

PARADISE IS A WALLED GARDEN? TRUST, ANTITRUST, AND USER DYNAMISM

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par•a•dise (pār'ə-dīs',-dīz') *n.* **1.** often **Paradise** The Garden of Eden. **2.** *Christianity a.* The abode of righteous souls after death . . . **3.** A place of ideal beauty or loveliness. **4.** A state of delight. . . **Word History** The history of *paradise* is an extreme example of amelioration, the process by which a word comes to refer to something better than what it used to refer to. The old Iranian language Avestan had a noun *pairidaēza-*, “a wall enclosing a garden or orchard,” . . . Xenophon, a Greek mercenary soldier who spent some time in the Persian army . . . us[ed] it not to refer to the wall itself but to the huge parks that Persian nobles loved to build and hunt in. This Greek word was used in the Septuagint translation of Genesis to refer to the Garden of Eden, whence Old English eventually borrowed it around 1200.¹

INTRODUCTION

Could walled gardens become better than we expect—is there a way we could come to see them as more “garden” than “wall”? In the worlds of technology and cyberlaw, the term “walled garden”² has become an epithet to epitomize a proprietary (and likely sterile) community.³ Often, this metaphor is contrasted with an open community with a vibrant, creative life.⁴

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¹ THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1273-74 (4th ed. 2000).

² Michael H. Wolk, *The iPhone Jailbreaking Exemption and the Issue of Openness*, 19 CORNELL J.L. & PUB. POL'Y 795, 797 (2010) (“A walled garden is a system where an entity controls as many aspects of a product as possible and where features are only available if approved by a central authority.”).

³ Jonathan Zittrain clearly presents the dystopian view of closed, proprietary communities. JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET—AND HOW TO STOP IT* 4 (2008). Zittrain presents society with a choice. On one hand exists the sterile but safe “information appliances,” with his examples of the iPhone and the Xbox, and “network[s] of control” such as Facebook. *Id.* at 2-4. On the other hand exists the vulnerable but malleable personal computers (“PCs”) and a “generative” Internet—information technology that fosters greater creativity among users. *Id.* at 2. Although he has a broad range of concerns beyond the Internet and telecommunication networks and prescribes lighter regulation, his views share important common themes with those who advocate for network neutrality or FCC mandatory-interconnection regulation of the Internet. *See, e.g.*, BARBARA VAN SCHEWICK, *INTERNET ARCHITECTURE AND INNOVATION* 387-89, 392 (2010) (calling for “[t]hose protecting the public interest” to influence the choice of network architecture because of its effects on social welfare); Mark A. Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the*

Is this choice really so stark? Can a walled garden, in fact, be a kind of creative paradise? When most frequently deployed, the walled garden metaphor tends to emphasize the walls more than the garden.⁵ However, from mass user-generated content and innovation on the Internet—what this Article terms “user dynamism”—to successful iPhone and Google Android Apps produced by comparatively small developers, both open online communities and controlled networks have spawned significant user dynamism.⁶ Such developments are comparatively recent in economic history, and it is unclear how valuable such user dynamism may turn out to be.⁷ In fact, the examples thus far may be simply the beginning of larger possibilities for this phenomenon.⁸ “Interventionist” analyses suggest that the openness of networks, platforms, and the like is critical, and the government may need to mandate it through regulation, if necessary.⁹

The view that networks, standards, and similar “platforms”¹⁰ require state-compelled openness is not universal, however.¹¹ Detractors make dif-

Broadband Era, 48 UCLA L. REV. 928-29, 971 (2001) (arguing that current Internet design principles should be preserved because they enable creativity); Kevin Werbach, *Off the Hook*, 95 CORNELL L. REV. 535, 571-98 (2010) (proposing a theory of FCC Internet jurisdiction to mandate an “open Internet”); see also Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 MINN. L. REV. 917, 918-21 (2005) (proposing intervention in markets based on the variable use of certain kinds of economic infrastructure in downstream products).

⁴ See, e.g., David R. Johnson, et al., *The Accountable Internet: Peer Production of Internet Governance*, 9 VA. J.L. & TECH. 9, ¶¶ 28, 40, 43 (2004) (comparing the walled garden of a “benevolent dictator” to an open Internet “built both on trust and on the right to distrust”).

⁵ See, e.g., Neil Weinstock Netanel, *Temptations of the Walled Garden: Digital Rights Management and Mobile Phone Carriers*, 6 J. ON TELECOMM. & HIGH TECH. L. 77, 80 (2007) (“The Apple-AT&T walled garden approach, in short, employs a combination of DRM and proprietary format to attract and then lock in consumers to the iPhone and AT&T subscription.”); Tal Z. Zarsky, *Information Privacy in Virtual Worlds: Identifying Unique Concerns Beyond the Online and Offline Worlds*, 49 N.Y.L. SCH. L. REV. 231, 240 (2004) (“These sites are at times referred to as ‘walled gardens’ as they aim to entice the user to remain within the boundaries of this specific site that can provide the user with all the various sources he or she might require.”); Hattie Harman, Note, *Drop-Down Lists and the Communications Decency Act: A Creation Conundrum*, 43 IND. L. REV. 143, 145 (2009) (“Due in part to increased competition in the dial-up access market and the proliferation of broadband access, the ‘walls’ of the walled garden world began to crumble, and websites began to offer users the ability to interact with the content on their sites.” (footnote omitted)).

⁶ See *infra* Part I.

⁷ For examples of innovation by users, especially by lead users, see ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION* 23-27 (2005). See also YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* 1-2, 133-36 (2006) (describing information production and innovation, especially by non-market actors).

⁸ BENKLER, *supra* note 7, at 174-75; VON HIPPEL, *supra* note 7, at 1.

⁹ See *infra* Part IV.A.

¹⁰ See Michael J. Madison et al., *Constructing Commons in the Cultural Environment*, 95 CORNELL L. REV. 657, 691-92 (2010) (explaining the similarities between open-source software, standard-setting organizations, intentional creation of scientific commons, and other explicit acts aimed at constructing an open environment to pool and use information resources).

ferent points relating to the same claim: if the government mandates neutral access, network providers may experience some real costs while any benefits remain uncertain.¹² Thus, these laissez-faire commentators argue that using intervention to foster network neutrality-like openness may be flawed as a matter of economic theory,¹³ may be difficult to apply without causing unforeseen harm to innovation in practice,¹⁴ and, finally, may not matter to consumer welfare.¹⁵

This Article makes several claims. First, the potential magnitude of user dynamism's contribution to Internet platform value is not yet fully appreciated. This Article is the first to apply the exit-voice-loyalty-neglect ("EVLN") model to understand the economic value of users' choices among exit, loyalty, and goodwill. It is also the first to examine how those choices impact the user dynamism, which is increasingly the source of platform value. Second, the error-cost framework developed in antitrust doctrine over the past several decades can help inform policy choices aimed at promoting user dynamism within such walled gardens.¹⁶ In this context, under an error-cost analysis, government action should be favored over passivity due to the yet-unknown potential of user dynamism.¹⁷ In fact, the Federal Trade Commission's ("FTC") recent patent-ambush, standard-setting cases implicate concerns that are analogous to those surrounding user dynamism in walled gardens.¹⁸ Finally, while neither antitrust law nor regulations may offer a perfect solution, this Article sets forth some guidelines for potential steps that the government should take. In doing so, this Article explains how these considerations relate to debates about network neutrality and network access, two areas that antitrust law has significantly

¹¹ See, e.g., Daniel F. Spulber & Christopher S. Yoo, *Mandating Access to Telecom and the Internet: The Hidden Side of Trinko*, 107 COLUM. L. REV. 1822, 1843-46 (2007) (describing the essential facilities doctrine's potential negatives when applied to telecommunications and Internet contexts).

¹² See *id.* at 1844-45 (explaining that short run, supracompetitive returns provide incentives to invest in additional network capacity, while the essential facilities doctrine dampens investment incentives and reduces price).

¹³ See *id.* at 1845 ("Compelled access also dampens the incentives of the essential facilities defendant to invest in improvements in its facilities, since price regulation will limit the returns it can earn on such investments and force it to share successful investments with its competitors.").

¹⁴ See Geoffrey A. Manne & Joshua D. Wright, *Google and the Limits of Antitrust: The Case Against the Case Against Google*, 34 HARV. J.L. & PUB. POL'Y 171, 187 (2011) (arguing that "antimarket bias in favor of monopoly explanations for innovative conduct" plus "increased stakes" of "intervention against innovative business practices" makes essential facilities-related intervention "problematic from a consumer welfare perspective").

¹⁵ Jonathan M. Barnett, *The Host's Dilemma: Strategic Forfeiture in Platform Markets for Informational Goods*, 124 HARV. L. REV. 1861, 1869 (2011) ("Access policies, as implemented through some mix of closed and open organizational components, are simply part of the consumption bundle . . . [and] there is no assurance that open structures even promote consumer welfare.").

¹⁶ See *infra* Part III.A.1.a.

¹⁷ See *infra* Part III.A.1.a.

¹⁸ See *infra* Part IV.B.

shaped.¹⁹ In particular, this Article draws inspiration from the essential facilities doctrine in monopolization law²⁰ and the interconnection regime for telecommunications that the Federal Communications Commission (“FCC”) implemented pursuant to *United States v. AT&T*.²¹

The rise of user-generated innovation and content (that is, increased *dynamic and static efficiency*²² due to user activity) alters the way in which error costs and dynamic versus static efficiency are usually perceived in traditional antitrust doctrine.²³ Antitrust doctrines such as error costs (false negatives and false positives) and dynamic versus static efficiencies can help to shape access requirements. Whether one explores user dynamism using dynamic efficiency, technological progress, or an increase in total-factor productivity, the gain is simple: it provides the ability to make more with less.²⁴ Now, both producers and users drive dynamic efficiency and, therefore, refraining from intervention for fear of imposing costs on innovative producers may unintentionally result in leaving innovative users unprotected against ex post appropriation of their contributions.²⁵ As a result, the

¹⁹ See, e.g., Jonathan E. Nuechterlein, *Antitrust Oversight of an Antitrust Dispute: An Institutional Perspective on the Net Neutrality Debate*, 7 J. ON TELECOMM. & HIGH TECH. L. 19, 21 (2009) (“[T]he net neutrality controversy is best understood as a classic antitrust dispute”); Spulber & Yoo, *supra* note 11, at 1823-24 (discussing the “pivotal role” antitrust courts have played in shaping the telecommunications industry through access remedies).

²⁰ See generally Brett Frischmann & Spencer Weber Waller, *Revitalizing Essential Facilities*, 75 ANTITRUST L.J. 1 (2008) (discussing current challenges to the essential facilities doctrine and proposing its reinvigoration in open access debates).

²¹ 552 F. Supp. 131, 223-25 (D.D.C. 1982) (issuing a consent decree mandating a break-up of the monopoly), *aff’d sub nom.* Maryland v. United States, 460 U.S. 1001 (1983); see also Spulber & Yoo, *supra* note 11, at 1879, 1884, 1889 (discussing network access using a framework of concepts such as “natural monopoly” and “double marginalization” that are canonical economic arguments in antitrust law concerning the tying or bundling of separate products); Tim Wu, *Wireless Carterfone*, 1 INT’L J. COMM. 389, 396, 415-16 (2007), available at <http://ijoc.org/ojs/index.php/ijoc/article/view/152/96> (arguing that *Hush-a-Phone Corp. v. United States*, 238 F.2d 266, 269 (1956), requiring AT&T to allow interconnection of devices to the telephone network, is analogous in rationale to regulating network operators to promote competition at higher layers using the Internet).

²² This is a standard economic concept tracking static, or short-run, efficiency concerns about deadweight loss, versus dynamic, or longer-term, concerns about efficient investment decisions and stimulation of technological progress. E.g., Pierre Régibeau & Katharine Rockett, *The Relationship Between Intellectual Property Law and Competition Law: An Economic Approach*, in THE INTERFACE BETWEEN INTELLECTUAL PROPERTY RIGHTS AND COMPETITION POLICY 507-08 (Steven D. Anderman ed., 2007) (contrasting the static efficiency concern that price be equal to the marginal cost of production to avoid deadweight loss with the dynamic efficiency concern that proper incentives for investment apply broadly not only to physical assets but also R&D and improvements in production).

²³ See *infra* Part III.A.

²⁴ See Thomas O. Barnett, *Maximizing Welfare Through Technological Innovation*, 15 GEO. MASON L. REV. 1191, 1194 (2008) (discussing technological change, dynamic efficiency, and innovation in production).

²⁵ See *infra* Part I.A.

possibility of snuffing out user dynamism in its infancy provides a compelling reason to question arguments against regulatory intervention.²⁶

Both the interventionist and the laissez-faire approaches often neglect the degree to which networks must first gain their users' trust before convincing these users to invest time and effort in generating content and innovation.²⁷ Users value the products of their own user dynamism as well as the opportunity to benefit from other users' activity.²⁸ Network effects supercharge the impact of user dynamism by increasing its value to the community of network users.²⁹ Simply put, users will lack incentives to adopt a network and may change their conduct if they believe that the network will exploit them without redress after adopting that network.³⁰ Such concerns are real ones that traditional economic models do not address, but that are usefully understood through the EVLN model's application.³¹ In contrast, protecting reliance and investment interests from holdup and opportunism are problems with which black-letter law has long dealt.³²

This Article proceeds in five Parts. In Part I, the Article briefly describes user dynamism within networks and platforms. It provides examples of ex post changes in policy by network and platform proprietors that have undercut users' expectations. Part II applies the EVLN model to explain the important role of platforms' community aspects in fostering user dynamism. Part III describes the interventionist and laissez-faire approaches to networks and platforms. It also explains how applying an error-cost analysis to user dynamism leads to divergence from traditional expectations. Part IV describes the FTC's recent experience with standard-setting. Finally, drawing on these guidelines, Part V sets forth a series of simple considerations as touchstones for protecting user dynamism. While such prescriptions cannot substitute for ideal policy due to the lack of information about the importance and nature of user dynamism, these simple principles can help

²⁶ ERIC S. RAYMOND, *THE CATHEDRAL AND THE BAZAAR: MUSINGS ON LINUX AND OPEN SOURCE BY AN ACCIDENTAL REVOLUTIONARY*, at xi-xii (rev. ed. 2001) (“[C]omputer software is an increasingly critical factor in the world economy and in the strategic calculations of businesses. . . . Today the open-source movement is bidding strongly to define the computing infrastructure of the next century.”).

²⁷ See *id.* at 26-27 (discussing the importance of “properly cultivat[ing]” users as “co-developers”); see also *infra* Part III.

²⁸ See RAYMOND, *supra* note 26, at 125 (“In this inverse commons, the grass grows taller when it’s grazed upon.”).

²⁹ *Id.*

³⁰ See *id.* at 133.

³¹ See ALBERT O. HIRSCHMAN, *EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES* 76-77 (1970) (applying the concepts of “exit,” “voice,” and “loyalty”). See generally Michael J. Withey & William H. Cooper, *Predicting Exit, Voice, Loyalty, and Neglect*, 34 *ADMIN. SCI. Q.* 521 (1989) (applying all four concepts of EVLN in a study of employee dissatisfaction).

³² See, e.g., Juliet P. Kostritsky, *Uncertainty, Reliance, Preliminary Negotiations and the Holdup Problem*, 61 *SMU L. REV.* 1377, 1381-83 (2008) (discussing how courts award reliance costs).

keep walled gardens a bit more prelapsarian in terms of the trust users can place in them.

I. WALLED GARDENS, OPEN PLATFORMS, AND USER DYNAMISM

The term “walled garden” typically refers to restrictions on user access or abilities that are, in some way, limited.³³ The “walls” need not be absolute.³⁴ Instead, they can be restrictions on exit or entry, or “partial” restrictions on certain categories of activity.³⁵ The broader conception of restraints, which includes partial restrictions, echoes definitions used in anti-trust law.³⁶ The “garden” in question is generally some kind of platform enabling user activity—a network or device that allows users to connect with each other.³⁷ Users may make that connection through direct communication. Alternatively, they may connect through indirect ways, such as shared complimentary innovation or content generation, which can collectively be called “user dynamism.”³⁸ The focus of this Article is on platforms that promote user dynamism. These platforms fundamentally represent the same kind of dynamic increase in productive capacity that intellectual property (“IP”) and antitrust law seek to promote.³⁹

³³ Anthony Ciolli, *Chilling Effects: The Communications Decency Act and the Online Marketplace of Ideas*, 63 U. MIAMI L. REV. 137, 166 (2008).

³⁴ See *id.* (explaining that “walled-garden Internet service providers” of the mid-1990s made it difficult to access “content outside the walled garden”).

³⁵ See *id.* (describing the creation of “walled-gardens” by directing users to exclusive content within the walled garden); Wolk, *supra* note 2, at 797-98 (discussing Apple’s control over the iPhone by hampering the performance of unapproved apps).

³⁶ Restraints such as group boycotts and exclusionary conduct need not require absolute bars in order to be actionable under the antitrust laws. Instead, they can involve concerted refusal to compete on a particular quality or term of a product. See *Fed. Trade Comm’n v. Ind. Fed’n of Dentists*, 476 U.S. 447, 459 (1986). The Court noted:

A refusal to compete with respect to the package of services offered to customers, no less than a refusal to compete with respect to the price term of an agreement, impairs the ability of the market to advance social welfare by ensuring the provision of desired goods and services to consumers at a price approximating the marginal cost of providing them.

Id.; see also *Ross v. Bank of Am.*, 524 F.3d 217, 223 (2d Cir. 2008) (concluding that “alleged collusion to impose a mandatory term in cardholder agreements” was an actionable group boycott under the Sherman Act).

³⁷ See Hernan Galperin & François Bar, *The Regulation of Interactive Television in the United States and the European Union*, 55 FED. COMM. L.J. 61, 62 n.1 (2002); see also Wolk, *supra* note 2, at 797 (describing Apple’s creation of a walled garden of use with the iPhone).

³⁸ See BENKLER, *supra* note 7, at 133-36 (discussing the alternative sources of communications offered by the “networked information economy,” such as the sharing of homemade films and massive multiplayer online games).

³⁹ Herbert Hovenkamp and Christina Bohannon have made this point about the alignment of rationales of antitrust and IP despite the existence of some tensions. Christina Bohannon & Herbert Hovenkamp, *IP and Antitrust: Reformation and Harm*, 51 B.C. L. REV. 905, 914 (2010).

The concepts of “walled gardens” versus “open platforms” form a useful rhetorical dichotomy for modeling different approaches to platforms. However, between these poles may lay a spectrum rather than a stark discontinuity. For example, in his insightful book, Professor Jonathan Zittrain contrasts the 1980s-era freedom to innovate with modern times by comparing the Apple II computer with the sterile, applanized iPhone.⁴⁰ However, in light of the subsequent development of the AppStore and the flourishing of independent developers’ products there, these platforms seem more similar than at first look.⁴¹

Platforms vary depending on the degree to which the platform hosts or users, through their own activity, invest in the platforms to give them added value.⁴² In the traditional model of platforms, host investments drive network effects, thereby lowering transaction costs and providing value.⁴³ This may be a fairly accurate way to model investment in telecommunications networks or cable television.⁴⁴ Increasingly, however, Internet-based platforms in which user activity provides a greater share of the value have become more prominent.⁴⁵ On these platforms, users provide content and innovation.⁴⁶ While some say that altruism motivates these users, it might be more accurate to say that reciprocity, reputation, and community-mindedness also motivate them.⁴⁷

⁴⁰ ZITTRAIN, *supra* note 3, at 1-3.

⁴¹ James Grimmelmann & Paul Ohm, *Dr. Generative or: How I Learned to Stop Worrying and Love the iPhone*, 69 MD. L. REV. 910, 920-24 (2010) (reviewing JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET—AND HOW TO STOP IT* (2008)).

⁴² Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS’N 990, 990-92 & tbl.1 (2003).

⁴³ *E.g.*, David S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 YALE J. ON REG. 325, 332-33 (2003) (working through analysis of multi-sided platforms that create value where “[t]here are two or more distinct groups of customers” and the multi-sided platform helps members of these two groups to come together and capture the externalities between them that they otherwise cannot because of transaction costs).

⁴⁴ *See, e.g., id.* at 332 n.17 (citing telecommunications networks as an example of direct network effects increasing the value of a good).

⁴⁵ *See, e.g.*, Kristine Laudadio Devine, *Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?*, 10 N.C. J.L. & TECH. 59, 62-63 (2008) (discussing the relationship of increased user activity to the value of a search engine platform to advertisers); Paul J. Neufeld, Note, *Circumventing the Competition: The Reverse Engineering Exemption in DMCA § 1201*, 26 REV. LITIG. 525, 526 (2007) (describing the “key feature of games using Blizzard’s online service,” which allows users to chat with other users and participate in multiplayer games).

⁴⁶ *See, e.g.*, BENKLER, *supra* note 7, at 135-36 (describing Second Life, a newer game where users are given the tools to create their own game environment); Neufeld, *supra* note 45, at 526 (“Once connected, game owners may chat with other users; record scores, wins and losses; and participate in game tournaments.”).

⁴⁷ BENKLER, *supra* note 7, at 92-93, 96-97 (providing examples of motivations, including dinner invitations, blood donations, and amateur athleticism to make the point that individuals have varying motivations, including monetary ones, as well as nonmonetary ones from altruism to reciprocity).

However, user dynamism is, to some extent, an investment subject to opportunism, depending on the platform.⁴⁸ Of course, there are many examples of user dynamism in the area of software development, particularly those harnessing the Internet's lowering of transaction costs and communications barriers, including the "R" statistical software package⁴⁹ and Linux.⁵⁰

This Part discusses three specific examples of online platforms built with heavy user involvement: the Compact Disc Database ("CDDB"), Firefox, and Wikipedia. These platforms illustrate how platform operators can appropriate user investments, with potentially negative impacts on future user dynamism or, alternatively, how certain types of commitment strategies can convince users to continue to invest in dynamic activity.

A. CDDB/Gracenote and Appropriation

One of the earliest examples of user-created, mass content is the CDDB.⁵¹ By creating content through Internet-based sharing, users' goodwill, and time investments, CDDB succeeded in "what would have otherwise cost millions of dollars in human labor—compil[ing] a list of tracks on virtually every commercial compact disc known to humankind."⁵² The CDDB database has become the authoritative source for song track lists that load automatically when a user inserts the CD into his or her computer.⁵³ Similar user-content creation resulted in the Internet Movie Database ("IMDB"), whose movie directory originally stemmed from user contributions.⁵⁴

As a result, CDDB has become an archetype of valuable user-content generation. It also is an example of appropriation and propertization of user investments. CDDB's website, Gracenote, acquired and licensed the database, which made it possible for computer-based audio players to recognize

⁴⁸ See *infra* Part I.A.

⁴⁹ VON HIPPEL, *supra* note 7, at 128-29 (describing user innovation concerning both StataCorp and the "R" project).

⁵⁰ BENKLER, *supra* note 7, at 60 (describing the emergence of Linux, the "flagship[]" of open source software).

⁵¹ See Dan Hunter & F. Gregory Lastowka, *Amateur-to-Amateur*, 46 WM. & MARY L. REV. 951, 1002-03 (2004) (describing CDDB as "the canonical database of information about the contents of compact discs"); John Tehranian, *All Rights Reserved? Reassessing Copyright and Patent Enforcement in the Digital Age*, 72 U. CIN. L. REV. 45, 75, 77 (2003) (mentioning the CDDB as an example of the innovation advantages of the anti-regulatory culture of the Internet).

⁵² Tehranian, *supra* note 51, at 77; see also William Hubbard, *Communicating Entitlements: Property and the Internet*, 22 YALE L. & POL'Y REV. 401, 432 n.192; Hunter & Lastowka, *supra* note 51, at 1002-03.

⁵³ Hunter & Lastowka, *supra* note 51, at 1002-03.

⁵⁴ *Id.*

the tracks and display information about CDs automatically.⁵⁵ This also led to controversy and a lawsuit concerning “whether databases formed through submissions by individual members of the public can be considered the property of the company that collects and formats that data.”⁵⁶ Early announcements on the CDDB site stated that access to the CDDB service would “remain[] 100% free to software developers and consumers.”⁵⁷ CDDB changed this policy by implementing exclusionary license terms, a change that some users and developers found unacceptable.⁵⁸

Users might be upset by such appropriation of their work and undercutting of their reliance in the same manner that IP creators or industry players relying on a common standard might be in a similar situation.⁵⁹ Acquiring property through ex post propertization could have a significant negative impact on users’ investment in content creation and innovation, including chilling effects on future projects.⁶⁰ It is uncertain whether there will be more and better user investments in the hypothetical world where user dynamism enjoyed some protection from appropriation in such a manner. This is particularly important given how novel user dynamism through mass collaboration still remains.⁶¹

B. *Firefox, Symbian, and “Strategic Forfeiture”*

Is misappropriating the fruits of user dynamism really a problem worth worrying about? Professor Jonathan Barnett argues that it is not.⁶² In partic-

⁵⁵ Robert Lemos, *Companies Fight Over CD Listings, Leaving the Public Behind*, CNET NEWS (May 24, 2001, 4:00 AM), http://news.com.com/2009-1023-258109.html?legacy=cnet&tag=tp_pr.

