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Antitrust Enforcement and Big Tech: After the Remedy Is Ordered

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Abstract. Each of us—one an attorney and the other two software experts—has substantial experience monitoring the implementation of court-ordered remedies in two leading hi-tech cases: *United States v. Microsoft Corp.* and *United States v. Bazaarvoice, Inc.* We discuss challenges that attorney and expert monitors confront in overseeing company compliance with antitrust remedial decrees in cases against hi-tech companies. We first summarize the legal principles applicable to antitrust remedies. Thereafter, we discuss oversight in the *Microsoft* and *Bazaarvoice* cases. Finally, we offer takeaways on effective antitrust decree monitoring. Two takeaways are particularly noteworthy. First, expect the unexpected. During monitoring oversight, implementing the court decree’s relatively general relief provisions will likely uncover unanticipated issues that prove challenging to resolve and may often require hi-tech expertise to do so. Second—and relatedly—be skeptical of company resistance. Court-ordered relief is unlikely to align with company business interests; if it did, the company probably would have adopted the practice without being ordered to do so. Accordingly, company incentives probably will militate toward a cramped view of decree implementation. Monitors therefore should refrain from taking company protestations at face value and should be prepared to leverage hi-tech expertise to probe company systems, data, and personnel for verification or refutation of company positions. Finally, with artificial intelligence and computational law (including antitrust) continuing to develop, we call attention to opportunities to use computer-automated processes to inform compliance oversight.

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I. Introduction

In recent months, federal and state antitrust enforcers have brought monopolization cases against Facebook and Google. The claims in these cases directly challenge the way these companies operate when they deliver (or fail to deliver) services to online users. In such cases, should the parties settle, or a court determine liability, merely prohibiting prior conduct would not seem a sufficient remedy. Instead, additional affirmative tech company obligations seem likely. Indeed, New York’s pending Facebook case seeks such equitable relief as “divestiture or reconstruction of illegally acquired businesses and/or divestiture of Facebook assets or business lines.”¹ Similar requests for relief are found in the DOJ’s and various states’ complaints against Google,² and the FTC’s case against Facebook seeks “divestiture of assets, divestiture or reconstruction of businesses (including, but not limited to, Instagram and/or WhatsApp). . . .”³ Relief such as this requires oversight not only from attorneys, but also from technical experts. Thus, the Antitrust Division and the Federal Trade Commission regularly include provisions for an outside monitor in consent decrees arising from antitrust and merger cases and authorize the monitor to retain experts to assist.⁴

If relief short of divestiture emerges, provisions centering on platform access and lowered entry barriers seem likely, achieved through notions of interoperability, data portability, standardization, and non-discrimination. Competition-driven relief may also bump up against privacy considerations. Enforcer-attorney oversight alone won’t be enough. Technical experts will be essential for performing a deep dive into company systems and operations and for communicating meaningfully with their company counterparts. As was the situation during the *Microsoft* case, filed nearly a generation ago, software experts can be expected to provide ongoing assistance to the government enforcers to help monitor any remedy ordered. We each have multi-year experience monitoring court-ordered remedies in two leading hi-tech cases—*Microsoft* and *Bazaarvoice*—and we share insights from these experiences.

We discuss challenges that monitors and experts confront in overseeing company compliance with remedial decrees in antitrust cases involving hi-tech companies. As context for our discussion, we summarize the legal principles applicable to antitrust remedial decrees. Then, we discuss the oversight activity arising from the conduct relief ordered in the *Microsoft* and the divestiture relief ordered in *Bazaarvoice*. Finally, we offer takeaways on effective antitrust decree monitoring.

¹ Complaint ¶ 277 (subpar. 8), *New York v. Facebook, Inc.*, No. 20-cv-03589 (D.D.C. Dec. 9, 2020), ECF No. 4.

² See, e.g., Amended Complaint ¶ 194 (subpar. c & d), *United States v. Google LLC*, No. 20-cv-03010-APM (D.D.C. Jan. 15, 2021), ECF No. 94; Complaint ¶ 357 (subpar. e, g & m), *Texas v. Google LLC*, No. 20-cv-00957 (E.D. Tex. Dec. 16, 2020), ECF No. 1 [hereinafter TX Complaint]; Complaint ¶ 233 (subpar. b, c, d & e), *Colorado v. Google LLC*, No. 20-cv-03715 (D.D.C. Dec. 17, 2020), ECF No. 3.

³ Complaint § X.B, *Federal Trade Commission v. Facebook, Inc.*, No. 20-cv-03590-CRC (D.D.C. Dec. 9, 2020), ECF No. 3.

⁴ See, e.g., Final Judgment § X, *United States v. Liberty Latin America Ltd.*, No. 20-cv-03064 (D.D.C. Feb. 3, 2021), ECF No. 16; Proposed Final Judgment § X, *United States v. Intuit Inc.*, No. 20-cv-03441 (D.D.C. Nov. 25, 2020), ECF No. 2-2; Monitor Agreement, *In the Matter of UnitedHealth Group Inc.*, No. C-4677 (FTC May 12, 2019), available at https://www.ftc.gov/system/files/documents/cases/181_0057_c4677_united_davita_monitor_agreement.pdf [<https://perma.cc/MH4K-U4CD>]; see also *Fed. Trade Comm’n v. Qualcomm Inc.*, 411 F. Supp. 3d 658, 824 (N.D. Cal. 2019) (directing affirmative relief), *vacated*, 969 F.3d 974 (9th Cir. 2020).

