[Working Draft April 30, 2018 — DO NOT QUOTE OR CITE]

The Problem of Antitrust "Nostalgia"

Market Definition, Barriers to Entry, and Network Effects in Abuse of Dominance Review of High-Tech Markets

Geoffrey A. Manne & Pinar Akman[1]

ABSTRACT

All platforms are not created equal. And the first key to properly assessing competitive effects in high-tech platform markets is to do so in a manner that takes account of actual competitive dynamics. Among other things, this means taking account of complex and shifting markets, actual competitive constraints, the unique consequences of network effects, the role of data and advertising, and other important attributes of high-tech, online, platform competition.

Accommodating today's high-tech markets in antitrust enforcement does not necessitate a wholesale overhaul of well-established legal and economic principles of antitrust. But it does require a shift in the understanding of the nature of competition to ensure that those principles further, rather than impair, social welfare.

The most significant risk confronting antitrust enforcers, courts, practitioners and scholars today is the use (and potential abuse) of standard antitrust tools to overly preference the *status quo*, which is unlikely to be optimal — least of all in high-tech industries characterized by rapid and jarring change.

As our paper will discuss in detail, too often it is some kind of change from established practice that precipitates antitrust complaints and undergirds

---

[1] Manne: Founder and Executive Director, International Center for Law & Economics; Akman: Professor of Law and Director of the Centre for Business Law and Practice, University of Leeds. Please address comments to Geoffrey Manne at gmanne@laweconcenter.org.

enforcement. But in high-tech industries, change is the hallmark of competition. Moreover, it is precisely in the situation of allegedly anticompetitive innovation (*i.e.* change) that intervention may be *more likely*, despite being exactly what we want and expect from competition.

This is the "nostalgia bias" in antitrust. Antitrust is (often) too quick to hold that because a practice has benefited competition before, changing it will harm competition going forward. Paradoxically, excessive concern for the quite-possibly costly, static effects of innovation — business model change, product design change, price change — on current users or competitors can harm welfare overall.

The truly fundamental problem is antitrust that is skeptical of, and triggered by, various changes in *status quo* conduct and relationships, when, to a first approximation (and at the very least in digital marketplaces), change (including by incumbents) is the hallmark of competition itself.

In these markets, change means innovation, and we should encourage innovation. We simply don't know enough, especially about the relationship between firm structure, market structure, and innovation, to view change with the skepticism that we do.

PAPER DRAFT

All platforms are not created equal. And the first key to assessing competitive effects in high-tech platform markets is to do so in a manner that takes account of actual competitive dynamics. Among other things, this means taking account of complex and shifting markets, actual competitive constraints, the unique consequences of network effects, the role of advertising, and other important attributes of high-tech, online, platform competition. Accommodating today's high-tech markets in antitrust enforcement does not necessitate a wholesale overhaul of well-established legal and economic principles of antitrust. But it does require a shift in the understanding of the nature of competition to ensure that those principles further, rather than impair, social welfare.

The most significant risk confronting antitrust enforcers, courts, practitioners and scholars today is the use (and abuse) of traditional

antitrust tools to overly preference the *status quo*, which is unlikely to be optimal, least of all in high-tech industries characterized by rapid and jarring change.

Too often it is *change* that precipitates antitrust complaints and undergirds enforcement. But in high-tech industries, change is the hallmark of *competition*. There's a problem in that disconnect.

RATE OF RETURN OVER TIME AND CHANGING BUSINESS MODELS

First, and most generally, antitrust analysis that is insufficiently sensitive to the "product lifecycle" will overly deter procompetitive entry and innovation.

Among other things, as Posner pointed out in "Antitrust in the New Economy" in 2001:

> *[t]he prospect of a network monopoly should thus induce not only a high rate of innovation but also a low-price strategy that induces early joining and compensates the early joiners for the fact that eventually the network entrepreneur* may be able *to charge a monopoly price.*[2]

If innovators have forsaken monopoly profits in competition for the field in expectation of future reward, only to find that their reward is made unavailable at the moment they begin to enjoy it, it will tend to deter innovation. As a doctrinal matter, it will also lead to the mischaracterization of potentially welfare-enhancing conduct as anticompetitive.

But the concern isn't just about price changes; it's also about product evolution and business model changes.

Since Jorde and Teece began writing about antitrust, and especially market definition, in high-tech industries in the late 1980s, we've known that traditional, price-based antitrust analysis doesn't work well for

---

[2] Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L. J. 925, 929-30 (2001).

understanding these markets. For these industries, performance, not price, is paramount — which means innovation is key.[3]

High-tech industries are often marked by frequent disruptions or paradigm shifts rather than horizontal market share contests; and spending on innovation and investment are important signals of competition, which comes from the continual threat of new entry down the road — often from competitors who, though they may start with relatively small market share, or may arise in completely different markets, can rapidly and unexpectedly come to overtake incumbents. They may not even exist yet, but as long as markets are contestable, the possibility that they *may soon* exist is sufficient to drive competitive outcomes.[4]

So a core focus for antitrust regulators is often conduct that might impede new entry. And that's appropriate.

But it is important to remember that innovation comes from within incumbent firms, as well[5] — and market-share-based market definition and other traditional approaches to antitrust analysis tend to overweight foreclosure effects and underweight innovation effects.

Platforms are typically built first by attracting users with business strategies to create and build the market and increase the network of users and content providers. But sometimes, once this has proven successful, the model changes, and constraints on users and content providers are put into

---

[3] See, *e.g.,* Thomas M. Jorde & David J. Teece, *Competing Through Innovation: Implications for Market Definition*, 64 CHI.-KENT L. REV. 741, 742 (1988) ("Moreover, in markets characterized by rapid technological progress, competition often takes place on the basis of performance features and not price."). *See also* David S. Evans & Richard Schmalensee, *Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries*, in INNOVATION POLICY AND THE ECONOMY, VOLUME II 1, 3 (Adam B. Jaffe, et al., eds., 2002) ("The defining feature of new-economy industries is a competitive process dominated by efforts to create intellectual property through R&D, which often results in rapid and disruptive technological change.").

[4] *See generally* William J. Baumol, *Contestable Markets: An Uprising Theory of Industry Structure*, 72 AM. ECON. REV. 1 (1982).

[5] *See generally* NICOLAI J. FOSS & PETER G. KLEIN, ORGANIZING ENTREPRENEURIAL JUDGMENT (2012).

place in order to finally reap the rewards of the investment in the platform, or to shift cross subsidization from one group to another, or to build on the installed base to further evolve and develop the platform.

In this case, challenging these developments means fewer new entrants will adopt strategies that prioritize long-term development of new businesses and products over immediate returns.

Paradoxically, excessive concern for the quite-possibly costly, static effects of innovation — business model change, product design change, price change — on current users or competitors can harm welfare overall.[6]

It is precisely in the situation of allegedly anticompetitive innovation that intervention may be more likely, despite being exactly what we want and expect from competition.

This is the "nostalgia bias" in antitrust. Antitrust is (often) too quick to hold that because a practice has benefited competition before, changing it will harm competition going forward. The truly fundamental problem is antitrust enforcement that is skeptical of and triggered by various changes in *status quo* conduct and relationships, when, to a first approximation (and at the very least in digital marketplaces), *change* is the hallmark of competition itself.[7]

In these markets, change is innovation, and we should be encouraging innovation. We simply don't know enough, especially about the relationship between firm structure, market structure, and innovation to view change with the skepticism that we do.[8]

---

[6] *See* Thomas M. Jorde & David J. Teece, *Antitrust Policy and Innovation: Taking Account of Performance Competition and Competitor Cooperation*, 147 J. INST'L & THEORETICAL ECON. 118, 120 (1991) ("At minimum, we would propose that when the promotion of static consumer welfare and innovation are in conflict, the courts and administrative agencies should favor innovation. Adopting dynamic competition and innovation as the goal of antitrust would, in our view, serve consumer welfare over time more assuredly than would the current focus on short-run consumer welfare.").

[7] *Id.*

[8] *See* Geoffrey A. Manne & Joshua D. Wright, *Innovation and The Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153 (2010).

MARKET DEFINITION AS AN IMPEDIMENT TO PROCOMPETITIVE CHANGE

One of the primary reasons this problem arises is market definition — which is almost always primarily backward-looking.

> *Economics provides no reason to believe innovation ordinarily will come from within a "market" as defined for the purpose of static antitrust analysis; hence, there is little reason to believe proxies for dynamic competition will be positively correlated with innovative activity observed in such a market. (Ginsburg & Wright).*[9]

Market definition is inherently retrospective — systematically minimizing where competition is going, and locking even fast-evolving digital competitors into the past.

Traditional market definition analysis that infers future substitution possibilities from existing or past market conditions will systematically lead to overly narrow markets and an increased likelihood of erroneous market power determinations. This is the problem of viewing Google as a "search engine" and Amazon as an "online retailer," and excluding each from the other's market.