⁵⁶ Tehranian, *supra* note 51, at 77 n.120; *see also* Lemos, *supra* note 55.

⁵⁷ Press Release, Gracenote, CDDB, World’s Largest Online CD Music Database, Debuts New Web Site (Apr. 27, 1999), *available at* http://www.gracenote.com/company_info/press/1999/1999042700/.

⁵⁸ *Why Freedb.org*, INTERNET ARCHIVE WAYBACKMACHINE, <http://web.archive.org/web/20041013091839/www.freedb.org/modules.php?name=Sections&sop=viewarticle&artid=2> (last visited June 25, 2011) (explaining that CDDB had required a license term that required that software using CDDB do so exclusively and not use other databases); *see also* Lemos, *supra* note 55.

⁵⁹ *See, e.g.*, Jonathan L. Rubin, *Patents, Antitrust, and Rivalry in Standard-Setting*, 38 RUTGERS L.J. 509, 513-14, 524-25 (2007) (discussing the importance of platform standards to determine “the future development path for a set of complementary products” and industry players’ reliance on standards).

⁶⁰ *See* RAYMOND, *supra* note 26, at 132-33 (describing the “social contract that supports open-source development”).

⁶¹ *See* BENKLER, *supra* note 7, at 1-2 (“[W]e have begun to see a radical change in the organization of information production.”).

⁶² *See* Barnett, *supra* note 15, at 1868-69 (“[T]he choice of organizational form [between open and closed networks] would appear to be a matter of social indifference that provides no basis for government intervention.”).

ular, he contends that “open” networks and “closed” networks are not provably different enough to require policy intervention.⁶³

Specifically, Barnett points out that platform hosts strategically forfeit⁶⁴ important parts of their networks or IP as a way of making precommitments to users.⁶⁵ Under this view, these commitments reassure users who would rely on these forfeited networks or IP.⁶⁶ According to Barnett, this forfeiture makes it possible for users to invest without fear of opportunism.⁶⁷

Does strategic forfeiture alone actually provide such reassurance? Two of Barnett’s chief examples of this strategy do not seem entirely convincing on this point: Netscape voluntarily forfeited its Communicator source code, which enabled users to develop Firefox,⁶⁸ and Nokia forfeited its mobile phone operating system, Symbian, to Android.⁶⁹ Both examples arguably involved IP that was entering a terminal stage of decline as proprietary technology. By the time Netscape made this forfeiture in 1998,⁷⁰ Microsoft’s bundling practices, later judged illegal under the Sherman Act, had effectively frozen Netscape’s web-browsing products off of the then-dominant (and still dominant) Windows-based PCs.⁷¹ Similarly, Nokia’s forfeiture of the Symbian mobile phone operating system represents a mixed story. While Nokia made Symbian available under an open-source license without charge in 2010, iOS (Apple’s iPhone operating system) and Google’s Android were already in the process of overtaking Symbian.⁷² Moreover, by early 2011, Nokia had already announced that it was aban-

⁶³ *Id.* at 1868.

⁶⁴ Barnett defines strategic forfeiture as the abandonment of IP rights or other control. *Id.* at 1887.

⁶⁵ *Id.* at 1865-66.

⁶⁶ *Id.* at 1887-88.

⁶⁷ *Id.* at 1881.

⁶⁸ Barnett, *supra* note 15, at 1888 n.84.

⁶⁹ *Id.* at 1863-64, 1914-19.

⁷⁰ RAYMOND, *supra* note 26, at 61-62 (describing Netscape’s announcement that it would give away the source code for its Communicator software suite, including the web browser Navigator, which evolved through user development into Firefox).

⁷¹ See *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30, 35 (D.D.C. 2000) (“Microsoft . . . violated § 1 of the Sherman Act by unlawfully tying its Web browser to its operating system.”), *aff’d in part, rev’d in part en banc and per curiam*, 253 F.3d 34 (D.C. Cir. 2001). The legality of Microsoft’s tying practices was never resolved by the courts because Microsoft entered a consent decree or settled all of the antitrust actions against it. Sue Ann Mota, *Hide It or Unbundle It: A Comparison of the Antitrust Investigations Against Microsoft in the U.S. and the E.U.*, 3 PIERCE L. REV. 183, 188-90 (2005).

⁷² See Kevin O’Brien, *Nokia to Open Access to Mobile Software*, N.Y. TIMES, June 25, 2008, at C3; Andrew Parker, *Google’s Android Overtake’s Nokia’s Symbian*, FIN. TIMES, Feb. 1, 2011, at 17 (reporting that data showed Android overtook Symbian during 2010).

doing Symbian to use its own products.⁷³ While examples like Firefox and Symbian show that platform hosts abandon valuable properties, doing so as these properties enter a stage of decline or even obsolescence is not a pre-commitment strategy, because the platform host is not expecting a robust future development of the platform *ex ante*.⁷⁴ Instead, these forfeitures resemble leaving unwanted but usable furniture at the curbside for others to repurpose.⁷⁵

In neither the Firefox nor the Symbian examples did voluntary forfeiture create the dynamic that Barnett proposes: an open platform that attracts use and thereby generates profit on a linked proprietary network or standard.⁷⁶ It is not clear yet that a for-profit entity's voluntary forfeiture alone can induce strong forces of user dynamism. However, in connection with other commitments, Barnett's theory may provide valuable insight, as the next example suggests.

C. *Wikipedia*

The possibility that the government will appropriate user dynamism has been a recurring concern within the Wikipedia community.⁷⁷ Wikipedia has responded with arguably a form of strategic forfeiture with its affiliated

⁷³ See Thomas Ricker, *RIP: Symbian*, ENGADGET (Feb. 11, 2011, 7:26 AM), <http://www.engadget.com/2011/02/11/rip-symbian/> (describing Nokia's representation to investors that it was transitioning to all Windows 7-based mobile phones, abandoning the use of Symbian).

⁷⁴ Barnett's argument regarding strategic forfeiture assumes that "a platform has achieved the highest level of user adoption" *ex ante*. Barnett, *supra* note 15, at 1880.

⁷⁵ Some might argue that firms competing in several markets might forfeit a "losing" technology to open source as a competitive response to injure the winner in that particular market segment, making it tougher for the winner to leverage that particular success into adjoining markets. *E.g.*, Douglas Lichtman et al., *Strategic Disclosure in the Patent System*, 53 VAND. L. REV. 2175, 2177 (2000). That is not Barnett's argument. See Barnett, *supra* note 15, at 1874-75. Whether that argument is procompetitive generally is an interesting question that is beyond the scope of this Article.

⁷⁶ See Barnett, *supra* note 15, at 1864-65.

⁷⁷ See Piero Scaruffi, *February 2011: Wikipedia as a Force for Evil*, SCARUFFI.COM, <http://www.scaruffi.com/politics/usa11.html> (last visited July 6, 2011) ("Wikipedia . . . is increasingly representing the voice of the oppressor; or, if you prefer, the oppressors are increasingly keen on appropriating Wikipedia."); see also *Why an Encyclopedia is Harder to Write than Linux*, WIKIPEDIA REV. (Mar. 31, 2008, 4:19 PM), <http://wikipediareview.com/blog/20080331/why-an-encyclopedia-is-harder-to-write-than-linux/#more-80> ("[T]he logical conclusion of wikia/wikipedia is a monolithic, corporately-controlled standard, where every page and every site pretty much looks the same, works the same, and has the same culture."); cf. Commentary on YouTube's Compliance with Government Removal Requests, REDDIT, http://www.reddit.com/r/politics/comments/hfyso/in_a_frightening_example_of_how_the_state_is/ (last visited July 6, 2011) ("Corporations have the resources to hire people to fake consensus and win edit wars. It's subtle, but many of the articles regarding large organizations are completely whitewashed. I'd guess governments do the same.")

“Wikia” platform.⁷⁸ More importantly, it has responded with a governance structure and a portability policy that give dynamic users assurances that their investment will not be appropriated.⁷⁹

Wikipedia has become the canonical example of successful mass collaboration.⁸⁰ Cyberlaw theorists have pointed to network effects and lower transaction costs as contributing factors for increased online production.⁸¹ For decades, economic and legal commentators have appreciated the salient features of network effects, such as demand-side economies of scale, the tendency to foster complimentary investments that may generate lock-in, and the resulting first mover advantages.⁸² However, cyberlaw theorists’ predominant approach emphasizes not only complimentary investment or increased value from participation, but also an increased scope for the demand side to create content and generate innovation.⁸³ In short, the user becomes involved in both the supply and the demand sides, in both production and consumption.⁸⁴ Moreover, with user dynamism, the user generates

⁷⁸ See Matthew Rimmer, *Wikipedia, Collective Authorship and the Politics of Knowledge*, in INTELLECTUAL PROPERTY POLICY REFORM: FOSTERING INNOVATION AND DEVELOPMENT 172, 177 (Christopher Arup & William van Caenegem eds., 2009) (“Wiki supports the creation and development of wiki communities.”).

⁷⁹ *Wikipedia: About*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Wikipedia:About> (last visited July 6, 2011).

⁸⁰ BENKLER, *supra* note 7, at 72 (basing Wikipedia’s success on its users’ “dedication to objective writing” and the “self-conscious use of open discourse, usually aimed at consensus”); CLAY SHIRKY, *HERE COMES EVERYBODY: THE POWER OF ORGANIZING WITHOUT ORGANIZATIONS* 132-34 (2008) (positing that Wikipedia succeeds because individuals make “economically irrational but socially useful calculations,” which generate both individual motivation and mass collaboration and because individuals have an inherent desire to exercise their “unused mental capacities” for the “pleasure of changing something in the world”); ZITTRAIN, *supra* note 3, at 143-46 (describing Wikipedia as managing collaboration through a combination of brute force through massive voluntarism, a “communitarian” ethos, action through “consensus” during disputes, and a “light regulatory touch”).

⁸¹ *E.g.*, BENKLER, *supra* note 7, at 3-5.

⁸² *E.g.*, Joseph Kattan, *Market Power in the Presence of an Installed Base*, 62 ANTITRUST L.J. 1, 5-6, 10-11 (1993) (explaining how high switching costs increase the ability of the manufacturer to create lock-in by imposing supracompetitive prices for complementary goods); Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 484, 535 (1998) (arguing that network effects are demand-side and discussing first mover advantages in the network effect context); *see also* Mark A. Lemley & David W. O’Brien, *Encouraging Software Reuse*, 49 STAN. L. REV. 255, 274 (1997) (stating that innovators who are the first to market an idea or product enjoy “first mover advantage,” defined as “substantial advantages over later imitators even when access is not physically, electronically, or legally restricted”); Patrick D. Curran, Comment, *Standard-Setting Organizations: Patents, Price Fixing, and Per Se Legality*, 70 U. CHI. L. REV. 983, 986 (2003) (defining “demand-side economy of scale” as a market in which the consumer demand for a product increases as the product’s use increases).

⁸³ *See, e.g.*, BENKLER, *supra* note 7, at 39-40 (discussing innovation and information production from nonmarket sources).

⁸⁴ *See* Madison et al., *supra* note 10, at 661 (“[E]ach member of the Linux community may use material in the Linux commons and may contribute material back to the Linux commons. Each individ-

not just more units of supply but technological and qualitative improvement as well.⁸⁵ This is true of Wikipedia also, as users' contributions encompass not only the generation of content through encyclopedia entries, but also user innovation ranging from software improvements to governance institutions.⁸⁶

Wikipedia has an affiliated Wikia platform for pop-culture and other entries deemed not notable for the online encyclopedia itself.⁸⁷ Unlike Wikipedia, Wikia is a for-profit company,⁸⁸ despite sharing a parent entity and many key contributing individuals.⁸⁹ The connections between the two wiki-constellations have drawn some criticism. For example, per Wikipedia's own guidelines, articles on topics that are deemed not notable enough to remain on Wikipedia—such as somewhat obscure pop-culture topics or ethnic cuisine recipes—are “transwikied” to the sister site Wikia, with a link then placed on Wikipedia directing the user to Wikia.⁹⁰ Wikipedia—and its members—have opposed selling ads.⁹¹ Thus, its connection to for-profit, advertising-laden Wikia represents a way to potentially profit while maintaining Wikipedia as a strategically forfeited “free” site.⁹²

Strategic forfeiture may well allow Wikipedia's affiliated entities and individuals to profit from links to the online encyclopedia.⁹³ Yet, what reas-

ual member of the community contributes code to the accumulated archive of the Linux kernel, which is the core of the operating system.”); *see also supra* note 45 and accompanying text.

⁸⁵ *See* RAYMOND, *supra* note 26, at 125 (“[W]idespread use of open-source software tends to increase its value, as users fold in their own fixes and features . . .”).

⁸⁶ *Wikipedia: About*, *supra* note 79.

⁸⁷ *See* Jon Bernstein, *Wikipedia's Benevolent Dictator*, NEW STATESMAN, Jan. 31, 2011, at 36 (“Wales, who also runs a for-profit company called Wikia that hosts 3,000 wikis, predominantly about popular culture . . .”).

⁸⁸ *Id.*

⁸⁹ *The Tight-Knit Web of Wikimedia and Wikia*, WIKIPEDIA REV. (Aug. 21, 2007, 4:01 PM), <http://wikipediareview.com/blog/20070821/the-tight-knit-web-of-wikimedia-and-wikia>.

⁹⁰ *50 Ways that Connect Wikia/Wikimedia*, WIKIPEDIA REV. (Feb. 6, 2008, 1:42 AM), <http://wikipediareview.com/lofiversion/index.php?t15648.html> (stating that *Wikipedia* operates a practice of “transwiking” of content created by volunteers from Wikipedia to *Wikia Inc.*'s “for-profit” sites (internal quotation marks omitted)); *see Wikipedia: Deletion Policy*, WIKIPEDIA, http://en.wikipedia.org/wiki/Wikipedia:Deletion_policy (last modified June 24, 2011) (listing the copying of articles to sister projects “using transwiki functionality” as an alternative to deletion or merger with another Wikipedia article). One user expressed dissatisfaction with Wikipedia's practice of linking to for-profit sites:

I believe that the integrity of Wikipedia is at stake by linking to Wikia articles and the morals of a free encyclopedia which accepts donations linking to a for-profit site run by the very same person are extremely questionable. I do not think that Wikipedia[']s purpose is to generate money for the Wikia corporation. I am aware that it is common practice . . .

Wikipedia: Village Pump (Policy), WIKIPEDIA (Dec. 1, 2007), http://en.wikipedia.org/w/index.php?title=Wikipedia:Village_pump_%28policy%29&diff=prev&oldid=175064490.

⁹¹ Bernstein, *supra* note 87, at 36 (“When the idea of a model funded by advertising was floated in 2002, the Wikipedia Spain volunteers walked away in protest . . .”).

⁹² *See The Tight-Knit Web of Wikimedia and Wikia*, *supra* note 89.

⁹³ *Id.*

tures Wikipedia's dynamic users, despite concerns about Wikia, is Wikipedia's governance and portability policy.⁹⁴ That reassurance helps keep contributions flowing.⁹⁵ In fact, Wikipedians have built a dispute resolution system aimed less at resolving disputes than articulating norms of behavior and weeding out problem users (while "weed[ing] in" those users who show signs that they can contribute productively).⁹⁶ The Wikipedia community has also created a series of governing and advisory bodies drawn from its contributors.⁹⁷ While there have been concerns about the selection process for these groups, they nonetheless represent a commitment to a degree of user representation in decisionmaking.⁹⁸

Finally, Wikipedia's use of first the GNU Free Documentation License, and then the Creative Commons Attribution Share Alike License gives exiting users at least the theoretical ability to copy and redistribute the online encyclopedia's content royalty-free, subject to commitments to follow proper attribution and to pursue noncommercial use.⁹⁹ The effect of these governance and portability commitments is that, *ex ante*, they give users comfort that Wikipedia will not summarily strip users of their investments in content creation and other innovation.¹⁰⁰

Thus, Wikipedia combines elements of controlled forfeiture with governance and portability commitments. Controlled forfeiture allows for profit-making that can flow to the individuals and entity that controls both Wikipedia and Wikia.¹⁰¹ Under Barnett's account, this satisfies the "insol-

⁹⁴ See Bernstein, *supra* note 87, at 36 (explaining that the absence of commercialism on the site fosters trust from dynamic users who are interested only in "sharing the passion" (internal quotation marks omitted)).

⁹⁵ Andrea Forte & Amy Bruckman, *Why Do People Write for Wikipedia? Incentives to Contribute to Open-Content Publishing*, JELLIS.ORG, <http://jellis.org/work/group2005/papers/forteBruckmanIncentivesGroup.pdf> (last visited July 6, 2011).

⁹⁶ See David A. Hoffman & Salil K. Mehra, *Wikitruth Through Wikiorder*, 59 EMORY L.J. 151, 203-04 (2009) (internal quotation marks omitted).

⁹⁷ See Ivan Beschastnikh, et al., *Wikipedian Self-Governance in Action: Motivating the Policy Lens*, in PROCEEDINGS OF THE SECOND INTERNATIONAL CONFERENCE ON WEBLOGS AND SOCIAL MEDIA 27, 29 (2008), available at <http://www.aaai.org/Papers/ICWSM/2008/ICWSM08-011.pdf>; Andrea Forte & Amy Bruckman, *Scaling Consensus: Increasing Decentralization in Wikipedia Governance*, in PROCEEDINGS OF THE 41ST ANNUAL HAWAII INTERNATIONAL CONFERENCE ON SYSTEM SCIENCES, at 4 (2008), available at <http://www.computer.org/portal/web/csdl/doi/10.1109/HICSS.2008.383>.

⁹⁸ Forte & Bruckman, *supra* note 97, at 4.

⁹⁹ See Jon M. Garon, *Wiki Authorship, Social Media, and the Curatorial Audience*, 1 HARV. J. SPORTS & ENT. L. 95, 118-19 (2010) (describing the difference between the two licenses and the effect on Wikipedia); Jyh-An Lee, *The Greenpeace of Cultural Environmentalism*, 16 WIDENER L. REV. 1, 33 (2010) (describing Wikipedia's switch between the two licenses and the reasons behind it).

¹⁰⁰ See Lee, *supra* note 99, at 32.

¹⁰¹ See Timothy K. Armstrong, *Shrinking the Commons: Termination of Copyright Licenses and Transfers for the Benefit of the Public*, 47 HARV. J. ON LEGIS. 359, 386 (2010) (explaining that any users wishing to edit a Wikipedia page must agree to release any contributions under both the Creative Commons Attribution/Share Alike License 3.0 and the GNU Free Documentation License).

vency constraint”—that is, the ability to stay financially afloat.¹⁰² Nevertheless, governance and portability commitments are at least as important. The governance commitments allow quality-sensitive users to voice their opinions in a meaningful way about the direction of the community.¹⁰³ At the same time, the portability commitment allows not just for exit, but an exit that potentially allows dynamic users to avoid or lessen the appropriation of their investment.¹⁰⁴ These commitments can help keep these gardens paradisiacal even when they are walled.

II. ONLINE COMMUNITIES, EXIT, AND MARKETS

Scholars frequently analyze online platforms as though they were typical twentieth-century natural monopolies, such as the Bell System.¹⁰⁵ The most salient features of these entities are significant upfront investments and network effects.¹⁰⁶ For example, a telephone system requires extremely large fixed-cost investments and becomes more valuable to each user each time another user joins the system.¹⁰⁷ Under this view, because such systems require major upfront investments, requiring interconnection or non-discrimination¹⁰⁸ against those outside the network, at the margin, creates a disincentive for users to make the fixed-cost investment in the first place.¹⁰⁹

However, platforms characterized by user dynamism implicate three considerations beyond those that surrounded the mid-twentieth century Bell System. First, users engaged in dynamic use resemble members of an organization just as much or more than they resemble the classic economic consumer; as such, the economics of membership resemble dynamic users’

¹⁰² Barnett, *supra* note 15, at 1913-14.

¹⁰³ See Forte & Bruckman, *supra* note 95 (Wikipedia’s governance commitments make it “easy for a newcomer to enter into the community and quickly begin to direct the character of the content and the discussions that happen on the site”).

¹⁰⁴ See *Wikipedia: About*, *supra* note 79.

¹⁰⁵ See, e.g., Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149, 1180 (2008).

¹⁰⁶ Harry First, *Microsoft and the Evolution of the Intellectual Property Concept*, 2006 WIS. L. REV. 1369, 1412 (2006) (describing a natural monopoly with characteristics including “strong supply-side economies (high fixed costs . . .) and strong demand-side economies (network effects)”).

¹⁰⁷ Robert B. Ahdieh, *The Visible Hand: Coordination Functions of the Regulatory State*, 95 MINN. L. REV. 578, 640 (“The individual benefits of a telephone . . . depend on its consumption by others.”); Marina Lao, *Networks, Access, and “Essential Facilities”: From Terminal Railroad to Microsoft*, 62 SMU L. REV. 557, 569 (2009) (“The . . . ‘last mile’ of telephone wires leading to the millions of homes and businesses with telephone service is a natural monopoly. It is not cost-effective to duplicate them because of the high fixed costs of installation . . .”).

¹⁰⁸ See *infra* Part III.A.2.

¹⁰⁹ See Spulber & Yoo, *supra* note 11, at 1845; see also Barnett, *supra* note 15, at 1868-69 (arguing that current knowledge can prove open systems lead to a more efficient outcome than proprietary systems, and so choice of “open and closed structures” should be a matter of “social indifference”).

incentives more closely.¹¹⁰ Second, based on economic theories of community and membership, the ability of users with the highest level of dynamism and quality sensitivity get responses by voicing their concerns (rather than by exiting the platform).¹¹¹ This should inform policy responses such as enforcing non-discrimination or interconnection.¹¹² Finally, because user dynamism requires users to rely on the platform host's commitments in investing its time and energy, the possibilities of holdup and cheap exclusion may justify a policy response.¹¹³

This Part proceeds in four Sections. It discusses how user dynamism increases the quality of platforms, how dynamic users should not be treated as pure consumers or pure producers, how quality sensitivity leads to different behavior than price sensitivity, and how giving dynamic users a voice can lead to loyalty rather than exit.

A. *User Dynamism, Quality, and Exit's Weakness*

Under traditional network consumer analysis, the consumer's role is firmly and solely on the demand side.¹¹⁴ Often, analyses that try to account for network parties' productivity assume that users can be neatly culled into separate groups of consumers and producers. Such accounts describe networks as involving producer-users on one hand and consumer-users on the

¹¹⁰ This argument relies significantly on Albert Hirschman's seminal analysis. *See generally* HIRSCHMAN, *supra* note 31.

¹¹¹ *Id.* at 37-38 (“[Q]uality-elasticity of demand . . . can . . . be viewed as depending on the ability and willingness of the customers to take up the voice option.”). Customers may stick with a lower quality product because they feel they are “able to ‘do something’ about [it] and because only by remaining . . . customer[s] . . . will [they] be able to exert this influence.” *Id.* at 38.

¹¹² For example, if consumers are more quality sensitive, they will be more likely to voice their concerns about goods or services, as is the case with durable goods like platform software. *Id.* at 40-41; Greg R. Vetter, *Exit and Voice in Free and Open Source Software Licensing: Moderating the Rein over Software Users*, 85 OR. L. REV. 183, 200 n.68 (2006) (describing platform software applications as durable goods). A policy choice to enforce non-discrimination or interconnection may be less necessary than in a case where online content is “degraded or made inaccessible to consumers.” Helgi C. Walker & Martha E. Heller, *Communications Law 2009*, PRACTISING L. INST., Dec. 2009, available at 990 PLL/Pat 229, 273 (Westlaw).

¹¹³ This is analogous to the concerns in Frischmann, *supra* note 3, at 992-95 (describing the social value of requiring access to basic research in the IP context and determining that policy should favor granting access over allowing restriction of access to overcome the free-riding problem) and the FTC standard-setting cases, see *infra* Part IV.