II. Relief in Antitrust Cases

Effective relief in an antitrust case has three overarching objectives: (1) ending the violation; (2) avoiding its recurrence or the potential for other similar violations; and (3) restoring competition in those sectors affected by the violation.⁵ Equitable relief itself is often thought to fall in one of two buckets: (1) conduct restrictions, which either prohibit specified conduct or impose affirmative obligations on the defendant; and (2) structural relief, the most significant of which is divestiture. Structural relief can take many forms, such as licensing intellectual property, disaggregating parts of business operations, or directing sales of distinct business units. Divestiture has been called “the most important of antitrust remedies,” as “[i]t is simple, relatively easy to administer, and sure.”⁶

By contrast, in commenting on merger remedies, the Antitrust Division has noted that conduct remedies can, “in effect, regulate the merged firm’s post-merger business conduct or pricing authority,” thus “substitut[ing] central decision making for the free market.”⁷ While the same could be said of conduct remedies for non-merger violations, there will be cases where conduct relief is the only realistic option; structural relief could be too drastic in light of the violation.⁸ Sometimes, both conduct relief and structural relief may be needed to remedy an antitrust violation.

As technology has come to play an increasing role in business operations, it has become increasingly challenging to craft effective antitrust remedies. Nowhere are the challenges greater than where they have to be applied to a company whose products are services delivered through digital technology, such as those offered by Facebook and Google—and before them Microsoft and Bazaarvoice. Both the amount and depth of scrutiny needed to monitor decree compliance by hi-tech companies is markedly greater than that needed for companies operating in the brick-and-mortar world.

A – The *Microsoft* Cases

The *Microsoft* cases, filed by both the Antitrust Division and various states, was the first antitrust case tried against a hi-tech company. Once Microsoft’s liability was established on appeal, the parties’ attention turned to fashioning an antitrust remedy consistent with the appellate court’s decision. The resulting remedy included establishing a monitoring group led by software experts, an approach not previously used in an antitrust decree to our knowledge.

⁵ See, e.g., *Nat’l Soc’y of Pro. Eng’rs v. United States*, 435 U.S. 679, 697 (1978); *Ford Motor Co. v. United States*, 405 U.S. 562, 573 (1972); *United States v. E. I. DuPont de Nemours & Co.*, 366 U.S. 316, 326 (1961).

⁶ *E.I. DuPont de Nemours & Co.*, 366 U.S. at 331; see also *Saint Alphonsus Med. Ctr-Nampa Inc. v. St. Luke’s Health Sys., Ltd.*, 778 F.3d 775, 793 (9th Cir. 2015).

⁷ DEP’T OF JUST., *MERGER REMEDIES MANUAL 4* (2020); see also *Steves and Sons, Inc. v. JELD-WEN, Inc.*, 988 F.3d 690, 720 (4th Cir. 2021) (conduct remedies “risk excessive government entanglement in the market” (quoting *Saint Alphonsus*, 778 F.3d at 793)).

⁸ See *United States v. Microsoft Corp.*, 253 F.3d 34, 106-07 (D.C. Cir. 2001) (en banc) (arguing that in considering structural relief, the court should analyze the causal connection between the violation proven and the creation or maintenance of market power); *United States v. Microsoft Corp.*, 231 F.Supp.2d 144, 163-64 (D.D.C. 2002) (discussing the causal relationship between violation and relief), *aff’d sub nom. Massachusetts v. Microsoft Corp.*, 373 F.3d 1199 (D.C. Cir. 2004).

In an *en banc* ruling, the D.C. Circuit held that Microsoft engaged in an array of conduct that constituted monopoly maintenance in violation of Section 2 of the Sherman Act. Microsoft's unlawful conduct included license restrictions imposed on PC manufacturers; exclusivity and promotional agreements with internet access providers, software vendors, and Apple, which favored Microsoft's Internet Explorer ("IE") browser and disadvantaged Navigator, IE's competitor; and misconduct (including deception) designed to thwart development of Java as a platform for cross-operating system application.⁹

The D.C. Circuit, however, vacated the lower court's order on relief, which included a break-up of Microsoft into an operating system (OS) entity and an applications entity.¹⁰ Remanding the case, the Court appeared skeptical that relief splitting Microsoft was appropriate: "[i]f the court on remand is unconvinced of the causal connection between Microsoft's exclusionary conduct and the company's position in the OS market, it may well conclude that divestiture is not an appropriate remedy."¹¹

After remand, the DOJ announced publicly that it would "not seek a break-up of the company . . ."¹² The ensuing negotiations led to a proposed consent decree between Microsoft, the DOJ, and a group of states led by New York, which the district court thereafter approved.¹³ The consent decree prohibited various forms of conduct, required Microsoft to modify its Windows operating system, and called for Microsoft to disclose certain technology to industry participants.¹⁴

More specifically, the district court directed Microsoft (among other things) to add a default option to Windows so as to allow users to choose and set their preferred form of "middleware," a term covering such applications as browsers, messaging systems, and media players.¹⁵ The court also ordered Microsoft to disclose certain application programming interfaces ("APIs"), so that applications developers could use various existing Windows functions rather than have to write software code anew to invoke the same functions.¹⁶

The court further directed Microsoft to disclose certain communications protocols ("CPs"), which would allow non-Microsoft servers to communicate with

⁹ *Microsoft*, 253 F.3d at 59-78; *Microsoft*, 231 F. Supp. 2d at 157-61.