In reality, of course, both are competing for scarce user attention in digital environments. *The specific functionality they employ in order to do so is a red herring*. In fact:

That's a problem in itself, but it gets worse:

Because of these relatively static market definitions, innovation — that thing every regulator will tell you is of paramount importance and justifies bringing enforcement actions — or other procompetitive conduct may be systematically misidentified as anticompetitive. And the *benefits* of innovation aimed at competing with rivals *outside* an improperly narrow market, or procompetitive effects conferred on users elsewhere on the

---

[9] Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and the Limits of Antitrust Institutions*, 78 ANTITRUST L. J. 1, 4 (2012).

platform or in another market, will be relatively, if not completely, neglected.

It has to be recognized that some things that are excluded from the market because they seem to differ in superficial ways may actually be at least as similar, and at least as likely to operate as substitutes, as any number of items that are *included* in the market.

Most obviously, this is true when it comes to digital platforms. If we think of them as competing for user attention we wouldn't make that mistake. Even if we limit ourselves to the ones that exist to sell ads, say a market for advertising matchmakers, we'd be ok. But when the market is defined as "search" or "social media" or the like, the market is being defined in a way that disregards the relevant competitive effects.

> *However, market definition is an entirely artificial construct that has been called an incoherent process as a matter of basic economic principles. Real markets do not come defined. Market definition is an exercise that serves to establish the group of products that are sufficiently substitutable with one another.*[10]

The bigger problem, perhaps, is that such market definitions are, as noted, inherently backward-looking. Yet, as Jorde & Teece note, true competition in high-tech markets tends to come from the future:

> *It is especially in assessing potential competition that a departure must be made from orthodox approaches when new technologies and new products are at issue. The reason is that potential competition from new technologies can destroy a firm's position in a particular market and its underlying competences. Price competition, on the other hand, may erode profit margins but is less likely to completely destroy the value of a firm's underlying technological, physical, and human assets. Accordingly, potential competition from new products and*

---

[10] Pinar Akman, *The Theory of Abuse in Google Search: A Positive and Normative Assessment Under EU Competition Law*, 2017 J. L. TECH. & POL'Y 301, 369 (2017) (citing Louis Kaplow, *Why (Ever) Define Markets*, 124 HARV. L. REV.437 (2010)).

> *processes is the more powerful form of competition.*[11]

Yet even when enforcers or courts consider future effects (say, of efficiencies) or potential entry, it is typically limited to fact-intensive analysis and potential entry into existing markets (and rarely does potential entry actually alter outcomes in either enforcement decisions or cases). As the EU once said regarding its analysis of potential competition:

> *The third source of competitive constraint, potential competition, is not taken into account when defining markets, since the conditions under which potential competition will actually represent an effective competitive constraint depend on the analysis of specific factors and circumstances related to the conditions of entry. If required, this analysis is only carried out at a subsequent stage, in general once the position of the companies involved in the relevant market has already been ascertained, and when such position gives rise to concerns from a competition point of view..* [12]

There are, in fact, a few cases where agencies have *challenged* activity (mergers) on a theory of "actual potential competition," in which it is asserted that one of the merging parties would likely enter the other's market, and thus that the merger would reduce (likely) future competition.

The FTC's recent Nielsen-Arbitron merger challenge offers an even more speculative analysis to challenge a proposed merger. There the Commission asserted a future relevant market for a product that did not yet exist, asserted that both of the merging firms were likely to enter this hypothetical market, and that their combination would reduce future, hypothetical competition. Unlike the fact-specific analyses of asserted future effects in typical merger analysis, the assertion of anticompetitive effect in Nielsen rested not only on speculation but on "a general

---

[11] Jorde & Teece, *Innovation, Dynamic Competition, and Antitrust Policy*, REGULATION (Fall 1990) at 37-38.

[12] European Commission, *Commission Notice on the definition of relevant market for the purposes of Community competition law*, OJ C 372, 9.12.1997, *available at* http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A31997Y1209(01).

presumption that economic theory teaches that an increase in market concentration implies a reduced incentive to invest in innovation."[13]

ESSENTIAL FACILITIES AS AN IMPEDIMENT TO PROCOMPETITIVE CHANGE

Aspen Skiing — the "outer boundary of § 2 liability" in the US[14] — has exactly this character, and even bakes it into the law.[15] (In the EU, of course, an essential facilities approach is somewhat more pervasive).[16]

First, it gets geographic market definition wrong: The city of Aspen, CO, instead of something like "destination ski resorts in the US."

Second, and maybe more important, liability is *defined* by giving up a previously profitable, voluntary enterprise.[17] In other words, moving on to new modes of business or marketing can actually create liability. In that

---

[13] Dissenting Statement of Commissioner Joshua D. Wright, *In the Matter of Nielsen Holdings N.V. and Arbitron Inc.*, FTC File No. 131-0058 (Sep. 20, 2013) at 3. As then-Commissioner Wright further points out in a related footnote:

> The link between market structure and incentives to innovate remains inconclusive. *See, e.g.*, [Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and The Limits of Antitrust Institutions*, 78 ANTITRUST L.J. 1 (2012)] at 4-5 ("To this day, the complex relationship between static product market competition and the incentive to innovate is not well understood."); Richard J. Gilbert, *Competition and Innovation*, in 1 ABA SECTION OF ANTITRUST LAW, ISSUES IN COMPETITION LAW AND POLICY 577, 583 (W. Dale Collins ed., 2008) ("[E]conomic theory does not provide unambiguous support either for the view that market power generally threatens innovation by lowering the return to innovative efforts nor the Schumpeterian view that concentrated markets generally promote innovation.").

Id. at note 7.

[14] *Verizon Communications v. Law Offices of Curtis v. Trinko*, LLP, 540 U.S. 398, 407-08 (2004).

[15] *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 601 (1985).

[16] *See, e.g.*, *Istituto Chemioterapico Italiano S.p.A. and Commercial Solvents Corporation v. Commission*, Joined Cases 6/73 & 7/73, 1974 E.C.R. 223, [1974] 1 C.M.L.R. 309.

[17] *Aspen Skiing* at 610-11.

case, as it happens, it may well have been an effort to innovate that caused the break up and led to the case in the first place.[18]

But at the same time, such innovation may seem to impose outsized constraints on firms or consumers *within* the (improperly defined) market, leading to more complaints and to more readily identifiable, apparent harm.

These problems are likely to be particularly acute in rapidly changing digital markets.

Google is a paradigmatic example. When Google evolves from offering 10 blue links directing users only to *other* sites, to offering direct answers or developing its own content and directing users there, it's probably responding primarily to the threat from Amazon (where something like 50 percent of product searches now originate) and Facebook (which now accounts for the majority of page referrals on the Web), rather than the "threat" from, say, Foundem — a UK-based comparison shopping search engine that built its business on the assumption that it would always be able to get all the product search traffic it wanted from Google's links.[19]

But based on a narrow market definition that includes Foundem but not Amazon or any of the myriad other channels of distribution available (like direct navigation, mobile apps, links from other sites, etc.), Google's innovation gets characterized (by Foundem, at least) as foreclosure, not healthy competition.

The biggest irony of all is that if such a theory were to prevail, it would end up protecting the decidedly non-innovative Foundem's bad business model — one that made itself dependent on Google never changing — at the expense of Google's efforts to evolve with technology, competition, and consumer demand.

---

[18] *See* Alan J. Meese*, Property, Aspen, and Refusals to Deal*, 73 ANTITRUST L. J. 81, 112-13 (2005).

[19] *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. 1 (2011).

This turns essential facilities on its ear. In this theory, Google is "essential" only because Foundem decided to put all its eggs in one basket. It is not remotely as though Google is the only way for consumers to reach Foundem and vice versa. But it is the way Foundem chose. If it is Foundem's bad business model that turns Google into an essential facility, prevented from developing new products or new modes of business, then competition law will be doing the opposite of what it is supposed to do.

Berkey Photo as "nostalgia" paradigm

A version of essential facilities would impose upon firms a duty to deal with competitors, either directly or, as in the *Berkey Photo* case, by facilitating their ability to compete. In the late 60s, Kodak introduced a new camera using a new film format, and a new type of high-quality color film (in a format to fit the new camera). The district court decided that introduction of the product *without advance notice to competitors* was an anticompetitive act.

Leaving aside for the moment the market definition issue, the lower court decision is notable for essentially imposing upon successful competitors upon which other companies rely (as in film companies relying on Kodak) an obligation to facilitate continued operation of reliant competitors even as the dominant company is actually innovating — changing the market, to be sure, but doing so not for no reason but incidental to its own product innovations.

Requiring a company in such a case to provide other firms a means to continue to compete as they did before turns a novel innovation into old hat. Requiring advanced disclosure of the innovation would subvert the incentive/reward structure that facilitates expenditure on technological innovation (and the marketing and distribution of innovative products). To complain of innovation without advance notice is to complain of innovation.

This is an odd sort of nostalgia, that preferences past competitive dynamics and even market share allocations over dynamic competition and technological innovation.

More troubling, this approach is almost always wrong, even on its own terms.

