multi-Sided Platforms*, BERKLEY TECHNOLOGY LAW JOURNAL 27:2 (2012), 1201.

important for metaverse services whose userbases remain just a fraction of the size they could ultimately reach. While 100 or 200 million users already comprises a vast ecosystem, it pales in comparison to the sometimes billions of users that “traditional” online platforms attract.

The bottom line is that the market for metaverses is growing. This likely compounds platforms’ incentives to weed out undesirable behavior, thereby complementing government efforts to achieve the same goal.

III. Opening Platforms or Opening Pandora’s Box?

In its call for evidence, the commission implicitly assumes that open ecosystems are better for consumers than closed ones. Indeed, the commission laments that a lack of regulation made the Internet less open than it would otherwise have been. In its own words:

The first wave of the Internet developed mostly in an uncoordinated and unregulated manner leading to a more closed ecosystem with the prevalence of proprietary systems and gatekeepers.⁴¹

According to the commission, it would be detrimental to consumers if metaverse competition led to closed and proprietary ecosystems:

Such a closed ecosystem with the prevalence of proprietary systems can negatively affect the protection of personal information and data, the cybersecurity and the freedom and openness of virtual worlds at the same time.⁴²

But this assumption is simply wrong. There are many benefits to closed ecosystems. Choosing the optimal degree of openness entails tradeoffs. At the very least, this suggests that policymakers should be careful not to assume that opening platforms up will systematically provide net benefits to consumers.

A. Antitrust Enforcement and Regulatory Initiatives

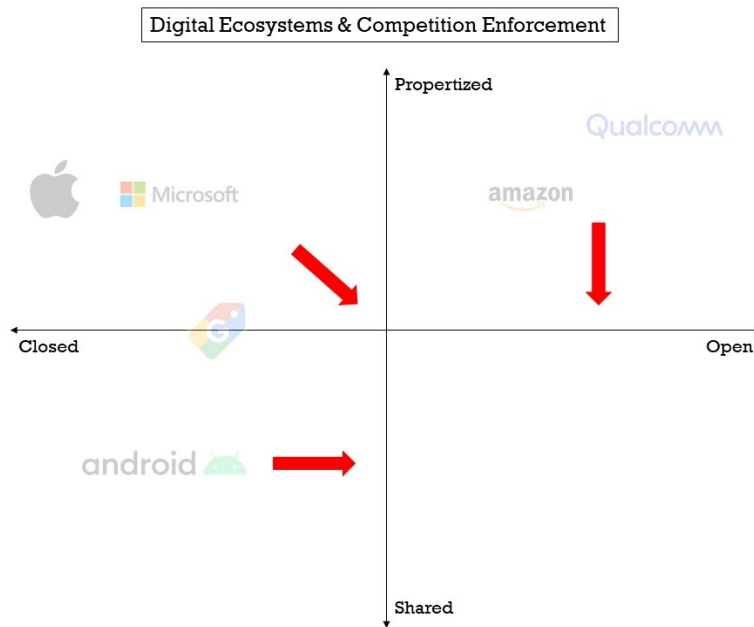
To understand why open (and highly propertized) platforms are not always better for consumers, it is worth looking at past competition enforcement in the online space.

⁴¹ Call for Evidence, *supra* note 1.

⁴² *Id.*

Recent interventions by competition authorities have generally attempted (or are attempting) to move platforms toward more openness and less propertization. For their part, these platforms are already tremendously open (as the “platform” terminology implies) and attempt to achieve a delicate balance between centralization and decentralization.

Figure I: Directional Movement of Antitrust Intervention



The Microsoft cases and the Apple investigation both sought or seek to bring more openness and less propertization to those respective platforms. Microsoft was made to share proprietary data with third parties (less propertization) and to open its platform to rival media players and web browsers (more openness).⁴³ The same applies to Apple. Plaintiffs in private antitrust litigation brought in the United States⁴⁴ and government enforcement actions in Europe⁴⁵ are seeking to limit the fees that Apple

⁴³ See Case COMP/C-3/37.792, *Microsoft*, OJ L 32 (May 24, 2004). See also, Case COMP/39.530, *Microsoft (Tying)*, OJ C 120 (Apr. 26, 2013).