¹⁰ *Microsoft*, 231 F. Supp. 2d at 161-63.

¹¹ *Microsoft*, 253 F.3d at 107.

¹² DEP'T OF JUST., PRESS RELEASE, JUSTICE DEPARTMENT INFORMS MICROSOFT OF PLANS FOR FURTHER PROCEEDINGS IN THE DISTRICT COURT 1 (Sept. 6, 2001), https://www.justice.gov/archive/atr/public/press_releases/2001/8981.htm [<https://perma.cc/83CY-U8PK>].

¹³ *Microsoft*, 231 F. Supp. 2d; *New York v. Microsoft Corp.*, 231 F.Supp.2d 203 (D.D.C.2002).

¹⁴ See generally *Microsoft*, 231 F. Supp. 2d at 164 *et seq.* A second group of states, led by California, pursued a remedies hearing before the District Court, which resulted in a court-directed final judgment that differed in minor respects from that agreed to by the DOJ and the New York group. The differences are not material to the discussion here. See generally *New York v. Microsoft Corporation*, 224 F.Supp.2d 76 (D.D.C.2002), *aff'd sub nom. Massachusetts v. Microsoft Corp.*, 373 F.3d 1199, 1204 (D.C. Cir. 2004).

¹⁵ Final Judgment § III.H, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Nov. 12, 2002), ECF No. 746 [hereinafter *Microsoft Final Judgment*]; see generally *Microsoft*, 253 F.3d at 53; *Microsoft*, 231 F. Supp. 2d at 176-79. There were separate final judgments entered in the action brought by the United States and in the one brought by the states, and these judgments were modified in ways not relevant here prior to their termination. For simplicity, we cite to the first operative final judgment (ECF No. 746) entered in the action by the United States after the Court granted Tunney Act approval.

¹⁶ *Microsoft Final Judgment*, *supra* note 15, § III.D.

Windows “clients”—that is, desktop workstations and laptops—where Microsoft had a monopoly position.¹⁷ The CP disclosures were intended to allow non-Windows servers to deliver to Microsoft clients functions that were then typically provided by Windows Server operating systems. Thus, enabling non-Windows servers would enhance server-level competition to provide functions to Microsoft clients.¹⁸ This was “the most forward-looking provision in the Court’s remedy.”¹⁹

These affirmative forms of conduct relief necessarily meant that the DOJ and the state enforcers needed software expertise to monitor Microsoft’s compliance. Accordingly, the final judgment required creating a dedicated entity, the “Technical Committee” or “TC,” to assist in monitoring Microsoft’s decree compliance.²⁰ Funded by Microsoft, the TC consisted initially of three software engineers who set up full-time offices in Bellevue, WA, near Microsoft’s Redmond campus, and Palo Alto, CA.²¹ The district court later called the TC “one of the most successful aspects of the Final Judgments, because it [was] invaluable in facilitating the Plaintiffs’ enforcement efforts.”²²

The middleware default provisions and the API disclosures proceeded largely uneventfully, with the TC monitoring these matters on an on-going basis.²³ TC involvement included review and testing as Microsoft rolled out new versions of Windows, Internet Explorer, and other default “middleware” programs (such as media players and messenger services). For example, after releasing its XP operating system, Microsoft followed with the Windows Vista operating system. While Vista was under development, in mid-2004, TC review began. As the district court wrote:

Plaintiffs focused on changes in Vista that might implicate . . . the Final Judgments, reviewed materials supplied by Microsoft, discussed their concerns with Microsoft, and were actually able to effect changes to Vista in advance of its release, particularly with respect to the methods for setting default middleware. . . . Throughout that process, the TC developed a number of testing tools that middleware ISVs used to ensure “Vista-readiness” prior to the shipment of Windows Vista. . . . In addition to their oversight efforts related to Vista, Plaintiffs were also able to “stud[y] the new search feature in Internet

¹⁷ *Id.* § III.E.

¹⁸ See *New York v. Microsoft Corp.*, 531 F. Supp. 2d 141, 152-53 (D.D.C. 2008) [hereinafter Decree Extension Opinion]; *Microsoft*, 231 F. Supp. 2d at 189-90.

¹⁹ *Microsoft*, 231 F. Supp. 2d at 173.

²⁰ *Microsoft* Final Judgment, *supra* note 15, § IV.B.

²¹ *Id.* § IV.B.6.a; see, e.g., Joint Status Report at 14, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. July 3, 2003), ECF No. 790; Joint Status Report at 10, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Aug. 30, 2006), ECF No. 836.

²² Decree Extension Opinion, *supra* note 18, at 157 (footnote omitted). For a summary of the TC’s role in Microsoft decree compliance, see *id.* at 157-58. The final judgment entered after the remedies hearing involving the California group of States did not include “TC provisions.” Thus, this group of States retained their own independent expert, who consulted with the TC and whose own activities came to be closely connected to those of the TC. See *id.* at 157 & n.25.