Thus, for example, the opinion makes no mention of the role of Fuji Film, which had, in fact, begun a strong push into the U.S. market in 1972, the year before the *Berkey Photo* case was brought and precisely as Kodak introduced the 110 Instamatic camera in the "pocket camera" market—a market substantially invigorated by the high-quality Kodacolor II film made (at first) only for the 110 Instamatic at issue in the case. Beginning in 1967, in fact, Kodak saw declining market share in both the overall camera and film markets (although its share seems to have remained quite high in both).

These sorts of dynamic market changes, and the efforts firms undertake to respond to them, are a consistent problem in antitrust cases. Firms are poorly positioned to assess future competitive threats and to know how to address them, and courts are substantially more hampered in these assessments. Moreover, especially on market definition questions, the importance of competitive threats is systematically undervalued by courts, conditioned as they are to assess the facts before them and to view claims of not-yet-materialized competitive threats with suspicion.

At root, this case is similar to many other product innovation cases, where claims are based on variants of arguments about interoperability and access to intellectual property (or products protected by intellectual property). In this case, a competitor claimed that it was disadvantaged in its ability to compete with its dominant competitor without sufficient advance notice of the dominant company's innovations. Although not discussed in the case, the argument appears like an essential facilities argument, and there is an element of essential facilities logic to all of these product innovation cases.

The problem with such arguments is that they assume, incorrectly, that there is no opportunity for meaningful competition with a strong incumbent in the face of innovation, or that the absence of short-term competitors in these markets indicates inefficiency. The root of the problem is essentially in the application of inhospitable antitrust rules in the face of technological innovation. The traditional indicia of dominance are often easy to satisfy in the face of successful product innovation, especially in the New Economy. But it does not follow that dominance presents the same problems as it might in other facets of the economy. As one commentator has put it:

> *Some factors make leaders even more aggressive and tend to increase their market share (eventually until other firms exit): these are scale economies, network effects and learning by doing in dynamic contexts, product homogeneity and rapid technological development, all factors typical of New Economy markets. The consequence is that markets with high concentration due to the presence of a dominant firm are perfectly consistent with efficiency. This has major implications for competition policy: while the old approach to abuses of dominant positions needs to verify dominance through structural indicators and the existence of a certain abusive behaviour, a new economic approach would just need to verify the existence of harm to consumers. As Rey et al. correctly point out, "the case law tradition of having separate assessments of dominance and of abusiveness of behaviour simplifies procedures, but this simplification involves a loss of precision in the implementation of the legal norm. The structural indicators which traditionally serve as proxies for 'dominance' provide an appropriate measure of power in some markets, but not in others," notably in the New Economy.*[20]

Even "neutral" analysis prioritizes the *status quo*

Microsoft suggests a "neutral" approach to product innovation, weighing benefits vs costs. Some scholars suggest an approach tilted against innovations if it can be shown that they harm rivals. Either way, this is exactly the problem. Even with the opportunity to offer procompetitive justifications to counter such a prima facie case, there is a systematic bias that discounts the future and over-weights the past.

> *This neutral approach is problematic. Courts in monopolization cases must rely on unquantifiable and probabilistic long-term effects. Since short-run anticompetitive effects are easier to assess and are more available, a neutral test will systematically overweigh them at the expense of a fair assessment of long-term*

[20] Federico Etro, Competition Policy: Toward a New Approach, 2 EUR. COMPETITION J 29, 30–31 (2006).

> *benefits. Indeed, it is easier to demonstrate some "harm" to competition in the short-run, static sense than it is to disprove anticompetitive consequences by appealing to economic theory governing dynamic effects.*[21]

To some extent there is an unavoidable information cost problem surrounding innovations, and, in particular, innovations adopted to address prospective competition in rapidly-changing markets. Benefits to consumers may be more attenuated or simply impossible for enforcers and courts to evaluate. This is even more true with respect to the competitive pressures that instigate innovation.

But this is compounded by the corresponding problem of market definition which looks at existing competitors, market shares and conduct. Not only does that mean it systematically evaluates the effect of conduct on current/past participants to the exclusion of others, but also that it misses valid sources of competition in the market that may mitigate or remove market power to begin with.

At the same time, typical tests (e,g, the *Microsoft* test) to evaluate potentially anticompetitive product design require demonstrable consumer benefit. While innovations will frequently have this characteristic, they certainly won't always, especially when they are "business" innovations.

And why should innovations have demonstrable consumer benefit even if they harm current competitors? That's what competition is. One can compete by offering consumers something better, But one can also compete by improving internal processes, developing new sources of revenue, reworking business models to lower costs and improve productivity, pursuing new markets, etc. We shouldn't discourage any of these. But we're bound to with a static balancing of foreclosure against consumer benefit.

All of which creates a problem for foreclosure analysis in particular. Predatory innovation can be a problem at all only if it forecloses competitors

---

[21] Alan Devlin & Michael Jacobs, *Anticompetitive Innovation and the Quality of Invention*, BERKELEY TECH. L. J. 1, 16 (2012).

from the market. But to what extent does it matter if it forecloses today's competitors if it enables tomorrow's?

Imagine, for example, that Uber always intended to use self-driving cars, but the business justification for building brand recognition, creating markets, etc. using live drivers until self-driving was possible were very strong. You can even consider today's Uber like an aberration, a detour from the real objective that simply can't be realized yet, but which requires groundwork today to ensure that it is, when the technology is ready.

But it's very successful and come 2025, Uber is dominant, with 90% of the "market." But now, it's 2025, Uber is rolling out self-driving fleets, excluding human drivers from its platform. They complain. Not only that, Lyft is complaining, too, because it can't compete with Uber's uber low prices, and its self-driving cars are so effective that demand for Lyft has dropped precipitously.

Regardless of the specifics, that current Uber drivers and even direct competitors may be foreclosed by Uber's innovation is a feature, not a bug. Yet the antitrust analysis will look at this change from past to future and condemn Uber for making life harder for those for whom it once made life easier.

THE ANALYSIS OF BARRIERS TO ENTRY, ESPECIALLY DATA AND NETWORK EFFECTS, IS ALSO AN IMPEDIMENT TO PROCOMPETITIVE CHANGE

Data

The logic of entry barriers implied by those who assert data as an entry barrier is a curious one. In effect, it suggests that any product improvement made by an incumbent amounts to an entry barrier to any new entrant. The effect is magnified with network effects. And if the product improvement itself is in the use of data or the ability to access data, it's doubly magnified.

But does this make sense, and is it operationalizable? In essence, such a concept of barriers to entry means the concept has no intrinsic antitrust

relevance — it's merely a statement that the better the incumbent is (or the cheaper its product), the harder it is for new entrants. It would be a curious approach to antitrust if this were treated as a problem, as it would imply that firms should under-compete, should forego consumer-welfare enhancements, in order to bring about more competition.

Even if somehow we thought this were true, how would it be implemented? At what point would competition and product improvement and price reductions become anticompetitive? It can't be at *any* point at which they make entry more difficult, because on the margin that must happen at every single point in the product lifecycle. But otherwise it's essentially arbitrary. And, of course, any decision here makes new entrants compete less, invest less in their own products, etc., in anticipation of regulators opening up markets — which could easily undermine the entire rationale we started with.

And there is a fundamental underlying error in the entire barriers to entry enterprise: It is rooted in the idea that barriers tend to determine the number of firms, and the number of firms determines competitiveness. But this is a far too simplistic view.

> *For example, firms can compete against each other by investing in the development of new products, in the promotion of the product, or in the reduction of costs. All these features are determined in equilibrium together with industry concentration. One can show in these models that as markets grow in size, the industry structure that can emerge is not one of atomistic competition with constant quality but rather one where concentration remains high but product quality increases. Therefore, competition along nonprice dimensions can explain why concentration does not necessarily diminish as industries grow. The significance of this point cannot be overstated. Models that focus on only price competition may fail miserably to correctly predict industry concentration and consumer welfare when there are other product dimensions along which competition occurs. This is likely to be particularly true in industries requiring investment and creation of new products. It is no coincidence that many of the most controversial antitrust and regulatory cases have arisen in high- technology industries (e.g., computers and telecommunications) where competition in research and development and new products is paramount.*[22]

The confusion surrounding the meaning of "barriers to entry" often results because the precise consequence of having an entry barrier is unclear. If there are such "barriers," is anticompetitive conduct a result of the barriers? The proper analysis doesn't end with entry barriers; it starts with analysis of what would happen without barriers, and then assesses whether barriers changes anything. In so doing, it must also account for the benefits of existing conduct, including barriers. Where it does not, it again tends the assessment toward protection of the *status quo*.

A key *status quo* bias problem in the analysis of entry barriers is the assumption of essentiality of inputs or other relationships created by the early movers:

---

[22] Dennis W. Carlton, *Barriers to Entry*, in 1 ISSUES IN COMPETITION LAW AND POLICY 601, 603-04 (ABA Section of Antitrust Law, 2008).