⁴⁴ See Complaint, *Epic Games, Inc. v. Apple Inc.*, 493 F. Supp. 3d 817 (N.D. Cal. 2020) (4:20-cv-05640-YGR).

⁴⁵ See European Commission Press Release IP/20/1073, *Antitrust: Commission Opens Investigations into Apple’s App Store Rules* (Jun. 16, 2020); European Commission Press Release IP/20/1075, *Antitrust: Commission Opens Investigation into Apple Practices Regarding Apple Pay* (Jun. 16, 2020).

can extract from downstream rivals (less propertization), as well as to ensure that it cannot exclude rival mobile-payments solutions from its platform (more openness).

The various cases that were brought by EU and U.S. authorities against Qualcomm broadly sought to limit the extent to which it was monetizing its intellectual property.⁴⁶ The European Union's Amazon investigation centers on the ways in which the company uses data from third-party sellers (and, ultimately, the distribution of revenue between those sellers and Amazon).⁴⁷ In both cases, authorities are ultimately trying to limit the extent to which firms can propertize their assets.

Finally, both of the EU's Google cases sought to bring more openness to the company's main platform. The Google Shopping decision sanctioned Google for purportedly placing its services more favorably than those of its rivals.⁴⁸ The separate Android decision sought to facilitate rival search engines' and browsers' access to the Android ecosystem. The same appears to be true of ongoing litigation brought by state attorneys general in the United States.⁴⁹

Much of the same can be said of the numerous regulatory initiatives pertaining to digital markets. Indeed, draft regulations being contemplated around the globe mimic the features of the antitrust/competition interventions discussed above. For instance, it is widely accepted that Europe's DMA effectively transposes and streamlines the enforcement of the theories harm described above.⁵⁰ Similarly, several

⁴⁶ See European Commission Press Release IP/18/421, *Antitrust: Commission Fines Qualcomm €997 Million for Abuse of Dominant Market Position* (Jan. 24, 2018); *Federal Trade Commission v. Qualcomm Inc.*, 969 F.3d 974 (9th Cir. 2020).

⁴⁷ See European Commission Press Release IP/19/4291, *Antitrust: Commission Opens Investigation into Possible Anti-Competitive Conduct of Amazon* (Jul. 17, 2019).

⁴⁸ See Case AT.39740, *Google Search (Shopping)*, 2017 E.R.C. I-379. See also, Case AT.40099 (*Google Android*), 2018 E.R.C.

⁴⁹ See Complaint, *United States v. Google, LLC*, (2020), <https://www.justice.gov/opa/pr/justice-department-sues-monopolist-google-violating-antitrust-laws>; see also, Complaint, *Colorado et al. v. Google, LLC*, (2020), available at <https://coag.gov/app/uploads/2020/12/Colorado-et-al.-v.-Google-PUBLIC-REDACTED-Complaint.pdf>.

⁵⁰ See, e.g., Giorgio Monti, *The Digital Markets Act: Institutional Design and Suggestions for Improvement*, TILLBURG L. & ECON. CTR., Discussion Paper No. 2021-04 (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3797730 ("In sum, the DMA is more than an enhanced and simplified application of Article 102 TFEU: while **the obligations may be criticised as being based on existing competition concerns**, they are forward-looking in trying to create a regulatory environment where gatekeeper power is contained and perhaps even reduced.") (Emphasis added).

scholars have argued that the proposed American Innovation and Choice Online Act (“AICOA”) in the United States largely mimics European competition policy.⁵¹ The legislation would ultimately require firms to open up their platforms, most notably by forcing them to treat rival services as they would their own and to make their services more interoperable with those rivals.⁵²

What is striking about these decisions and investigations is the extent to which authorities are pushing back against the very features that distinguish the platforms they are investigating. Closed (or relatively closed) platforms are forced to open up, and firms with highly propertized assets are made to share them (or, at the very least, monetize them less aggressively).