¹¹⁴ Peter Simeon Swisher, *The Managed Web: A Look at the Impact of Web 2.0 on Media Asset Management for the Enterprise*, 3 J. DIGITAL ASSET MGMT. 32, 32-33 (2007) (“Legacy [multimedia asset management (“MAM”)] solutions created clear boundaries between content creators and content consumers. Content creators were within company walls; content consumers were at the receiving end of distribution packages.”).

other,¹¹⁵ or they describe network operators as operating in a two-sided market in between consumers and producers.¹¹⁶ These accounts fit well with network archetypes as described in landmark cases such as *In re Use of the Carterfone Device in Message Toll Telephone Service*,¹¹⁷ which involved the Bell System,¹¹⁸ or *United States v. Microsoft Corp.*,¹¹⁹ which involved Microsoft Windows.¹²⁰ Perhaps they may continue to describe platforms accurately where the host's investment in reducing transaction costs between users greatly outweighs the value that the users themselves create.¹²¹ Such models also typically make the increasingly untenable assumption that new products and services originate *only* with traditional producers and manufacturers.¹²²

Increasingly, however, the network platforms with interactive users resemble communities rather than two-sided versions of perfectly competitive markets.¹²³ Users cannot always be hived off into one group that innovates and another that merely consumes.¹²⁴ Platform operators' added value of reducing transaction costs is not as convincing in the case of online platforms, created on an Internet whose transaction costs already approach zero.¹²⁵ User dynamism, within something approaching a community, ac-

¹¹⁵ See, e.g., Barnett, *supra* note 15, at 1875-76 (explaining that there are two types of users in platform markets: end-users and developer-users).

¹¹⁶ E.g., Evans, *supra* note 43, at 332-33; Letter from David S. Evans, Chairman, eSapience, Ltd., to Donald S. Clark, Sec'y, Fed. Trade Comm'n (Oct. 6, 2006) (working through analysis of "[t]wo-sided platforms [that] create value" where "distinct groups of customers" and the two-sided platform helps members of these two groups to come together and capture the externalities between them that they otherwise cannot "because of transaction costs").

¹¹⁷ 13 F.C.C.2d 420 (1968).

¹¹⁸ *Id.* at 422; see also Wu, *supra* note 21, at 395 (describing 1960s and 1970s era FCC rules on attaching devices to the telephone network stemming from the *Carterphone* case and arguing for an analogous application to wireless telephony).

¹¹⁹ 253 F.3d 34 (D.C. Cir. 2001) (en banc) (per curiam).

¹²⁰ *Id.* at 45.

¹²¹ See, e.g., *Broad. Music, Inc. v. CBS*, 441 U.S. 1, 4-5 (1979) (describing the American Society of Composers, Authors and Publishers ("ASCAP"), which sold blanket licenses for copyrighted music, acted as a middleman between copyright holders and users, such as CBS, and reduced the transaction costs that made it "impossible for the many individual copyright owners to negotiate with and license the users and to detect unauthorized uses").

¹²² See VON HIPPEL, *supra* note 7, at 110.

¹²³ Garon, *supra* note 99, at 105 ("[S]haring knowledge among friends is an important form of user-generated information This audience is a highly participatory community." (footnotes omitted)); Swisher, *supra* note 114, at 32-33 (describing MAM 2.0 as an "ecosystem[]]" that "removes boundaries").

¹²⁴ See Swisher, *supra* note 114, at 32-33 (describing Wikipedia as exemplifying Web 2.0 and "'managed web,' or 'MAM 2.0,'" the ecosystems of which "blur [the] lines in such a way that consumers are also producers").

¹²⁵ See Garon, *supra* note 99, at 104 ("Wikis . . . emphasize user generated content and highlight the technology's elimination of barriers to entry for anyone who wishes to share his thoughts . . . [and they] provide free content to the public . . ."); Rebecca Lubens, *Survey of Developments in European*

counts for a larger share of value on these platforms.¹²⁶ This observation has become commonplace, and perhaps even trite, in popular business books.¹²⁷ These platforms—like Facebook and Wikipedia—are characterized by reciprocity, membership, and contribution, rather than the mere consumption of a natural monopoly-produced widget.¹²⁸ They increasingly rely on user-generated content and innovation for their added value to other users.¹²⁹

While not all users produce such dynamic improvement, enough do that the economics of communities may better map users' interactions with such platforms. In particular, the Exit-Voice-Loyalty model (now further developed and known as the “exit-voice-loyalty-neglect,” or EVLN model), originated by Professor Albert Hirschmann, may be particularly helpful.¹³⁰ Many have applied this paradigm profitably to understand other contexts, including those involving human interaction, combining economic production and consumption with broader feelings of community, workplace relations,¹³¹ and citizens' responses to dissatisfaction with public services.¹³² An application of this model helps to illuminate important aspects of quality sensitivity and user response that are not as usefully analyzed under a more classical economic framework.¹³³

Database Protection, 18 BERKELEY TECH. L.J. 447, 469 (2003) (referring to the low transaction costs of the Internet).

¹²⁶ Garon, *supra* note 99, at 104-05 (stating that “wikis reflect collaborative writing” and that “[t]he modern content consumer . . . is as much a participant in the dissemination and characterization of the content as the original publisher” since both individuals are “active and engaged in the content they consume”).

¹²⁷ See, e.g., RACHEL BOTSMAN & ROO ROGERS, WHAT'S MINE IS YOURS: THE RISE OF COLLABORATIVE CONSUMPTION 59 (2010); LISA GANSKY, THE MESH: WHY THE FUTURE OF BUSINESS IS SHARING 59-60 (2010); CLAY SHIRKY, COGNITIVE SURPLUS: CREATIVITY AND GENEROSITY IN A CONNECTED AGE 200 (2010); SHIRKY, *supra* note 80, at 121-22.

¹²⁸ See Garon, *supra* note 99, at 105 (“[W]ikis and . . . social media networks rely on the participation of the users to create timely, relevant content.”).

¹²⁹ See *id.*

¹³⁰ See generally HIRSCHMAN, *supra* note 31.

¹³¹ See generally Jaesub Lee & Fredric M. Jablin, *A Cross-Cultural Investigation of Exit, Voice, Loyalty and Neglect as Responses to Dissatisfying Job Conditions*, 29 J. BUS. COMM. 203 (1992); Caryl E. Rusbult et al., *Impact of Exchange Variables on Exit, Voice, Loyalty, and Neglect: An Integrative Model of Responses to Declining Job Satisfaction*, 31 ACAD. MGMT. J. 599 (1988); Withey & Cooper, *supra* note 31.

¹³² See generally William E. Lyons & David Lowery, *Citizen Responses to Dissatisfaction in Urban Communities: A Partial Test of a General Model*, 51 J. POL. 841 (1989).

¹³³ See *infra* Part II.C. Even incorporating assumptions of a “two-sided market” with network effects, the more traditional models tend to ignore the value of user dynamism and do not recognize the particular ramifications of quality-based exit from a platform with “community” characteristics. See *infra* Part II.C.

Figure 1. Responses to Community Deterioration in the EVLN Model¹³⁴

	Destructive	Constructive
Passive	Neglect	Loyalty
Active	Exit	Voice

B. *Dynamic Users Cannot Be Treated as Purely Consumers or Purely Producers*

Treating users as traditional consumers oversimplifies the analysis of their behavior and its effects on network development.¹³⁵ Under the standard microeconomic model, when the price of a good rises, the marginal consumer—that is, with the smallest consumer surplus—drops out first. Obligations, such as interconnection or non-discrimination that raise a network operator’s cost, force the operator to raise prices and lose these marginal consumers.¹³⁶ Thus, where users are treated as pure consumers, any benefits of these obligations come with a seemingly clear trade-off of higher costs and resultant reduced “sales.”

Applying the traditional model to online communities by dividing users into consumer-users and producer-users,¹³⁷ or by segmenting producer and consumer behavior into two sides of the market,¹³⁸ does not capture the new reality of user dynamism. Where users generate content or produce innovation that they (and other similar users) also consume, the attempt to

¹³⁴ E.g., Caryl E. Rusbult, *Responses to Dissatisfaction in Close Relationships: The Exit-Voice-Loyalty-Neglect Model*, in *INTIMATE RELATIONSHIPS: DEVELOPMENT, DYNAMICS, AND DETERIORATION* 214 (Daniel Perlman & Steve Duck eds., 1987); Caryl E. Rusbult & Isabella M. Zembrodt, *Responses to Dissatisfaction in Romantic Involvements: A Multidimensional Scaling Analysis*, 19 *J. EXPERIMENTAL SOC. PSYCHOL.* 274, 281 (1983).

¹³⁵ Axel Bruns, *The Future Is User-Led: The Path Towards Widespread Producersage*, *FIBRE CULTURE J.* (Nov. 2008), <http://eleven.fibrejournal.org/fcj-066-the-future-is-user-led-the-path-towards-widespread-producersage/>.

¹³⁶ Cf. J. Gregory Sidak, *A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet*, 2 *J. COMPETITION L. & ECON.* 349, 351-52 (2006).

[N]etwork neutrality regulation would . . . require an access provider to recover the full cost of its broadband network through disproportionately higher charges imposed on all end-users By making end-users pay for the full cost of broadband access, network neutrality regulation would deny broadband access to the large number of consumers who would not be able to afford, or who would not have the willingness to pay for, what would otherwise be less expensive access.

Id.

¹³⁷ See, e.g., Barnett, *supra* note 15, at 1875.

¹³⁸ See, e.g., Evans, *supra* note 43, at 331-34; cf. Manne & Wright, *supra* note 14, at 208 (focusing on advertisers versus end-users in the Google case).

cleanly segment them fails.¹³⁹ Instead, the “consumer” is more accurately modeled as something more like a community member.¹⁴⁰ As noted above, altruism may be part of this sense of community membership,¹⁴¹ but reciprocity, and potential pecuniary and nonpecuniary rewards may well provide incentives to participate.¹⁴²

Instead, dynamic users produce the *quality* of the platforms, and, in turn, they also consume in a quality-sensitive manner.¹⁴³ Professor Eric von Hippel has shown empirically that

innovating users (both individuals and firms) . . . have the characteristics of ‘lead users.’ That is, they are ahead of the majority of users in their populations with respect to an important market trend, and they expect to gain relatively high benefits from a solution to the needs they have encountered there.¹⁴⁴

Von Hippel’s study encompassed a range of situations from physical manufacturing to open-source software development—the latter is the starting point for the user dynamism on many contemporary platforms.¹⁴⁵ Due to this sensitivity to the quality of freedom to innovate and reap the gains, the effects of interconnection or non-discrimination obligations on users become more difficult to predict where users’ activities mix consumption and dynamism.¹⁴⁶ As noted previously, when network operators treat users as pure consumers, such obligations may raise prices and cause marginal consumers to exit; reduced demand due to this exit places pressure on the network operator to lower the price.¹⁴⁷ Thus, in the traditional model, reduced quality places pressure on the host to raise quality or lower prices.

However, where user dynamism actually improves product quality, the effects of the user’s exit are more ambiguous.¹⁴⁸ The user is now part of a

¹³⁹ Swisher, *supra* note 114, at 33 (noting that within the last two to three years, “publisher[s]” and “audience[s]” began to collaborate with each other to create a “socially networked web” (third internal quotation marks omitted)).

¹⁴⁰ See Lee Anne Fennell, *Beyond Exit and Voice: User Participation in the Production of Local Public Goods*, 80 TEX. L. REV. 1, 10-12 (2001) (pointing out this observation and commenting that Hirschman’s exit-voice options are useful for legal scholarship on local government where citizens can exit; that is, they can move, vote, or otherwise express themselves if they are dissatisfied); *cf.* HIRSCHMAN, *supra* note 31, at 100 (“[T]he ‘buyer’ is now in reality a member and as such he is involved in both the supply and the demand sides . . .”).

¹⁴¹ See BENKLER, *supra* note 7, at 83.

¹⁴² Forte & Bruckman, *supra* note 95; see also Hoffman & Mehra, *supra* note 96, at 196 n.186.

¹⁴³ HIRSCHMAN, *supra* note 31, at 52-53.

¹⁴⁴ VON HIPPEL, *supra* note 7, at 4.

¹⁴⁵ *Id.* at 11.

¹⁴⁶ See *infra* Part III.A.2 (discussing interconnection and non-discrimination interventions).

¹⁴⁷ See *infra* Part III.B (discussing arguments against intervention); see also HIRSCHMAN, *supra* note 31, at 99-100 (arguing that in a situation where a buyer is a price-maker, the buyer’s withdrawal will lead the producer to try to lower the price or raise the quality).

¹⁴⁸ See HIRSCHMAN, *supra* note 31, at 100.

community and, thus, involved on both the supply and demand sides.¹⁴⁹ Therefore, the user's quality-consciousness becomes an important factor.¹⁵⁰

Quality-consciousness both determines the dynamic user's demand and willingness to supply content and innovation to improve the quality of the platform.¹⁵¹ Interconnection and non-discrimination obligations, all things being equal, prevent reduction in the quality of a platform for its users; when access to some content or some of the users is blocked or reduced, the platform generally worsens from a quality perspective, even if the financial price of the platform for users remains the same.¹⁵² Thus, a regulatory commitment that prevents reduction in the quality of a platform for dynamic users encourages quality-sensitive users to continue to participate in and improve the platform by generating content and innovation. Therefore, the same obligations that might raise costs that lead price-sensitive users to exit based on higher price can also play a role in keeping quality-sensitive users by safeguarding the quality they value.¹⁵³

C. *Quality-Sensitivity Leads to Different Behavior than Price-Sensitivity*

The EVLN model calls into question the implications of the traditional economic model.¹⁵⁴ In contrast to the equilibrating tendencies of cost-conscious, pure consumers' exit, the exit of quality-conscious, dynamic users will likely lead to further deterioration and, thus, further exit.¹⁵⁵ The contrast is between a dynamic that self-equilibrates and one that leads to a death spiral.¹⁵⁶

Is this a realistic portrayal of how dynamic users of platforms act? Examples ranging from online fora to Wikipedia suggest that it may be.¹⁵⁷

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* (describing how the transformation of buyers to members brings them into "both production and consumption of the organization's output").

¹⁵¹ This virtuous cycle has been observed in other "memberships" examples as well. *See, e.g., id.* at 51-52 (describing the link in the context of public education between quality-consciousness as a consumer and the production of quality as a producer).

¹⁵² *Id.* at 100.

¹⁵³ *See supra* text accompanying note 136.

¹⁵⁴ *See HIRSCHMAN, supra* note 31, at 18.

¹⁵⁵ *Id.* at 100 (describing how the exit of customers leads to further quality decline); Vetter, *supra* note 112, at 200 n.68 ("[U]sers choose the exit opportunity when the quality of the incumbent firm's product declines beyond their tolerance." (citing HIRSCHMAN, *supra* note 31, at 24-25, 36, 47-49)).

¹⁵⁶ Barnett, *supra* note 15, at 1876-77 ("The interdependent demand functions that characterize platform-based markets imply that user adoption rates can exhibit both negative and positive feedback effects Even the most dominant platform . . . inherently occupies a precarious position, as it can be slow to start and can suffer a rapid demise.").

¹⁵⁷ *See id.* (regarding instability of platforms generally); Eric Goldman, *Wikipedia's Labor Squeeze and Its Consequences*, 8 J. ON TELECOMM. & HIGH TECH. L. 157, 167-69 (2010) (describing social dynamics of Wikipedia and its challenges); *see also supra* Part I.C.

Commentators observe that network effects can work to unravel platforms as quickly as they help establish them.¹⁵⁸ Yet, the effect of quality-conscious users' departure is to lower the demand further and production of quality, thereby encouraging the next most quality-conscious users to depart also.¹⁵⁹ In other words, the death spiral is not only the product resulting from network effects of declining numbers; it is also about a race to the bottom in quality.¹⁶⁰

In a traditional product market with no quality effects, a firm that loses too many customers when it raises prices will face self-corrective pressure to cut prices to regain them.¹⁶¹ However, this does not seem to reflect the actual experience of online communities based on user dynamism.¹⁶² Managing user exits in a community to avoid a death spiral is a lot harder. Wikipedia has managed this problem by using an arbitration system to manage partially the exit of active users.¹⁶³ It weeded out those involved in disputes that lacked the ability and commitment to provide quality participation, and it "weeded in" those who possessed such qualities.¹⁶⁴ Examples of uninhibited downward spirals, from no longer usable online discussion forums to Myspace (previously "MySpace") riddle the Internet.¹⁶⁵ Myspace was formerly the world's largest social networking site, where the added value stemmed from user-generated content, but the exit of participants led to a cascading decline.¹⁶⁶

¹⁵⁸ See Barnett, *supra* note 15, at 1876-77; Salil Kumar Mehra, *Information in an Antitrust Age*, 2000 U. CHI. LEGAL F. 219, 244 (2000) ("The fact that some users flee the product would by itself lead other users to cease using the product due to the reduced utility of doing so, and so on in a 'death spiral.'" (citing *A&M Records, Inc., v. Napster, Inc.*, 114 F. Supp. 2d 896, 926 (N.D. Cal. 2000), *aff'd in part, rev'd in part*, 239 F.3d 1004 (9th Cir. 2001))). The court in *Napster* acknowledged that "even a narrow injunction may so fully eviscerate Napster, Inc. as to destroy its user base." *Napster*, 114 F. Supp. 2d at 926.

¹⁵⁹ See C. Scott Hemphill, *Network Neutrality and the False Promise of Zero-Price Regulation*, 25 YALE J. ON REG. 135, 161-62 (2008) (describing an example whereby Encyclopedia Britannica excluded Wikipedia from the market by offering a superior service and, because "[c]ustomers prefer faster access . . . fewer consumers look to Wikipedia for answers," making it "likely [that] fewer will contribute, reducing its quality").

¹⁶⁰ See, e.g., HIRSCHMAN, *supra* note 31, at 25 ("[I]n perfect competition . . . the firm is not deprived of an effective correction mechanism because performance deterioration . . . is reflected directly in a decline in revenue . . .").

¹⁶¹ *Id.* at 23.

¹⁶² Cf. Emily Steel & Russell Adams, *Myspace's Future Gets Fuzzy*, WALL ST. J., Feb. 7, 2011, at B4 (describing the rapid decline of Myspace usage by the end of 2010).

¹⁶³ Hoffman & Mehra, *supra* note 96, at 182.

¹⁶⁴ See *id.* at 187 (using an empirical analysis to find a correlation between banishment due to behavior, and making the expectation of quality participation unlikely in the future).

¹⁶⁵ E.g., *Thread: Bye Bye All - The Forum Is Unusable*, ORACLE (Sept. 14, 2007, 11:34 AM), <http://forums.oracle.com/forums/thread.jspa?threadID=1694302&tstart=1> (showing a conversation in a forum discussing the forum's decline).

¹⁶⁶ Steel & Adams, *supra* note 162, at B4 (noting a nearly one-third decline in user population of formerly the most popular social networking site in 2010 alone).

Unlike the assumption of the traditional economic model, this deterioration does not face automatic self-corrective pressure.¹⁶⁷ This is particularly important if there is significant variation among users in both their generation and appreciation of the fruits of user dynamism.¹⁶⁸ In a perfect competition model, economists assume that increased quality of a particular good is the exact equivalent of a lower price for the same good; lower prices or increased quality makes the good more attractive.¹⁶⁹ The equivalence allows the modeler to ignore quality as a dimension by treating it simply as part of a good or service's price.¹⁷⁰ However, where quality exists as a separate dimension and where users are, in fact, members of a community on both the supply and demand sides, this simple relationship breaks down.¹⁷¹ As quality decreases and price remains the same, the platform will retain a smaller base of less quality-conscious users.¹⁷²

Besides exit, quality-conscious users have another alternative: *neglect*.¹⁷³ However, for platforms with community characteristics, neglect may have similar effects as exit.¹⁷⁴ Social psychologists and labor-relations scholars focusing on a variety of human relationships have extended Hirschman's original economics-focused model by developing the possibility of neglect as a response to deteriorating quality.¹⁷⁵ That is, quality degradation in a community leads some members not to exit completely, but to become more neglectful in their participation in that community.¹⁷⁶ In the context of an online platform, a user might ratchet down the degree to which they generate value on the production side. Returning to the example of Wikipedia, a formerly productive generator of content might do so at a

¹⁶⁷ See HIRSCHMAN, *supra* note 31, at 99-100. Hirschman observes that in the classical economic model where price and quality are fungible and information is perfect, "withdrawal of a buyer . . . will lead to price being lowered, or correspondingly, to quality being *improved*." *Id.* at 100. However, "withdrawal of the quality making 'buyer' leads to a quality decline" where "the 'buyer' is now in reality a member and as such he is involved in both the supply and the demand sides, in both production and consumption of the organization's output." *Id.* Therefore, "if those who have the greatest influence on quality of output are also, as is likely, more quality-conscious than the rest of the members, any slight deterioration in quality may set off their exit, which in turn will lead to further deterioration, which will lead to further exits." *Id.*

¹⁶⁸ See SHIRKY, *supra* note 127, at 200.

¹⁶⁹ Frischmann, *supra* note 3, at 973.

¹⁷⁰ See HIRSCHMAN, *supra* note 31, at 47-48 (observing that "[q]uality changes have usually been dealt with by economists and statisticians through the concept of the *equivalent* price or quantity change," i.e., the traditional model treats a decline in quality as the equivalent of a higher price for the same quantity or less quantity for the same price).

¹⁷¹ See *id.* at 99-100.

¹⁷² See *id.*

¹⁷³ See Rusbult & Zembrodt, *supra* note 134, at 275-76.

¹⁷⁴ See *id.* at 276.

¹⁷⁵ See, e.g., Rusbult, *supra* note 134, at 212; Rusbult & Zembrodt, *supra* note 134, at 288.

¹⁷⁶ Rusbult & Zembrodt, *supra* note 134, at 288 (describing how a neglectful person in a relationship acts cruelly and allows the relationship to deteriorate).

lower rate, while still using the site as a consumer. In the platform context, neglect may simply be a lower degree of exit. However, like exit, neglect has been broadly classed as destructive in a variety of human contexts;¹⁷⁷ it is likely the same in the context of platforms with significant community aspects.

D. *Voice and Loyalty*

Given this dynamic between user dynamism and platform quality, the ability of such quality-conscious users to convince platform operators to improve platforms by voicing their dissatisfaction becomes important. In the EVLN model, the ability to arrest quality degradation or to effect quality enhancement is mediated by the ability of members to voice their dissatisfaction rather than exit; their willingness to choose the former over the latter is influenced by the degree of loyalty that they feel to the organization.¹⁷⁸ In contrast to exit and neglect, voice and loyalty are fundamentally constructive responses to problems, in that they potentially foster repair.¹⁷⁹

Platform users may choose responses motivated by loyalty or may voice their dissatisfactions for several reasons. Loyalty, rather than exit, can stem from a variety of sources, ranging from affective bonds with the community to severe initiations and high penalties for—or even impossibility of—exit.¹⁸⁰ Ultimately, loyalty influences the choice to stay and improve rather than exit, which as discussed in the prior Section, may trigger a cascade of deterioration.¹⁸¹

Where the value of a platform depends heavily on user dynamism, fostering repair through voice rather than exit is important not only to the platform host, but to users who do not wish to lose their invested time, effort, content, and innovation. If the platform host can make no such repair, the investment is a sunk cost, and exit is logical.¹⁸² However, if mechanisms to voice concerns exist, they can help to address quality deterioration before it starts spiraling.¹⁸³ The mere ability to voice one's dissatisfactions may not be enough; the platform may also need some level of shared governance by which platform hosts commit to address deterioration. For example, Wiki-

¹⁷⁷ Exit and neglect have been classed as “destructive” responses because they tend to be destructive of the relationship in question, while loyalty and voice are seen as “constructive” responses that help to improve or maintain the relationship. Rusbult, *supra* note 134, at 214; *see also supra* notes 131-32 and accompanying text (describing this model in other contexts).

¹⁷⁸ *See* HIRSCHMAN, *supra* note 31, at 30, 77.

¹⁷⁹ *See supra* Figure 1 and note 134.

¹⁸⁰ HIRSCHMAN, *supra* note 31, at 98, 100.

¹⁸¹ *Id.* at 92; *see supra* Part II.C.

¹⁸² *See* Withey & Cooper, *supra* note 31, at 532.