²³ See, e.g., Joint Status Report at 13-14, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. May 5, 2006), ECF No. 827 (TC review of Windows Vista and IE 7 development and beta builds); Joint Status Report at 5-6, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Sept. 18, 2008), ECF No. 880 (TC oversight of Windows XP and Vista service packs, search features, browser over-rides, and IE 8); Joint Status Report at 4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Mar. 17, 2011), ECF No. 923 (TC review of Microsoft’s resolution of complaint involving IE 9).

Explorer 7 and discuss[] its implications with Microsoft months before it was included in the beta versions released to consumers.”²⁴

The TC further provided critical input in resolving complaints arising under the final judgment.²⁵

The API disclosure provisions amounted to documenting Microsoft’s own interfaces and detailing how certain Windows middleware worked with the Windows operating system so that industry developers also could write software to work with Windows. With everything in Windows already, the API disclosures had a base from which to start, even as new versions of Windows rolled out.

The CP disclosures, which came to be known as the “Microsoft Communications Protocol Program” (the “MCP”), were much harder projects, however. The protocols had to support a number of server-to-client functions, and the sheer number of protocols was daunting. Most had never been documented, and the documentation available for some protocols was inadequately specified. Moreover, potentially knowledgeable individuals had left Microsoft, due at least in part to the company’s generous stock option plan, which seemingly incentivized many able engineers to leave.²⁶ Thus, the MCP work was effectively a massive reverse engineering effort. The end product had to be documented sufficiently to enable a skilled industry engineer to achieve interoperability between a non-Windows server and a Windows client solely by reference to documents. While the district court’s final judgments provided a nine-month period for Microsoft to make the CPs available to third parties, Microsoft ultimately needed several years to provide the necessary technical documents.²⁷ Well before the MCP work ended, the district court wrote that Microsoft’s efforts to meet its CP disclosure obligations had had a “tortured history” and were a “saga.”²⁸

Microsoft released CP documentation to industry participants in 2002. Yet despite its issuing a major revision in 2004, it quickly became apparent that the documents needed more work to ensure their “completeness, usability, and accuracy.”²⁹ Microsoft itself told the court that it “did not fully appreciate the scale, complexity, cost, and duration of the project,” and that it had “overestimated the capability of existing technologies to meet the requirements of the effort.”³⁰ Microsoft, the enforcers, and the TC “agreed to a comprehensive plan designed to

²⁴ Decree Extension Opinion, *supra* note 18, at 157 (cited court filing references deleted); *see also, e.g.*, Joint Status Report at 4, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Aug. 7, 2009), ECF No. 899 (“The TC has worked closely with Microsoft during the development of Windows 7 over the past two years. . . . Prior to [Windows 7’s] release, the TC performed detailed testing and interacted with Microsoft on numerous occasions to suggest changes to Windows 7 consistent with Microsoft’s Final Judgment requirements.”); Joint Status Report at 4, United States v. Microsoft Corp., No. 98-1232 (D.D.C. July 9, 2004), ECF No. 794 (testing of Service Pack 2 for Windows XP).

²⁵ *See, e.g.*, Decree Extension Opinion, *supra* note 18, at 158.

²⁶ *See* Martin Wolk, *Gates Regrets Ever Using Stock Options*, NBC NEWS (May 2, 2005), <https://www.nbcnews.com/id/wbna7713133> [<https://perma.cc/7ZXD-SWEX>].

²⁷ *See generally* Decree Extension Opinion, *supra* note 18, at 152; Joint Status Report 3, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Apr. 22, 2011), ECF No. 927.

²⁸ Decree Extension Opinion, *supra* note 18, at 158.

²⁹ *Id.* at 159-60; Joint Status Report 4-5, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Apr. 14, 2004), ECF No. 799.

³⁰ Decree Extension Opinion, *supra* note 18, at 160.

remedy the deficiencies, which they expected to be completed in one year.”³¹ The plan included a TC trip to a Microsoft facility in India, where the TC installed equipment to capture network data to validate Microsoft’s protocol work.³² Although the TC’s part of the plan made “extensive progress,” Microsoft’s part—“dubbed ‘Troika’—became mired in difficulties.”³³ Efforts to restructure the work proved futile.³⁴

In May 2006, more than four years after the court approved the final judgment, Microsoft trashed its then-existing MCPP work and undertook a “reset” program to “rewrite substantial portions of the documentation, taking advantage of what it ha[d] learned during the last several years, including all of the specific [issue] reports from the TC.”³⁵ The TC and Microsoft developed a process to implement the reset, and Microsoft consented to an extension of judicial oversight.³⁶ Difficulties persisted: “more than five years after the entry of the Final Judgments, Section III.E [the CP provision] still ha[d] yet to be fully implemented.”³⁷

Microsoft staff participation in the MCPP tells a stark story. Initially, in 2002, Microsoft committed 10 employees to the project. By May 2006 “over 210 employees were involved in Microsoft’s technical documentation efforts, including 150 product team engineers and program managers.”³⁸ By January 2008, the project included “[a]pproximately 630 Microsoft employees and contingent staff” (which also covered work on the heavily overlapping European Commission protocol documentation), and “approximately 320 product team engineers and program managers [were] actively involved in the creation and review of the technical content of the documentation.”³⁹

Throughout this time, the TC oversaw Microsoft’s MCPP work.⁴⁰ To deal with problems associated with the MCPP, TC staffing increased substantially—numbering over 40 software engineers for an extended period.⁴¹ The TC and its engineering staff interacted on a daily basis with Microsoft personnel to review and critique work. TC engineers reported to Microsoft “technical documentation

³¹*Id.*

³² See generally Plaintiffs’ Response to Microsoft’s Supplemental Status Report at 3-4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Jan. 23, 2006), ECF No. 821; Plaintiffs’ Response to Microsoft’s Supplemental Status Report at 4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Jan. 17, 2006), ECF No. 820; Joint Status Report at 2-8, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Nov. 18, 2005), ECF No. 818.