Consider this error in the *Microsoft* court's analysis of entry barriers: The court pointed out that new entrants face a barrier that Microsoft didn't face, in that Microsoft didn't have to contend with a powerful incumbent impeding its entry by tying up application developers.[23]

But while this may be true, Microsoft did face the *absence* of any developers at all, and had to essentially create (or encourage the creation of) businesses that didn't previously exist. In fact, although the court dismissed this argument in a slightly different context, it noted that, "[a]ccording to Microsoft, it had to make major investments to convince software developers to write for its new operating system, and it continues to 'evangelize' the Windows platform today."[24] Yet, the court also notes:

> Because the applications barrier to entry protects a dominant operating system irrespective of quality, it gives Microsoft power to stave off even superior new rivals. The barrier is thus a characteristic of the operating system market, not of Microsoft's popularity, or, as asserted by a Microsoft witness, the company's efficiency.[25]

The point about quality may be true, and it may even be true that the extent of the purported barrier didn't correlate with Microsoft's popularity or efficiency. But it is not true that the applications barrier to entry was independent of Microsoft's efforts or investment; it was not merely a "characteristic of the operating system market," as if exogenous to any conduct undertaken by Microsoft in order to obtain its scale in the first place. Rather, as noted, Microsoft invested heavily to create the network of developers in the first place.

Moreover, having done so, Microsoft created a huge positive externality for new entrants: existing knowledge and organizations devoted to

---

[23] *United States v. Microsoft Corp.*, 253 F.3d 34, 56 (D.C. Cir. 2001) ("When Microsoft entered the operating system market with MS-DOS and the first version of Windows, it did not confront a dominant rival operating system with as massive an installed base and as vast an existing array of applications as the Windows operating systems have since enjoyed.").

[24] *Id.*

[25] *Id.*

development, industry knowledge, reputation, awareness, incentive for schools to offer courses, etc. It could well be that new entrants in fact faced *lower* barriers with respect to app developers than did Microsoft when it entered.

This is crucial in considering the distinction between data pre- and post-entry. Much of the "analysis" of data as a barrier to entry casually speaks as if, because an incumbent has data, new entrants must also have data in order to compete. But the reality is that incumbents entered *without* data and produced it subsequent to entry — again, sometimes creating entirely new businesses and business models around it. Facebook is an obvious example of this dynamic, but so are Uber and Google and many others.

Data in this respect is like reputation. Nearly all new entrants suffer reputational disadvantages. And yet new entry happens all the time. Likewise, the more successful the incumbent — the larger its network, the stronger its reputation, the better its product — the more difficult is new entry. And yet this *is* competition.

In the US, courts have consistently rejected the idea that reputation operates as a barrier to entry. The Ninth Circuit has noted:

> *We agree with the unremarkable proposition that a competitor with a proven product and strong reputation is likely to enjoy success in the marketplace, but reject the notion that this is anticompetitive. It is the essence of competition.*[26]

Or the Third Circuit, for example, noted:

---

[26] *Omega Environmental, Inc. v. Gilbarco, Inc.*, 127 F.3d 1157, 1164 (9th Cir. 1997) (*Citing American Professional Testing Service, Inc. v. Harcourt Brace Jovanovich Legal and Professional Publications, Inc.*, 108 F.3d 1147, 1154 (9th Cir.1997) ("[R]eputation alone does not constitute a sufficient entry barrier in this Circuit."); *United States v. Syufy Enterprises*, 903 F.2d 659, 669 (9th Cir.1990) ("We fail to see how the existence of good will achieved through effective service is an impediment to, rather than the natural result of, competition.")).

> *New entrants and customers in virtually any market emphasize the importance of a reputation for delivering a quality good or service…. [Plaintiff's] argument, without some limiting principle (that it fails to supply), implies that there are barriers to entry, significant in an antitrust sense, in all markets. We find this proposition implausible and… precluded by Supreme Court precedent.*[27]

It is possible that, under some conditions, reputation or product differentiation can operate as a barrier to entry.[28] But there must be special circumstances for that to be true; it can't be always and everywhere true, or else every market would be characterized by anticompetitive barriers.

The same holds true for data. Data is typically generated by companies *after* they enter markets, as a by-product (or intended consequence) of their operations, or else in some case it is purchased beforehand.[29] It cannot be the case that doing so in the abstract creates an entry barrier, or else every market would be marked by entry barriers and the risk of antitrust liability for incumbents — including offline markets.

What seems to be required in order that data may be treated as a potential entry barriers is that the data at issue be some combination of essential, unique, exclusive, and rivalrous. If a suitable dataset can be created by new entrants or obtained elsewhere, or if other data can be used in its stead, or if alternatives other than data can be used (*e.g.,* synthetic data or artificial intelligence), then it is hard to see any relevant competitive significance from data, regardless of the amount.

A key aspect of the mistake here is a sort of availability heuristic: It is often assumed that the successful way something has been done, and is done today, is the *only* way to do it, or the only way new entrants can do it and be competitive.

---

[27] *Advo, Inc. v. Philadelphia Newspapers, Inc.*, 51 F.3d 1191, 1201-02 (3d Cir. 1995)

[28] *See Id.* at 1202.

[29] Daniel L. Rubinfeld and Michal S. Gal, *Access Barriers to Big Data*, 59 ARIZ. L. REV. 339, 357 (2017) ("More commonly, data are collected as a (valuable) side-effect of other productive activities.").

But of course that's never actually true. Facebook uses a very different method and different data than does Google to match advertisers and users — and yet it entered the online advertising/matchmaking market and became enormously successful. Uber entered the transportation network market with a business model that didn't require capital outlay on a large fleet of vehicles. Digital cameras made film irrelevant and didn't need to rely on suppliers of film to enter. Fax machines went through a series of improvements — until email and cloud services completely replaced them.

The examples are endless. But they are key to understanding the non-essentiality of data: For some entrants — those adopting incumbents' business models, minimizing their own innovations, or even piggy-backing on incumbents — it *seems* indispensable. And they may find a willing ear at some antitrust agencies. But innovation has never required implementation of the same business model as incumbents, and especially not access to the particular, proprietary inputs incumbents have created.

And, as noted above, new entrants may face even more welcoming environments *because of* incumbents. Consider how much Google contributed to the creation of the online advertising industry and consumer acceptance of advertising, and web page and app developers' expectations that advertising would need to be accommodated. Whatever the data used to deliver it, there can be no doubt that a new provider of online advertising today faces an environment in which its product is known, and even invited. That wasn't always true in the past.

Which raises another key point: However important incumbents' data may be, it is never as important as many make it out to be at the margin. Consumers want accurate video recommendations, for example, but they also want a variety of content, an attractive and functional user interface, high-quality streaming, etc. Even in something like search, users care about interfaces, mobile-specific (including voice) input, attractive results pages, limited clicking, etc. These elements of design and of algorithmic processing are arguably decisively important, while the "quality" and amount of data are significantly less important by comparison.

Can a new entrant make it without *some* of that data to begin with, though? Of course. Because it can differentiate its product, offer other services

designed to attract users to the platform and then obtain data (the old fashioned way), offer an alternative not dependent on data, find ways to make better use of more limited amounts or different kinds of data, or, finally, purchase the relevant data. Moreover, data are not monolithic. They vary along multiple dimensions, any of which can be more significant than the others even incumbents' business models were built using data with different characteristics:

> *[T]he quality and value of data are affected not only by their volume, but also by their velocity, variety, and veracity. As a result, once one characteristic of big data exhibits high entry barriers, another characteristic might grow in importance in order to overcome the competitive advantages created by the first. For example, where past data are not easily available (therefore reducing the volume or temporal variety of data available), veracity or variety might gain importance in order to create a higher level of predictive certainty based on a smaller data panel.*[30]

And recall that every incumbent had to face the same constraints itself.

There is a longstanding debate whether an entry barrier is properly conceived of as "some source of disadvantage to potential entrants as compared with established firms" (the Joe Bain version[31]), or "a cost of producing (at some or every rate of output) which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry" (the Stigler version[32]).

The former rejects sunk costs as relevant — it rejects, in other words, the importance of evolution over time, and looks only at relative costs today — meaning every advantage enjoyed by incumbents can be an entry barrier, regardless of what it cost to get them. The latter says that costs incurred similarly by both incumbents and entrants impose the same constraints on

---

[30] *Id.* at 370.

[31] JOE S. BAIN, BARRIERS TO NEW COMPETITION: THEIR CHARACTER AND CONSEQUENCES IN MANUFACTURING INDUSTRIES (1956).

[32] GEORGE STIGLER, THE ORGANIZATION OF INDUSTRY 67 (1968).

each, regardless if one has already incurred the costs and another has yet to do so.

In part the claimed justification for this approach is the importance of entry to police incumbents *ex post* — and entry is made in the short term. Yet it is crucial to consider this (often neglected) economic reality: Even in the short term, an incumbent that doesn't sell its assets (whether goodwill, data or installed base, etc.) to a new entrant incurs an opportunity cost (economic cost) equal to the new entrant's cost of obtaining those things.

