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# *Microsoft* after Fifteen Years

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## INTRODUCTION

*United States v. Microsoft Corp. (Microsoft III)*[2] is now fifteen years old, and that I would write such a long introduction to a reprint of significant portions from the opinion is a sign its significance has not died out. Just the opposite, I think it will become more significant in the near future, and not only because of its impact on U.S. antitrust law. The decision lays the groundwork for international enforcement of antitrust in high technology markets, at least as we have come to know them, and this is likely to continue to be significant for the foreseeable future.

As for U.S. law, it has become increasingly clear that *Microsoft III* is the second most important monopolization decision after Learned Hand's *United States v. Alcoa*.[3] To be sure, *Alcoa* must and will always be the most important Section 2 opinion because it sets the foundational principles for modern (post-1945) monopolization law. Judge Hand overturned a doctrinal framework that had induced a passive approach to antitrust enforcement against dominant firms and replaced with a framework that enabled and encouraged aggressive antitrust enforcement.[4] *Microsoft* has had a comparatively limited impact,[5] but it clarifies and updates the monopolization standard and constrains judges, and in these senses fundamentally alters the law from *Alcoa*.

In addition to the comparison with *Alcoa*, I will emphasize aspects of the case that cannot easily be gleaned from reading the opinion. I will not focus on the economics, a topic that has received ample attention.[6] Instead, I will emphasize strategic decisions of the parties involved – Microsoft, the Justice Department, the courts – and especially the human frailties that drove this litigation forward and made it the public spectacle that it was. Most importantly, I will emphasize the aftermath of the decision – specifically, its effects on antitrust enforcement and doctrine. *Microsoft III* has provided the template for modern antitrust enforcement in technology markets, and its legacy cannot be evaluated without taking into account its enormous impact on international antitrust.

## THE LITIGATION: A QUICK SUMMARY

The Department of Justice's antitrust litigation against Microsoft began as a rather narrow and technical complaint about the firm's licenses with original equipment manufacturers – makers of computer hardware such as personal computers and laptops.[7] Microsoft required these firms to pay a license fee for every unit they sold, whether or not the unit incorporated Microsoft's operating system. The efficiency rationale for this is easy to see: software being easy to copy, and Microsoft's system being nearly ubiquitous at the time, it was more efficient for Microsoft and the original equipment manufacturer to assume that each unit had Microsoft's system installed rather than set up a costly monitoring and verification system. Still, the agreement had the effect of impeding rival operating systems; if the equipment manufacturer was going to have to pay for the Microsoft operating system whether he had installed it or not, then why would he consider installing a rival system? This dispute, known as *Microsoft I*,[8] ended quickly with a consent decree in which Microsoft agreed to stop seeking the per-processor license in its contracts.

Even this "preliminary skirmish," to use the description of Page and Lopatka,[9] reveals much about the core economic issues in the Microsoft litigation. The per-processor license agreement had an efficiency rationale, but it also posed a risk of harm to consumers by excluding competition. Rule of reason analysis would require consideration of both effects. It is possible that consumers were better off under the agreement because of the substantial costs of monitoring. These straightforward and yet empirically uncertain tradeoffs between efficiency and consumer harm would continually reappear in the Microsoft and related spin-off antitrust cases following *Microsoft I*.

Justice's litigation against Microsoft soon mushroomed into a more complex case centering on Microsoft's contractual and technological integration of its Internet browser with its operating system. First, Justice tried to enjoin, as a breach of the terms of the consent decree from *Microsoft I*, Microsoft's contractual requirement that original equipment manufacturers that license its operating system also license its browser. District Judge Thomas Penfield Jackson sided with Justice and issued an injunction, but it was overturned by the D.C. Circuit Court of Appeals with a stern rebuke in *Microsoft II*.[10]

The technological integration case, *Microsoft III*, was initiated in Judge Jackson's court shortly before the decision in *Microsoft II*. The disadvantaged rival in both cases was Netscape, the maker of a once popular stand-alone Internet browser. This time the Justice Department framed its case on a broader plane and expanded it, after hiring David Boise to manage the litigation, to include a smorgasbord of additional charges.