¹⁸³ *See* HIRSCHMAN, *supra* note 31, at 34 (stating that those with the ability to voice concerns become the “voice option”).

pedia consists of layers of dispute resolution and governance by a mix of elected and appointed community members.¹⁸⁴ In addition, Facebook formed an advisory board with five leading Internet safety organizations, allowing for input on a kind of quality degradation in a quicker, though somewhat less committed, manner in response to concerns about privacy and risks to minors.¹⁸⁵

For commitments of shared governance to convince users that their voiced concerns will arrest quality degradation, thus preventing them from exiting and accelerating degradation and thereby fostering user investment in a platform, such commitments must be credible.¹⁸⁶ The need to make these *ex ante* commitments credible to foster investment may require *ex post* enforcement when platform operators renege upon such commitments. Whether this is an appropriate problem to call on law as a solution depends in part on how to make decisions under an unavoidable level of uncertainty.¹⁸⁷ One particular area of innovation-focused economic regulation has a particularly advanced framework to analyze decisionmaking under uncertainty: antitrust.¹⁸⁸

III. THE CURRENT OPTIONS: ANTITRUST OR REGULATORY ACTION VS. INACTION

Antitrust scholars have actively debated whether the government should regulate network platforms based on network effects and downstream impacts of platforms, and, if so, what form of intervention should the government take.¹⁸⁹ However, the analysis of these debates depends on the assumptions due to uncertainty. This Part expands upon that debate by comparing the theoretical consequences of government intervention to the consequences of government inaction. It does this through the lens of monopolization law under the Sherman Act, as well as network neutrality.

¹⁸⁴ Hoffman & Mehra, *supra* note 96, at 170-75 (describing the establishment of a series of bodies and steps within Wikipedia, ostensibly to resolve disputes, but, in fact, they generate norms for internal governance).

¹⁸⁵ Steven Musil, *Facebook Forms Safety Advisory Board*, CNET NEWS (Dec. 6, 2009, 8:40 PM), http://news.cnet.com/8301-1023_3-10410216-93.html (describing a board formed with five leading Internet child safety organizations after a controversy over secret online advertising and access to social network by sex offenders).

¹⁸⁶ See HIRSCHMAN, *supra* note 31, at 85.

¹⁸⁷ See Alan Devlin & Michael Jacobs, *Antitrust Error*, 52 WM. & MARY L. REV. 75, 82 (2010) (stating that antitrust enforcement is made difficult because the consequences of “many contestable business behaviors is uncertain and therefore very difficult to assess correctly *ex ante*”).

¹⁸⁸ See *id.* at 86 (describing how antitrust law often deals with many uncertain variables); Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153, 167-68 (2010) (stating that antitrust law involves “innovative conduct”).

¹⁸⁹ See, e.g., Evans, *supra* note 43, at 380-81 (debating the merits of regulatory intervention and antitrust).

A. *Action*

Although antitrust law may be useful in discussing platform dominance, monopolization laws pursuant to Section 2 of the Sherman Act (“Section 2”) fall short of providing an active response. This Section addresses why an antitrust approach is inadequate by applying an error-cost framework and analyzing network effects in the context of antitrust doctrine.

1. An Antitrust Approach?

Antitrust law has useful tools and approaches that can inform a discussion of platform dominance.¹⁹⁰ Despite that, monopolization law under Section 2 is unlikely to provide an active response for practical and ideological reasons. From a practical standpoint, antitrust law, as it is conducted in the United States, is unlikely to work well or faster on the Internet.¹⁹¹ Additionally, two decades of case law cabining Section 2 have blunted the potential impact of relevant cases such as *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*,¹⁹² *Eastman Kodak Co. v. Image Technical Services, Inc.*,¹⁹³ and *United States v. Microsoft Corp.*

a. *The Error-Cost Framework*

Antitrust law’s most useful contribution to this discussion may be its well-developed focus on error-cost minimization for market intervention. In particular, Judge Frank Easterbrook’s landmark analysis of error-cost minimization¹⁹⁴ not only provided a framework for Chicago School antitrust, it also suggested a broader approach to economic regulation.¹⁹⁵ His application of the error-cost framework continues to draw both praise¹⁹⁶ and criti-

¹⁹⁰ See *id.* at 328 (“The economics of platform competition has implications for antitrust and regulatory policies in multi-sided markets.”).

¹⁹¹ See, e.g., John E. Lopatka & William H. Page, *Antitrust on Internet Time: Microsoft and the Law and Economics of Exclusion*, 7 SUP. CT. ECON. REV. 157, 159-60 (1999) (questioning whether antitrust law can keep up with the “dizzying pace” of the Internet); William H. Page, *Microsoft and the Limits of Antitrust*, 6 J. COMPETITION. L. & ECON. 33, 39-40 (2010) (questioning whether the importance of network effects justified the Department of Justice’s reassessment of monopolization prosecutions).

¹⁹² 472 U.S. 585 (1985).

¹⁹³ 504 U.S. 451 (1992).

¹⁹⁴ Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 9-10 (1984) (advocating judicial error-cost minimization).

¹⁹⁵ Page, *supra* note 191, at 34-35.

¹⁹⁶ E.g., Manne & Wright, *supra* note 188, at 156-57 (calling the error-cost approach a “simple but powerful analytical tool”).

cism.¹⁹⁷ Easterbrook stressed that it was not enough for antitrust rules to track anticompetitive conduct—they also had to account for courts and enforcement officials’ costs of errors.¹⁹⁸ He rightly pointed out that the costs of false positives might differ from those of false negatives.¹⁹⁹ For Easterbrook, this was an opportunity to perform a kind of jiu jitsu on the activist antitrust that had preceded the Chicago School.²⁰⁰ Due to stare decisis and the dominance of an interventionist stream during the 1960s—sometimes called the *Von’s Grocery* era²⁰¹—courts deployed error-cost minimization in the 1980s to argue for caution in extending existing antitrust rules against certain types of business conduct.²⁰²

The error-cost minimization lens, set forth by Judge Easterbrook, is quite insightful. Early in *The Limits of Antitrust*, Easterbrook critiqued four antitrust cases to make points about antitrust indeterminacy and judicial obstinacy and to illustrate why he thought error costs were so critical to formulating better antitrust law.²⁰³ In his view, courts were too quick to condemn what he saw as indeterminate cases.²⁰⁴ These cases involved three horizontal agreements, including a blanket license agreed upon by competing music copyright holders, a horizontal agreement among physicians, and rules adopted by the NCAA to govern universities with football programs that competed not only on the playing field, but also in inputs such as players and outputs such as television broadcasts.²⁰⁵ In each of these cases, Easterbrook contended that the Supreme Court had too quickly allowed condemnation of a practice that he believed might be benign—creating what is termed a “false positive.”²⁰⁶

¹⁹⁷ E.g., Devlin & Jacobs, *supra* note 187, at 83-84 (arguing that the error-cost approach causes many consumer-injuring acts to go unpunished).

¹⁹⁸ Easterbrook, *supra* note 194, at 29.

¹⁹⁹ *Id.* at 15-17 (“[W]e should prefer the error of tolerating questionable conduct, which imposes losses over a part of the range of output, to the error of condemning beneficial conduct, which imposes losses over the whole range of output.”).

²⁰⁰ *See id.* at 6.

²⁰¹ Jon Leibowitz, Chairman, Fed. Trade Comm’n, Remarks at the 36th Annual Conference on International Antitrust Law & Policy 4-5 (Sept. 24, 2009), available at <http://www.ftc.gov/speeches/leibowitz/090924fordhamspeech.pdf> (referring to the era of *United States v. Von’s Grocery Co.*, 384 U.S. 270 (1996)).

²⁰² Page, *supra* note 191, at 34.

²⁰³ Easterbrook, *supra* note 194, at 7-8. These four cases were *Monsanto Co. v. Spray-Rite Service Corp.*, 465 U.S. 752 (1984), *Arizona v. Maricopa County Medical Society*, 457 U.S. 332 (1982), *Broadcast Music, Inc. v. CBS*, 441 U.S. 1 (1979), and *Board of Regents of the University of Oklahoma v. NCAA*, 546 F. Supp. 1276 (W.D. Okla. 1982), *aff’d in part*, 707 F.2d 1147 (10th Cir. 1983), *aff’d*, 468 U.S. 85 (1984).

²⁰⁴ Easterbrook, *supra* note 194, at 9.

²⁰⁵ *Id.* at 7-8.

²⁰⁶ Manne & Wright, *supra* note 188, at 158-59 (internal quotation marks omitted); *see also* Easterbrook, *supra* note 194, at 16.

However, with the (admittedly unfair) benefit of more than a quarter-century of hindsight, it is interesting to note how his seminal article got so much wrong. While Easterbrook's benign appraisal of each of the horizontal agreements involving healthcare²⁰⁷ and the NCAA²⁰⁸ appears incorrect, he may have erred the most significantly in his view of *Broadcast Music, Inc. v. CBS*.²⁰⁹ In that case, the Court remanded for consideration under the rule of reason, "the 'blanket license' issued by ASCAP and BMI, two performing rights societies," to broadcasters playing music.²¹⁰ Easterbrook pointed out that "the license is a cost-reducing device, allowing those who want music to get what they need without thousands of individual licensing transactions."²¹¹ While that sounds good in a static sense, the scholarly community recognizes, thanks chiefly to Professor Harold Demsetz, that property rights and transaction costs are not necessarily exogenous.²¹²

To the extent that distributions and rules shape the evolution of transaction costs, a rule tolerating the blanket license—which is what ultimately

²⁰⁷ Concerning *Arizona v. Maricopa County Medical Society*, 457 U.S. 332 (1982), Easterbrook asserts very succinctly that a horizontal agreement among doctors to set their fees might be a precompetitive "signaling [sic]" device. Easterbrook, *supra* note 194, at 7 (internal quotation marks omitted) (arguing that such an arrangement could serve as "a signaling [sic] device by which the lower-price physicians can identify themselves" and "offer to share some of the insurance function"). This argument is difficult to critique since treatment of physicians' agreements has shifted during the forty years, in part due to the growth of HMOs, the *per se* treatment of physician-sponsored agreements after *Maricopa*, and shifting antitrust agency approaches to doctor-sponsored agreements of this kind. *E.g.*, Robert Kuttner, *Physician-Operated Networks and the New Antitrust Guidelines*, 336 NEW ENG. J. MED. 386, 386-87 (1997) (providing an interesting healthcare industry-oriented, as opposed to case law-oriented, view of the aftermath of *Maricopa*). However, policymakers have linked horizontal arrangements among competitors in the healthcare industry to the acutely spiraling cost of American healthcare in recent decades. For example, in 2007, then-presidential candidate, Senator Barack Obama faulted, in part, lax antitrust policies that had allowed 95% of health insurance markets to become "highly concentrated." Sen. Barack Obama, Statement of Senator Barack Obama for the American Antitrust Institute (Sept. 27, 2007), available at http://www.antitrustinstitute.org/files/aai-%20Presidential%20campaign%20-%20Obama%209-07_092720071759.pdf.

²⁰⁸ With respect to *Board of Regents of the University of Oklahoma v. NCAA*, Judge Easterbrook contested the Court's too-quick disapproval of the NCAA's restrictions "controlling the number of college football games available for broadcast" on television. Easterbrook, *supra* note 194, at 8. As justifications for friendlier treatment for the NCAA, Easterbrook pointed to the need for the business of college football, for schools to cooperate, and to the usefulness of the NCAA's restrictions for its competition against other forms of entertainment. *Id.* However, last term, a much more antitrust-skeptical Supreme Court revisited similar arguments concerning the NFL, and still found them wanting. *See Am. Needle, Inc. v. NFL*, 130 S. Ct. 2201, 2213-14 (2010) (rejecting the argument that NFL teams constitute a single entity due to cooperation because "justification for cooperation is not relevant to whether that cooperation is concerted or independent action").

²⁰⁹ 441 U.S. 1 (1979).

²¹⁰ Easterbrook, *supra* note 194, at 7; *see also Broad. Music, Inc.*, 441 U.S. at 24-25.

²¹¹ Easterbrook, *supra* note 194, at 7.

²¹² *See generally* Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967) (describing the endogenous nature of property rights and their relationship to transaction costs).

resulted on remand in *Broadcast Music*²¹³—can actually inhibit the development of superior alternatives to a transaction-cost reducing, but price-fixing, restraint.²¹⁴ For example, iTunes makes the efficient individual licensing of copyrighted music possible at the *retail* level—where the number of twenty-first century music downloading customers greatly exceeds number of late twentieth century broadcasters in *Broadcast Music*.²¹⁵ Could something similar have been developed earlier to allow song-by-song licensing to broadcasters? With the blanket license approved by *Broadcast Music*, the incentives to create such a system were diminished.²¹⁶ As a result, a “false negative” might also have costs, including a kind of Heisenberg Uncertainty Principle²¹⁷ effect in which toleration of a restraint itself slows the creation of more efficient, innovative alternatives.²¹⁸

Easterbrook’s second point—and, in retrospect, his second misjudgment—was his concern with the particular durability of false positives, distinctly from false negatives, in antitrust case law. He pointed to *Monsanto Co. v. Spray-Rite Service Corp.*²¹⁹ to illustrate what he saw as the unfortunate durability of false positives.²²⁰ In *Monsanto*, the Court refused to overturn the *per se* rule against resale price maintenance, which was, in fact, overturned in *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*²²¹ Easterbrook decried what he called a tradition of “inhospitality,” which is a tendency of judges in antitrust cases to condemn practices that they do not understand.²²² However, the Court—and indeed the judiciary as a whole—now approaches antitrust cases from a very different ideological stance than the one Easterbrook critiqued in 1984. The federal judiciary now views antitrust largely through a technocratic lens.²²³ When ideology peeks through, it tends to reveal itself as inhospitality not to antitrust defen-

²¹³ *CBS v. Am. Soc’y of Composers, Authors & Publishers*, 620 F.2d 930, 934, 938-39 (2d Cir. 1980).

²¹⁴ See Noel L. Hillman, *Intractable Consent: A Legislative Solution to the Problem of the Aging Consent Decrees in United States v. ASCAP and United States v. BMI*, 8 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 733, 746-56 (1998).

²¹⁵ See Eddy Hsu, Comment, *Antitrust Regulation Applied to Problems in Cyberspace: iTunes and iPod*, 9 INTELL. PROP. L. BULL. 117, 120 (2005).

²¹⁶ See Devlin & Jacobs, *supra* note 187, at 117 (arguing that an antitrust restriction upon the right to exclude will be a disincentive to innovators, and the cost of such an outcome is larger than short-run monopoly prices associated with exclusivity).

²¹⁷ Laurence H. Tribe, *The Curvature of Constitutional Space: What Lawyers Can Learn From Modern Physics*, 103 HARV. L. REV. 1, 17 (1989) (discussing the Heisenberg Uncertainty Principle).

²¹⁸ See Devlin & Jacobs, *supra* note 187, at 117.

²¹⁹ 465 U.S. 752 (1984).

²²⁰ Easterbrook, *supra* note 194, at 7.

²²¹ 551 U.S. 877, 899 (2007).

²²² Easterbrook, *supra* note 194, at 4 (quoting Donald Turner) (internal quotation marks omitted).

²²³ Daniel A. Crane, *Technocracy and Antitrust*, 86 TEX. L. REV. 1159, 1160 (2008) (“This Article . . . celebrates antitrust’s technocratic shift.”).

dants, but to antitrust plaintiffs,²²⁴ and, sometimes, seemingly to antitrust law itself.²²⁵ Easterbrook critiqued a Supreme Court that had shown little recent hesitance to overrule established precedent; indeed, in recent years, the Court seems quite willing to do so.²²⁶

To be sure, the specifics of these cases were Judge Easterbrook's support for his thesis, not his ultimate point. His basic conclusion was that be-

²²⁴ The past term saw *American Needle*, the first Supreme Court decision in favor of a plaintiff in an antitrust case since 1992; the intervening time had seen a string of cases ruling for defendants and adopting more defendant-friendly antitrust rules. *Am. Needle Inc. v. NFL*, 130 S. Ct. 2201, 2217 (2010); *Credit Suisse Sec. (USA) LLC v. Billing*, 551 U.S. 264, 285 (2007); *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 46 (2006); *Volvo Trucks N. Am., Inc. v. Reeder-Simco GMC, Inc.*, 546 U.S. 164, 181 (2006); *Verizon Comm'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 416 (2004); *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 243 (1993). *Eastman Kodak Co. v. Image Technical Services*, 504 U.S. 451, 486 (1992), was the last Supreme Court case to rule for a plaintiff in which the argument was about substantive antitrust rules. *Hartford Fire Insurance Co. v. California*, 509 U.S. 764, 769-70 (1993), involved a ruling for a plaintiff in an antitrust case centering on the jurisdictional reach of U.S. antitrust laws.

²²⁵ For example, in several recent merger cases, federal courts have explicitly discounted the concerns about anticompetitive effects of the *customers* of the merging firms in favor of judges' own impressions of the transaction. *E.g.*, *United States v. Oracle Corp.*, 331 F. Supp. 2d. 1098, 1130-31 (N.D. Cal. 2004) (discounting testimony as to anticompetitive concerns of merging firms' enterprise software customers, including an executive at Daimler Chrysler); *Fed. Trade Comm'n v. Arch Coal, Inc.*, 329 F. Supp. 2d 109, 145-46 (D.D.C. 2004) (denying FTC's request for an injunction of a merger pending an administrative trial, stating that "[c]ustomers do not, of course, have the expertise to state what *will* happen in the . . . market" after the merger). The court in *Oracle* stated that it "found the testimony of the customer witnesses largely unhelpful." *Oracle*, 331 F. Supp. 2d at 1130-31. The court also stated that "customer testimony of the kind plaintiffs offered can put a human perspective or face on the injury to competition that plaintiffs allege[.] [b]ut unsubstantiated customer apprehensions do not substitute for hard evidence." *Id.* at 1131. This level of judicial inhospitality to antitrust is remarkable for at least three reasons. First, the Chicago School of antitrust took as its lodestone a shift from concerns about competitors to concerns about consumer welfare. *See* Clyde W. Crews Jr., *Antitrust Policy as Corporate Welfare*, COMPETITIVE ENTER. INST. (July 2009), <http://cei.org/pdf/1615.pdf> ("[T]he 'consumer welfare' standard remains the guiding principle for Chicago School scholars, who still regard outright collusion (price fixing) and large horizontal mergers as harmful to consumers and worthy of antitrust enforcer concern."). A further shift away from consumer concerns about their own welfare in favor of paid economists' testimony would widen avenues for rent-seeking behavior. Second, most view customers as valid indicators concerning the competitive effects of a transaction, since they should rationally believe that increased efficiency should lead to lower cost, from which they may benefit, but decreased competition should lead to higher cost, from which they will suffer. *Court Rules Against Department of Justice in United States v. Oracle*, ANTITRUST WIRE (2004), http://www.wsgr.com/wsgr/Display.aspx?SectionName=publications/PDFSearch/AntitrustWire_1004.htm. Finally, due to judicial second-guessing, both enforcement agencies *and* customers may radically increase the frequency of false negatives. William Kolasky, *Reinvigorating Antitrust Enforcement in the United States: A Proposal*, ANTITRUST, Spring 2008, at 85, 87 (explaining that the court is more at risk from false negatives than false positives due to the court's "exaggerated fear of false positives" and lack of litigation over agency complaints).

²²⁶ *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 899-900 (2007); *State Oil Co. v. Khan*, 522 U.S. 3, 20-22 (1997). Some would argue that the new judicial freedom from *stare decisis* goes beyond antitrust. *See Leegin*, 551 U.S. at 918-19, 929 (Breyer, J., dissenting).

cause, “[m]onopoly is self-destructive” and “[m]onopoly prices eventually attract entry,” “judicial errors that tolerate baleful practices are self-correcting, while erroneous condemnations are not.”²²⁷ That is, false negatives fix themselves, but due to *stare decisis*, false positives do not.²²⁸ Finally, he sought to elevate Economist Joseph Schumpeter’s concept of dynamic competition as a “gale of creative destruction” in which innovation blows away competitors, above the more modest static competition over prices and quantity.²²⁹

However, all of these premises may be questioned today. First, concerning monopoly’s fragility, while the owners of dominant platforms compete for the field at some points, they also have the ability to alter the nature of the next competition.²³⁰ In addition, they sell “tethered” devices over which they may maintain control after an Internet purchase, and therefore, the ability to direct their industry’s evolution does not end at the point of original sale.²³¹ Admittedly, whether they have the ability to do so in a meaningful way is not yet measurable, but the possibility cannot be dismissed outright.²³² Second, regarding judicial flexibility, it is worth noting that, if recent Supreme Court decisions are any guide, *stare decisis* appears to have waned compared to a quarter-century ago.²³³ At any rate, not only can the Court apply antitrust doctrine, but the FTC can as well, where regulatory interpretations can and do change rapidly.²³⁴

Finally, a model that rests innovation solely in the hands of competing producers may fundamentally understate the impact of “democratized inno-

²²⁷ Easterbrook, *supra* note 194, at 2-3.

²²⁸ *Id.* at 2.

²²⁹ *Id.* at 5 (quoting JOSEPH SCHUMPETER, *CAN CAPITALISM SURVIVE?* 24 (1978)) (internal quotation marks omitted).

²³⁰ Mark Cooper, *Open Communications Platforms: The Physical Infrastructure as the Bedrock of Innovation and Democratic Discourse in the Internet Age*, 2 J. ON TELECOMM. & HIGH TECH. L. 177, 180 (2003).

²³¹ ZITTRAIN, *supra* note 3, at 106 (internal quotation marks omitted) (describing such devices as “tethered because it is easy for their vendors to change them from afar, long after the devices have left warehouses and showrooms”); *see also* *United States v. Microsoft Corp.*, 253 F.3d 34, 45 (D.C. Cir. 2001) (en banc) (per curiam) (addressing an attempted monopoly case based on the theory that Microsoft used a monopoly over an operating system to shape the competition for Internet browsers running on that operating system).

²³² *See* ZITTRAIN, *supra* note 3, at 110 (stating that tethering is both “practical and inexpensive for regulators”).

²³³ *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 900-02 (2007); *State Oil Co. v. Khan*, 522 U.S. 3, 20-22 (1997); *see also* *Citizens United v. Fed. Election Comm’n*, 130 S. Ct. 876, 921 (2010) (Roberts, C.J., concurring) (“[I]f adherence to a precedent actually impedes the stable and orderly adjudication of future cases, its *stare decisis* effect is also diminished.”).

²³⁴ *See* Crane, *supra* note 223, at 1207; Charles H. Koch, Jr. & Beth Martin, *FTC Rulemaking Through Negotiation*, 61 N.C. L. REV. 275, 278 (1983) (“[T]he FTC . . . tends to abandon one generation of regulatory devices for those of the next generation.”).

vation.”²³⁵ As Eric von Hippel points out, user innovation operates in sharp contrast to the traditional economic model, “in which products and services are developed by manufacturers in a closed way,” in which manufacturers alone own the intellectual property and where a consumer’s “only role is to have needs” that the manufacturer meets.²³⁶ Empirical studies show that innovation provides real benefits.²³⁷ For instance, a variety of real-world effects include users’ heterogeneous desires for better fit for their needs, agency costs to get manufacturers to meet those needs, and the ability of users to generate and share their innovations to their common benefit.²³⁸ This undercuts Easterbrook’s exalting of competition for the field *à la* Schumpeter.²³⁹

Viewed through the error-cost framework, commentators have argued that the possibility of false positives militates against overhasty antitrust intrusion on innovators’ property rights.²⁴⁰ The concern about lost innovation is especially significant given the widespread empirical finding that innovation and dynamic efficiency are the most important drivers of economic growth.²⁴¹ However, where users increasingly supply valuable innovation rather than the platform owner, the latter of which is antitrust law’s current dominant paradigm, the main concern should be about false *negatives*.²⁴² That is, as user dynamism increases in importance, so too does the potential loss due to false negatives based on the network host’s harmful acts.²⁴³

²³⁵ VON HIPPEL, *supra* note 7, at 1-2.

²³⁶ *Id.* at 2.

²³⁷ *Id.* at 4.

²³⁸ *Id.* at 6-7, 9.

²³⁹ Compare *id.*, with Easterbrook, *supra* note 194, at 5-6 (describing antitrust as inhibiting Schumpeter’s “gale of creative destruction” with exclusive focus on a paradigm of business versus business using lawyers and antitrust law strategically (quoting JOSEPH SCHUMPETER, CAN CAPITALISM SURVIVE? 24 (1978)) (internal quotation marks omitted)).

²⁴⁰ Devlin & Jacobs, *supra* note 187, at 117.