More important perhaps, it is imperative to consider what the "real" sources of barriers to entry are, and whether they first provide important benefits that should not lightly be taken away or discounted. In many cases (and leaving aside government-created barriers), they come down to information costs. Why does reputation matter? Because it conveys information to consumers. Why does longevity in a market matter? Same reason. Scale economies are just a manifestation of the same thing in markets with declining marginal costs: They are indicia of established quality.

Those realities don't help new entrants any, but they do suggest why being quick to use antitrust or other regulatory measures to overcome such barriers is a problem: It means less such capital will be created in the first place. We'll get less longevity, less investment to build reputation and scale, if it is going to be taken away. It's possible that is worth it in order to induce more competition, but it's at least as possible that it simply transfers more of the information costs back onto consumers, at a rate that more than offsets whatever presumed gains there may be from having more firms — especially in a market that tends because of its fundamental economics toward a single firm or small number of firms.[33]

Treating data as an essential facility is akin to removing IP protection: It may lower costs of existing products, but it also lowers the incentive to create competing products. Large amounts of data (if effectively employed,

---

[33] *See generally* Giuseppe Colangelo & Mariateresa Maggiolino, *Data Accumulation and the Privacy-Antitrust Interface: Insights from the Facebook case for the EU and the U.S.*, TTLF Working Paper No. 31 (2018), *available at* https://ssrn.com/abstract=3125490.

and if they do deter imitators) may raise costs, but they also create an incentive for new entrants to innovate around the costs and to differentiate their products (innovate). As one antitrust authority has noted:

> *Antitrust issues generally do not arise when firms collect more data and antitrust does not usually impose on firms an obligation to share data that they have collected and developed. To do so may very well chill innovation, which is the very behaviour that antitrust is designed to protect*.[34]

All of which points back to the problem of nostalgia: If all we want is multiple exact copies of existing firms, with minimal further innovation, then treating data as a common good or essential facility may be fine. But if not, it makes no sense to do so.

Data as a simulacrum and information asymmetry

It can be hard for users to know the value of their data ex ante, but it can be hard for platforms or other intermediaries to know underlying information *at all*. On the one hand, users know far more about themselves than any platform does, but, on the other, they don't necessarily know how valuable that information is. While the latter information asymmetry is often assumed to be pervasive and important, the latter is virtually always ignored.

But platforms incur significant costs in order to obtain the former information, and they only possess the latter if and when they apply high-quality processing to the data in order to learn its value.

Data is a simulacrum: Platforms are locked in an ever-evolving battle to identify, collect, process, interpret, and use data in order to figure out user preferences or conduct. There is no silver bullet amount and kind of data to accomplish this. Every data set represents some collection of pieces of information that are an effort to guess at the user's mind, as is every aggregate set of data about a large group of people (for which errors are

---

[34] Canadian Competition Bureau, *Big data and Innovation: Implications for Competition Policy in Canada*, Discussion Paper (2017), *available at* http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04304.html.

more likely to cancel out, but for which the representational value of the data is less likely to be very accurate or useful because it encompasses significant noise relative to signal). Big data sets do, however, allow for pattern recognition (i.e., in order to plot out likely traffic issues, mapping apps don't really need to know where a given user is, *per se*, but only whether a large mass of drivers are likely to be in the same place at the same time…).

This is complicated by multi-homing and product differentiation, as well as by tools users use to hide their data. Asymmetry re value means that despite our concerns about big data, arguably users are *under*-producing data, not overproducing it, and/or they are spreading their data too thin.

Which is why it's also key to keep markets in mind: The story is different for advertisers than it is for users. But then, so are the ramifications of data. Advertisers want targeting, of course, but advertisers have enormous amounts of information on their own. They decide what keywords to bid on, and this is information they have and would bring to any platform.

This information asymmetry point is important. It's commonly said or assumed that platforms have much more information than users, and can use it to their advantage. The same is said for incumbents vs. new entrants. But is it really true? Users know far more about themselves than any platform ever will. Whatever Google knows about a user, if a new entrant were to ask the right questions, or buy the right data, it could easily know more. Which is a key reason why Amazon is such a threat to Google: It knows what users shop for, what they buy, at what price, etc. That's of enormous value. Whatever Google knows about how often users search for terms like "Stigler entry barriers," it pales in importance compared to what Amazon knows about what books I buy, or what Facebook knows about who my friends are and how I interact with them. And tomorrow — who knows what will be most relevant?

Even today, if big data were so good at predicting users' behavior, then tech firms would be very good at, for example, predicting what future products and R&D projects will be most profitable. They are not, of course.

It is also important to account for incumbent platforms as facilitators of new entry. Without generalizing, there are some obvious examples, like

Amazon's Web Services, that reduce the cost to smaller entrants of obtaining scale in backbone technology, or Google's making it easier for users to find new entrants that otherwise have to overcome the problem of anonymity.

In fact, to the extent that lack of information is a real entry barrier, the role of incumbent intermediaries in reducing search and other information costs (like providing reputation markets, etc.) can actually operate to *overcome* entry barriers. It is crucial in assessing the extent to which data might operate as a barrier to also assess the mechanisms it enables for reducing barriers, even for a company's direct competitors.

As suggested by the U.S. *Microsoft* court, however, the relevant question concerns not the "initial acquisition of monopoly power," it concerns a company's "efforts to maintain this position through means other than competition on the merits."[35] It is, presumably, possible for a company to deploy, use, or limit access to data in order to impede competition at the platform level, rather to compete — but this doesn't convert data into an entry barrier *per se*.[36]

Network effects

Related, the role of network effects is often overstated, as well. First, it must be remembered that network effects are generally beneficial: after all, they increase the value of a platform to users as more users are added, including the additional users.[37] So scale and network effects offer increased value. It is only after considering whether they also create barriers to competition that incumbents can use to extract

---

[35] *United States v. Microsoft Corp.*, 253 F.3d at 56.

[36] It should also be noted that examples of conduct that might amount to the erection of unjustified barriers to competition are few and far between, and may not even be identifiable in actual markets. See, for example, Rubinfeld & Gal, *supra* note 29, which attempts to canvass possible "behavioral" data barriers, but essentially identifies only a limitation imposed on a national census form as a constraint employed without business justification. *Id.* at 363.

[37] *See generally* Stan J. Liebowitz & Stephen E. Margolis, *Network Externality: An Uncommon Tragedy*, 8 J. ECON. PERSP. 133 (1994).

supracompetitive profits, degrade quality, etc. that they should ever be considered as competitive *concerns*.[38] Surely sometimes this is true. But not always.

Observers are often prone to believe that network effects are always and consistently a) positive (for users — thus always negative in terms of creating barriers to entry), and b) increasing. There are (at least) three under-appreciated problems with this view as applied to social networks (as distinguished from "pure" communications networks):

First, revealed preference and the actual business models of social networks makes clear that the optimal size of any user's network is considerably less than infinite. Users of social networks appear to find value in relatively restricted networks of, say, 100 to (n x 100) friends, where n is less than ten.[39]

Second, and perhaps more important: Users with very large networks will have less incentive to post content, or to post personalized content (which is the most valuable in terms of a presumed data barrier), for fear of reputational effects. In other word, the wider one's network, the greater the social control, and the less the unique value of the data created by user interactions.

Third, and even more important: Users with very large networks have a greater risk of being flooded by irrelevant content. As a result, they end up (i) not using the social network as much (thus not generating data, and also facing lower opportunity cost of switching away); and (ii) missing out on the important information (reducing the value of the network, again making switching easier).

The Issues in Context: The EU's Android Case [TENTATIVE/DRAFT]

The European Commission is currently investigating antitrust allegations concerning certain Google practices surrounding the Android mobile

---

[38] Manne & Wright, *Google and the Limits of* Antitrust, *supra* note 19 at 53-58.

[39] For example, 80% of U.S. Facebook users in 2016 had 500 or fewer friends in their networks, and 40% had fewer than 200. *See* https://www.statista.com/statistics/398532/us-facebook-user-network-size/.

operating system. These criticisms have focused on contractual terms requiring device manufacturers to "install all the apps Google specifies, with the prominence Google requires, including setting these apps as defaults where Google instructs" if they want to pre-install any of a number of key Google apps on their Android devices.

In addition, these apps themselves are allegedly bundled together anticompetitively in an app called Google Play Services, so if you want Gmail you have to install YouTube, as well. Critics claim that Google harms competition and endangers the Android app ecosystem by imposing such requirements.

Because Android is significantly open, and changeable in myriad ways by OS developers, device makers and mobile network operators, making Google Android competitive with its tightly controlled rivals requires special efforts from Google to maintain a uniform and consistent experience. Google has tried to achieve this uniformity by increasingly disentangling its apps from the operating system and giving OEMs the option (but not the requirement) of licensing Google Mobile Services — a "suite" of technically integrated Google applications (integrated with each other, not the OS). Critics label these practices as tying, leveraging dominance, etc., criticizing Google's increasing exertion of control over the platform.