³³ Decree Extension Opinion *supra* note 18, at 160.

³⁴ *Id.* at 160-61.

³⁵ Joint Status Report at 6, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. May 14, 2006), ECF No. 827; see also Decree Extension Opinion, *supra* note 18, at 161-62.

³⁶ Joint Status Report at 6-7, 10-11, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. May 5, 2006), ECF No. 827.

³⁷ Decree Extension Opinion, *supra* note 18, at 158.

³⁸ *Id.* at 161-62.

³⁹ *Id.* at 162 n.26.

⁴⁰ See, e.g., Joint Status Report at 3-5, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. May 5, 2006), ECF No. 827.

⁴¹ Joint Status Report at 10-11, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Aug. 30, 2006), ECF No. 836; Joint Status Report at 3-4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Oct. 4, 2010), ECF No. 918.

issues” (“TDIs”), which required Microsoft follow-up, on a regular basis.⁴² For some parts of the MCPP oversight, the TC itself engaged outside experts.⁴³

Under the “reset” plan, the quality of CP documentation improved.⁴⁴ However, as of January 2008, there still were “over 900 TDIs outstanding . . .”⁴⁵ The court summarized the state of affairs at that point—more than five years after the court had entered judgment:

[P]ractically speaking, Microsoft has never complied with Section III.E. . . . [T]he majority of the issues relating to Section III.E that have arisen over the years have been identified by the Plaintiffs, through the efforts of the TC. While Microsoft eventually proposed the RESET plan, and has since cooperated in carrying it out, it did so in the face of mounting pressure from all Plaintiffs and the Court.⁴⁶

A year later, outstanding TDIs had swelled to 1660—more than half of which the TC had identified. Microsoft called the increase “inevitable” because of “the volume and complexity of the new technical documentation.”⁴⁷ There were nearly 800 Microsoft employees and contingent staff involved in technical documentation work, and still more working as technical writers, editors, production technicians, and testing personnel.⁴⁸ As the MCPP reset work progressed, the TC determined that a set of “system” documents—detailing how the protocols worked together—was necessary. Microsoft resisted the idea, causing the TC to provide templates that “should form the basis for further discussions.”⁴⁹ In April 2009, Microsoft consented to a further extension of judicial oversight.⁵⁰ As the TC shifted emphasis to this part of the review, TDIs continued to rise.⁵¹

It took until December 2009 for the enforcers, “[a]fter consulting with the TC,” to determine that the CP documentation was “substantially complete,” and even at that point, “[t]here [was], in fact, much work left to do.”⁵² The TC continued to

⁴² Decree Extension Opinion, *supra* note 18, at 160-61.

⁴³ *See, e.g.*, Joint Status Report at 4, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Aug. 31, 2007), ECF No. 862; Joint Status Report at 9-10, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Jan. 16, 2004), ECF No. 796.

⁴⁴ Decree Extension Opinion, *supra* note 18, at 162.

⁴⁵ *Id.* at 163. *See* Microsoft Supplemental Status Report at 4-5, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Jan. 15, 2008), ECF No. 872 (reporting 927 TDIs outstanding, more than half of which the TC had identified).

⁴⁶ Decree Extension Opinion, *supra* note 18, at 163.

⁴⁷ Joint Status Report at 7-9, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Jan. 21, 2009), ECF No. 884.

⁴⁸ Joint Status Report at 10, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Jan. 21, 2009), ECF No. 884.

⁴⁹ Joint Status Report at 4, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Sept. 18, 2008), ECF No. 880. The system (or “overview”) documents were as source of protracted frustration. *See, e.g.*, Hearing Transcript at 6-7, 13-20, 22-33, 37-40, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Sept. 25, 2008), ECF No. 896; Hearing Transcript at 8-9, 14, 20-22, 31-39, 46, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Mar. 7, 2008), ECF No. 876; Joint Status Report at 4-5, United States v. Microsoft Corp., No. 98-1232 (D.D.C. June 17, 2008), ECF 877.

⁵⁰ Joint Status Report at 4-7, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Apr. 16, 2009), ECF No. 887.

⁵¹ *See, e.g.*, Joint Status Report at 6-8, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Aug. 7, 2009), ECF No. 899 (noting 2355 outstanding TDIs, roughly 2000 of which the TC had identified).