The core theory of the complaint was that Microsoft had suppressed the development of "middleware" as a competitive threat to its operating system monopoly. Middleware, a product category defined by Justice for its case against Microsoft, consisted of software applications that could, in theory, develop into substitutes to an operating system. Netscape and Sun's Java were offered as examples of such middleware, and also victims of Microsoft's anticompetitive conduct. In addition to this core theory, Justice augmented its complaint to include various contractual provisions with original equipment manufacturers, Internet service providers, software firms, Apple, Intel, and others that allegedly suppressed competition, again all to maintain Microsoft's dominance in the operating system market. Boise, working with state attorneys general, set up a veritable ecosystem of consultants, many paid through the offices of the state attorneys general, who spent countless hours combing through Microsoft's contracts to find provisions that could be cast as anticompetitive.[11]

Judge Jackson found Microsoft guilty of violating Section 2 for maintaining its operating system monopoly and for attempting to monopolize the browser market, and of violating Section 1 for tying the browser to the operating system. He ordered the company to be split into an operating system company and a software applications company. The D.C. Circuit upheld the finding that Microsoft had monopolized the operating system market, reversed the attempted monopolization holding, and remanded the decision on tying.

The trial was not time-consuming as antitrust cases go; Judge Jackson had put the case on a 76-day fast track resulting in detailed factual findings that greatly constrained the discretion of the D.C. Circuit to overturn the central findings of illegality. Still, the trial, and the events leading up to it, seemed to take much more time because of the unusual media attention the case had garnered.[12]

## HUMAN FRAILTIES AND LITIGATION

Perhaps the main reason the trial captured so much attention was its narrative of the rise of the Bill Gates Empire. Justice presented a case about a fellow who had engaged in perpetual and intense battles with competitors over every scrap of turf, and seemed almost paranoid in managing Microsoft's strategy. He had made himself the richest man in the world, as a result of his persistently anticompetitive conduct.[13] Now he had gone too far, and the law would cut him down to size; a familiar theme in literature. This simple narrative was barely beneath the surface in public descriptions of the case, and was surely the reason it captured so much attention as the trial progressed.

Moreover, the Bill Gates narrative not only captured the public's attention, it also helped propel the litigation forward, as Page and Lopatka have noted.[14] It fueled lobbying efforts directed toward enforcement agencies, and eventually became the core of the government's case against Microsoft; the part that appealed directly to the basic human tendency to see disputes in moral colors, as good versus evil.

Along with the manufactured Gates narrative, there were some genuine sensational events played out in the litigation that were both worthy of attention from artists and at the same time important in driving the litigation. In addition to the dramatic rise and downfall theme, there is the conflict between human frailty and the demands of judging, captured in three important vignettes.

The first vignette involves District Judge Stanley Sporkin, and illustrates the behavioral tendency to attribute improper motives and to seek punishment, even when no personal profit – and only personal loss – can result from it.[15] Frustrated with the passive position he was forced to take as a judge reviewing an antitrust settlement under the Tunney Act, Sporkin castigates Justice for not prosecuting Microsoft for other bad deeds, and refuses to approve the settlement in the first litigation involving the per-processor licenses. In response, the D.C. Circuit disqualified him from hearing the case.[16] However, the clash between Sporkin's view and Justice's would be short lived. He had a firmer grasp of the ultimate prosecution narrative than Justice did at that time. Sporkin's view that this was a story of good against evil would become the prosecution narrative in *Microsoft III*. In addition, Sporkin's diatribe surely signaled to Justice that there was a broader attack on Microsoft that might be persuasive to some judges.

The second vignette, involving Richard Posner, illustrates obstacles that status perception can create in the dispute resolution process. Judges, as humans, are status conscious, and the perception of high status generates an expectation of deference.[17] When the expected deference is not forthcoming, conflict arises. Posner was tasked by Judge Jackson with mediating a settlement before trial got under way. But the mediation process was severely hobbled by the state attorneys general, who kept upping their demands as Justice and Microsoft came closer to a set of terms on which they could agree. Posner did not see this as a case of good versus evil, but found himself in the unusual position, as a judge, of having to persuade a litigant in his court (the state attorneys general) that his stance on the relevant legal and policy matters should prevail. Like Sporkin, he was hemmed into a passive position, not by the law, but by the nature of the role he had accepted as mediator. The settlement talks broke down, with Posner, according to a whispered account, exposing his frustration with the state attorneys general by referring to them as "assholes" in his last conference call with them.