But tying is an antitrust problem only if it significantly forecloses competitors from these apps' markets compared to a world without integrated Google apps, and without pro-competitive justification. Neither claim withstands appropriate antitrust scrutiny.

The arguments against Google turn in large part on a couple of related errors.

- First, they dramatically understate the procompetitive benefits of increased control over complex integrated systems like Android and overstate the benefits of so-called "generativity."
- Second, they take a snapshot approach to assessing competitive effects, under-stating the dynamic, prior benefits of certain practices, and overstating the importance of harm to existing

competitors (that wouldn't exist in the first place, for example, if not for the complained of practices).

- And third, they improperly presume harm rather than benefit from the fact of changes in Google's business model for Android.

Control versus generativity

As others have noted:

> *The issue of managing digital ecosystem innovation can be seen as the continuous process of developers as protagonists seeking to engage in generative acts further expanding the platform functionality, and an opposing platform owner as antagonist serving the role as moderator and regulator accepting or rejecting generative attempts through the application of control points. The core challenge of innovation in a digital ecosystem is to continuously engage in balancing control and generativity.*[40]

The key is that while "generativity" often seems to, and does, come from apps and content provided on top of platforms, platforms themselves dramatically increase the value of content by coordinating interactions between content providers and between content and users. Platforms, in other words, generate systemic value, where content generates local value.

Evaluating each requires different approaches, evidence, understandings of market dynamics, etc. And while in narrow senses content and platforms may be antagonists, they are dependent upon each other and their interests often perfectly aligned.

Asset Specificity?

Of great importance, for a given platform, when content is first developed it is often most clearly symbiotic. The problem is that as content evolves at same time as platform evolves, along with technology and consumer demand, those interests can readily diverge. When assessment of conduct is undertaken ex post, conduct of the platform aimed, in part, at generating

---

[40] Eaton, Elaluf-Calderwood, et al.

systemic value may appear anticompetitive from the point of view of existing local content, which may no longer be of the same value to the evolved system as it was initially.

So a key issue for evaluating the social value of content is the extent to which it can evolve with, rather than against, its environment. Which means looking backward in antitrust, and incorporating consideration of whether content being harmed today exhibits this evolutionary ability, or whether (as will usually be the case) the harm today is at least in part a function of the app's inability or unwillingness to evolve — its desire to remain dependent on older, less-valuable aspects of the platform.

> *Nextag and companies like it that complain about their placement in Google search results. Google search has evolved to offer different types of results than 10 blue links, offering a Universal Search Box with things like Google's own product search results of the sort Nextag offers at the top of appropriate search results pages. Presumably circumventing some users from digging down to the links where Nextag and Yelp and the like are relegated. But those companies have developed business models that rely on the 10 blue links version to drive traffic. Today they claim they are being harmed by Google's anticompetitive behavior. But even if it's true in a local sense, should we really reward them for business models that became outdated as technology and consumer demand evolved? Even if it made perfect sense when initiated, if it no longer does, should Google bear the burden of that, or should they?*[41]

One question is — does the platform owe anything to participants that make themselves dependent on it? Does it create something like an essential facility, without any contract or other explicit commitments, but just in some sense that should be cognizable in law or regulation, particularly in antitrust?

It seems to us that the answer is pretty clearly no: Antitrust is concerned with maximizing consumer welfare which would be impaired by saddling

---

[41] Manne & Reinhart, *Google Realities*.

platforms with a responsibility to maintain the business models of companies that rely on them, regardless of greater social benefit from throwing them to the wolves.

And if that makes it less likely that content will be developed for and integrated with a platform in the first place, the platform has every incentive to overcome that — it can pay for content development, it can offer contractual guarantees, it can offer exclusivity, it can vertically integrate, etc.

But forget essential facilities. Perhaps the better analogy is asset specificity. An input provider that makes itself dependent on another company for distribution (or vice versa, of course) takes on enormous risk — it is at the mercy of the other or at least incurs immense cost in dealing with changes that affect its ability to deal with it. But typically this is dealt with through contract terms and/or price terms which reflect the risk allocation. When contracts are too difficult to cover the risk, we see vertical integration, which removes the possibility of divergent incentives.

Consider an automaker that has a relationship with a supplier that makes nothing but software for certain computerized functions in the automaker's cars. As technology, the cost of capital, consumer usage, and the like evolve, the automaker starts making more advanced cars, relying more on software and computers for previously physical functions, and distinguishing itself from competitors based on its software-driven functions. It also begins to collect and incorporate proprietary (and sometimes sensitive) data from its cars, which it uses to constantly tweak its software, pushing updates to its cars multiple times a day. As its product becomes more defined by, and more reliant upon, the perpetually evolving software it uses, it begins developing its own software and its own systems in order to enable the feedback process to function rapidly and seamlessly.

Is the automaker obligated to continue buying the developer's software absent a contract obligation to do so? Does the answer change if the developer has specialized in the creation of software usable only by the specific automaker, in the expectation — again, not guaranteed by contract — that it would continue to buy all its software from the developer?

Of course not. To hold differently would be to lock the automaker into an outdated business model and to constrain its ability to design its product. Remember — it was not the automaker that locked itself into the relationship with the developer; it was the developer that locked itself into the relationship with the automaker. The answer might be different if the developer had protected itself with a long-term contract obligating the automaker to purchase its software. But in the absence of such a guarantee, or at the expiration of the agreed-upon term of such a guarantee, the automaker would owe no duty to the developer. To the extent that digital economy platforms and merchants change to adapt to changing circumstances the same logic applies. And thus, as Google has evolved from 10 blue links to offering direct answers and numerous other innovations, the companies that built businesses dependent on its old model have no claim on it.

Let's bring this point more directly into the question at hand — the question of Android's alleged anticompetitive conduct.

With respect to apps, Android offers a platform. Unlike Apple, which derives the vast majority of revenue from device sales, Google derives revenue primarily from search advertising. Android is a way into that revenue source for Google, offering relatively low-cost devices (because the OS is free) and a robust OS, along with other apps and services of value to consumers in order to drive search advertising revenue.

Because Google licenses its operating system at no cost and derives revenue from search advertising rather than application or device sales, its contractual requirements serve to increase the likelihood that it will receive sufficient revenue to offer (and to improve) its mobile products — much to the benefit of consumers and device manufacturers.

Key to understanding its competitive situation is understanding that pure platforms and pure content providers and pure advertisers, etc. are in exceptionally vulnerable positions in the modern platform economy. One need look no further than Yahoo to see this.

> *Yahoo was once a tech world darling, a huge company at the top of the pyramid. But it was a pure media company, mostly an information service (though also and significantly an email*

> *provider). It didn't invest in operating systems, devices, browsers, etc.*
>
> *"Yahoo lacked a "front door" through which smartphone users might access—and, more to the point, be led to—the company's own services and apps. Google, by contrast, had its Android operating system, which it had begun work on in the mid-two-thousands. When Android devices started selling, in 2008, they came bundled with Google's search function and some of its other apps."*[42]

In a current, static sense, framed by complaints from fairsearch and the like, Android is a distributor, an essential facility, an antagonist in the battle for eyeballs and advertising dollars.

But one could also view Android as an input into app developers' businesses — one that they decided (in varying degrees) to outsource rather than make in house (whereas Google bought Android in 2005). Content companies know they need distribution, and they need marketing — "front doors through which users might access, and… be led to" their content. But leaving that to another company, whether a competitor or not, is risky. And it increasingly looks like it's a bad idea to eschew integration in Internet markets and to operate as a pure anything without a secure means to attract consumers' time.

Today, when we use our phones, we spend more and more time using communication-based apps. Apps that provide information and content-based services tend (with some exceptions, like Pandora) to be less successful—it doesn't take long to check the weather, after all.

> "Facebook, for its part, benefitted greatly from the mobile shift. In 2012, it, like Yahoo, had an all-but-nonexistent mobile business, no operating system, and no Web browser. But it did have a popular communications app, which people checked compulsively, often for hours each day…."[43]

---

[42] New Yorker article on Yahoo.

[43] Id.

What does that mean for antitrust?

It means first that those companies that made mistakes in their business models and investment choices will use antitrust ex post to try to ameliorate those mistakes. It also means that antitrust decisions in favor of such pure-plays will increase the incentives to make those mistakes in the future.

A "snapshot" view of welfare effects from an antitrust case by, say, Yelp against Google might suggest finding in Yelp's favor will incentivize investment in more content and improve competition. But in a more holistic sense it suggests incentivizing bad business decisions and reducing the dynamic competitiveness of markets, not least by under-incentivizing investment by distributors/platforms.

From a social welfare perspective, it makes little sense to incentivize creation or preservation of content that is at the mercy of changing demand and technology relative to supporting investment in more robust technology — which includes the platform itself.

What matters most in determining the efficacy of a platform or any form of organization of economic activity is the relative benefits of *control or coordination* on the one hand and *specialization and market exchange* on the other.