B. The Empty Quadrant

All of this would not be very interesting if it weren’t for a final piece of the puzzle: the model of open and shared platforms that authorities apparently favor has traditionally struggled to gain traction with consumers. Indeed, there seem to be vanishingly few successful consumer-oriented products and services in this space.

There have been numerous attempts to introduce truly open consumer-oriented operating systems in both the mobile and desktop segments. Most have ended in failure. Ubuntu and other flavors of the Linux operating system remain fringe products.

⁵¹ See, e.g., Aurelien Portuese, “Please, Help Yourself”: *Toward a Taxonomy of Self-Preferencing*, INFORMATION TECHNOLOGY & INNOVATION FOUNDATION (Oct. 25, 2021), available at <https://itif.org/sites/default/files/2021-self-preferencing-taxonomy.pdf>. (“The latest example of such weaponization of self-preferencing by antitrust populists is provided by Sens. Amy Klobuchar (D-MN) and Chuck Grassley (R-IA). They introduced legislation in October 2021 aimed at prohibiting the practice.² However, the legislation would ban self-preferencing only for a handful of designated companies—the so-called “covered platforms,” not the thousands of brick-and-mortar sellers that daily self-preference for the benefit of consumers. Mimicking the European Commission’s Digital Markets Act prohibiting self-preferencing, Senate and the House bills would degrade consumers’ experience and undermine competition, since self-preferencing often benefits consumers and constitutes an integral part, rather than an abnormality, of the process of competition.”).

⁵² Efforts to saddle platforms with “non-discrimination” constraints are tantamount to mandating openness. See Geoffrey A. Manne, *Against the Vertical Discrimination Presumption*, Foreword, CONCURRENCES NO. 2-2020 (2020) at 2 (“The notion that platforms should be forced to allow complementors to compete on their own terms, free of constraints or competition from platforms is a species of the idea that platforms are most socially valuable when they are most ‘open.’ But mandating openness is not without costs, most importantly in terms of the effective operation of the platform and its own incentives for innovation.”).

There have been attempts to create open-source search engines, but they have not met with success.⁵³ The picture is similar in the online retail space. Amazon appears to have beaten eBay, despite the latter being more open and less propertized. Indeed, Amazon has historically charged higher fees than eBay and offers sellers much less freedom in the ways in which they may sell their goods.⁵⁴

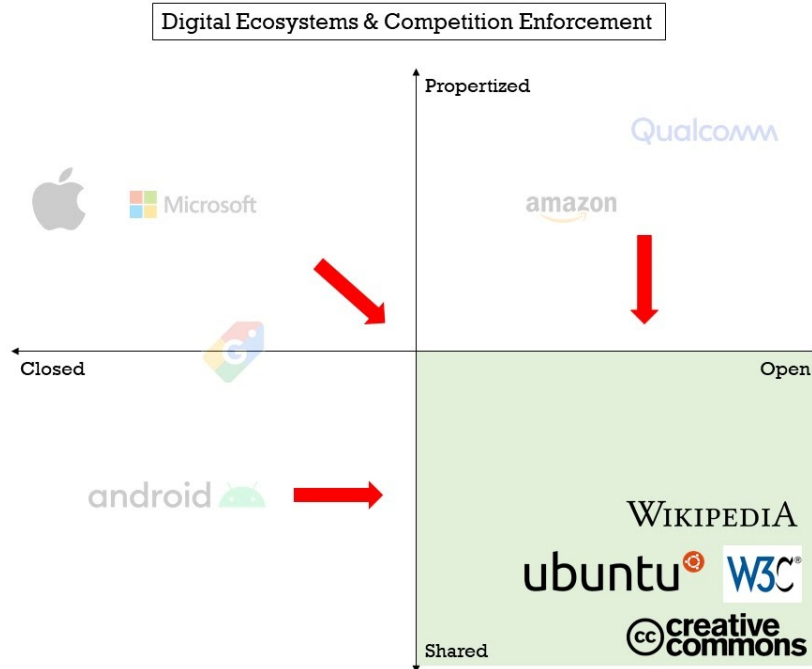
This theme is repeated in the standardization space. There have been innumerable attempts to impose open, royalty-free standards. At least in the mobile-internet industry, few (if any) of these have taken off. Instead, proprietary standards such as 5G and WiFi have been far more successful. That pattern is repeated in other highly standardized industries, like digital-video formats. Most recently, the proprietary Dolby Vision format seems to be winning the war against the open HDR10+ format.⁵⁵