⁵² Joint Status Report at 3, United States v. Microsoft Corp., No. 98-1232 (D.D.C. Dec. 8, 2009), ECF No. 904 (noting that TDI identification continued and issues would need to be resolved; some documents

identify TDIs until January 1, 2011, after which TC resources were applied to close outstanding TDIs and to review the MCPP documents: “the objective [was] to take advantage of the TC’s expertise and make the documents as good as possible in the few months remaining under the Final Judgments.⁵³ As the May 2011 judgment expiration deadline approached, TDIs skyrocketed to over 6000, requiring substantial Microsoft and TC effort.⁵⁴ To speed the process, the TC “took over primary responsibility” for resolving roughly 150 TDIs involving network policy and access services “[w]hen it looked like Microsoft would not be able to resolve these issues in a timely way without the TC’s help.”⁵⁵

As the spring 2011 TC activity reflects, at times Microsoft itself could not provide work product that satisfied the TC, resulting in the TC instructing that material it created, instead of Microsoft’s, be used.⁵⁶ As Microsoft developed new versions of Windows, the TC analyzed whether additional protocols existed.⁵⁷ And the TC’s own testing disclosed protocols in Windows that Microsoft’s own work missed.⁵⁸ Indeed, at one status conference, the district court observed, “it’s interesting that it appears the TC is able to do what is necessary and brings Microsoft along, not the other way around.”⁵⁹

At the final status hearing in the case, counsel for the DOJ said:

[W]e’re only in this position because of the Herculean work done by the technical committee. As time has gone on, the TC has taken on more and more responsibilities culminating over the last few weeks with the TC taking over primary responsibility for directly editing these certain technical documents relating to a particularly difficult issue. It is simply impossible to overstate how much talent and dedication they have brought to their job every single day.⁶⁰

“require[d] substantial rewriting or reorganization;” test suites for Windows 7 were needed; and Microsoft had to resolve licensee concerns).

⁵³ See, e.g., Joint Status Report at 6, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. June 16, 2010), ECF No. 911; see also *id.* at 3-4 (further describing the planned review.)

⁵⁴ Joint Status Report at 3, 9, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Mar. 17, 2011), ECF No. 923.

⁵⁵ Hearing Transcript at 17:9-11, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 27, 2011), ECF No. 930; see also Joint Status Report at 3, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 22, 2011), ECF No. 927.

⁵⁶ See, e.g., Joint Status Report at 3-4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Sept. 18, 2008), ECF No. 880 (Where the TC concluded that Microsoft templates, created to govern preparation of system documents, were unsuitable despite prior feedback “the TC provided to Microsoft the TC’s two proposed templates . . . and advised Microsoft that the TC templates should form the basis for further discussions.”); Joint Status Report at 9, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 22, 2011), ECF No. 927 (Microsoft will be “publishing the documentation prepared by the TC without substantive changes.”).

⁵⁷ See, e.g., Joint Status Report at 3-4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Jan. 21, 2009), ECF No. 884 (discussing new protocols in Windows 7 beta).

⁵⁸ Joint Status Report 5, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Sept. 18, 2008), ECF No. 880.

⁵⁹ Hearing Transcript at 39:17-19, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Sept. 25, 2008), ECF No. 896.

⁶⁰ Hearing Transcript at 14:19-25 & at 15:4-6, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 27, 2011), ECF No. 930.

The district court further noted:

They certainly have been the lynchpin in the successful effort. Not only have they been monitors of the progress, which was what we expected, arbiters of the technical complaints, but they've proactively developed devices and programs, they have been a creative force in this endeavor, and I think without their assistance we would not have been successful, and so their contribution has been really invaluable.⁶¹

The TC's work continued right up to decree expiration in May 2011. At that point, more than 600 Microsoft employees and contingent staff were involved in technical documentation and TDI resolution activity, or worked as technical writers, editors, production technicians, software test designers, test engineers, and test architects.⁶²

The oversight road was much longer and rockier than either Microsoft or the enforcers had anticipated when they hammered out the court's remedial decree. Likewise, the TC's assistance was much greater and deeper than expected—but critical, indeed, to ensuring decree enforcement. At the final status conference, counsel for the California group of states noted his group's "initial[] . . . doubts about the technical committee, but . . . it's turned into something very different than what we envisioned it, and I think that's largely a testament to the men and the women who have peopled it. So, I think it's been one of the success stories of the Final Judgment."⁶³

B – The *Bazaarvoice* Case

Bazaarvoice was (and is) the largest player in providing online product ratings and review services ("R&R"). In summary, Bazaarvoice provides software that enables product manufacturers—often referred to as "brands"—and retailers to set up a user interface that captures and delivers to Bazaarvoice product reviews and star ratings. Bazaarvoice reviews the content submitted to assure suitability for online display, a process known as "moderation." It also applies analytics to the data received from website display and provides its brand and retail customers with reports.

In 2012, Bazaarvoice acquired PowerReviews, the number two company in the online R&R industry. Following the closing of the merger, the Antitrust Division conducted an investigation and filed suit to invalidate the transaction. The case was tried, with the district court holding the acquisition unlawful.⁶⁴ The Division and Bazaarvoice then negotiated a divestiture decree, which the district court entered

⁶¹ Hearing Transcript at 29:23-25 & at 30:1-5, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 27, 2011), ECF No. 930; *see also* Decree Extension Opinion *supra* note 18, at 157 (noting that the TC provided "testing, feedback, and critiques that have proved critical to the Plaintiffs' efforts to maximize the full potential of the Final Judgments' remedies.").

⁶² Joint Status Report at 10, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 22, 2011), ECF No. 927.

⁶³ Hearing Transcript at 24:11-16, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 27, 2011), ECF No. 930.