When a company refuses to share its intellectual or physical property with a rival, it exercises the power to exclude, which defines a property right. By intruding upon that right, antitrust authorities wade into dangerous waters. If a successful innovator cannot reap the fruits of its invention, the crucial incentives that drove that innovation yesterday may be absent tomorrow. The cost of such an outcome is apt to be far larger than the short-run monopoly prices associated with exclusivity.

Id.

²⁴¹ See Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 274-75 (2003) (noting that innovation is “the *most* desirable form of market activity we can have” and that “[r]epeated economic studies indicate” it is more valuable than the mere avoidance of static allocative inefficiency such as the deadweight loss from monopoly pricing); see also JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 84, 102 (3d ed. 1950).

²⁴² Cf. Devlin & Jacobs, *supra* note 187, at 101 (“In certain types of cases, the likely social costs of false negatives may exceed the cost of false positives, particularly when adjusted for probability.”).

²⁴³ Philip J. Weiser, *The Relationship of Antitrust and Regulation in a Deregulatory Era*, 50 ANTITRUST BULL. 549, 556-57 (2005) (“[T]he opportunity to stall technological innovation by new entrants is particularly pernicious in network industries where an incumbent may adopt exclusionary

Consequently, the error-cost framework militates towards viewing antitrust treatment of platform dominance through the lens of false negatives and false positives.²⁴⁴ This paradigm clearly establishes the ultimate indeterminacy of monopolization theory with respect to user dynamism.²⁴⁵ Traditionally, concerns that false positives will justify intervention with an incumbent's IP, and thereby inhibit innovation, duel with fears that false negatives will allow incumbents to thwart competing platform owners' new entry.²⁴⁶ However, user innovation provides a new concern regarding false negatives: what will the unaddressed but pernicious injury restraints do to a potentially large source of ongoing innovation? Unfortunately, scholars are simply not yet in a position, empirically or theoretically, to do this accounting. Thus, it is hard, based on error costs, monopoly costs, and innovation costs to simply weigh up and endorse either intervention or non-intervention on monopolization grounds.²⁴⁷ Nevertheless, the error-cost framework can continue to be useful. First, as scholars develop more understanding of the benefits of user innovation, error costs should continue to be a useful guide for policymaking. Additionally, the error-cost framework is useful in considering other possible responses.²⁴⁸

strategies to 'suppress the new and improved network by selectively signing exclusive agreements with consumers who would otherwise be pioneers.'" (quoting Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON L. REV. 673, 680 (1999)).

²⁴⁴ *Id.* at 554-57.

²⁴⁵ *Id.* at 551, 555-56 (describing the "challenge of classifying conduct as anticompetitive in 'network industries'").

²⁴⁶ *E.g.*, Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON L. REV. 673, 680 (1999); Weiser, *supra* note 243, at 551 ("[T]he argument that antitrust courts should forbear from intervening in monopolization cases in new economy industries more generally . . . reflects three principal concerns: the Schumpeterian critique [that antitrust inhibits creative destruction]; the risk of false positives versus false negatives; and the institutional advantages of regulatory agencies over antitrust courts."). David McGowan observes that there are two schools of thought on error costs, one associated with Frank Easterbrook in which a precautionary principle would "stay the heavy hand of antitrust" where courts were not sure whether an error might result. David McGowan, *Between Logic and Experience: Error Costs and United States v. Microsoft Corp.*, 20 BERKELEY TECH. L.J. 1185, 1186-87 (2005). The other is associated with Oliver Williamson in which error costs would internalize into the calculus along with the likelihood of anticompetitive harm to decide whether antitrust action was warranted. *Id.* at 1187 (citing Oliver Williamson, *Delimiting Antitrust*, 76 GEO. L.J. 271, 280 (1987)).

²⁴⁷ Compare MICHAEL A. CARRIER, *INNOVATION FOR THE 21ST CENTURY: HARNESSING THE POWER OF INTELLECTUAL PROPERTY AND ANTITRUST LAW* 296, 299 (2009) (stating that "we do not know all the potential innovators or the optimal relationship between R&D and innovation," but endorsing antitrust approaches to promote dynamic efficiency), with Geoffrey A. Manne, *Assuming More Than We Know About Innovation Markets: A Review of Michael Carrier's Innovation in the 21st Century*, 61 ALA. L. REV. 553, 557 (2010) (book review) (asking, in the face of indeterminacy concerning innovation, "[w]hy are we intervening at all?" and "[w]hy are we not, at most, attempting to incorporate a more dynamic analysis into our traditional assessment of product market structure and behavior?").

²⁴⁸ For example, a regulatory approach, such as those discussed *infra* Part III.A.2, under network neutrality or infrastructure theories, could also be examined under an error-cost framework, adjusting for the lack of stare decisis and possibly different costs of adjudication and rate of error.

b. *Antitrust and Network Effects*

Economists have appreciated the importance of network effects for decades, although antitrust law has dealt with these effects uneasily.²⁴⁹ Despite this awkwardness, antitrust case law helps to explain the potential consumer harms involved.

The Supreme Court first addressed issues critical to platform dominance over a decade ago in *Eastman Kodak Co. v. Image Technical Services*. In that case, the Court considered the impact of information costs and lock-in on consumers.²⁵⁰ Although *Kodak* did not involve a network industry or computer or Internet technology, the merits of the case forced the Court to examine issues relevant to these fields.²⁵¹

Kodak involved an antitrust claim against Eastman Kodak for changing its policies for supplying expensive, high-capacity photocopier parts.²⁵² In a departure from pre-existing policies, the new policy required owners of such photocopiers—primarily businesses—to purchase repair and maintenance services only from Kodak in order to access replacement parts.²⁵³ Moreover, Kodak was the only source of such parts.²⁵⁴ In response to this claim, Kodak argued that its bundling of parts and services could not actually harm consumers because the market for the photocopiers was a competitive one.²⁵⁵ As a result, Kodak contended that it could not raise the price of aftermarket parts and service by bundling them without facing a corresponding penalty in the “primary” market for photocopiers.²⁵⁶

The Court rejected the proposition that Kodak’s argument was strong enough to avoid a trial on the merits, citing information and switching costs.²⁵⁷ The Court recognized that real-world consumers, whether businesses or others, do not possess the perfect information that classical eco-

²⁴⁹ E.g., Joseph Farrell & Garth Saloner, *Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation*, 76 AM. ECON. REV. 940, 940 (1986) [hereinafter Farrell & Saloner, *Installed Base*]; Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70, 71 (1985) [hereinafter Farrell & Saloner, *Standardization*]; Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AMER. ECON. REV. 424, 424 (1985) [hereinafter Katz & Shapiro, *Network Externalities*]; Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93, 95-96 (1994) [hereinafter Katz & Shapiro, *Competition*]; Jeffrey Rohlfs, *A Theory of Interdependent Demand for a Communications Service*, 5 BELL J. ECON. & MGMT. SCI. 16, 16 (1974).

²⁵⁰ *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 476-77 (1992).

²⁵¹ *Id.* at 483-84.

²⁵² *Id.* at 456-58.

²⁵³ *Id.* at 458.

²⁵⁴ *Id.*

²⁵⁵ *Id.* at 465.

²⁵⁶ *Kodak*, 504 U.S. at 465-66, 473.

²⁵⁷ *Id.* at 473-76.

nomics predicts.²⁵⁸ Their failure to be informed does not show a lazy irrationality.²⁵⁹ On the contrary, the Court observed that information is costly and that it might be difficult for consumers to get the kind of information they need to make the kind of rational decision that Kodak claimed.²⁶⁰ Furthermore, even if some consumers *could* inform themselves and accurately predict Kodak's conduct, that would not prevent Kodak from selectively exploiting that segment of consumers who could not get that information cost-effectively.²⁶¹

Additionally, the Court focused on the lock-in that characterizes network industries.²⁶² While Kodak photocopiers were not communications devices or computer software, they did represent a substantial investment that effectively "locked in" consumers to the Kodak network of parts and services.²⁶³ Kodak attempted to refute this by arguing that consumers could be penalized in the primary market.²⁶⁴ However, the Court observed that this argument was limited to *new* customers only because aftermarket consumers were effectively "trap[ped]" behind a proprietary Kodak wall.²⁶⁵ Therefore, existing customers would be stuck with the harmful effects of Kodak's bundling.²⁶⁶

The Court's analysis in *Kodak* provides a doctrinal hook to claims that post-adoption changes to Internet platforms merely represent a product or service's natural evolution, as opposed to competition law's opportunistic exploitation.²⁶⁷ In particular, *Kodak*'s discussion of information costs is quite relevant to arguments that consumers contract into exploitation by agreeing at the time of adoption to revisable terms of service with the Internet platform provider.²⁶⁸ When platforms bargain with consumers and then later revise the terms to the platform's benefit, they may simply be exploit-

²⁵⁸ *Id.*

²⁵⁹ Thomas C. Arthur, *The Costly Quest for Perfect Competition: Kodak and Nonstructural Market Power*, 69 N.Y.U. L. REV. 1, 11 (1994).

[I]n a world of imperfect information, consumers cannot afford the unbounded rationality of economic man, who considers every piece of relevant information before making an economic decision. Instead, real-world economic actions can only be boundedly rational; consumers acquire and use information only so far as the benefits from doing so outweigh the costs of acquiring and considering it.

Id.

²⁶⁰ *Kodak*, 504 U.S. at 473-76.

²⁶¹ *Id.*

²⁶² *Id.* at 476-77.

²⁶³ *Id.* (internal quotation marks omitted).

²⁶⁴ *Id.* at 472, 478.

²⁶⁵ *Id.* at 476-77; Daniel J. Gifford, *Antitrust's Troubled Relations with Intellectual Property*, 87 MINN. L. REV. 1695, 1712 (2003).

²⁶⁶ *Kodak*, 504 U.S. at 476.

²⁶⁷ See *PSI Repair Servs., Inc. v. Honeywell, Inc.*, 104 F.3d 811, 820 (6th Cir. 1997) (involving an antitrust plaintiff attempting to base a claim on *Kodak*, but ultimately failing because the defendant had not changed policy after lock-in).

²⁶⁸ See *Kodak*, 504 U.S. at 473-76.

ing information costs to effectively impose contractual terms of which rational consumers have not fully informed themselves.²⁶⁹ This is not the same thing as being wilfully lazy; in fact, it is simply a form of rational consumer behaviour.²⁷⁰ Indeed, where the platform provider's post-adoption changes are unforeseeable—or worse yet, opportunistically hidden—consumers will not be able to protect themselves.²⁷¹ Moreover, as *Kodak* suggests, the fact that some sophisticated consumers may understand the bargain does not prevent the exploitation of others.²⁷²

Additionally, *Kodak*'s logic is also important where the impact of adoption and one-sided, post-adoption changes that take advantage of information costs and lock in large numbers of consumers to a proprietary standard. When groups of consumers become “invested” in a proprietary standard, they may lose their future abilities to check exploitive practices by exiting from the standard.²⁷³ If large enough numbers of consumers wind up in a captive proprietary network, industry-wide inefficiencies may occur.²⁷⁴ Thus, the cost of leaving the network due to lock-in might trap consumers on an inefficient path.²⁷⁵

This concern provided the subtext for much of the D.C. Circuit Court's opinion in *United States v. Microsoft Corp.* In that highly-publicized case, the Microsoft Corporation faced the claim (among others) that, to maintain the dominant position of its Windows operating system franchise, it had improperly bundled in the web browser Internet Explorer.²⁷⁶

In its defense, Microsoft raised the economic concept of serial monopoly.²⁷⁷ In particular, Microsoft tried to argue that the nature of operating systems was such that the industry faced a series of competitions “for the field” of operating systems, rather than “within the field” of operating systems.²⁷⁸ According to this argument, software users and producers were both better off if there was a single standard universal operating system.²⁷⁹

²⁶⁹ *Cf. id.* at 474-75.

²⁷⁰ See Arthur, *supra* note 259, at 11.

²⁷¹ See Daniel M. Wall, *Aftermarket Monopoly Five Years After Kodak*, ANTITRUST, Summer 1997, at 32, 37 (“*Kodak*'s focus on change is more specific and consumer oriented.”).

²⁷² *Kodak*, 504 U.S. at 475.

²⁷³ Indeed, the European Union has voiced such concerns with respect to Apple's iTunes music sales platform and its related FairPlay digital rights management (“DRM”) technology. *EU's Consumer Chief Takes Aim at Apple over iTunes*, REUTERS.COM (Mar. 12, 2007, 1:39 AM), <http://www.reuters.com/article/idUSL1114922320070312>.

²⁷⁴ Clayton P. Gillette, *Lock-In Effects in Law and Norms*, 78 B.U. L. REV. 813, 818-19 (1998).

²⁷⁵ *Id.*

²⁷⁶ *United States v. Microsoft Corp.*, 253 F.3d 34, 45 (D.C. Cir. 2001) (en banc) (per curiam).

²⁷⁷ See *id.* at 49-50.

²⁷⁸ *Id.* (quoting Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55, 57 n.7 (1968)) (internal quotation marks omitted).

²⁷⁹ *Id.* at 49-50.

Thus, there was an economic value to having consumers tied to a single network.

The D.C. Circuit rejected this argument for a couple of reasons. First, the court noted that a serial monopoly both helps and hurts innovation.²⁸⁰ As Microsoft contended, competitors face strong incentives to innovate in order to leapfrog each other and capture the “next” monopoly in the series.²⁸¹ Yet, the court pointed out that economists had observed strong negative effects on ongoing innovation within the scope of the current monopoly.²⁸² The net effect of this situation was unclear.²⁸³

Additionally, the court pointed to the case’s facts.²⁸⁴ The substance of the monopolization—or “monopoly maintenance”—claim was that Microsoft had bundled in Internet Explorer in order to *foreclose* the competition for the next monopoly in a series.²⁸⁵ Thus, the possibility of serial monopolies was no longer exogenous to the overall market structure; in fact, one market participant, Microsoft, could change the rules of the serial monopoly game while it was still in play.²⁸⁶

The D.C. Circuit’s logic in *Microsoft* has serious implications for platform dominance as well. When an Internet platform is subject to ongoing upgrades, the platform operator may actually be able to delay or even prevent “competition for the field.”²⁸⁷ When substantial consumer lock-in exists, the result may be an entrenched dominant platform.²⁸⁸ That is, the contest to be the next dominant platform may not occur if the incumbent can effectively control the market’s evolution with post-adoption alterations.²⁸⁹

Despite these doctrinal hooks on which a theory of platform dominance could hang, potential obstacles block any monopolization theory that imposes affirmative duties on the monopolist. The U.S. Supreme Court in

²⁸⁰ *Id.*

²⁸¹ *Id.* at 49 (quoting Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1, 10-11 (2001)) (internal quotation marks omitted).

²⁸² *Microsoft*, 253 F.3d at 50.

²⁸³ *Id.*

²⁸⁴ *Id.* at 64-67.

²⁸⁵ *Id.* at 60.

²⁸⁶ *See id.*

²⁸⁷ Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55, 57 n.7 (1968) (emphasis omitted) (internal quotation marks omitted).

²⁸⁸ *See RPT-Facebook May “Lock In” Its Internet Dominance*, REUTERS.COM (Jan. 27, 2010, 1:33 PM), <http://www.reuters.com/article/2010/01/27/facebook-idUSN2612747120100127>.

²⁸⁹ *See* Comments of the Open Internet Coalition at 28-29, *In re Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52 (Jan. 14, 2010), *available at* http://www.arl.org/bm-doc/oic-nn-comments_final.pdf (“Because of network effects, any ‘winner’ can achieve a ‘lock-in’ that enables it to preserve dominance for a long time . . . creating a disincentive for innovators to challenge such ‘winner’ based on the development of new and better technologies.” (quoting Nicholas Economides, *Why Imposing New Tolls on Third-Party Content and Applications Threatens Innovation and Will Not Improve Broadband Providers’ Investment* 5 (N.Y. Univ. L. & Econ. Working Papers, Paper No. 227, 2010))).

*Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP*²⁹⁰ made it very hard for a plaintiff to use monopolization law to punish a defendant who unilaterally refuses to deal with a rival.²⁹¹ Moreover, the Court's recent decision in *Pacific Bell Telephone Co. v. Linkline Communications, Inc.*²⁹² reinforces this point.²⁹³

While these decisions involving attempts to gain access to telecommunications networks stand on their own facts, they are relevant to Internet platforms, which are characterized by strong network effects among users.²⁹⁴ In particular, the decisions in *Trinko* and *Linkline* make it unlikely that private plaintiffs at least will be able to use Section 2 to "open up" a network.²⁹⁵ Accordingly, this makes locked-in users more vulnerable to exploitation through after-the-fact changes to the platform, whether contractual or technological.²⁹⁶

Additionally, *Trinko* is particularly important in its redefinition of the relationship between monopolization and innovation.²⁹⁷ In the past, scholars have viewed impeding innovation as a cardinal harm of monopolization.²⁹⁸ However, in *Trinko*, Justice Antonin Scalia recast the relationship between monopolization and innovation from antagonistic to cozy, writing that

[t]he mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts "business acumen" in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive *conduct*.²⁹⁹

Thus, Scalia casts a monopoly as an incentive that drives entrepreneurs to innovate in the first place—in his view, a reward for the bright, hard-working, and creative.³⁰⁰

²⁹⁰ 540 U.S. 398 (2004).

²⁹¹ See *id.* at 408-11 (refusing to recognize insufficient assistance in the provision of service to rivals as an antitrust claim).

²⁹² 129 S. Ct. 1109 (2009).

²⁹³ *Id.* at 1119 (discussing *Trinko* and holding that no antitrust duty exists to deal with rivals at wholesale).

²⁹⁴ Tim O'Reilly, *Web 2.0 Compact Definition: Trying Again*, O'REILLY RADAR (Dec. 10, 2006), <http://radar.oreilly.com/2006/12/web-20-compact-definition-tryi.html> (discussing how Internet platforms have the ability to "harness[] the power of user contribution, collective intelligence, and network effects").

²⁹⁵ See *supra* notes 290-93 and accompanying text.

²⁹⁶ See *supra* notes 250-75 and accompanying text.

²⁹⁷ *Verizon Commc'ns Inc., v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004).

²⁹⁸ *E.g.*, *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 427 (2d Cir. 1945) (discussing reasons to forbid monopoly).

²⁹⁹ *Trinko*, 540 U.S. at 407.

³⁰⁰ *Id.*

Despite adopting a distinctly Schumpeter-colored worldview where firms compete *for* the market, not merely *within* it, *Trinko* does not go so far as to declare antitrust law unnecessary and unproductive.³⁰¹ However, it does draw a limit around the potential extent of the essential facilities doctrine.³⁰² A prominent lower court formulation of the doctrine required a monopolist to control an essential facility.³⁰³ The monopolist then denied access to the facility to a competitor unable to duplicate the essential facility, despite the feasibility of providing access.³⁰⁴ Nonetheless, the *Trinko* Court emphasized an additional element in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*: the unwillingness of a competitor to sell a good or service to another competitor that it had previously dealt with and that it was already offering the good or service at a retail price.³⁰⁵ By emphasizing a backwards look at a prior course of conduct, *Trinko* dealt a serious blow to the application of the essential facilities doctrine to technologically developing markets.³⁰⁶

The interplay of *Aspen*, *Trinko*, and related cases³⁰⁷ suggests that there are limits to antitrust under Section 2 concerning dominant platforms.³⁰⁸ In particular, Justice Scalia's embrace of a Schumpeterian model of monopoly and innovation, together with drawing a line in the sand between using Section 2 to redress anticompetitive acts versus using it to engender competition, makes monopolization law a difficult tool to use for platform dominance.³⁰⁹ Nonetheless, the error-cost framework, the consumer welfare implications, and the focus on monopoly and innovation all provide useful heuristics for thinking about policymaking for platforms characterized by user dynamism.³¹⁰

³⁰¹ Weiser, *supra* note 243, at 563-65.

³⁰² The *Trinko* case describes the "essential facilities" doctrine as "crafted by some lower courts," and limits its impact, assuming *arguendo*, that the U.S. Supreme Court were to adopt the same doctrine. *Trinko*, 540 U.S. at 410-11 (first internal quotation marks omitted) (citing Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841 (1990)).

³⁰³ *MCI Commc'ns Corp. v. AT&T*, 708 F.2d 1081, 1132 (7th Cir. 1983).

³⁰⁴ *Id.* at 1132-33.

³⁰⁵ *Trinko*, 540 U.S. at 408-09 (citing *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 608 (1985)) (describing *Aspen Skiing* as the "leading case for § 2 liability based on refusal to cooperate with a rival").

³⁰⁶ See, e.g., *Morris Commc'ns Corp. v. PGA Tour, Inc.*, 364 F.3d 1288, 1294-96 (11th Cir. 2004) (noting that Section 2 of the Sherman Act does not require one "to give its product freely to its competitors").

³⁰⁷ E.g., *Pac. Bell Tel. Co. v. Linkline Commc'ns, Inc.*, 129 S. Ct. 1109 (2009).

³⁰⁸ See Xiao Jeff Liu, Comment, Lorain, Aspen, and the Future of Section 2 Enforcement, 16 MICH. TELECOMM. & TECH. L. REV. 419, 427-29 (2010) (noting that the holdings in *Trinko* and *Linkline* "may extend beyond antitrust actions involving only regulated industries").

³⁰⁹ See Mark L. Silverstein, Comment, *VOIP and Pay-to-Play: Broadband's Attempt to Push Away Direct Competition*, 155 U. PA. L. REV. 1305, 1345 (2007); see also *supra* notes 290-93 and accompanying text.

³¹⁰ See Manne & Wright, *supra* note 188, at 158.

2. Regulation: Network Neutrality and Other Policies

This Subsection proceeds in two Parts. It first explains Wu's network neutrality theory. It then explains Frischmann, Weiser, and Werbach's theories of infrastructure. In particular, it points out that dominant platforms may create harms to network neutrality that dynamic users infrastructure theories do not address. Thus, platforms may need regulation to ensure that platform operators keep their promises to users.

a. *Wu and Network Neutrality Theories*

Over the past decade, many scholars have argued passionately for the imposition of "network neutrality" rules to bar broadband Internet access providers from discriminating against unaffiliated Internet content and applications providers.³¹¹ Proponents of these rules argue that they are necessary to prevent Internet fragmentation that would harm users.³¹² Indeed, such balkanization might also harm providers themselves.³¹³ While providers might collectively benefit from interconnection, they also might face powerful individual incentives to exit the platform on their own, undermining their own well-being in the process.³¹⁴

While the goal of network neutrality rules is to keep barriers to new entrants low and approximate a competitive market, network neutrality proposals may not address all problems with platform dominance.³¹⁵ First, the proposals usually hinge on the FCC's intervention, and thus they face the

³¹¹ See, e.g., Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141, 142, 145 (2003) (comparing different approaches to the regulation of broadband providers and arguing for policies that preserve "neutral[]" network design); Letter from Timothy Wu, Assoc. Professor, Univ. of Va. Law Sch. & Lawrence Lessig, Professor of Law, Stanford Law Sch., to Marlene H. Dortch, Sec'y, Fed. Comm'n Comm'n 12-15 (Aug. 22, 2003), available at http://www.freepress.net/files/wu_lessig_fcc.pdf (proposing a sample network neutrality regime in the broadband application context). But see Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L.J. 1847, 1898 (2006) ("Just because a market-based outcome is suboptimal does not mean that a government-imposed outcome will necessarily fare any better.").

³¹² See, e.g., Wu, *supra* note 311, at 151 (using banning of chat programs by broadband operators as an example of possible "last mile" discrimination); Letter from Timothy Wu & Lawrence Lessig, *supra* note 311, at 15 (using traffic-blocking of online gaming applications by broadband carriers as an example of possible discrimination).

³¹³ See Kevin Werbach, *Only Connect*, 22 BERKELEY TECH. L.J. 1233, 1236 (2007) ("In actuality, the core threat to the Internet is the potential erosion of robust interconnection, creating a balkanized environment in which innovation opportunities are circumscribed.").

³¹⁴ See *id.* at 1286-87 (doubting the "hyperbolic claims" of both sides of the network neutrality debate and pointing out with examples that attempts by network providers to cut off content, or content providers to issue exclusive licenses with certain network providers, might lead to unintended results that make both worse off).