⁵³ See, e.g., Klint Finley, *Your Own Private Google: The Quest for an Open Source Search Engine*, WIRED (Jul. 12, 2021), <https://www.wired.com/2012/12/solar-elasticsearch-google>.

⁵⁴ See Brian Connolly, *Selling on Amazon vs. eBay in 2021: Which Is Better?*, JUNGLESCOUT (Jan. 12, 2021), <https://www.junglescout.com/blog/amazon-vs-ebay>; *Crucial Differences Between Amazon and eBay*, SALEHOO, <https://www.salehoo.com/educate/selling-on-amazon/crucial-differences-between-amazon-and-ebay> (last visited Feb. 8, 2021).

⁵⁵ See, e.g., *Dolby Vision Is Winning the War Against HDR10 +, It Requires a Single Standard*, TECH SMART, <https://voonze.com/dolby-vision-is-winning-the-war-against-hdr10-it-requires-a-single-standard> (last visited June 6, 2022).

Figure II: Open and Shared Platforms



This is not to say that there haven't been any successful examples of open, royalty-free standards. Internet protocols, blockchain, and Wikipedia all come to mind. Nor does it mean that we will not see more decentralized goods in the future. But by and large, firms and consumers have not yet taken to the idea of *fully* open and shared platforms. Or, at least, those platforms have not yet achieved widespread success in the marketplace (potentially due to supply-side considerations, such as the difficulty of managing open platforms or the potentially lower returns to innovation in weakly propertized ones).⁵⁶ And while some “open” projects have achieved tremendous scale, the consumer-facing side of these platforms is often dominated by intermediaries that opt for much more traditional business models (think of Coinbase in the blockchain space, or Android’s use of Linux).

⁵⁶ On the importance of managers, see, e.g., Nicolai J Foss & Peter G Klein, *Why Managers Still Matter*, 56 MIT SLOAN MGMT. REV., 73 (2014) (“In today’s knowledge-based economy, managerial authority is supposedly in decline. But there is still a strong need for someone to define and implement the organizational rules of the game.”).

C. Potential Explanations

The preceding section posited a recurring reality: the digital platforms that competition authorities wish to bring into existence are fundamentally different from those that emerge organically. But why have authorities' ideal platforms, *so far*, failed to achieve truly meaningful success?

Three potential explanations come to mind. First, “closed” and “propertized” platforms might systematically—and perhaps anticompetitively—thwart their “open” and “shared” rivals. Second, shared platforms might fail to persist (or grow pervasive) because they are much harder to monetize, and there is thus less incentive to invest in them. This is essentially a supply-side explanation. Finally, consumers might opt for *relatively* closed systems precisely *because* they prefer these platforms to marginally more open ones—*i.e.*, a demand-side explanation.

In evaluating the first conjecture, the key question is whether successful “closed” and “propertized” platforms overcame their rivals before or after they achieved some measure of market dominance. If success preceded dominance, then anticompetitive foreclosure alone cannot explain the proliferation of the “closed” and “propertized” model.⁵⁷

Many of today's dominant platforms, however, often overcame open/shared rivals, well before they achieved their current size. It is thus difficult to make the case that the early success of their business models was due to anticompetitive behavior. This is not to say these business models cannot raise antitrust issues, but rather that anticompetitive behavior is not a good explanation for their emergence.