First and Gavil,[18] unfairly in my view, pin the blame on Posner for the mediation breakdown, when the efficient cause was the conduct of the state attorneys general. But there is an element of truth in First and Gavil, given that Posner had stepped into a position that was inconsistent with his perceived status as judge and reputation as the country's leading authority on antitrust law. A mediation specialist would have been more successful; unburdened by the status perception of a judge, he would have pushed or cajoled the parties to make whatever tradeoffs were necessary to close the deal whether or not those concessions were consistent with what the law or reasonable economic judgment required. In other words, if Posner had not been the initial mediator, the trial in Judge Jackson's court probably would have been avoided.

The final vignette in this series illustrating the conflict between judging and human emotions in the Microsoft litigation involves Judge Jackson. It was revealed after the trial that he had spoken uncharitably about Microsoft to reporters to whom he had granted interviews about the case, even as the trial was proceeding.[19] His remarks indicate that he had fully absorbed Sporkin's personification thesis that this was a battle between good and evil,[20] and evil could carry out its designs in many unexpected ways unless sternly shackled. Unlike Sporkin, Jackson was not forced into passivity; he could use findings of fact to bind the hands of an appellate court. The opportunity to do so had been amply provided Boise's team, hoovering up, partly through their reticulated system of consultants, mounds of anecdotes, contractual provisions, and emails that could be cast as reflecting an anticompetitive intent. And Jackson knew that he might face an appellate panel, like that in *Microsoft II*, deeply skeptical of the core theory of Justice's case. The result was his heavily fact-based opinion finding numerous anticompetitive acts coupled with no evidence in the record of any corresponding procompetitive justifications offered by Microsoft. Still, the core of the case was Microsoft's technological integration decision, and this is the aspect that still carries a unique reverberation through antitrust enforcement today.

**LEGACY AND AFTERMATH**

In *Microsoft III*, the D.C. Circuit upheld Jackson's finding that Microsoft had violated Section 2 of the Sherman Act by unlawfully maintaining its monopoly in the operating system market. Microsoft's unlawful maintenance actions consisted of technologically integrating its browser into its operating system, obstructing the development of an independent Java platform on the Microsoft operating system, and using restrictive licenses with original equipment manufacturers and other firms. Justice had skillfully presented numerous actions falling under these categories as part and parcel of an overall scheme to exclude the development of competition in the operating system market.

In a statement of the legal standard that reflects perhaps the most important legacy of *Microsoft III*, the D.C. Circuit said that if the plaintiff establishes an anticompetitive effect, and if the defendant establishes a nonpretextual procompetitive justification, the burden would lay with the plaintiff to prove that the anticompetitive harm outweighed the procompetitive benefit. Applying this balancing test, the court found that Microsoft had violated Section 2 through several acts, the most important of which was the technological integration of Internet Explorer with the Microsoft operating system. However, the court also reversed Jackson's finding that Microsoft had violated Section 1 by "tying" the browser to the operating system.

Viewed in economic terms, the Section 2 and Section 1 decisions on integration are inconsistent. We are talking about the same facts – a unilateral decision by Microsoft to integrate the browser with the operating system. If the antitrust laws rest on a solid economic foundation, simply changing the label from Section 2 to Section 1 should not lead to a different result. If the existence of several efficiencies might justify a court in finding that, under Section 1 tying law, the integration of the browser with the operating system was not unreasonably anticompetitive, then the very same efficiencies should point to the conclusion that under Section 2 monopolization law, integration was not anticompetitive. Whatever one thinks of the merits of the decision, it is a glaring example of the need for consistent principles in antitrust. The same set of facts should not generate entirely different answers from the court depending on the label or the pleading strategy of the plaintiff. More inconsistencies are revealed as you look more closely at the Section 2 holding.