What causes the biggest angst from an antitrust enforcement perspective is usually *a shift toward greater control.* But when not just local efficiencies are at stake, but the systemic efficiency of a complex system, there is good reason to be extremely skeptical of antitrust challenges to increasing control of a platform — which is not to say that there aren't anticompetitive risks, but just that the oft-ignored systemic benefits of control are all the more likely to outweigh the anticompetitive risks.

So two things are important here:

- First, the *fact* of control being more centralized;
- and second the *shift* from less to more control.

There is no economic reason that we know of to be more skeptical of *shifts* toward control than of control *ab initio*. Such shifts are as or more

consistent with competition and efficiency enhancement as they are anticompetitive monopolization. And yet from a regulatory standpoint, they are viewed with heightened suspicion and, in fact, it is usually these dynamic situations where antitrust actions arise.

If Google started out doing everything it is doing today, it's doubtful there would be any actions against it.

This is a problem for a couple of bad reasons.

- First, change means there is more likely to be someone who was previously benefiting who now feels slighted and harmed. That means more complaints and more purported evidence amassed — including of course evidence of harm to competitors masquerading as harm to competition.
- Second, without a baseline it's harder to make an argument that anything bad is happening. Of course, other industries or economic theory can supply those points of reference, but nothing is as compelling as a narrative based in facts.
- Third, such shifts are likely to correlate with increased size, and antitrust law obligations tend to attach to market power or dominance, which are often correlated with size.
- Fourth, and related, antitrust doesn't condemn monopoly per se, but only conduct undertaken to maintain monopoly or to obtain it — meaning that even a large, highly-integrated company can be off the hook whereas one that *further* integrates can violate the law.

It is easily forgotten that innovation in business models and modes of organization are as or more important than technological innovation. If we want to encourage innovation in society, all else equal, all change, including especially organizational change, *in and of itself* should be favored because given *uncertainty* over its effects, the one thing we know about innovation is that it entails change. The opposite presumption means relative stasis and stagnation.

But regardless, and even taking the law as given, antitrust restraint should be the first response. Because, in the case of large complex systems, heightened control is the norm for good efficiency reasons.

First, the realization of systemic as opposed to merely local efficiencies offers unique and uniquely large benefit:

> *Systemic efficiencies involve and affect multiple and dispersed parts of large complex systems whose components are intricately interconnected in a way that changes in one part may trigger readjustments in other parts. Because they draw from multiple parts, they require a holistic overview of the system in which they are interwoven, which makes them harder to identify and appreciate. However, at the same time, the fact that they are so integrative and extensive means that they can bring about dramatic innovations in the industry, such that would not occur at a smaller scale or insular environments. Systemic efficiencies and innovations, therefore, generate unique value both to the introducing firm and to the industry as a whole, and deserve to be identified as a distinct type of efficiency.*[44]

But of course, there is a dark side:

> *The challenge systemic efficiencies pose is that they often emerge through and because of pervasive control over the system and the production process…. The problem is that to achieve this kind of pervasive control, the system architect may need to resort to exclusionary practices, such as refusal to supply, tying, discrimination and others, which aim at creating the necessary conditions for the efficiency to materialize.*[45]

In certain contexts, of course, these mechanisms of control can be anticompetitive. But especially in complex systems,

> Authorities and courts cannot ignore the dangers of pervasive control, but… they should resist the particular risk in the context of systemic efficiencies of underestimating the indispensable role of control in achieving coordination and

---

[44] Eaton, Elaluf-Calderwood, et al.

[45] Id.

> coherence, without which the attempted combination, novelty, innovation, readjustment or other efficiency might collapse under its own complexity.[46]

Android is in some ways a paradigmatic example of this.

First, we've seen change. Android started out as a much more decentralized system. Within that platform environment, many developers found enormous opportunities to build applications that offered local innovation and efficiency. The generative quality of Android can't be denied, and its value shouldn't be understated.

But, at the same time, Android was constantly raked over the coals for offering a bad user and developer experience.

- Among other things, fragmentation and divergent user interface experiences imposed costs on developers and users alike.
- Also, by ceding control over the OS to device makers and mobile networks, updates were delayed, adding to fragmentation and keeping users and developers from accessing innovations in the OS.
- Meanwhile, a permissive architecture and app screening process meant that intents that connected the various elements of the system could be abused, and unsecure and faulty apps were more often a problem.

And not only was the platform itself impaired, but valuable apps were less valuable than they would have been because that decentralization meant that corruptions in the system affected the operation of apps themselves.

In response, Google attempts to reign in fragmentation and divergent and inconsistent UI experience and security problems and the like by moving more of the firmware from the OS to its Google Play Services so it can better maintain a consistent experience and issue security and other product updates to customers without carriers and OEMs blocking.

Integration of a set of core Google apps into Play Services has important justifications. One of the reasons for the full line strategy is to ensure that

---

[46] Id.

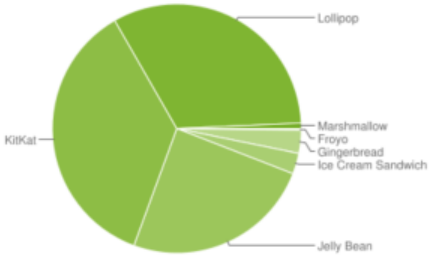
the essential set of applications that Google pushes evolve hand in hand and that an update in one module (including the operating system) is reflected in updates to the rest of the set without discontinuities in functionality.

Google's strategy appeals also to those users — apparently a LOT of them, given Apple's success — that do not want or can't evaluate apps core to a phone's functionality. By offering an off-the-rack, Google-branded Android experience, Android lets them forego the transaction costs of verifying the quality of the product and instead opt for an off-the-shelf end product/service that has taken care of all issues of compatibility, cross-functionality and interoperation for them.

So, for example, by integrating Google Maps, the OS and other pre-installed Google apps have a guaranteed ability to access location services. If location services are updated, the other apps can be updated along with it to ensure continued functionality. In the absence of such a default location functionality pre-installed or provided by another (or a wide range of other) parties, if Google wanted to release an update to the operating system or to its applications, it would be dependent on the third party to keep up with Google's update cycles, and, in the meantime if it decided to push the update nevertheless, part of the functionality would be broken. No other mobile OS operates like that, for good reason.

Despite claims to the contrary, fragmentation of Android is a real problem, not just across the non-Google version (According to a recent report there are now more than 24,000 devices from 1,300 brands that run some version of Android), but even within Google Android:

Version	Codename	API	Distribution
2.2	Froyo	8	0.2%
2.3.3 - 2.3.7	Gingerbread	10	3.0%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	2.7%
4.1.x	Jelly Bean	16	9.0%
4.2.x		17	12.2%
4.3		18	3.5%
4.4	KitKat	19	36.1%
5.0	Lollipop	21	16.9%
5.1		22	15.7%
6.0	Marshmallow	23	0.7%



With functionality in Google Play Services, Google itself can push out updates independent of OS updates. That's reduced the consequences of fragmentation. And yet Google is excoriated for being anticompetitive in doing so.

But *the fact of control itself is not obviously anticompetitive*. Apple bundles iTunes and a tightly controlled App Store with its OS., It includes iMessage, which only works with its Cloud. There's Apple Maps, a health app, a wallet, integrated mail, etc. All are proprietary, in a single-vendor system, and closed source.

Meanwhile, there are other important procompetitive effects of tighter control. Consider, for example, what pure decentralization taken to its extreme would look like. If every Android phone's out of box experience was a random collection of OEM apps that had no common standard, the consumer experience would be terrible. Developers would be saddled with immense development costs trying to develop for a multitude of systems, and most wouldn't bother — OEM-specific apps would be the norm, meaning a dramatic reduction in app-level competition. "Generativity" at the local level, sure, but at enormous cost and not necessarily very good generativity.

And that, in turn, would mean a reduction in device-level competition. If the switch from a Samsung to an HTC device meant a sea change in UI or,

assuming the aps were even available, the need to delete all of the current apps, and reinstall all of your previous ones, enter all the settings again, all of the login credentials, etc., the switching costs would be large and it would cause OEM lock in.

And what happens when things go wrong? If the user installs a third party app store, and gets malware, at least on the margin if not entirely, Google's Android brand will be blamed. Android incurs the cost of brand devaluation regardless, but without control, the risk is dramatically heightened.

Or imagine what a post-remedy Android might look like, with a browser ballot for every app. The setup process is a factor in consumer demand. If you are faced with an onerous gauntlet of selection dialogs for 10+ apps when you start — and no opportunity for a single sign-in like a Google account to streamline the process — consumer welfare will be hurt, not helped, relative to a world (the status quo) where all app alternatives are available, but for core apps in Google Play Services users don't have to go through such a process if they don't want to.

So in the end, you'd be asking Google to assume all the brand risk, all of the complaints over fragmentation and failure to patch older phones, making the consumer and developer experience worse, and reducing competition across apps and devices.

Apple has none of these problems. Say what you will about their locked down platform, it offers a secure, consistent and reliable experience. It also affords Apple the ability to implement system-wide changes, minimizes fragmentation and incentivizes investment in the platform because Apple has control over its brand.