Both the second and the third conjectures essentially ask whether “closed” and

⁵⁷ It is generally agreed upon that *anticompetitive* foreclosure is possible only when a firm enjoys some degree of market power. Frank H. Easterbrook, *Limits of Antitrust*, 63 TEX. L. REV. 1, 20 (1984) (“Firms that lack power cannot injure competition no matter how hard they try. They may injure a few consumers, or a few rivals, or themselves (see (2) below) by selecting ‘anticompetitive’ tactics. When the firms lack market power, though, they cannot persist in deleterious practices. Rival firms will offer the consumers better deals. Rivals’ better offers will stamp out bad practices faster than the judicial process can. For these and other reasons many lower courts have held that proof of market power is an indispensable first step in any case under the Rule of Reason. The Supreme Court has established a market power hurdle in tying cases, despite the nominally *per se* character of the tying offense, on the same ground offered here: if the defendant lacks market power, other firms can offer the customer a better deal, and there is no need for judicial intervention.”).

“proptertized” might be better adapted to their environment than “open” and “shared” rivals.

In that respect, it is not unreasonable to surmise that highly proptertized platforms would generally be easier to monetize than shared ones. For example, to monetize open-source platforms often requires relying on complementarities, which tend to be vulnerable to outside competition and free-riding.⁵⁸ There is thus a natural incentive for firms to invest and innovate in more proptertized environments. In turn, competition enforcement that limits a platform’s ability to proptertize their assets may harm innovation.

Similarly, authorities should reflect on whether consumers really want the more “competitive” ecosystems that they are trying to design. The European Commission, for example, has a long track record of seeking to open digital platforms, notably by requiring that platform owners do not preinstall their own web browsers (the *Microsoft* decisions are perhaps the most salient example). And yet, even after these interventions, new firms have kept using the very business model that the commission reprimanded, rather than the “pro-consumer” model it sought to impose on the industry. For example, Apple tied the Safari browser to its iPhones; Google went to some length to ensure that Chrome was preloaded on devices; and Samsung phones come with Samsung Internet as default.⁵⁹ Yet this has not ostensibly steered consumers away from those platforms.

Along similar lines, a sizable share of consumers opt for Apple’s iPhone, which is even more centrally curated than Microsoft Windows ever was (and the same is true of Apple’s MacOS). In other words, it is hard to claim that opening platforms is inherently good for consumers when those same consumers routinely opt for platforms with the very features that policymakers are trying to eliminate.

Finally, it is worth noting that the remedies imposed by competition authorities have been anything but successes. Windows XP N (the version of Windows that came without Windows Media Player) was an unmitigated flop, selling a paltry 1,787

⁵⁸ See, e.g., Josh Lerner & Jean Tirole, *Some Simple Economics of Open Source*, 50 J. INDUS. ECON. 197 (2002).

⁵⁹ See Matthew Miller, *Thanks, Samsung: Android’s Best Mobile Browser Now Available to All*, ZDNET (Aug. 11, 2017), <https://www.zdnet.com/article/thanks-samsung-androids-best-mobile-browser-now-available-to-all>.

copies.⁶⁰ Likewise, the internet-browser “ballot box” imposed by the commission was so irrelevant to consumers that it took months for authorities to notice that Microsoft had removed it, in violation of the commission’s decision.⁶¹

One potential inference is that consumers do not value competition interventions that make dominant ecosystems marginally more open and less pro-protected. There are also many reasons why consumers might prefer “closed” systems (at least, relative to the model favored by many policymakers), even when they must pay a premium for them.

Take the example of app stores. Maintaining some control over the apps that can access the store enables platforms to easily weed out bad actors. Similarly, controlling the hardware resources that each app can use may greatly improve device performance. Indeed, it may be that a measure of control facilitates the very innovations that consumers demand. Therefore, “authorities and courts should not underestimate the indispensable role control plays in achieving coordination and coherence in the context of systemic efficiencies. Without it, the attempted novelties and strategies might collapse under their own complexity.”⁶²

Relatively centralized platforms can eliminate negative externalities that “bad” apps impose on rival apps and consumers.⁶³ This is especially true when consumers will tend to attribute dips in performance to the overall platform, rather than to a particular app.⁶⁴ At the same time, they can take advantage of positive externalities to improve the quality of the overall platform.