⁶⁴ *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO, 2014 WL 203966 (N.D. Cal. Jan. 8, 2014) [hereinafter *Bazaarvoice* Opinion].

as its final judgment.⁶⁵ The court directed Bazaarvoice not only to sell PowerReviews' assets, which consisted of, essentially, software code and other intangible property, but also to provide the divested PowerReviews company with access to Bazaarvoice's own customer network—referred to as “Syndication Services”—for a four-year period.⁶⁶

Specifically, the court ordered Bazaarvoice to afford PowerReviews and its customers network access by “[p]roviding Syndication Services on non-discriminatory terms with respect to [Bazaarvoice's] and [PowerReviews'] customers.” The court provided a non-exhaustive list of terms for which Bazaarvoice could not discriminate, including content transmission speed, integration with other products, and server lag time.⁶⁷

Underpinning the Syndication Services provision was the district court's trial finding that Bazaarvoice's customer network was “a barrier to entry in the market for R & R platforms.”⁶⁸ Thus, affording PowerReviews a body of retailers would aid the company's efforts to market its R&R services to brands and would help jump-start PowerReviews' re-emergence as an independent competitor. At the same time, it would buy PowerReviews time to develop its own network of retail customers. Meaningful network access, however, required that Bazaarvoice not disadvantage content from PowerReviews compared to Bazaarvoice's handling of content from its own customers.

As in the *Microsoft* case, ongoing monitoring at a technical level was needed to assure Bazaarvoice's compliance with the Syndication Services provision and its other decree obligations, as well as to assure the completeness of Bazaarvoice's divestiture of the defined “Divestiture Assets”—primarily intangible property in the form of software and other digital information. Accordingly, the court's final judgment directed appointment of a monitoring trustee to serve during the four-year period of access and authorized the monitor to retain experts to assist in monitoring Bazaarvoice's decree compliance.⁶⁹ During the four-year period of Syndication Services, the monitoring trustee filed monthly reports to the court on Bazaarvoice's compliance with its access obligations, as well as its other obligations under the decree.⁷⁰

The Bazaarvoice final judgment gave the company 90 days from entry of the judgment to complete transfer or disposal of the Divestiture Assets.⁷¹ However, software and other digital files can flow throughout a company's IT systems along virtually limitless paths. Assuring the completeness of Bazaarvoice's divestiture

⁶⁵ See Third Amended Final Judgment, *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO (N.D. Cal.), ECF No. 286 (Dec. 2, 2014) [hereinafter *Bazaarvoice Final Judgment*]. As relevant here, the Third Amended Final Judgment is identical to the original final judgment and is, accordingly, referred to as “the final judgment.”

⁶⁶ *Bazaarvoice Final Judgment*, *supra* note 65, § V.A.2.

⁶⁷ *Id.*

⁶⁸ *Bazaarvoice Opinion*, *supra* note 64 at *49 (¶ 241) (Mem. Op., ECF 243, at 93). The Court further noted that, besides PowerReviews, “no credible syndication competitor existed.” *Id.* at *51 (¶ 252).

⁶⁹ *Bazaarvoice Final Judgment*, *supra* note 65, § VI.A & B. The monthly reports are covered by the protective order in the case. Consequently, unlike the reports in *Microsoft*, the *Bazaarvoice* reports are heavily redacted on the public docket.

⁷⁰ *Bazaarvoice Final Judgment* *supra* note 65, § VI.F.

⁷¹ *Id.* at § II.A.

obligation itself became the subject of weekly update reports to the monitor and continued for more than 12 months *beyond* the 90-day period.⁷² This was the time needed simply to assure that Bazaarvoice had not retained assets that the final judgment required it to either transfer on divestiture or dispose of if duplicative of transferred materials.

Bazaarvoice’s Syndication Services obligations ran for four years. During this time, Bazaarvoice had to ingest a constant flow of detailed digital information from PowerReviews, representing product information and associated R&R content for thousands of product SKUs, and treat the content received on a non-discriminatory basis as it moved to online display on Bazaarvoice’s customer network. These were business operations that Bazaarvoice had never before needed to set up. As the four-year Syndication Services term in *Bazaarvoice* ended, the district court observed that there were “innumerable complex issues” to resolve.⁷³

The *Bazaarvoice* protective order precludes our discussing monitoring details. However, based on our multi-year monitoring experience, we discuss here broad considerations that can arise when a remedial decree includes data-transfer between the defendant and one or more industry participants.

- The defendant and others involved in the data-transfer, whom we’ll refer to as “sender and receiver,” must scope out the project and determine what resources will be required to complete it. The enforcers also should be involved in these discussions as early as feasible. While the court’s decree will define the project at a high level, the devil—implementing the remedy ordered—is often in the details. As we saw with Microsoft’s MCPP work, there is a risk of under-estimating the project’s intricacies and the resources that must be applied. These resources will include both employee time and company IT resources.
- Ingesting digital content harvested by another company requires both the sender and the receiver to adopt security systems to assure appropriate authentication of the data stream. Ingestion cannot inadvertently become an entry point for hackers.
- In addition, the sender and receiver must consider the potential, indeed likely, incompatibility of collection and ingestion structures. Where incompatibility is present, either the sender or the receiver will need to convert the data to enable the receiver to ingest and use it for its intended purpose, thus assuring interoperability among systems. Conversion may be harder than anticipated to get right as the requirements may not be well-specified and interoperability may pose challenges for systems that were previously only intended for internal use. Issues from data conversion can arise, requiring both the sender and the receiver to create a system to address them and to track their resolution.