³¹⁵ See *id.* at 1241-43.

common objections to regulation that seeks to alter market structure.³¹⁶ If the FCC imposes network neutrality on existing networks, it may result in de facto appropriation of the gains that motivated the platform host to initially create the network.³¹⁷ Additionally, Professor Christopher Yoo has argued that network neutrality could ossify existing networks and chill the emergence of valuable network diversity.³¹⁸ Second, network neutrality primarily focuses on non-discrimination with respect to different network traffic.³¹⁹ Therefore, it does not extend to other issues involving changes in pricing schedules or alterations in services, so long as they are not non-discriminatory, occur off the network, or occur just beyond the network's end.³²⁰ Finally, platforms that do not fall under the regulatory ambit of the FCC would potentially escape such regulation and provide an opportunity for arbitrage—although, this concern could be alleviated by broadening the regulatory reach.³²¹

Despite these concerns, advocates of network neutrality have highlighted a primary concern about the network environment. The network operator may face a powerful incentive to favor some traffic over others—especially traffic that generates additional reward versus traffic that might tend to compete with it.³²² Where network users have become locked-in or where the network is a durable monopoly, the welfare gains to the network provider may outweigh the losses to the network user, allowing such discrimination to persist.³²³ This concern anticipates the potential harm: the owner of a dominant platform may impose opportunistic controls that increase its welfare but diminish the welfare of users, potentially with large but difficult to quantify costs to user dynamism.³²⁴

³¹⁶ Weiser, *supra* note 243, at 565-66; Werbach, *supra* note 313, at 1243.

³¹⁷ See Yoo, *supra* note 311, at 1888-89.

³¹⁸ *Id.* at 1903-04.

³¹⁹ See Werbach, *supra* note 313, at 1281-82.

³²⁰ *E.g.*, ZITTRAIN, *supra* note 3, at 183 (pointing out the inability of network neutrality alone to address this possibility, particularly with proprietary devices at the end of a network and for what he terms “appliancized systems” of information).

³²¹ Christopher T. Marsden, *Net Neutrality: The European Debate*, J. INTERNET L., Aug. 2008, at 13 (describing how some formulations of network neutrality rules can be an end-run).

³²² Brett M. Frischmann & Barbara van Schewick, *Network Neutrality and the Economics of an Information Superhighway: A Reply to Professor Yoo*, 47 JURIMETRICS J. 383, 387-90 (2007) (stating that network neutrality advocates argue that fear of network operators' price and access discrimination will reduce unaffiliated application and content developers' incentives to innovate, and that resulting reduction in innovation will reduce social welfare).

³²³ *Id.* at 409-20.

³²⁴ See Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 582 (2003) (“[A]n acceptance of dominant platform standards may create more value for the individual companies, but can leave the Internet community itself worse off . . .”).

b. *Frischmann, Weiser, Werbach, and Infrastructure Theories*

A number of prominent theorists have called for regulatory intervention on a slightly different basis than the network neutrality advocates. These calls for action do not necessarily differ based on their goals, but rather on the characteristics of platforms that they highlight and the decision rules that they advocate.

Perhaps the most useful theory for understanding how antitrust can play a role in the online environment has been the infrastructure theory set forth by Professor Brett Frischmann, alone and together with coauthors including Professor Michael Madison, Professor Katherine Strandburg, and Professor Spencer Waller.³²⁵ The theory identifies a class of goods and services that often lacks rivalry, whose “[s]ocial demand” is “driven primarily by downstream productive activity,” and that serves as an “input into a wide range” of uses, “including private goods, public goods, and nonmarket goods.”³²⁶ Fundamentally, the theory provides an economic rationale for managing infrastructure resources that provide open access.³²⁷ In so doing, scholars have used infrastructure theory to deploy arguments for reviving essential facilities in antitrust³²⁸ and for re-evaluating IP doctrine.³²⁹

Infrastructure, so defined, overlaps with the networks that are the focus of sharing and network neutrality theories, and also with concerns about platform dominance described herein.³³⁰ However, there are important differences that make infrastructure a weaker fit for platform dominance. In particular, infrastructure theory emphasizes the variance in uses, especially involving public and nonmarket goods, due to the difficulty in measuring social value in such cases.³³¹ The measurement difficulty creates the possibility of inefficiency through an underproduction of these downstream pub-

³²⁵ See generally Frischmann, *supra* note 3; Frischmann & Waller, *supra* note 20; Madison et al., *supra* note 10.

³²⁶ Frischmann, *supra* note 3, at 956.

³²⁷ *Id.* at 959.

³²⁸ E.g., Frischmann & Waller, *supra* note 20, at 3-4 (arguing, pre-*Linkline*, for the resurrection of the essential facilities doctrine despite *Trinko*).

³²⁹ See, e.g., Madison et al., *supra* note 10, at 708 (equating resource-pooling arrangements for information- and knowledge-based works to common-pool resources in the natural environment and calling for alternatives to a pure exclusionary right regime or government intervention).

³³⁰ *Id.* at 669, 691.

³³¹ Brett M. Frischmann, *Environmental Infrastructure*, 35 *ECOLOGY L.Q.* 151, 160 (2008) (“[T]he demand manifestation and valuation problem may be at its worst when infrastructures are used to produce public and nonmarket goods that yield social benefits not easily accounted for in economic decisionmaking.”).

lic and nonmarket goods.³³² Where differential value is more easily measured, price discrimination may well provide a more efficient result.³³³

However, dominant platforms may create harms that infrastructure theory is not designed to address. User-creators and user-innovators may use dominant platforms without actually yielding a wide variance in the downstream products to make the value immeasurable. First, they may yield widely varying products whose value can adequately be handled by market forces. Consider, for example, a platform like the iTunes App Store. While the applications produced and distributed through the platform may vary on several dimensions and may include private, public, and nonmarket goods, they can also be readily priced and valued.³³⁴ Sellers possess the ability to set and alter prices in response to sales signals.³³⁵ Moreover, some platforms may allow user-creators to produce products that do not vary greatly in the way infrastructure theory describes—consider Twitter, which only transforms private information, such as an individual’s private perceptions or thoughts, into the public good of information.³³⁶ Such information can be quite valuable and difficult to replicate, such as firsthand accounts of antigovernment protests in a society without a free press.³³⁷ Yet, as designed, it basically only produces the public good of information.³³⁸

Besides the infrastructure theory, Professor Kevin Werbach has proposed regulatory intervention based on an interconnection principle.³³⁹

³³² *Id.* at 166 n.50 (stating that the “benefits of nonmarket goods and services are typically underestimated in production and consumption decisions” because their value is difficult to measure).

³³³ Frischmann points to this consideration as crucial to the decision to favor infrastructure theory-based regulation over price discrimination. Frischmann, *supra* note 3, at 978-79.

³³⁴ ITUNES PREVIEW, <http://itunes.apple.com/us/genre/ios/id36?mt=8> (last visited July 6, 2011) (showing a variety of categories for apps, including business, finance, photography, and games); *The Colbert Report’s The Word*, ITUNES PREVIEW, <http://itunes.apple.com/us/app/the-colbert-reports-the-word/id332610545?mt=8> (last visited July 6, 2011) (showing an example of an app costing \$1.99).

³³⁵ See *BargainBin with Push!*, APPLE, <http://itunes.apple.com/us/app/bargainbin-with-push/id302951751?mt=8#> (last visited July 6, 2011) (offering an app which alerts users to price discounts for other apps).

³³⁶ *Twitter is the Best Way to Discover What’s New in Your World*, TWITTER, <http://twitter.com/about> (last visited July 6, 2011) (describing how Twitter allows individuals to share information publicly through “tweets”).

³³⁷ See Lev Grossman, *Iran Protests: Twitter, the Medium of the Movement*, TIME, June 17, 2009, available at <http://www.time.com/time/world/article/0,8599,1905125,00.html> (stating that Twitter is “ideal for a mass protest movement” because it is “very easy for the average citizen to use and very hard for any central authority to control”).

³³⁸ At a second order downstream, one could argue that the public good of information can be transformed into variable outputs, including private, public, and nonmarket goods. However, adopting such a loose connection between inputs and outputs could transform a vast percentage of inputs into infrastructure. Frischmann, *supra* note 3, at 979-80.

³³⁹ Werbach, *supra* note 313, at 1239-42 (arguing that non-discrimination principles do not sufficiently address the challenges to consumer welfare that some network operators’ practices may pose); see also Kevin Werbach, *The Network Utility*, 60 DUKE L.J. 1761, 1830 (2011) (“Connectivity issues go beyond nondiscrimination.”).

Drawing on the history of the telephone network and its regulation, Werbach points out the differences between regulatory policies based on non-discrimination, like network neutrality, and interconnection.³⁴⁰ Most relevantly, he argues that the Internet, at heart, “is interconnection,” and so a regulatory policy based on interconnection flows logically as a result.³⁴¹ This type of regulation is reasonable on its own terms. It would have positive effects on user dynamism but would not necessarily prevent appropriation or other forms of ex post policy changes that undercuts user investment.³⁴²

Similarly, drawing on the history of telecommunications regulation, Professor Philip Weiser has pointed out the need for antitrust law to supplement regulation when the regulator’s role is “insufficient to displace antitrust oversight.”³⁴³ In particular, he argues that incumbent network hosts may find it profitable to stall technological innovation by walling off their consumers from new entrants and innovations.³⁴⁴ As a result, he has called both for what he sees as practicably enforceable regulatory rules, such as requiring “best efforts” service for broadband traffic,³⁴⁵ as well as the application of Section 2 monopolization theories as a backstop to regulation.³⁴⁶ Professor Scott Hemphill has similarly argued for the importance of such best efforts and nonexclusion rules for peer production on the grounds that such phenomena may be particularly vulnerable to exclusion by network hosts.³⁴⁷ Like interconnection requirements, such rules may be necessary in the telecommunications context but may not be sufficient for platforms where the value added lies more heavily in user dynamism.³⁴⁸ The latter context may require more variation in the range of commitments that the FCC may need to enforce. In other words, enforcing commitments that each platform host makes, as opposed to a one-size fits all rule, may well be the superior choice.³⁴⁹

³⁴⁰ Werbach, *supra* note 339, at 1766-67.

³⁴¹ Werbach, *supra* note 313, at 1250 (emphasis omitted).

³⁴² *See id.* at 1234-35 (“By failing to emphasize interconnection, advocates on both sides of current debates push towards unworkable outcomes, while ignoring significant threats to innovation and investment.”).

³⁴³ Weiser, *supra* note 243, at 565.

³⁴⁴ *Id.* at 554; *see also* Elhauge, *supra* note 241, at 283 (observing that buyers might individually agree with a unitary monopolist to restrictions that harm buyers collectively and that may have pernicious effects on innovation).

³⁴⁵ *See* Philip J. Weiser, *The Next Frontier for Network Neutrality*, 60 ADMIN. L. REV. 273, 320-21 (2008) (advocating practically enforceable rules such as “best efforts” standards).

³⁴⁶ Weiser, *supra* note 243, at 561-62, 584.

³⁴⁷ Hemphill, *supra* note 159, at 161 (“[A] social producer is less able to pay an access fee.”).

³⁴⁸ *See supra* Part I (discussing how Internet-based platforms derive value from user activity).

³⁴⁹ *See infra* Part V.A (arguing for the ability of platform hosts to opt in or out of commitments).

These theories of regulation draw on the interplay between regulation and antitrust, and on the downstream effects of network industries.³⁵⁰ However, platform dominance concerns what contract law might call a “holdup problem”—only on a mass scale between the dominant platform and a potentially large number of user-creators and user-innovators.³⁵¹ The problem is not that pulling the rug out from under such user-creators and user-innovators is unfair or immoral.³⁵² Rather, the concern is that such opportunistic exploitation could be fundamentally destructive of user-innovation and user-creation.³⁵³ In addition, given the yet-unknown value of these dynamic effects, enforcing the commitments of platforms to their users may be both fair *and* efficient.³⁵⁴

B. *Do Nothing? Reasons Not to Pursue Antitrust or Network Neutrality-Based Solutions*

Some question whether networks and platforms require state-compelled openness.³⁵⁵ Opponents of intervention claim that access or other mandates impose costs on network hosts with uncertain benefits.³⁵⁶ These laissez-faire commentators argue that intervention to foster network neutrality-like openness thus may be flawed as a matter of economic theory,³⁵⁷ may not matter to consumer welfare,³⁵⁸ and may be difficult to apply without causing unforeseen harm to innovation in practice.³⁵⁹

³⁵⁰ See, e.g., Frischmann, *supra* note 3, at 990.

³⁵¹ See *infra* Part IV.B.

³⁵² These ethical concerns, while relevant to statutory language that could apply to these cases, are separate from the central argument in this Article, which is based on instrumental efficiency-related concerns. See *infra* Part IV.B (discussing Section 5 of the FTC Act which bars “unfair or deceptive” acts).

³⁵³ See *infra* Part IV.B (arguing for enforcement of platform operators’ representations to users as a means of avoiding loss to user-creation and user-innovation).

³⁵⁴ See *infra* Part IV.B (utilizing an example where Google promises a Droid with the ability to run open source software to show the benefits of commitment enforcement on the user and market).

³⁵⁵ E.g., Spulber & Yoo, *supra* note 11, at 1843-46 (describing the essential facilities doctrine’s potential negatives when applied to telecommunications and Internet contexts).

³⁵⁶ E.g., *id.* at 1846.

³⁵⁷ See, e.g., *id.* at 1845 (“Compelled access also dampens the incentives of the essential facilities defendant to invest in improvements in its facilities, since price regulation will limit the returns it can earn on such investments and force it to share successful investments with its competitors.”).

³⁵⁸ E.g., Barnett, *supra* note 15, at 1869 (“Access policies, as implemented through some mix of closed and open organizational components, are simply part of the consumption bundle . . . [and] there is no assurance that open structures even promote consumer welfare.”).

³⁵⁹ E.g., Manne & Wright, *supra* note 14, at 187 (arguing that “antimarket bias in favor of monopoly explanations for innovative conduct” plus “increased stakes of . . . intervention against innovative business practices” makes essential facilities-related intervention “problematic from a consumer welfare perspective”).

In several articles, separately and together, Professor Christopher Yoo and Professor Daniel Spulber have questioned the wisdom of mandated access to networks and IP.³⁶⁰ They are particularly concerned that access mandates erosion of the owner's property rights and inhibits innovation.³⁶¹ Additionally, Yoo has separately advocated for ex post regulation of network providers that would allow such providers to experiment with different policies "until such time as those practices can be shown to harm competition."³⁶² Like Yoo's proposal, the proposal in this Article also seeks to foster diversity among platforms.³⁶³ However, unlike Yoo's, instead of sacrificing user dynamism by waiting until the passage of time makes user harms clear, the proposal here would apply where the host reneges on a commitment to users.³⁶⁴ That wait-and-see approach may have unknowable costs, while allowing platform hosts to withdraw their ex ante commitments does not have obvious social benefits.³⁶⁵

Recently, Professor Jonathan Barnett has argued that there is no real difference between an open platform and a proprietary one.³⁶⁶ According to Barnett, each category is subject to the same needs required to attract users and the same insolvency constraints.³⁶⁷ Therefore, he argues, open networks must find a way to control and monetize at least part of their scope, while proprietary networks can commit to users by "forfeiting" valuable properties, thereby opening up part of their closed networks.³⁶⁸ As a result, he claims, there is little rationale for state intervention.³⁶⁹

³⁶⁰ E.g., Spulber & Yoo, *supra* note 11, at 1846; Christopher S. Yoo, *What Can Antitrust Contribute to the Network Neutrality Debate?*, 1 INT'L J. COMM. 493, 522 (2007).

³⁶¹ Daniel Spulber, *Competition Policy and the Incentive to Innovate: The Dynamic Effects of Microsoft v. Commission*, 25 YALE J. ON REG. 247, 268-70 (2008) (arguing that "[m]andated access," including "[p]latform access," "unbundled access," and "interconnection access" for IP and information products reduces innovation by both the owner, who faces reduced incentive to innovate, and by the competitor, who can allegedly use regulators to get access and "free rid[e]" off of the owner's innovation); Spulber and Yoo, *supra* note 11, at 1905; Daniel F. Spulber & Christopher S. Yoo, *Rethinking Broadband Internet Access*, 22 HARV. J.L. & TECH. 1, 45-46, 64-65 (2008) (arguing that mandatory access to broadband networks will increase demand for such services while imposing costs on hosts, thereby reducing incentive to invest in providing and improving such networks).

³⁶² Christopher S. Yoo, *Network Neutrality, Consumers, and Innovation*, 2008 U. CHI. LEGAL. F. 179, 261 (2008) (calling this approach "network diversity").

³⁶³ See *infra* Part V.A (proposing a system whereby Internet platform owners make a variety of unique commitments to users that are then enforced by regulators).

³⁶⁴ See *infra* Part V.A.

³⁶⁵ See *infra* Part V.A (arguing that the proposed system would provide a safe harbor and stimulate competition).

³⁶⁶ Barnett, *supra* note 15, at 1893-94.

³⁶⁷ *Id.* at 1876, 1913-14.

³⁶⁸ *Id.* at 1913-14.

³⁶⁹ *Id.* at 1933-34 (arguing that the imposition of higher costs on large-enterprise users gives rise to social issues, but does not warrant state intervention).

Barnett's argument captures an important role that the partial opening or closing of a platform can play. However, as discussed in Part II, some of his key examples do not necessarily support the idea that forfeiting valuable properties can generate the same user investments that enforcing platform hosts' commitments to users can generate.³⁷⁰ In particular, the Wikipedia/Wikia example may suggest that the kinds of forfeitures Barnett relies on are perhaps necessary but not sufficient to foster user dynamism.³⁷¹ To the extent that users participate on both the supply and demand sides and value the fruits of that participation as quality-sensitive members of a community, such commitments may take on increased importance, since they do not merely lower cost in the way that "free" access does, but they also maintain or promote improved quality.³⁷²

Another argument for inaction is the concern that judges and regulators are not well placed to deal with quickly changing platforms on the merits. The evidence from abroad is mixed at best. The European Commission has struggled for a decade to implement its interoperability dictates on Microsoft,³⁷³ and after five years, France's attempts to impose interoperability on Apple's FairPlay have murkily morphed into an agency's imposition of "three strikes and you're out" rules on users who infringe copyrights online.³⁷⁴ Domestically, the picture is also somewhat cloudy. The Supreme Court Justice with the deepest experience with antitrust and IP law has stated on record that he does not understand even the Hollywood version of Facebook;³⁷⁵ the Court's current longest-serving Justice described himself before Congress as "Mr. Clueless" when asked about Twitter.³⁷⁶ These

³⁷⁰ See *supra* Part I.B.

³⁷¹ See *supra* Part I.C.

³⁷² See *supra* Part I.C.

³⁷³ E.g., Press Release, Eur. Comm'n, Antitrust: Commission Takes Note of Microsoft's Announcement on Interoperability Principles (Feb. 21, 2008), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/106> (mentioning past failed attempts to create compliance).

³⁷⁴ Jane Winn & Nicolas Jondet, *A New Deal for End Users? Lessons from a French Innovation in the Regulation of Interoperability*, 51 WM. & MARY L. REV. 547, 550, 560-61 (2009) (describing how France created an interoperability agency in 2007, but as of 2009, no one had yet challenged any DRM before the agency, which underwent a name change and revamping to become "the cornerstone of the so-called graduated response policy" or "three strikes and you're out" (second internal quotation marks omitted)).

³⁷⁵ Erik Schelzig, *Breyer Says Justices Must Adapt to Facebook World*, WASH. TIMES (Nov. 16, 2010, 7:12 PM), <http://www.washingtontimes.com/news/2010/nov/16/breyer-says-justices-must-adapt-to-facebook-world/> (referencing a statement from Justice Breyer: "If I'm applying the First Amendment, I have to apply it to a world where there's an Internet, and there's Facebook, and there are movies like . . . 'The Social Network,' which I couldn't even understand" (alteration in original) (internal quotation marks omitted)).

³⁷⁶ *Hearing Before the Subcomm. on Commercial and Admin. Law of the H. Comm. on the Judiciary*, 111th Cong. 39 (2010) [hereinafter *Hearing*] (statement of Antonin Scalia, Assoc. Justice, U.S. Supreme Court). In response to a question of whether he has considered using Twitter, Justice Scalia

anecdotes are amusing until one considers the economic³⁷⁷ and social impact³⁷⁸ of these technologies.

These practical concerns may be of more relevance to an antitrust essential-facilities doctrine than to enforcing platform host commitments to users. Antitrust courts may feel justifiable hesitation to intervene in nascent markets on essential facilities grounds, because of the possibility of unintended consequences.³⁷⁹ Even where the access in question is a traditional example of non-discrimination or interconnection,³⁸⁰ forced access will be susceptible to interpretations of forced participation in a new product or market. For example, would a post-*Trinko* Court view *Aspen Skiing*'s compelled participation in an all-mountain *snowboarder* pass as simply providing lift tickets, as it always had done in cooperation with Aspen Highlands for *skiers*, or, something new? If it grows in popularity, what about compelled participation in an all-mountain *downhill biker*³⁸¹ pass? Both examples involve the sale of the same lift tickets, though arguably with "new" sets of customers and, therefore, new markets.³⁸² An analysis based on *United States v. E. I. du Pont de Nemours & Co.*³⁸³ would support prioritiz-

responded as follows: "I don't even know what it is, Mr. Chairman, to tell you the truth. . . . I have heard it talked about, but, you know, my wife calls me Mr. Clueless. I don't know what you—with tweeting." *Id.*

³⁷⁷ See Susanne Craig & Andrew Ross Sorkin, *Goldman Offering Clients a Chance to Invest in Facebook*, DEALBOOK (Jan. 2, 2011, 11:31 PM), <http://dealbook.nytimes.com/2011/01/02/goldman-invests-in-facebook-at-50-billion-valuation/>.

³⁷⁸ See Micah L. Sifry, *Did Facebook Bring Down Mubarak?*, CNN OPINION (Feb. 11, 2011), http://articles.cnn.com/2011-02-11/opinion/sifry.egypt.technology_1_egypt-internet-access-revolution/2?s=PM:OPINION; see also *Hearing*, *supra* note 376, at 39 (statement of Steven Breyer, Assoc. Justice, U.S. Supreme Court). With respect to Twitter's role in demonstrations against the government of Iran, Justice Breyer stated as follows: "And I thought 'My goodness, this is now for better or for worse.' I think maybe in many respects for better—in that instance, certainly." *Id.*

³⁷⁹ *Compare Rambus, Inc., v. Fed. Trade Comm'n*, 522 F.3d 456, 463-64 (D.C. Cir. 2008) (refusing to find liability where the defendant's conduct made its technology "more likely" to be incorporated into a nascent technology standard and where defendant did not prove that but for its conduct, an alternative standard would have been chosen), *with United States v. Microsoft Corp.*, 253 F.3d 34, 79 (D.C. Cir. 2001) (en banc) (concluding that despite uncertainty about the results of defendant's exclusionary conduct, the court would infer harm).

³⁸⁰ See Werbach, *supra* note 313, at 1246-47 (describing the history and characteristics of non-discrimination and interconnection as approaches to traditional telecommunications network regulation).

³⁸¹ The downhill ski venue for the 2010 Winter Olympics operates some of its trails as a downhill mountain biking park in the summer. See *2010 Winter Olympic and Paralympic Games*, WHISTLER BLACKCOMB, <http://www.whistlerblackcomb.com/olympics/index.htm> (last visited July 7, 2011); *Latest from the Park*, WHISTLER BIKE, <http://www.whistlerbike.com/index.htm> (last visited July 7, 2011). However, winter downhill biking also exists. *Winter Downhill Bike Race*, CAMDENSNOWBOWL, <http://winter.camdensnowbowl.com/event/winterbike-downhill-bike-race> (last visited July 7, 2011) (advertising a February downhill bike race in Maine).

³⁸² See *Lift Tickets and Passes*, WHISTLER BLACKCOMB, <http://www.whistlerblackcomb.com/tickets/index.htm> (last visited June 26, 2011).

³⁸³ 351 U.S. 377 (1956).

ing consumer response (cross-price elasticity of demand) over function (what is the product).³⁸⁴ While consumer response data might eventually show that these are new products, such data would be hard to come by at a nascent stage.

However, enforcing a platform host's ex ante commitments should not involve similar difficult distinctions for courts. Instead, interpreting statements and commitments and their effects on their recipient is a quintessential judicial role.³⁸⁵ Furthermore, the argument that courts' fundamental role in contract actions is to prevent opportunism is commonplace, even to those commentators not ordinarily disposed to government regulation.³⁸⁶ Moreover, as this Article discusses in the following Section, consumer protection law already addresses this problem in other contexts where direct contractual enforcement is an inferior response.³⁸⁷

IV. LESSONS FROM THE FTC'S STANDARD-SETTING CASES

To understand some of the uncertainty surrounding user dynamism, it is helpful to explore the parallel context of the FTC's standard-setting cases. This Part discusses the results of relevant cases. These results provide an analytical framework for concepts central to preserving dynamic users' trust in platforms. In particular, it discusses uncertainty and deception in the context of the standard-setting cases. It analogizes between the FTC's standard-setting case theories and theories of platform dominance that focus on binding platform operators to their initial commitments.