And it is surely the case that consumers prefer to make many of their decisions at the inter-platform level, rather than within each platform. In simple terms, users arguably make their most important decision when they choose between an Apple or Android smartphone (or a Mac and a PC, etc.). In doing so, they can select their preferred app

⁶⁰ FACT SHEET: *Windows XP N Sales*, REGMEDIA (Jun. 12, 2009), available at https://regmedia.co.uk/2009/06/12/microsoft_windows_xp_n_fact_sheet.pdf.

⁶¹ See Case COMP/39.530, *Microsoft (Tying)*, OJ C 120 (Apr. 26, 2013).

⁶² Konstantinos Stylianou, *Systemic Efficiencies in Competition Law: Evidence from the ICT Industry*, 12 J. COMPETITION L. & ECON. 557 (2016).

⁶³ See, e.g., Steven Sinofsky, *The App Store Debate: A Story of Ecosystems*, MEDIUM (Jun. 21, 2020), <https://medium.learningbyshipping.com/the-app-store-debate-a-story-of-ecosystems938424eeef74>.

⁶⁴ *Id.*

suite with one simple decision. They might thus purchase an iPhone *because* they like the secure App Store, or an Android smartphone *because* they like the Chrome Browser and Google Search. Absent false information at the time of the initial platform decision, this decision will effectively incorporate expectations about subsequent constraints.⁶⁵

Furthermore, forcing users to make too many “within-platform” choices may undermine a product’s attractiveness. Indeed, it is difficult to create a high-quality reputation if each user’s experience is fundamentally different.⁶⁶ In short, contrary to what antitrust authorities appear to believe, closed platforms might give most users exactly what they desire.

All of this suggests that consumers and firms often gravitate spontaneously toward both closed and highly propertized platforms, the opposite of what the commission and other competition authorities tend to favor. The reasons for this trend are still misunderstood, and mostly ignored. Too often it is simply assumed that consumers benefit from more openness, and that shared/open platforms are the natural order of things. Instead, what some regard as “market failures” may in fact be *features* that explain the rapid emergence of the digital economy.

When considering potential policy reforms targeting the metaverse, policymakers would be wrong to assume openness (notably, in the form of interoperability) and weak propertization are always objectively superior. Instead, these platform designs entail important tradeoffs. Closed metaverse ecosystems may lead to higher consumer safety and better performance, while interoperable systems may reduce the frictions consumers face when moving from one service to another. There is little reason to believe policymakers are in a better position to weigh these tradeoffs than consumers, who vote with their virtual feet.

⁶⁵ See, e.g., Benjamin Klein, *Market Power in Aftermarkets*, 17 *MANAGERIAL & DECISION ECON.* 143 (1996).

⁶⁶ See, e.g., Simon Hill, *What Is Android Fragmentation, and Can Google Ever Fix It?*, *DIGITALTRENDS* (Oct. 31, 2018), <https://www.digitaltrends.com/mobile/what-is-android-fragmentation-and-can-google-ever-fix-it>.

IV. Conclusion

A final important argument against intervening *today* is that the metaverse industry is nowhere near mature. Tomorrow's challenges and market failures might not be the same as today's. This makes it exceedingly difficult for policymakers to design appropriate regulation and increases the risk that regulation might harm innovation.

At the time of writing, the entire metaverse industry (both hardware and software) is estimated to be worth somewhere in the vicinity of \$80 billion, and projections suggest this could grow by a factor of 10 by 2030.⁶⁷ Growth projections of this sort are notoriously unreliable. But in this case, they do suggest there is some consensus that the industry is not fully fledged.