As David Teece and Henry Chesbrough have noted:

> Today, leading companies like Intel and Microsoft make extensive investments to enhance their current capabilities and spur the creation of new ones. Because so many important innovations are systemic, decentralization without strategic leverage and coordination is exactly the wrong organizational strategy. In most cases, only a large [meaning diverse as much

> or more than big] company will have the scale and scope to coordinate complementary innovations.[47]

Assessing the arguments against Android

It's true that equipment manufacturers who choose the Android operating system have the option to include the suite of integrated, proprietary Google apps and services licensed (royalty-free) under the name Google Mobile Services (GMS). GMS includes Google Search, Maps, Calendar, YouTube and other apps that together define the "Google Android experience" that users know and love.

But Google Android is far from the only Android experience. Even if a manufacturer chooses to license Google's apps suite, Google's terms are not exclusive. Handset makers are free to install competing applications, including other search engines, map applications or app stores.

Although Google requires that Google Search be made easily accessible (hardly a bad thing for consumers, as it is Google Search that finances the development and maintenance of all of the other (free) apps from which Google otherwise earns little to no revenue), OEMs and users alike can (and do) easily install and access other search engines in numerous ways. As Professor Korber notes, "[t] he standard MADA does not entail any exclusivity for Google Search nor does it mandate a search default for the web browser."[48]

Regardless, integrating key Google apps (like Google Search and YouTube) with other apps the company offers (like Gmail and Google+) is an antitrust problem only if it significantly forecloses competitors from these apps' markets compared to a world without integrated Google apps, and without pro-competitive justification. Neither is true, despite the unsubstantiated claims to the contrary from Edelman, FairSearch and others.

Consumers and developers expect and demand consistency across devices so they know what they're getting and don't have to re-learn basic functions or program multiple versions of the same application. Indeed,

---

[47] Teece & Chesbrough, *When Is Virtual Virtuous?*, HBR (2002)

[48] Korber, Android article.

Apple's devices are popular in part because Apple's closed iOS provides a predictable, seamless experience for users and developers.

But making Android competitive with its tightly controlled competitors requires special efforts from Google to maintain a uniform and consistent experience for users. Google has tried to achieve this uniformity by increasingly disentangling its apps from the operating system (the opposite of tying) and giving OEMs the option (but not the requirement) of licensing GMS — a "suite" of technically integrated Google applications (integrated with each other, not the OS). Devices with these proprietary apps thus ensure that both consumers and developers know what they're getting.

Unlike Android, Apple prohibits modifications of its operating system by downstream partners and users, and completely controls the pre-installation of apps on iOS devices. It deeply integrates applications into iOS, including Apple Maps, iTunes, Siri, Safari, its App Store and others. Microsoft has copied Apple's model to a large degree, hard-coding its own applications (including Bing, Windows Store, Skype, Internet Explorer, Bing Maps and Office) into the Windows Phone operating system.

In the service of creating and maintaining a competitive platform, each of these closed OS's bakes into its operating system significant limitations on which third-party apps can be installed and what they can (and can't) do. For example, neither platform permits installation of a third-party app store, and neither can be significantly customized. Apple's iOS also prohibits users from changing default applications — although the soon-to-be released iOS 8 appears to be somewhat more flexible than previous versions.

In addition to pre-installing a raft of their own apps and limiting installation of other apps, both Apple and Microsoft enable greater functionality for their own apps than they do the third-party apps they allow.

For example, Apple doesn't make available to other browsers (like Google's Chrome) all the JavaScript functionality that it does to Safari, and it requires other browsers to use iOS Webkit instead of their own web engines. As a result there are things that Chrome can't do on iOS that Safari and only Safari can do, and Chrome itself is hamstrung in implementing its own software on iOS. Far from facilitating competition,

this approach has even led Mozilla to refuse to offer its popular Firefox browser for iOS devices.

On Windows Phone, meanwhile, Bing is integrated into the OS and can't be removed. Only in markets where Bing is not supported (and with Microsoft's prior approval) can OEMs change the default search app from Bing. While it was once possible to change the default search engine that opens in Internet Explorer (although never from the hardware search button), the Windows 8.1 Hardware Development Notes, updated July 22, 2014, state:

> By default, the only search provider included on the phone is Bing. The search provider used in the browser is always the same as the one launched by the hardware search button.

Both Apple iOS and Windows Phone tightly control the ability to use non-default apps to open intents sent from other apps and, in Windows especially, often these linkages can't be changed: if you click on a URL in an email, it will open the page in Internet Explorer, and there is no way to change this.

As a result of these sorts of policies, maintaining the integrity — and thus the brand — of the platform is (relatively) easy for closed systems. While plenty of browsers are perfectly capable of answering an intent to open a web page, Windows Phone can better ensure a consistent and reliable experience by forcing Internet Explorer to handle the operation.

By comparison, Android, with or without Google Mobile Services, is dramatically more open, more flexible and customizable, and more amenable to third-party competition. Even the APIs that it uses to integrate its apps are open to all developers, ensuring that there is nothing that Google apps are able to do that non-Google apps with the same functionality are prevented from doing.

In other words, not just Gmail, but any email app is permitted to handle requests from any other app to send emails; not just Google Calendar but any calendar app is permitted to handle requests from any other app to accept invitations.

In no small part because of this openness and flexibility, current reports indicate that Android OS runs 85 percent of mobile devices worldwide. But it is OEM giant Samsung, not Google, that dominates the market,

with a 65 percent share of all Android devices. Competition is rife, however, especially in emerging markets. In fact, according to one report, "Chinese and Indian vendors accounted for the majority of smartphone shipments for the first time with a 51% share" in 2Q 2014.

Edelman is at least nominally circumspect in his unsubstantiated legal conclusions about Android's anticompetitive effect: "Applicable antitrust law can be complicated: Some ties yield useful efficiencies, and not all ties reduce welfare."

Of course, it could hardly be otherwise. If every integration were an antitrust violation, every element of every operating system — including Apple's iOS as well as every variant of Microsoft's Windows — should arguably be the subject of a government investigation.

In truth, Google has done nothing more than ensure that its own suite of apps functions on top of Android to maintain what Google sees as seamless interconnectivity, a high-quality experience for users, and consistency for application developers — while still allowing handset manufacturers room to innovate in a way that is impossible on other platforms. This is the very definition of pro-competitive, and ultimately this is what allows the platform as a whole to compete against its far more vertically integrated alternatives.

[MORE]

ANTITRUST ENFORCEMENT AS AN INADVERTENT TOOL FOR MARKET OR REVENUE SHARING

Traditional antitrust analysis, when insufficiently sensitive to the dynamics of high-tech and platform-economy competition, is inherently susceptible to these problems. As such, antitrust enforcement may inadvertently abet efforts by competitors to preserve *status quo* relationships *especially* when challenged with plausibly procompetitive change.

Thus, for example, traditional enforcement in some jurisdictions may recognize that large firms may enter new markets through product innovation, but still impose a non-trivial condition that they not steal "too much" market share from established players in something of an effort to

hedge against the disruptive effects of large scale new entry by preserving existing competition. But this approach would place a form of costly egalitarianism and *status quo* bias over competition, and impede the iterative process of entry and exit as a driver of growth in the long term. The risk is that an overly "conservative" approach to market definition and other doctrinal concepts may be used by competitors to attempt to diminish the displacement of inefficient incumbents (particularly through the commoditization of certain products and services) at the expense of the vast dynamic efficiencies disruption could produce over time.

Traditional tools can be coopted by companies to effect both a revenue-sharing and a market-sharing purpose: revenue sharing when used by dissatisfied purchasers or suppliers to reengineer terms of existing market transactions (*e.g.*, the ongoing, multi-faceted dispute between Qualcomm and Apple), and market sharing when used by failing competitors to keep a foothold in a market (*e.g.*, Foundem's complaints against Google). EU law, for example, may be particularly prone to abuse as a revenue-sharing device through its approach to market definition and its prohibition of "exploitative conduct," but it is also apt to accommodate efforts at market-sharing through the promulgation of *per se* illegality standards in exclusionary conduct cases.

Notably, it is when antitrust is insufficiently sensitive to market definition and other aspects of high-tech competition discussed above that traditional tools can be most readily coopted. For example, static market definition can make open business models (including open IP licensing) and platforms that operate under a "co-opetition" model appear dominant, while more proprietary/closed ecosystems are less amenable to antitrust proceedings. Complaints against open models are both more likely, and more likely to lead to (inefficient) enforcement, even though such business models are almost certainly more conducive to "generative" innovation. It is problematic for social welfare that the same aspects of the model that encourage more complaints and admit of more alleged abuses are also among the most important drivers of innovative change.

Ironically, it is *criticism* of this dynamic that is typically derided as "conservative," when in reality it is the inherent conservatism of traditional

antitrust that may be most susceptible to competitive abuse and costly preservation of *status quo* markets.

…