However, the broader legacy of *Microsoft III* has nothing to do with its inconsistencies. The broader legacy consists of two counterbalancing features of the decision: one providing a gloss on the judge's scope of authority under the Sherman Act that is circumscribed in comparison to the framework of *Alcoa*, and the other its application of the balancing test to a matter of technological product design, an apparent volte-face from *Microsoft II* and preexisting law.

On the circumscribing effect of *Microsoft III*, return to Judge Hand's *Alcoa* decision, which established the modern legal standard under Section 2. Hand held that a dominant firm violates Section 2 of the Sherman Act when it acquires or maintains a monopoly through means not attributable to luck, or superior skill, foresight, and industry. In addition, Hand held that although the law punishes conduct that monopolizes, the mere act of setting a price or producing as a monopolist should be considered a violation of the antitrust laws because it was equivalent in economic effect to a group of firms setting a common, cartel price. Hence, the premise that mere size was not unlawful, adopted in a string of early Supreme Court Section 2 cases, served mainly as a rule for channeling prosecutorial resources rather than a foundational position on the proper scope of the statute's prohibitions. Lastly, Hand held that efficiency was one of several ends sought by the statute, but by no means the most important, and that Congress in enacting the statute assumed that efficiency could be sacrificed in order to obtain a more atomistic market and political structure.

In combination, these three propositions of *Alcoa* give the judge enormous power and discretion under the statute to engage in economic and, to some degree, social engineering, all under a set of loosely connected legal principles. A judge need not worry about the efficiency consequences of his decision; it was his prerogative, under the law, to determine the structure of the market, so long as his vision was consistent with that of the statute's framers. Judges would not passively let economic forces determine outcomes under the statute, but would control those forces through the statute.

*Microsoft III*, in comparison, represents a sea change in the judiciary's view of its authority under the statute. The *Microsoft III* doctrine assumes that efficiency is a central concern of the statute, and instructs judges to balance efficiencies against anticompetitive harms in determining whether the statute has been violated. The judge is not permitted to subordinate efficiencies to other concerns, such as economic or political atomism. The balancing test of *Microsoft III* is a further constraint on the discretion of the judge. The non-passive acquisition test of *Alcoa* put few constraints if any on the judge's discretion to find that a certain course of conduct by a dominant firm violates the statute. *Alcoa* itself is an example of this nearly boundless discretion: Hand found Alcoa in violation of Section 2 because it had acted too aggressively in entering and supplying new geographical markets and product niches – conduct that could easily serve to illustrate the sort of superior foresight and industry that was in theory immunized under Hand's interpretation of the statute. In contrast to the non-passive acquisition standard of *Alcoa*, the balancing test of *Microsoft III* enables the defendant to offer proof that its conduct introduced efficiencies or procompetitive benefits to consumers.

All of this is progress because it brings some measure of consistency and predictability to Section 2 law and enforcement. The Justice Department is less likely, going forward, to bring cases that clearly violate the *Microsoft III* test because of the presence of substantial efficiencies created by the defendant's conduct.[21] Courts are far less likely to cite *Alcoa* for a ruling that cannot be justified on efficiency grounds.

The other substantial part of *Microsoft III* legacy is its application of Section 2 to a case of technological integration. This is obviously of great importance for the future because much of modern technology involves the integration of various conceptual functions, mainly through the use of software. Phones have become computers, and cars are rapidly becoming computers too.

*Microsoft III*'s application of the balancing test to a dominant firm's decision to technologically integrate two functions has gone a considerable distance toward obscuring or at least seriously compromising two established doctrines of antitrust law: limitations on a dominant firm's duty to deal, and the general policy exempting technological integration from the test of *Alcoa*. The limitations antitrust law puts on a dominant firm's duty to deal are best articulated in the Supreme Court decisions *Trinko*[22] and *linkLine*.[23] As between the two, *Trinko* provides the more nuanced treatment of the doctrine in this area. Justice Scalia, in *Trinko*, held that Verizon's reluctance to aid rival phone service providers in their efforts to connect to its telecommunications infrastructure did not violate Section 2 because there was insufficient evidence that Verizon's actions were motivated solely by intent to exclude competition. *LinkLine* expands on *Trinko*'s holding by articulating a general rule that a dominant firm does not have a general duty to deal with a rival. The lesson of the two cases is that in the absence of evidence of a specific intent to exclude competition, the dominant firm has no duty to aid a rival under Section 2 of the Sherman Act. Evidence that the dominant firm had an efficiency motivation that might justify its exclusionary act should be sufficient under *Trinko* to avoid a finding of a specific intent to exclude. Certainly, the absence of a duty to deal with a rival implies that a court should not apply a balancing test to the evidence suggesting exclusion when efficiencies are present. But this clashes with *Microsoft III*, where there were obvious efficiency justifications for the technological integration, detailed with admirable care in the court's analysis of the technological tying issue, and yet the court asserted that it would be appropriate to balance anticompetitive harms against efficiencies.