Along similar lines, it remains unclear what types of metaverse services will gain the most traction with consumers, what sorts of hardware consumers will use to access these services, and what technologies will underpin the most successful metaverse platforms. In fact, it is still an open question whether the metaverse industry will foster any services that achieve widespread consumer adoption in the foreseeable future.⁶⁸ In other words, it is not exactly clear what products and services metaverse-specific rules would end up covering.

Given these uncertainties—and the other arguments against regulation discussed in the previous sections—it would be premature to enact metaverse-specific rules. And yet, that is precisely what the commission appears to be contemplating.

⁶⁷ Metaverse Market Revenue Worldwide from 2022 to 2030, STATISTA, <https://www.statista.com/statistics/1295784/metaverse-market-size> (last visited May 3, 2023); *Metaverse Market by Component (Hardware, Software (Extended Reality Software, Gaming Engine, 3D Mapping, Modeling & Reconstruction, Metaverse Platform, Financial Platform), and Professional Services), Vertical and Region - Global Forecast to 2027*, MARKETS AND MARKETS (Apr. 27, 2023), <https://www.marketsandmarkets.com/Market-Reports/metaverse-market-166893905.html>; see also, Press Release, Metaverse Market Size Worth \$ 824.53 Billion, Globally, by 2030 at 39.1% CAGR, VERIFIED MARKET RESEARCH (Jul. 13, 2022), <https://www.prnewswire.com/news-releases/metaverse-market-size-worth-824-53-billion-globally-by-2030-at-39-1-cagr-verified-market-research-301585725.html>.

⁶⁸ See, e.g., Megan Farokhmanesh, *Will the Metaverse Live Up to the Hype? Game Developers Aren't Impressed*, WIRED (Jan. 19, 2023), <https://www.wired.com/story/metaverse-video-games-fortnite-zuckerberg>; see also Mitch Wagner, *The Metaverse Hype Bubble Has Popped. What Now?*, FIERCE ELECTRONICS (Feb. 24, 2023), <https://www.fierceelectronics.com/embedded/metaverse-hype-bubble-has-popped-what-now>.

In its call for evidence, the commission suggests that acting now will enable it to shape the metaverse industry to fit its own preferences, while guaranteeing that European firms are central to metaverse ecosystems:

The EU is well positioned to shape this next evolution, reflecting the EU's vision for the Digital Decade 2030² and in line with the European Declaration on Digital Rights and Principles , from the outset: open, interoperable, trusted, secure, privacy preserving, virtual worlds, respecting our legislation.⁶⁹

But this outcome is anything but certain. Intervening so early in the industry's life cycle is like aiming at a moving target. New rules or guidelines might end up being irrelevant before they have any influence on the products that firms develop. More worryingly, acting now signals that the metaverse industry will be subject to heightened regulatory scrutiny for the foreseeable future. In turn, this may deter large platforms from investing in the European market. It also may funnel venture-capital investments away from the European continent.

The core problem is that, without a clear sense of the market failures that need to be fixed, there is little apparent upside to offset the costs of regulation. The best evidence concerning these potential costs comes from the GDPR. While privacy regulation is obviously not the same as other types of economic regulation, the evidence concerning the GDPR suggests that regulation may, at least in some instances, slow down innovation and reduce competition.

The most-cited empirical evidence concerning the effects of the GDPR comes from a paper by Garrett Johnson and co-authors, who link the GDPR to widespread increases to market concentration, particularly in the short-term:

We show that websites' vendor use falls after the European Union's (EU's) General Data Protection Regulation (GDPR), but that market concentration also increases among technology vendors that provide support services to websites.... The week after the GDPR's enforcement, website use of web technology vendors falls by 15% for EU residents. Websites are relatively more likely to retain top vendors, which increases the concentration of the vendor market by 17%. Increased concentration predominantly arises among vendors that use personal data, such as

⁶⁹ Call for Evidence, *supra* note 1.

cookies, and from the increased relative shares of Facebook and Google-owned vendors, but not from website consent requests. Although the aggregate changes in vendor use and vendor concentration dissipate by the end of 2018, we find that the GDPR impact persists in the advertising vendor category most scrutinized by regulators.⁷⁰