A. *The Lessons*

The relevance of antitrust law's essential-facilities doctrine and the post-AT&T breakup regulatory regime to arguments for network neutrality

³⁸⁴ *Id.* at 400 (defining the market for cellophane with inquiry into possible substitutes as defined by consumer behavior).

³⁸⁵ *E.g.*, *Bureau of Alcohol, Tobacco & Firearms v. Fed. Labor Relations Auth.*, 464 U.S. 89, 98 n.8 (1983).

³⁸⁶ *E.g.*, *Jordan v. Duff & Phelps, Inc.*, 815 F.2d 429, 438 (7th Cir. 1987) ("One term implied in every written contract and therefore, we suppose, every unwritten one, is that neither party will try to take opportunistic advantage of the other."); RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 81 (3d ed. 1986) ("[T]he fundamental function of contract law (and recognized as such at least since Hobbes's day) is to deter people from behaving opportunistically toward their contracting parties, in order to encourage the optimal timing of economic activity and to make costly self-protective measures unnecessary.")

³⁸⁷ *See infra* Part IV.B.

and similar interventions is well known.³⁸⁸ However, the FTC's standard-setting cases are comparatively undiscussed. These cases provide an analytical framework that highlights considerations of timing, deception, and opportunism that should be central to protecting dynamic users' trust in the platforms they use.³⁸⁹ These cases are particularly relevant to user dynamism for two important reasons. First, as with user dynamism, the parties' actions and the relevant cases operate in an environment characterized by multilateral innovation, as opposed to static consumers as "innovation takers" in the market.³⁹⁰ Second, the parties in these cases, and the FTC itself, act against a background of uncertainty about what they do not and cannot yet know about how these markets may develop.³⁹¹ However, as in such disparate fields as investing³⁹² and war,³⁹³ uncertainty cannot automatically compel inaction.

In the FTC standard-setting cases, a common pattern emerges: private parties arrange to manage these unknowns, and the FTC tries to enforce these understandings in the face of post hoc opportunism.³⁹⁴ For reasons that are even more compelling for cases involving user dynamism, party self-protection through contract law is potentially a weaker response, partly because of the pattern of concentrated interests facing off against unconcentrated counterparts.³⁹⁵ As a result, the parties' standard-setting activities, similar to network adoption by dynamic users, represents an attempt at managing uncertainty; the FTC cases aim to protect the participants' expectations in that process.³⁹⁶

³⁸⁸ See, e.g., Kevin Werbach, *Higher Standards Regulation in the Network Age*, 23 HARV. J.L. & TECH. 179, 192-94 (2009).

³⁸⁹ See, e.g., *In re Dell Computer Corp.*, 121 F.T.C. 616, 629 (1996) (Azcuena, Comm'r., dissenting).

³⁹⁰ See, e.g., *id.* at 617 (describing the innovation resulting from activities of Dell and the Video Electronics Standards Commission).

³⁹¹ The problem of making decisions under uncertainty, including uncertainty about what is, in fact uncertain, has analogies in other areas. See, e.g., NASSIM NICHOLAS TALEB, *THE BLACK SWAN: THE IMPACT OF THE HIGHLY IMPROBABLE* 165-71 (2007) (discussing the impact of very unexpected events on markets and societies); Donald Rumsfeld, Sec'y, Dep't of Def. & Richard Myers, Chairman, Joint Chief of Staff, Remarks at a Department of Defense News Briefing (Feb. 12, 2002), available at <http://www.defense.gov/transcripts/transcript.aspx?transcriptid=2636> ("[A]s we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know." (internal quotation marks omitted)).

³⁹² Cf. TALEB, *supra* note 391, at 165-66.

³⁹³ See John Yoo, *Using Force*, 71 U. CHI. L. REV. 729, 735 (2004) (referencing the inherent uncertainty in predicting an enemy's next move); Rumsfeld & Myers, *supra* note 391.

³⁹⁴ See, e.g., *Rambus Inc. v. Fed. Trade Comm'n*, 522 F.3d 456, 461 (D.C. Cir. 2008) (involving an action by the FTC against Rambus Inc. for breaching a trade association's patent disclosure policies).

³⁹⁵ Barnett, *supra* note 15, at 1884-85 (describing the shortcomings of contract law in preventing opportunistic behavior).

³⁹⁶ E.g., *Rambus*, 522 F.3d at 468 (involving the FTC's attempt to enforce disclosure expectations).

B. *From Patent Ambush to User Dynamism*

In a string of recent cases, the FTC has focused on the problem of deception in the context of standard-setting.³⁹⁷ These cases have varied on several dimensions. Some involved deception in addition to holdup.³⁹⁸ Some cases involved breaches of clear commitments to contribute a proprietary standard to the technology.³⁹⁹ Yet, in other cases, the commitments were more vague.⁴⁰⁰ Some were monopolization cases under Section 2,⁴⁰¹ and others were brought solely under Section 5 of the FTC Act, which empowers the FTC alone to order private parties to “cease and desist” from “unfair or deceptive acts or practices.”⁴⁰² Nonetheless, all involved post hoc attempts to profit from users who had adopted a standard and were committed to its use.⁴⁰³

Standard-setting implicates network effects in a manner similar to platforms. Indeed, in the era before “the Internet” was a household word, the early economic analysis of network effects focused significantly on standard-setting and systems that required compatibility.⁴⁰⁴ The reasons are fairly straightforward. Adopting a standard can foster direct network effects—

³⁹⁷ See *In re Dell Computer Corp.*, 121 F.T.C. 616, 617 (1996); Complaint at 4, *In re Intel Corp.*, No. 9341 (F.T.C. Dec. 16, 2009), available at <http://www.ftc.gov/os/adjpro/d9341/091216intelcmpt.pdf>; Decision and Order at 4, *In re Negotiated Data Solutions LLC*, No. 0510094 (F.T.C. Sept. 23, 2008), available at <http://www.ftc.gov/os/caselist/0510094/080923ndsdo.pdf>; Final Order at 4-5, *In re Rambus Inc.*, No. 9302 (F.T.C. Feb. 5, 2007), available at <http://www.ftc.gov/os/adjpro/d9302/070205finalorder.pdf>; see also *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 303 (3d Cir. 2007) (representing a private standard-setting antitrust case under Section 2 of the Sherman Act).

³⁹⁸ E.g., Opinion of the Commission at 74, *In re Rambus Inc.*, No. 9302 (F.T.C. Aug. 2, 2006), vacated, 522 F.3d 456 (D.C. Cir. 2008).

³⁹⁹ E.g., *Dell*, 121 F.T.C. at 623-24.

⁴⁰⁰ Compare Complaint at 2-3, *In re Negotiated Data Solutions LLC*, No. 0510094 (F.T.C. Sept. 23, 2008), available at <http://www.ftc.gov/os/caselist/0510094/080923ndscomplaint.pdf> (involving a “licensing assurance”) [hereinafter Complaint, *N-Data*], with Complaint at 2, *In re Rambus Inc.*, No. 9302 (F.T.C. June 18, 2002) [hereinafter Complaint, *Rambus*], available at <http://www.ftc.gov/os/adjpro/d9302/020618admincmp.pdf> (involving a violation of patent rules and policies, rather than a violation of a clear commitment). In *Rambus* and related private cases, the ambiguity in the standard-setting organization’s (“SSO’s”) policies on the ex ante disclosure of patent interests by participants in standard-setting was criticized by two district courts, two appellate panels, plus the FTC and an ALJ. *Rambus*, 522 F.3d at 467-68; *Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1102 & n.10 (Fed. Cir. 2003); *Hynix Semiconductor Inc. v. Rambus Inc.*, 441 F. Supp. 2d 1066, 1074 (N.D. Cal. 2006); *Micron Tech., Inc. v. Rambus Inc.*, No. Civ.A 00-792-KAJ, 2006 WL 1653136, at *2 (D. Del. June 15, 2006); Initial Decision at 271, *In re Rambus Inc.*, No. 9302 (F.T.C. Feb. 23, 2004), available at <http://www.ftc.gov/os/adjpro/d9302/040223initialdecision.pdf>.

⁴⁰¹ E.g., *Rambus*, 522 F.3d at 459; see also *Broadcom*, 501 F.3d at 306 (non-FTC, private case).

⁴⁰² 15 U.S.C. § 45(a)-(b) (2006); see also *Dell*, 121 F.T.C. at 618-19.

⁴⁰³ E.g., *Hynix*, 441 F. Supp. 2d at 1070.

⁴⁰⁴ See, e.g., Farrell & Saloner, *Installed Base*, *supra* note 249, at 940; Farrell & Saloner, *Standardization*, *supra* note 249, at 71, 81; Katz & Shapiro, *Competition*, *supra* note 249, at 94-95; Katz & Shapiro, *Network Externalities*, *supra* note 249, at 439.

that is, an immediate benefit from others' use of the standardized product. For example, adoption of Morse Code as a communication standard helped make telegraphic communication much more useful.⁴⁰⁵ Indirect network effects, including the development of complementary products based on the standard, can also follow, such as the development of Western Union's telegraph-based money transfer systems.⁴⁰⁶ Similar analogous effects are now familiar to Internet businesspeople, scholars, and users.

As a result, market competition between standards and networks, as opposed to competition between other products, particularly emphasizes expectations, coordination, and compatibility.⁴⁰⁷ A user's value depends on the concurrent decisions of others, and therefore, consumers cannot maximize their welfare purely by competing and having the option to exit, as is characteristic in "normal" conditions.⁴⁰⁸ As antitrust courts have recognized, network effects lock in users.⁴⁰⁹ Even those who argue that the real world importance of lock-in is exaggerated do not go so far as to argue that consumers could never become locked into a standard that is suboptimal.⁴¹⁰

⁴⁰⁵ Prior to Morse Code, different standards had existed that failed to catch on. These standards included an English telegraphic system involving an arrow on the machine that would rotate to point to different letters, and Morse's first system, which used a code to indicate numbers, which could then be translated into words using a chart. RUSSELL W. BURNS, COMMUNICATIONS: AN INTERNATIONAL HISTORY OF THE FORMATIVE YEARS 79-86 (2004). These varying systems apparently did not catch on as well as Morse Code did once it was invented. *Id.*

⁴⁰⁶ W. UNION, <http://www.westernunion.com/> (last visited July 7, 2011); *see also* BURNS, *supra* note 405, at 86 (discussing Morse's push for the Telegraph Bill in order to set up a telegraph system in the United States).

⁴⁰⁷ Katz & Shapiro, *Competition*, *supra* note 249, at 95.

⁴⁰⁸ HIRSCHMAN, *supra* note 31, at 21 (internal quotation marks omitted). This point was actually recognized, prior to the development of economic theory on network effects, in connection with membership goods in which the buyer is "involved in both the supply and the demand sides." *Id.* at 100.

⁴⁰⁹ *E.g.*, United States v. Microsoft Corp., 253 F.3d 34, 55 (D.C. Cir. 2001) (en banc) (per curiam) (recognizing that the "chicken-and-egg" situation of consumers preferring an operating system that developers write applications for and developers preferring to write applications for an operating system that consumers use "ensures that applications will continue to be written for the already dominant Windows, which in turn ensures that consumers will continue to prefer it over other operating systems").

⁴¹⁰ Stan Leibowitz and Stephen Margolis, perhaps the most vocal critics of path-dependency theories, explicitly limit their doubts to the category of "third-degree" path dependency, which include situations in which "actors make particular durable commitments in spite of the availability of a feasible better alternative," which "maybe have been there all along" or "might become available later on." Stan J. Leibowitz & Stephen E. Margolis, How the Lock-In Movement Went Off the Tracks 12 (Oct. 2010) (unpublished manuscript), available at <http://ssrn.com/abstract=1698486>. They are explicitly not concerned with "second degree" path dependence, where "actors can make durable commitments that are wise given all the information available at the time they made their commitments, but unanticipated events can yield payoffs such that the decision turns out to be unfortunate." *Id.* They believe that policy cannot relevantly address such situations. Yet, to the extent that the FTC standard-setting cases show firms trying to manage both known unknowns and unknown unknowns, while other firms practice strategic nondisclosure that can yield individually better but socially worse outcomes, policy improvements may be possible by effectively creating penalties for strategic nondisclosure. *Id.* at 12-13. The argument that such policy steps might create incentives for better bargaining, even if they might not

In a series of cases, the FTC has dealt with issues of coordination, deception, hold-outs, and policy change in standard-setting.⁴¹¹ In *In Re Rambus Inc.*,⁴¹² an industry player failed to disclose pending patent applications to members of a standard-setting organization (“SSO”), because it allegedly sought to monopolize markets for computer memory technologies included in the standard.⁴¹³ The Commission argued that strategic deception allowed the defendant to get its technology adopted into the industry standard first, locked other producers and innovators into the standard, and then ambushed the producers and innovators with a demand for high royalties.⁴¹⁴ In the Commission’s view, the defendant made a commitment *ex ante*, scaled the standard, and then reneged on the commitment *ex post*.⁴¹⁵ According to the

track what parties would have bargained for, is related to the classic normative claim concerning penalty defaults in contracting. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87, 91 (1989) (describing penalty defaults).

⁴¹¹ In these cases, the FTC has viewed anticompetitive conduct by a dominant firm through the lens of unfairness and deception. See *infra* notes 412-27. While private standard-setting can promote consumer welfare by promoting the interoperability of products, standards that rely on or embody IP may confer market power on the patentee or licensee. *Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy: Joint Hearings of the U.S. Dep’t of Justice and the Fed. Trade Comm’n 2* (2002) (statement of Richard T. Rapp & Lauren J. Stiroh, NERA). As a result, many SSOs have instituted policies to govern the use of patented technologies in proposed industry standards. For example, some SSOs require members to disclose any relevant patents covering the proposed standards, while others condition the inclusion of patented technologies upon the patentees’ agreement to license them on a “reasonable and non-discriminatory” basis, while still others explicitly avoid adopting standards that rely on protected IP. See *In re Dell Computer Corp.*, 121 F.T.C. 616, 623-24 app. A (1996); Todd Wilson, *Disclosure Requirements for Patent Holders Who Participate in Standards Setting Organizations*, THE IP LAW BLOG (Dec. 14, 2005), <http://www.theiplawblog.com/archives/-patent-law-disclosure-requirements-for-patent-holders-who-participate-in-standards-setting-organizations.html>. In a series of cases, the FTC has challenged IP rights holders who were deceptive about the existence or scope of their IP during the standard-setting process and then later asserted their rights against manufacturers producing products in compliance with the standard. See *Dell*, 121 F.T.C. at 617 (failing to disclose VL-bus standard); Complaint, *N-Data*, *supra* note 400, at 2-5 (failing to honor predecessor’s promise to license patents on a particular basis, resulting in consent not to enforce patents); Statement of the Fed. Trade Comm’n at 2, *In re Union Oil Co.*, No 9305 & *In re Chevron Corp.*, No. 4144 (F.T.C. Aug. 2, 2005), available at <http://www.ftc.gov/os/caselist/0510125/0510125.shtm> (failing to disclose pending patents on emissions research for which it intended to seek royalties); Complaint, *Rambus*, *supra* note 400, at 2.

⁴¹² No. 9302 (F.T.C. Aug. 2, 2006), available at <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>, vacated, 522 F.3d 456 (D.C. Cir. 2008).

⁴¹³ *Id.* at 73-74.

⁴¹⁴ *Id.* at 74.

⁴¹⁵ There is a separate issue concerning whether this type of conduct, even if wrong, is, in fact, an anticompetitive harm subject to redress under Section 2 of the Sherman Act. The D.C. Circuit’s *Rambus* decision decided that it was not, relying heavily on *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128 (1998), to argue that a lawful monopolist’s use of deception to enhance its ability to raise prices is not an anti-trust concern. *Rambus Inc. v. Fed. Trade Comm’n*, 522 F.3d 456, 464-65 (D.C. Cir. 2008). However, timing is everything. NYNEX involved an existing, inherited (and government-sponsored) monopoly. NYNEX, 525 U.S. at 136. The allegations in *Rambus* under Section 2 were that the defendant’s decep-

Commission, had the defendant disclosed its IP rights as the SSO allegedly required it to do, the other industry participants might have demanded a RAND commitment⁴¹⁶ or chosen other technologies for the standard.⁴¹⁷

In a decision that has drawn significant criticism,⁴¹⁸ the D.C. Circuit reversed the Commission's judgment in *Rambus* on appeal based on insufficient evidence of anticompetitive harm pursuant to Section 2 monopolization.⁴¹⁹ However, the appellate court left open the possibility of a stand-alone action under Section 5 of the FTC Act.⁴²⁰ This Act authorizes the FTC to sanction "unfair or deceptive" conduct, including conduct that may not meet the standard of "exclusionary" required in a monopolization case.⁴²¹

In the context of technological standards, such as those that apply to the design for a CPU bus (a mechanism for transferring data) and the Fast Ethernet protocol (for years, the most widely used method of implementing a local area network), the FTC has pursued several cases under Section 5.⁴²² These cases are either wholly⁴²³ or largely separate from allegations of

tion in the standard-setting process helped it to transform its patent rights—which, by themselves, do not necessarily constitute a monopoly for antitrust purposes—into monopoly power. See Michael A. Carrier, *The D.C. Circuit's Error in Rambus and a More Justifiable Framework for Causation and Standard-Setting*, 77 ANTITRUST L.J. (forthcoming 2011-2012) (manuscript at 12-13), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1586430. Yet, just as law professors observe that just because something is wrong, it is not necessarily unconstitutional, just because something is not anticompetitive does not mean it is not actionable. See *infra* Part V.B (discussing enforcement under Section 5 of the FTC Act authorizing action against "unfair or deceptive" acts).

⁴¹⁶ "RAND," or "reasonable and non-discriminatory," is a term of art that leading economists suggest should mean those "royalties that would have been voluntarily negotiated before users became committed to using the patented technology." Joseph Farrell et al., *Standard Setting, Patents and Hold-Up*, 74 ANTITRUST L.J. 603, 636-67 (2007) (quoting R. Hewitt Pate, Assistant Att'y Gen. for Antitrust, U.S. Dep't of Justice, EU Competition Workshop, Competition and Intellectual Property in the US: Licensing Freedom and the Limits of Antitrust 9 (June 3, 2005), available at <http://www.usdoj.gov/atr/public/speeches/209359.pdf>) (internal quotation marks omitted). Farrell and Shapiro are currently the chief economists at the FTC and the U.S. Department of Justice's Antitrust Division, respectively. *Obama Appoints New Antitrust Leaders*, ANTITRUST NEWS & NOTES, May 2009, at 1, available at http://www.velaw.com/uploadedFiles/VEsite/Resources/AntitrustNewsAndNotes_2009_04_30.pdf#Article1.

⁴¹⁷ Opinion of the Commission, *supra* note 398, at 25-26 (describing how deception could work and its effects on chilling precompetitive standard-setting activity).

⁴¹⁸ *E.g.*, Carrier, *supra* note 415 (manuscript at 12-13, 23) (assailing the standard of causation used by the *Rambus* court and its claimed mistaken reliance on *NYNEX*).

⁴¹⁹ See *Rambus*, 522 F.3d at 459.

⁴²⁰ *Id.* at 462-63. The FTC decided to dismiss the complaint instead, however, possibly given the D.C. Circuit's dubiousness as to the degree of candor that the SSO rules required of the defendant. Order Returning Matter to Adjudication and Dismissing Complaint at 1, *In re Rambus Inc.*, No. 9302 (F.T.C. May 12, 2009), available at <http://www.ftc.gov/os/adjpro/d9302/090512orderdismisscomplaint.pdf>.

⁴²¹ 15 U.S.C. § 45 (2006).

⁴²² *E.g.*, Decision and Order, *supra* note 397, at 1.

⁴²³ *Id.* at 1-2.

Sherman Act violations.⁴²⁴ These cases have ended in settlement agreements because independent Section 5 cases move through a quick administrative process and do not carry the specter of private piggyback damages.⁴²⁵ Similarly to *Rambus*, the FTC has sought to enforce IP rights-holders' ex ante commitments made at the time of standard adoption.⁴²⁶ These rights-holders or their assignors later sought ex post to renege after industry participants, both upstream and downstream, adopted the standard.⁴²⁷

Many have criticized the decision to bring such cases. First, some argue that parties can already address such "patent ambush" conduct through defenses and counterclaims such as implied license and fraud in an underlying patent infringement action.⁴²⁸ However, sole reliance on patent infringement defenses is an inferior response due to the delays and uncertainty of civil patent litigation, and creates the possibility of harm to innovation beyond the harm caused by those in direct contact with the ambusher.⁴²⁹ Others have argued that, while it makes sense for the FTC to protect reliance interests generally, the FTC's role should be more limited where those relying are sophisticated, large industry players.⁴³⁰

⁴²⁴ See *In re Dell Computer Corp.*, 121 F.T.C. 616, 617 (1996) (explicitly alleging only unfair competition under Section 5, but referring in its decision, issued upon a settlement agreement with the defendant, that the defendant might have gained monopoly power through deception). In its recent case against Intel, the allegations largely focused on deceptive conduct subject to enforcement under Section 5. Although, allegations of exclusion subject to Section 2 were also included, drawing from criticism from at least one commissioner who felt it to be unhelpful to both Intel and the Commission. See Concurring and Dissenting Statement of Commissioner J. Thomas Rosch at 2-3, *In re Intel Corp.*, No. 9341 (F.T.C. Dec. 16, 2009), available at <http://www.ftc.gov/os/adjpro/d9341/091216intelstatement.pdf>; see also Complaint at 16, *In re Intel Corp.*, No. 9341 (F.T.C. Dec. 16, 2009), available at <http://www.ftc.gov/os/adjpro/d9341/091216intelcmt.pdf>.

⁴²⁵ See 15 U.S.C. § 45(b) (empowering the FTC alone to order parties to "cease and desist" from unfair methods of competition). *Intel* moved from administrative complaint to decision and order in ten and a half months. See Complaint, *supra* note 424, at 24; Decision and Order at 21, *In re Intel Corp.*, No. 9341 (F.T.C. Nov. 2, 2010), available at <http://www.ftc.gov/os/adjpro/d9341/101102inteldo.pdf>.

⁴²⁶ See, e.g., *Dell*, 121 F.T.C. at 616.

⁴²⁷ In *Dell*, the plaintiff alleged that Dell had warranted to the SSO that it held no patent rights in the standard for a VL-bus, a unit that transfers data from a computer's CPU to other components, only to seek to enforce patent rights against firms following the standard later. *Id.* at 616-18. In *N-Data*, the central allegation was that National Semiconductor Corporation had agreed during the standard-setting process to license its technology used in the then-new Fast Ethernet standard to any part using that standard for a one-time license fee of \$1,000. After National transferred the patents, which were then again transferred, the later patent holder sought to renege on the earlier royalty commitment. Complaint, *N-Data*, *supra* note 400, at 1-5.

⁴²⁸ M. Sean Royall et al., *Deterring "Patent Ambush" in Standard Setting: Lessons from Rambus and Qualcomm*, ANTITRUST, Summer 2009, at 34, 34.

⁴²⁹ See *id.*

⁴³⁰ See Dissenting Statement of Chairman Majoras at 5, *In re Negotiated Data Solutions LLC*, No. 0510094 (F.T.C. Jan. 23, 2008), available at <http://www.ftc.gov/os/caselist/0510094/080122majoras.pdf> ("We have taken care to exercise this authority judiciously, however, to protect small businesses, non-profits, churches, and 'mom and pop' operations that lack the resources and, in some cases, the expe-

While it is unclear whether these specific cases were ideal for FTC enforcement,⁴³¹ the general issues at stake closely resemble those relevant to platforms characterized by user dynamism.⁴³² Just as component suppliers, hardware manufacturers, and software developers all rely on industry standards to coordinate their investments, so too do dynamic users rely on the platforms that they adopt to coordinate their own investments in innovation and content creation.⁴³³ An increasingly important set of devices, websites, and online communities differs in important respects from the economic phenomena that the sharing, network neutrality, and infrastructure theories address as their core focus.⁴³⁴ Such platforms host semi-captive markets such as that of the iTunes App Store, Facebook's interface for exchanging personal and professional information, and, potentially, GoogleBooks' future licensed content.⁴³⁵ These hosted platforms and activities likely do not rise to the level of monopolies meriting antitrust scrutiny under traditional market power tests, and in fact, may never do so.