The other strand of antitrust compromised by *Microsoft III* is the doctrine that technological tying (or integration) does not violate the antitrust laws in the absence of evidence indicating a specific intent to exclude competition.[24] One might view this as a rather artificial rule given that contractual tying has been subject to the antitrust laws for a long time. Why distinguish technological and contractual tying?[25] Why not treat tying of any sort under a common legal test? The reason for distinguishing technological and contractual tying is to remain consistent with the general maxim, recognized in many antitrust opinions, that courts are not authorized by the Sherman Act to serve as regulatory agencies.[26] Judges are not empowered by the statute to oversee product design, pricing, and output decisions. However, applying a balancing test to technological tying puts courts precisely in the position of regulating product design.

These decisions on the duty to deal and technological tying have had an enormous impact on antitrust enforcement in the United States and globally. The theories adopted by the D.C. Circuit in *Microsoft III* were adopted by the European Commission in its decision on Microsoft's integration of its media player,[27] leading to a requirement that Microsoft offer for sale in Europe a version of its operating system that did not technologically incorporate the media player. The European Commission is obviously free to adopt its own antitrust laws, but *Microsoft III* offered a blueprint for antitrust enforcement theories in the technology industry, and permitted Europe's antitrust regime to avoid the obvious scrutiny that would accompany the adoption of antitrust doctrines noticeably inconsistent with American law.

The seemingly never-ending entanglement of Google with the European antitrust authorities is also, somewhat ironically, derivative of *Microsoft III*. The irony here is that Google sought early to distance itself from Microsoft by adopting "Don't Be Evil" as a marketing theme, a not-so-subtle reference to the antitrust troubles of Microsoft. Now there are allegations that Google may have engaged in evil practices analogous to those condemned in *Microsoft III*. Google's entry into vertical search services (restaurants, hotels, etc.) put it into direct competition on its own search platform with other firms that had specialized in vertical search "sub-platforms" (e.g. Yelp). The rival sub-platforms claim that Google distorts or biases its rankings process to push them below Google's own sub-platforms, just as Microsoft allegedly made it difficult for rival applications such as Netscape to compete against Microsoft applications on its own platform (the operating system). Arguments have been made to distinguish Google from Microsoft – such as that competition is only "one click away" in the case of Google – but the general features of the antitrust problem are the same in the two cases. The doctrine of *Microsoft III* applies rather easily to Google's conduct toward the rival sub-platforms. The FTC applied the doctrine and closed its investigation of Google after concluding that the efficiencies likely outweighed the anticompetitive harms. The European Commission has not reached a similar conclusion, and is less likely to do so because of its more skeptical view of the weight that should be accorded to efficiencies.[28] However, at this time the Google search-bias case in the European Union meanders on with no clear resolution. At the same time, the Russian antitrust authorities have found that Google violated their antitrust laws by selling the Android platform in Russia with some of its own software applications bundled by default.[29]

I predict that *Microsoft III* will continue to have a greater effect on developing international antitrust enforcement as time passes. Integration of software functionality is now the most prominent type of technological innovation observed. Although the number of software patents awarded has declined recently as a result of *Alice Corp. v. CLS Bank International*,[30] a large share of new patents are software related – indeed, in 2011 new software patents outnumbered other types of new patent.[31] As many of new software-integrated products hit the markets and travel internationally, the disputes generated in *Microsoft III* will reappear. Local software firms will argue that the maker of the platform – whether a smart phone, a smart car, or a smart shirt – should have a legal duty to enable the local firm to install its software on the platform without facing anticompetitive obstacles.