Along similar lines, an NBER working paper by Jian Jia and co-authors finds that enactment of the GDPR markedly reduced venture-capital investments in Europe:

Our findings indicate a negative differential effect on EU ventures after the rollout of GDPR relative to their US counterparts. These negative effects manifest in the overall number of financing rounds, the overall dollar amount raised across rounds, and in the dollar amount raised per individual round. Specifically, our findings suggest a \$3.38 million decrease in the aggregate dollars raised by EU ventures per state per crude industry category per week, a 17.6% reduction in the number of weekly venture deals, and a 39.6% decrease in the amount raised in an average deal following the rollout of GDPR.⁷¹

In another paper, Samuel Goldberg and co-authors find that the GDPR led to a roughly 12% reduction in website pageviews and e-commerce revenue in Europe.⁷² Finally, Rebecca Janssen and her co-authors show that the GDPR decreased the number of apps offered on Google's Play Store between 2016 and 2019:

Using data on 4.1 million apps at the Google Play Store from 2016 to 2019, we document that GDPR induced the exit of about a third of available apps; and in the quarters following implementation, entry of new apps fell by half.⁷³

⁷⁰ Garret A. Johnson, et al., *Privacy and Market Concentration: Intended and Unintended Consequences of the GDPR*, Forthcoming MANAGEMENT SCIENCE 1 (2023).

⁷¹ Jian Jia, et al., *The Short-Run Effects of GDPR on Technology Venture Investment*, NBER WORKING PAPER 25248, 4 (2018), available at https://www.nber.org/system/files/working_papers/w25248/w25248.pdf.

⁷² Samuel G. Goldberg, Garrett A. Johnson, & Scott K. Shriver, *Regulating Privacy Online: An Economic Evaluation of GDPR* (2021), available at https://www.ftc.gov/system/files/documents/public_events/1588356/johnsongoldbergshriver.pdf.

⁷³ Rebecca Janßen, Reinhold Kesler, Michael Kummer, & Joel Waldfogel, *GDPR and the Lost Generation of Innovative Apps*, NBER WORKING PAPER 30028, 2 (2022), available at https://www.nber.org/system/files/working_papers/w30028/w30028.pdf.

Of course, the body of evidence concerning the GDPR's effects is not entirely unambiguous. For example, Rajkumar Vekatesean and co-authors find that the GDPR had mixed effects on the returns of different types of firms.⁷⁴ Other papers also show similarly mixed effects.⁷⁵

Ultimately, the empirical literature concerning the effects of the GDPR shows that regulation—in this case, privacy protection—is no free lunch. Of course, this does not mean that regulating the metaverse would necessarily have these same effects. But in the absence of a clear market failure to solve, it is unclear why policymakers should run such a risk in the first place.

In the end, regulating the metaverse is unlikely to be costless. The metaverse is still in its infancy, regulation could deter essential innovation, and the commission has thus far failed to identify any serious market failures that warrant public intervention. The result is that the commission's call for evidence appears premature or, in other words, that the commission is putting the meta-cart before the meta-horse.

⁷⁴ Rajkumar Venkatesan, S. Arunachalam & Kiran Pedada, *Short Run Effects of Generalized Data Protection Act on Returns from AI Acquisitions*, UNIVERSITY OF VIRGINIA WORKING PAPER 6 (2022), available at: https://conference.nber.org/conf_papers/f161612.pdf. (“On average, GDPR exposure reduces the ROA of firms. We also find that GDPR exposure increases the ROA of firms that make AI acquisitions for improving customer experience, and cybersecurity. Returns on AI investments in innovation and operational efficiencies are unaffected by GDPR.”)

⁷⁵ For a detailed discussion of the empirical literature concerning the GDPR, see Garrett Johnson, *Economic Research on Privacy Regulation: Lessons From the GDPR And Beyond*, NBER WORKING PAPER 30705 (2022), available at https://www.nber.org/system/files/working_papers/w30705/w30705.pdf.