However, beyond that static dominance, platform dominance can become a significant issue for the user-innovators for whom the platform is a vital input to the creative process.⁴³⁶ In this respect, platform dominance may potentially result in dynamic harm to downstream user-innovators' activity.⁴³⁷ Even where an antitrust-defined monopoly does not result, the potential for abused power in the aftermarket of a platform can deter user-innovators from investing in innovation.⁴³⁸ While existing evidence has left the somewhat indeterminate question of whether dynamic effects or static effects matter more, the consensus is that dynamic harms are significantly

rience or understanding to defend themselves adequately against fraud There is a clear qualitative difference between these entities and the computer manufacturers that the majority treats as injured consumers in this matter.” (footnote omitted).

⁴³¹ For example, Michael Carrier has stated:

I am not convinced that the majority in *N-Data* adequately set forth a framework that justified the application of Section 5. Also contributing to concern are facts revealed in Chairman Majoras's dissent from the complaint, including (1) an initial level of royalties that was nominal (2) set by a predecessor eight years ago (3) for a product for which no licenses were sought in the eight-year period and (4) for a royalty increase to which the SSO's Patent Administrator did not object.

Michael A. Carrier, *Innovation for the 21st Century: A Response to Seven Critics*, 61 ALA. L. REV. 597, 605 (2010).

⁴³² See generally Complaint, *N-Data*, *supra* note 400.

⁴³³ See Ralph Katz, Book Review, 2 J. STRATEGIC MGMT. EDUC. 1, 1-3 (2005) (reviewing ANNABELLE GAWER & MICHAEL CUSUMANO, PLATFORM LEADERSHIP: HOW INTEL, MICROSOFT AND CISCO DRIVE INDUSTRY INNOVATION (2002)) (describing the platform concept as a way for users to share innovation and create new technologies).

⁴³⁴ See *supra* Part III.A.2.a.

⁴³⁵ See *supra* Part III.A.2.a.

⁴³⁶ See *supra* Part III.A.2.b.

⁴³⁷ See *supra* Part III.A.2.b.

⁴³⁸ See *supra* Part III.A.2.b.

more destructive to consumer welfare.⁴³⁹ Some might contend that it is unnecessary to use consumer protection law to protect dynamic users from harms that contracts could eliminate. However, contracting may be a dissatisfying option where it is difficult to specify *ex ante* all the interests at issue; where legal action suffers from cost, uncertainty, and collective action problems; and where the host's limited lifespan and assets may make enforcement difficult.⁴⁴⁰

Admittedly, the overall empirical evidence is uncertain: before pursuing a course of action, it is difficult to know how the loss to user-creation and user-innovation would stack up against the loss in investment and innovation in platform creation. However, one way to take a step towards addressing the trade-off is to hold platform operators to the representations they make when convincing users to adopt their platforms. Such a policy has two-fold benefits. First, it forces platforms to put their money where their mouth is. If Google promises a Droid phone that is totally amenable to running open source software, then enforcing such a commitment prevents Google from renegeing after users have adopted the platform. Enforcing such commitments does not merely prevent Google from selling the razor cheap and the blades dear.⁴⁴¹ It also prevents the possibility of jettisoning user innovation or user-generated content that may have value to other users (but not to Google). Additionally, preventing such opportunism not only protects these user innovations and user creations, but it also safeguards the *process* of user innovation and user creation; maintaining user trust in this regard could be very important. User dynamism will likely suffer if users cannot trust that the platform they adopt will remain valuable to them.

As a second benefit, enforcing platform operators' commitments will tend to foster a kind of qualitative competition involving the trade-off between platform security and user freedom. Many platforms confront a di-

⁴³⁹ *E.g.*, David S. Evans & Keith N. Hylton, *The Lawful Acquisition and Exercise of Monopoly Power and Its Implications for the Objectives of Antitrust*, COMPETITION POL'Y INT'L, Autumn 2008, at 203, 203, 238-40 (arguing that dynamic effects are more important than static effects and calling for academic economists to change their focus accordingly); *see also* Herbert Hovenkamp, *Schumpeterian Competition and Antitrust*, COMPETITION POL'Y INT'L, Autumn 2008, at 273, 278-79 (agreeing on the importance of dynamic effects but disagreeing that antitrust is necessarily antagonistic to them).

⁴⁴⁰ *See* Barnett, *supra* note 15, at 1884-85 (observing these flaws with contracts but advocating a very different laissez-faire solution).

⁴⁴¹ There is a *per se* rule against product tying. *See* *N. Pac. Ry. Corp. v. United States*, 356 U.S. 1, 5-6 (1958) (stating *per se* rule against tying); 9 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 1720-22 (2d ed. 2004) (describing case law shifts surrounding the *per se* rule against tying). However, its continuing existence is not favored by all commentators. *E.g.*, WARD S. BOWMAN, JR., PATENT AND ANTITRUST LAW: A LEGAL AND ECONOMIC APPRAISAL 55-57, 118-19 (1973) (explaining tying arrangements as facilitating metering and the charging of differential, effective prices); Richard D. Cudahy & Alan Devlin, *Anticompetitive Effect*, 95 MINN. L. REV. 59, 92 (2010) ("Requirements contracts [that require a buyer to purchase all its required supplies for, e.g., a machine, from the seller] may operate as unusually precise metering devices. For this reason, it might be reasonable to presume that tying is more often than not desirable from a total-welfare standpoint . . .").

lemma in which increased user freedom for users also increases their security vulnerability.⁴⁴² At the launch of a platform, competition exerts pressure concerning where to make this trade-off.⁴⁴³ One platform provider might promise more freedom but less security; its competitor might promise more security but less freedom. Ideally, this would push the production possibility frontier outward, so that a third platform might offer as much freedom as the first and as much security as the second.⁴⁴⁴ By holding platforms to their commitments, competition can emerge based on the trade-off between these or other dimensions.

A clear analogy can be drawn between the theory behind the FTC's standard-setting cases and an approach to platform dominance that keys on holding platform operators to their initial commitments. Both examples seek to prevent opportunistic holdup from creating both *ex post* and *ex ante* disincentives to innovation.⁴⁴⁵ The *ex post* effect of holdup is to later exploit those who have chosen to adopt the standard—or the platform—after they have made investments that may make it difficult to avoid the exploitation.⁴⁴⁶ The *ex ante* effect is to deter others from adopting standards—or platforms—which lowers overall welfare.⁴⁴⁷

The case for a similar approach to platform dominance may be even stronger than the argument in support of the FTC's standard-setting cases. First, one of the chief objections to the standard-setting cases is that the other standard-setting participants are powerful, sophisticated players who could protect themselves *ex ante* through contract.⁴⁴⁸ Even if that is to some degree correct in the standard-setting context, the argument has less force in the online space, where user-creators and user-innovators may be much smaller and more diffuse players. Additionally, in many cases the beneficiaries of user-innovation may not be present at the initial stages of platform adoption, negating arguments that such beneficiaries can protect themselves adequately through contract.⁴⁴⁹ Finally, while SSOs, their participants, and their licensees might be able to use contract and civil litigation to assert their rights, it is a great deal less likely that thousands or millions of online user-creators or user-innovators will be able to adequately use state contract law to obtain similar relief. Indeed, these characteristics—difficult to iden-

⁴⁴² See ZITTRAIN, *supra* note 3, at 3-4 (contrasting secure but sterile network “appliances” with generative but risky devices such as Internet-linked PCs).

⁴⁴³ *See id.*

⁴⁴⁴ *See id.*

⁴⁴⁵ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 35-36 (2007), available at <http://www.justice.gov/atr/public/hearings/ip/222655.pdf>.

⁴⁴⁶ *Id.*

⁴⁴⁷ *Id.*

⁴⁴⁸ Dissenting Statement of Chairman Majoras, *supra* note 430, at 5.

⁴⁴⁹ *Id.*

tify beneficiaries, diffuse claims, and complex adjudication—all seem to tip the balance in favor of administrative action.

V. A PROPOSAL

Taking into account interventionist and laissez-faire approaches, as well as the FTC's standard-setting cases, it becomes clear that some type of framework is needed to protect user dynamism in platforms and networks. This Part sets out a series of considerations that can be used as a guide for protecting user dynamism.

A. *A Framework of Considerations*

The discussion above suggests that the application of competition law to platform dominance should address three primary issues. First, regulation for platform dominance should focus on the relationship between the interoperability issues and the traditional consumer protection issues. The interoperability problem is the idea that once users become committed to a particular platform, they face real costs in migrating to another platform.⁴⁵⁰ The traditional consumer protection issue is that users may be exploited by a platform owner who promises one thing at the start and delivers quite another later in the relationship.⁴⁵¹ To the extent that regulation of platform dominance focuses on this link with consumer protection concerns, it provides a ready answer to those who oppose any forced access or affirmative duties on a network monopolist.⁴⁵²

Second, regulation in this area should also focus on the value created by users and creators. The importance of this phenomenon is not yet completely understood. Competition law in this area would provide a regulatory space in which information about the value of user-generated content and user innovation could be appraised. Understanding such value is important to a more fully developed understanding of the complex relationship between innovation, monopoly, and improper monopolization. Particularly to the extent that platform dominance is implemented through Section 5 of the FTC Act, the focus on user dynamism counters arguments that harms based on consumer deception may nonetheless provide benefits to competition or

⁴⁵⁰ See, e.g., *New York v. Microsoft Corp.*, 224 F. Supp. 2d 76, 121-22 (D.D.C. 2002) (“In the more common model, a heterogeneous network, interoperation is more complex because of basic differences between types of hardware and operating systems.”), *aff’d sub nom.* *Massachusetts v. Microsoft Corp.*, 373 F.3d 1199 (D.C. Cir. 2004).

⁴⁵¹ See Lopatka & Page, *supra* note 191, at 383-84 (discussing Kodak's policy change after customers were locked in, resulting in a finding of exploitation by the Court).

⁴⁵² See *supra* notes 284-93 and accompanying text.

be avoided by consumers themselves.⁴⁵³ Even where such arguments justify departures from prior commitments in specific cases, they could still have a chilling effect on user dynamism generally.

Finally, such regulation can promote credible commitments by platform owners. The owners can then help user-generators make better decisions about investing their time, energy, and money. When Internet platform owners make upfront commitments about freedom and security issues on their platform, and regulation enforces these commitments in ways that individual users cannot, such regulation will reduce the uncertainty that may deter some user-creators and -innovators from making socially optimal investments in those particular Internet platforms. By the same token, restricting platform dominance to platform operators who make affirmative commitments provides both an implicit safe harbor and stimulates competition among several dimensions. The safe harbor is simple: platform operators are only responsible for their commitments. Moreover, when the credibility of their commitments increases, they can compete for the adoption of their platforms based on what they are willing to promise. These promises involve several dimensions: a certain amount of freedom, security, and, perhaps, even the preset duration of their commitments. In a sense, the arguments for enforcing these commitments are analogous to compulsory licensing.⁴⁵⁴ In particular, the impact of compulsory licensing is empirically indeterminate⁴⁵⁵ but effectively stronger since, by making or eschewing commitments to users, platform operators can select in or opt-out. When platform hosts' commitments are enforced, it fosters competition for quality based on empowering user dynamism and promoting a race to the top.

B. *An Analogy to Consumer Protection Online*

Can regulators really protect consumers online? For more than a decade, the FTC's Bureau of Consumer Protection has, in fact, enforced web platform commitments to their customers.⁴⁵⁶ While another regulator, such as a *de novo* body,⁴⁵⁷ might be better at dealing with platform dominance,

⁴⁵³ See 15 U.S.C. § 45(n) (2006) (requiring unfair acts or practices to cause a likelihood of "substantial injury to consumers which is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers or to competition").

⁴⁵⁴ See Devlin & Jacobs, *supra* note 187, at 79, 116 (observing that empirical evidence about the overall effectiveness of compulsory licensing is indeterminate).

⁴⁵⁵ *Id.*

⁴⁵⁶ For a review and critique of corporate responses to the FTC's actions as a "roving" privacy regulator, see Kenneth A. Bamberger & Deirdre K. Mulligan, *Privacy on the Books and on the Ground*, 63 STAN. L. REV. 247, 251-52, 313 (2011) (presenting empirical review of corporate privacy officers' responses to FTC privacy initiatives).

⁴⁵⁷ *E.g.*, Pasquale & Bracha, *supra* note 105, at 1151 (proposing creation of a regulatory framework to apply to search engines).

the FTC's experience with online privacy representations shows that it is more than theoretically possible for regulators to enforce online promises to consumers despite the passage of time and the changing of business models.⁴⁵⁸

In a string of enforcement actions, the FTC has repeatedly brought complaints against companies that mishandled consumer information by breaching representations that they made initially when gathering the data.⁴⁵⁹ The cases vary in their details. Some involve failing firms trying to sell consumer data that they had gathered online years earlier despite promises not to share the data with third parties.⁴⁶⁰ Other cases involve sharing or selling consumer data more broadly than the firms' privacy policies stated at the time of data collection—often in a manner that can only be described as deceptive.⁴⁶¹ Still other cases involve perhaps less blatant conduct with respect to consumer data, such as promising, yet failing to deliver, state-of-the-art data protection; such conduct still falls within the ambit of deception.⁴⁶²

⁴⁵⁸ *E.g.*, News Release, Fed. Trade Comm'n, FTC Announces Settlement with Bankrupt Website, Toysmart.com, Regarding Alleged Privacy Policy Violations (July 21, 2000) [hereinafter News Release, Toysmart.com], available at <http://www.ftc.gov/opa/2000/07/toysmart2.shtm> (announcing settlement of charges against Toysmart after it violated its policy of not sharing customer information with third parties); News Release, Fed. Trade Comm'n, Internet Site Agrees to Settle FTC Charges of Deceptively Collecting Personal Information in Agency's First Internet Privacy Case (Aug. 13, 1998), available at <http://www.ftc.gov/opa/1998/08/geocitie.shtm> (settling charges that a website with a two million member virtual community was misrepresenting the purpose for which it gathered consumer data online); News Release, Fed. Trade Comm'n, Online Pharmacies Settle FTC Charges (July 12, 2000), available at <http://www.ftc.gov/opa/2000/07/iog.shtm> (announcing a settlement involving misuse of online pharmacy customer data for purposes other than physician consultation, in violation of company policy).

⁴⁵⁹ See *supra* note 458.

⁴⁶⁰ *E.g.*, News Release, Toysmart.com, *supra* note 458.

⁴⁶¹ *E.g.*, News Release, Fed. Trade Comm'n, High School Student Survey Companies Settle FTC Charges (Oct. 2, 2002), available at <http://www.ftc.gov/opa/2002/10/student1r.shtm> (settling charges that companies gathered information from millions of high school students and sold it to commercial marketers after promising that such information would only be shared with colleges and universities).

⁴⁶² *E.g.*, News Release, Fed. Trade Comm'n, Guess Settles FTC Security Charges; Third FTC Case Targets False Claims About Information Security (June 18, 2003) [hereinafter News Release, Guess], available at <http://www.ftc.gov/opa/2003/06/guess.shtm> (settling charges that an apparel company's website claimed that credit card information and sign-in passwords were encrypted but instead were left vulnerable to theft by hackers); News Release, Fed. Trade Comm'n, Microsoft Settles FTC Charges Alleging False Security and Privacy Promises (Aug. 8, 2002) [hereinafter, News Release, Microsoft], available at <http://www.ftc.gov/opa/2002/08/microsoft.shtm> (settling charges that Microsoft falsely claimed to employ appropriate measures to safeguard consumer data and passwords entrusted to its "Passport" service, which would remember consumer sign-in and other data across different retail websites (internal quotation marks omitted)); News Release, Fed. Trade Comm'n, Petco Settles FTC Charges (Nov. 17, 2004), available at <http://www.ftc.gov/opa/2004/11/petco.shtm> (settling case alleging that PETCO.com falsely claimed to "strictly" protect customers' data against any unauthorized access but instead left vulnerabilities by failing to implement reasonable measures that could have prevented attacks (internal quotation marks omitted)).

While many of these cases seem like obvious targets for a consumer watchdog agency, others approach the possibility of preventing modification to the website's business practices over time.⁴⁶³ This raises a serious question. If a platform owner makes representations, but discloses that such representations are subject to change, at what point are such changes no longer, strictly speaking, deceptive? Similarly, if a platform owner does not actually make any representations, but appears to be part of a separately owned platform that does make representations, at what point does a violation of those representations amount to deception?⁴⁶⁴

The answer to such questions might emerge from the enforcement program itself, the results that consumers expect from it, and the legislation that may result in part from the publicity that such an enforcement program generates. For example, the FTC tends to obtain remedies that effectively enforce the platforms' original privacy representations.⁴⁶⁵ Such results will tend to bolster consumers' willingness to rely on such representations, knowing that there is the possibility of enforcement against the platform owner's wishes. Ultimately, in these cases, the FTC plays the role of a contractual enforcer where, for various reasons, private plaintiffs may be unlikely to bring the cases necessary to obtain such relief. While plaintiffs may have real reliance interests, the diffuse and difficult-to-measure nature of harm makes an individual or aggregated claim unlikely. Additionally, like chilling effects on user dynamism, threats to users' privacy lead to a generalized mistrust and potential inefficiency in online markets.

The FTC's role in these cases sheds light on the unethical business practices involved, perhaps contributing to legislation aimed at addressing

⁴⁶³ See News Release, Fed. Trade Comm'n, Gateway Learning Settles FTC Privacy Charges (July 7, 2004) [hereinafter News Release, Gateway], available at <http://www.ftc.gov/opa/2004/07/gateway.shtm> (settling charges that Gateway Learning changed its policy to allow companies to rent consumer data to third parties without giving consumers a chance to opt-out, which it had promised it would do if its policy ever changed).

⁴⁶⁴ E.g., News Release, Fed. Trade Comm'n, Internet Service Provider Settles FTC Privacy Charges (Mar. 10, 2005) [News Release, ISP], available at <http://www.ftc.gov/opa/2005/03/cartmanager.shtm> (settling charges that a provider of "shopping cart" software "rented personal information about merchants' customers to marketers, knowing that such disclosure contradicted merchant privacy policies").

⁴⁶⁵ See News Release, Gateway, *supra* note 463 (involving a settlement that prohibited "Hooked on Phonics" from renting out consumer data gathered under a no-third-party-sharing policy without an opt-out (internal quotation marks omitted)); News Release, Microsoft, *supra* note 462 (involving a settlement that required an independent verifier to pass judgment on Microsoft Passport's security methods once every two years); News Release, Fed. Trade Comm'n, Online Apparel Retailer Settles FTC Charges That It Failed to Safeguard Consumers' Sensitive Information, in Violation of Federal Law (Jan. 17, 2008), available at <http://www.ftc.gov/opa/2008/01/lig.shtm> (requiring an online apparel retailer to submit to an independent third-party security auditor biennially after the online apparel retailer "unnecessarily risked [customer] credit card information by storing it indefinitely in clear, readable text on its network," in contrast to its representation to its customers that "[w]e are committed to maintaining our customers' privacy").

them. Some of these enforcement actions implicate specific anti-spam⁴⁶⁶ and online child-protective legislation,⁴⁶⁷ but by and large, the FTC has relied on its authority under the “deceptive acts or practices” language of Section 5 of the FTC Act.⁴⁶⁸ In doing so, it often has transformed rather mundane statements of intent to “safeguard customer privacy” or “take reasonable and appropriate steps to protect customer data” into the equivalent of enforceable warranties.⁴⁶⁹ Similarly, it has benchmarked such representations against evolving industry custom.⁴⁷⁰

Of course, there are important differences between competition and consumer protection—and between privacy and openness as substantive goals. It may be easier to make clear representations about customer data than it is, for example, about rights to user dynamism. However, the example of the FTC Section 5 online privacy cases shows how regulation can make commitments in an evolving area credible.⁴⁷¹ Certainly, one might worry about over-zealous enforcement scaring off potential platform providers.⁴⁷² However, one could equally worry that weak enforcement might lead potential consumers to shy away from platforms whose policies they suspect could never be enforced, absent a consumer protection watchdog. Skepticism about antitrust might normally weigh in favor of the concern for

⁴⁶⁶ *E.g.*, News Release, Fed. Trade Comm’n, ValueClick to Pay \$2.9 Million to Settle FTC Charges (Mar. 17, 2008), available at <http://www.ftc.gov/opa/2008/03/vc.shtm> (involving a \$2.9 million settlement in a case implicating the FTC Act and the CAN-SPAM Act, in which customer data was not encrypted per websites’ stated privacy policy and firms deceptively used consumers’ information to spam customers).

⁴⁶⁷ *E.g.*, News Release, Toysmart.com, *supra* note 458 (involving a settlement of the first FTC complaint under the Children’s Online Privacy Protection Act of 1998 requiring a bankrupt toy seller to destroy its database rather than sell it to others who would use the data in violation of the stated policies under which it was gathered).

⁴⁶⁸ 15 U.S.C. § 45(a) (2006); *see, e.g.*, News Release, Gateway, *supra* note 463; News Release, ISP, *supra* note 464; News Release, Fed. Trade Comm’n, Mortgage Company Settles Data Security Charges (Nov. 6, 2008), available at <http://www.ftc.gov/opa/2008/11/pcl.shtm> (settling charges that a mortgage lender violated Section 5 of the FTC Act by “failing to live up to its own privacy policy”).

⁴⁶⁹ *Cf.* News Release, Microsoft, *supra* note 462.

⁴⁷⁰ *See, e.g.*, News Release, Guess, *supra* note 462 (stating that the FTC created a fact sheet to help businesses bolster their information security).

⁴⁷¹ *See supra* note 459-465 and accompanying text.

⁴⁷² This concern resembles, but is not exactly the same as, the concern that animates opposition to the essential facilities doctrine among many antitrust commentators that “a firm may be unwilling to assume the risk and costs of creating a facility if it could later be compelled to share that facility on terms it would not otherwise have chosen.” U.S. DEP’T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 129 (2008), available at <http://www.justice.gov/atr/public/reports/236681.pdf>. This Section 2 Report was later “repudiated” by the Obama Administration’s Head of the DOJ’s Antitrust Division. Theo Francis, *Antitrust’s Big Break*, BUSINESSWEEK (May 11, 2009), http://www.businessweek.com/blogs/money_politics/archives/2009/05/antitrusts_big.html (last visited July 6, 2011). This fear is much less convincing where user content creation and user innovation supply a big part of the platform’s value, and where the platform operator chooses to induce user reliance on terms that it has in fact chosen by act or omission.

platform providers, but where user dynamism is important, that tack presents a real danger of squelching a potentially huge source of content and innovation.⁴⁷³

Such steps need not be zero-sum between platform hosts and dynamic users. User dynamism can increase the value of platforms and, thus, benefit the hosts themselves.⁴⁷⁴ The point of enforcing hosts' commitments is to foster a race to the top in user dynamism, rather than a race to the bottom through appropriation of user investments. That is, by making commitments credible, enforcement can help keep a walled garden a creative paradise.

CONCLUSION

As this Article establishes, user dynamism can be very beneficial in terms of generating content, creativity, and quality on platforms and networks. However, by applying the ELVN model, it becomes clear that platform operators must listen to users if they want to retain the quality of their platforms. To avoid killing the golden goose, platform operators must meet the commitments they make to users regarding users' investments. Although there is merit to both the interventionist and laissez-faire approaches to regulation, it is clear that some framework for guidance is needed. Keeping the FTC standard-setting cases in mind, the FTC, or another appropriate body or group, may keep user dynamism vigorous by taking the simple steps set out in this Article.

Yet, the deployment of the FTC to deal with platform dominance is not the only way to handle these issues. The considerations sketched here should be relevant to any attempt to protect user dynamism from deception and opportunism. However, as discussed, traditional antitrust law and proposed network neutrality regulation will likely not reach these concerns. Given the traditionally high value placed on dynamic effects, and the incipient stage of user dynamism, attempts should be made to bolster user trust by enforcing host platform commitments. This is particularly true where it is possible to do so with limiting principles. A regulatory plan tailored to making ex ante commitments credible can reduce the degree to which user dynamism is chilled by appropriation. A regulatory body that understands its role in protecting user dynamism may yield significant social returns.

⁴⁷³ See *supra* note 5 and accompanying text.

⁴⁷⁴ See VON HIPPEL, *supra* note 7, at 111 (observing in the manufacturing context that "if the manufacturer makes positive margins on the platform, then the availability of user-developed add-ons can have a positive effect: it can increase the value of the platform to users, and so allow manufacturers to charge higher margins on it and/or sell more units").