In the end, *Microsoft III* has delivered a rather strange legacy. On one hand, it has jettisoned the bewildering language and nearly unfettered judicial discretion of the *Alcoa* standard, replacing it with a more predictable and constraining doctrine. That is an unambiguously desirable change. On the other hand, its holding on technological integration has unleashed a wave of antitrust constraints in the technology sector that has become especially foreboding for American firms that have a global reach, and promises to become much knottier in the future as software integrated products multiply. In other words, *Microsoft III* has bound the hands of American judges, and at the same time encouraged international enforcement authorities, and the protectionist factions who lobby those authorities, to pick apart American technology firms once they venture from home. While it is unlikely that the international antitrust attacks will drastically reduce innovation incentives in the United States, they are likely to remain a significant drag for years to come.[32]

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[2] *United States v. Microsoft Corp.,* 253 F.3d 34 (D.C. Cir. 2001).

[3] *United States v. Alcoa,* 148 F.2d 416 (2d Cir. 1945).

[4] Keith N. Hylton, *Antitrust Law: Economic Theory and Common Law Evolution* (Cambridge: Cambridge University Press, 2003), 189-194.

[5] David S. Evans, Albert L. Nichols and Richard Schmalensee, "U.S. v. Microsoft: Did Consumers Win?," *Journal of Competition Law and Economics* 1, no. 3 (2005): 497-529

[6] Timothy Bresnahan, "The Economics of the Microsoft Case," Working Paper No. 232, *Stanford Law and Economics*, 2002, http://ssrn.com/abstract=304701 or http://dx.doi.org/10.2139/ssrn.304701;

Franklin M. Fisher and Daniel L. Rubinfeld, "U.S. v. Microsoft - An Economic Analysis," *Antitrust Bulletin* 46, no.1 (2001), Richard L. Gilbert and Michael L. Katz, "An Economist's Guide to U.S. v. Microsoft," *Journal of Economic Perspectives* 25, no.37 (2001); Michael D. Whinston, "Exclusivity and Tying in U.S. v. Microsoft: What We Know, and Don't Know," *Journal of Economic Perspectives* 15, No. 63 (2001); Nicholas Economides, "The Microsoft Antitrust Case," *Journal of Industry Competition & Trade* 1, no. 7 (2001).

[7] *United States v. Microsoft*, 159 F.R.D. 318 (D.D.C. 1995), and 56 F.3d 1448 (D.C. Cir. 1995)

[8] *United States v. Microsoft Corp.,* 56 F.3d 1448 (D.C. Cir. 1995).

[9] William H. Page and John E. Lopatka, *The Microsoft Case: Antitrust, High Technology, and Consumer Welfare* (Chicago: University of Chicago Press, 2007).

[10] *United States v. Microsoft Corp.,* 147 F.3d 935 (D.C. Cir. 1998).

[11] During the Microsoft litigation, I asked one law professor who claimed to be consulting for the government on the litigation precisely what the professor did. Answer: "the state attorney general sends us copies of Microsoft's contracts, and we comb through them to identify anticompetitive stuff, and bill the state for the time." I was given the impression that this was a lucrative endeavor for the professor.

[12] On the media attention and broader political context of the Microsoft litigation, *see* William H. Page and John E. Lopatka, "The Microsoft Case as a Political Trial," *Political Trials* ed. Jens Meierhenrich and Devin Pendas (Cambridge: Cambridge University Press, 2015).

[13] Even some economists adopted this narrative; *see* Bresnahan, Timothy, "The Right Remedy," Working Paper No. 233 (Stanford Law and Economics Olin, 2002), http://ssrn.com/abstract=304702 or http://dx.doi.org/10.2139/ssrn.304702.

[14] Page and Lopatka, *supra* note 12.

[15] This tendency is reflected in the Ultimatum Game. *See* Rachel T. A. Croson, “Information in Ultimatum Games: An Experimental Study,” *Journal of Economic Behavior & Organization,* 30, no.2 (1996): 197- 209. Hessel Oosterbeek , “Cultural Differences in Ultimatum Game Experiments: Evidence from a Meta-Analysis,” *Experimental Economics* 7(2004): 171-72.

[16] Lawrence M. Fisher, “Appeals Court Reinstates Microsoft Antitrust Settlement,” *New York Times,* (1995). http://www.nytimes.com/1995/06/17/business/appeals-court-reinstates-microsoft-antitrust-settlement.html?pagewanted=all.

[17] Robert H. Frank, *Choosing the right pond: Human behavior and the quest for status* (New York :Oxford University Press, 1985); Ori Heffetz and Robert H. Frank, *Preferences for status: evidence and economic implications*, ed. Jess Benhabib, Alberto Bisin, Matthew Jackson (Handbook of Social Economics, 2010), 69-91.

[18] Andrew I. Gavil and Harry First, *The Microsoft Antitrust Cases: Competition Policy for the Twenty-First Century*, (Massachusetts: MIT Press, 2014).

[19] Ken Auletta, “Final Offer,” *New Yorker* (2001), http://www.kenauletta.com/finaloffer.html.

[20] On the behavioral tendency to personify, *see* Nicholas Epley, Adam Waytz, and John T. Cacioppo, “On Seeing Human: A Three-Factor Theory of Anthropomorphism,” *Psychological Review* 114 (2007): 864

[21] *United States v. Syufy Enterprises*, 903 F.2d 659, 667 (9th Cir. 1990) (criticizing government’s use of the *Alcoa* doctrine to justify its refusal to give weight to efficiencies in a monopolization case).

[22] *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko*, *LLP*, 540 U.S. 398 (2004).

[23] *Pacific Bell Telephone Co. v. linkLine Communications Inc*., 555 U.S. 438 (2009).

[24] *Response of Carolina, Inc. v. Leasco Response, Inc.,* 537 F.2d 1307 (5th Cir. 1976).

[25] *United States v. Microsoft Corp*., 87 F. Supp. 30 (D.D.C. 2000) *in* Brief of Lawrence Lessig as Amicus Curiae, (2000): 98-1233.

[26] See *Supra* note 22 at 408 (“Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing--a role for which they are ill suited.”)

[27] Case T-201/04, *Microsoft Corp. v. Commission,* 17 September 2007, ECR II-3601,  (CFI Decision 2007).

[28] Keith N. Hylton, “Antitrust Enforcement Regimes: Fundamental Differences,” *The Oxford Handbook of International Antitrust Economics*, ed. Roger D. Blair and Daniel Sokol (Oxford: Oxford University Press, 2014).

[29] Olga Razumovskaya and Alistair Barr, “Google Found Guilty of ‘Abusing Dominant Market Position’ in Russia”, *Wall Street Journal* (2015) http://www.wsj.com/articles/google-found-guilty-of-abusing-dominant-market-position-in-russia-1442250025. The European Union currently is investigating this issue, and an antitrust class-action has been filed in the United States. For an analysis, *see* J. Gregory Sidak, “Do Free Mobile Apps Harm Consumers?” *San Diego Law Review*, *Forthcoming.* (2015), http://ssrn.com/abstract=2507905 or http://dx.doi.org/10.2139/ssrn.2507905.

[30] *Alice Corp. Pty. Ltd. v. CLS Bank Int'l,* 573 U.S. __, 134 S. Ct. 2347 (2014).

[31] *See* Government Accountability Office (GAO), "Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality" Report to Congressional Committees, August 2013 GAO-13-465, (United States GAO) 12, http://www.gao.gov/products/GAO-13-465.

[32] The innovation implications of *Microsoft III* are fully explored in Daniel F. Spulber, "Competition Policy and the Incentive to Innovate: The Dynamic Effects of Microsoft v. Commission", 25 *Yale J. Reg.* 247 (2008). However, Spulber does not emphasize the public choice implications of *Microsoft III*. At the time of the Microsoft litigation, arguments were made that Microsoft's conduct had deterred innovation in the software industry. Those allegations were empirically examined by Josh Lerner, who found no evidence to support them, *see* Josh Lerner, "Did Microsoft Deter Software Innovation?" (2001), SSRN: http://ssrn.com/abstract=269498 or http://dx.doi.org/10.2139/ssrn.269498.