⁷² See, e.g., Report No. 17 by the Trustee I, *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO (N.D. Cal. Dec. 1, 2015), ECF No. 329 (“Data Purge Activity . . . is now complete.”); see also, e.g., Report No. 12 by the Trustee I, *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO (N.D. Cal. July 1, 2015), ECF No. 314 (“Bazaarvoice has continued to provide its Weekly Status Update for Data Purge Project, together with accompanying explanatory emails.”).

⁷³ Order Administratively Closing the Case, *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO (N.D. Cal. Aug. 28, 2018), ECF No. 394.

- Once data conversion is accomplished and the receiver ingests the data, other considerations may develop. For example, if the receiver will display the content received publicly online, its suitability for display online must be addressed. This entails “guardrails,” such as content authentication and moderation.⁷⁴ Either the sender or the receiver, or both, can perform these functions. But such guardrails may also raise compatibility issues between sender and receiver if the two apply different standards or tests in deciding whether or not display is suitable.
- Similarly, where the objective is posting content publicly online, ingested content may need to be integrated into the receiver’s IT systems used to display internally-generated content.
- Once content is posted publicly, the sender and receiver will likely need to adopt a system to verify posting and any associated issues, such as an unanticipated delay in public display. This includes, again, a system for issue identification, resolution, and tracking.
- Besides verifying content display, the sender, in particular, probably will want to have a means to collect site data, such as impressions, views, and click-throughs, as well as to apply analytics to the collected data. The sender is also likely to want to receive regular analytic reports from the receiver.
- Throughout this process of collection, ingestion, display, and site reporting, assuring appropriate customer consent, including review of consent limitations, may also have to be taken into account. This is especially so where data are transferred from a jurisdiction, such as the European Community, that restricts transfer.
- Handling the regular flow of inputted content is one thing. There may also be pre-existing, or “legacy,” content subject to transfer from sender to receiver. If so, the parties will need to develop a process for ingesting that content.
- The receiver probably also needs to adopt internal restrictions on information access to protect the sender’s competitively sensitive information. Amazon’s use of merchant data to inform its own private label and retail decision-making illustrates the issue.⁷⁵ This concern is even stronger where the data transfer is part of a court-ordered antitrust remedy. An antitrust violator should not be able to use competitive information received as part of the remedy itself to inform its own ongoing business decisions.

The interoperability required in data-transfer circumstances such as this is quite different than that underlying the CP provisions in *Microsoft*. There, Microsoft’s technical documentation for its CPs had to be usable by skilled engineers so that they could design and offer interoperable services. On the other hand, in the Bazaarvoice-PowerReviews situation, the two companies’ systems in

⁷⁴ See, e.g., Jennifer Polk, *Ratings and Reviews Get Personal*, GARTNER: GARTNER BLOGS (Oct. 2, 2015), <https://blogs.gartner.com/jennifer-polk/reviews/> [<https://perma.cc/4V75-K7JU>].

⁷⁵ See, e.g., HOUSE SUBCOMMITTEE ON ANTITRUST, COMMERCIAL AND ADMINISTRATIVE LAW OF THE COMMITTEE ON THE JUDICIARY, INVESTIGATION OF COMPETITION IN DIGITAL MARKETS: MAJORITY STAFF REPORT AND RECOMMENDATIONS 274-82 (2020).

fact had to interoperate and perform well together day-in and day-out. Regular, ongoing activity enabled interoperability to be inherently tested day-to-day by the interested parties themselves and effectively facilitated monitoring. Furthermore, performance could be directly measured to quantify whether systems were performing well together.

The *Bazaarvoice* court required Bazaarvoice to treat ratings and reviews from PowerReviews no less favorably than it treated the content that Bazaarvoice itself generated. Parity of treatment required a relatively smooth-functioning process to receive and display the content PowerReviews sent. Implementing this sort of inter-company data-transfer system in turn depends on such factors as: (a) the nature of the data collected for transfer and the fields by which it is defined; (b) the frequency of its transfer and of content updates; and (c) acceptable lag time between collection and display. All this has to be operationalized with sensitivity to the lifetime of the decree itself. If achieving the “optimal” result would take too long, something less may still be effective. Technical experts on both sides are essential to discuss tradeoffs that are acceptable to get a good, albeit perhaps suboptimal, result in a realistic time frame—all the while assuring compliance with court-ordered obligations.

III. Takeaways: Monitoring Practices and the Role of Technology Expertise

A – Framing the Decree

When an antitrust remedy is necessary against a technology-driven company, such as one offering computer services or operating on the internet, the relief afforded can be expected to implicate the software that enables the company’s operations and that delivers its services to users. Structuring the required relief will be challenging at the outset. The enforcers themselves need expert advice on developing proposed relief, whether adopted on consent or argued to the court in litigated proceedings. However, the company invariably understands its operations better, and, just as important, has future plans in mind that are unknown to the enforcers. These asymmetries of information are likely to result in relatively general decree provisions, leaving the details of judgment implementation to the enforcer and its monitor.

B – Company and Employee Incentives

Once the court’s remedial decree is approved, most of the company’s executives and other employees will move on. While company personnel and lawyers will be charged with responsibility to assure decree compliance, their natural incentive will generally be to do the least amount possible, consistent with arguable good faith, to achieve compliance. To do more is to take on unnecessary cost. As a result, the company can be expected to limit the resources assigned to compliance. Furthermore, since those employees assigned to the compliance work are not involved in profit-making activity for their employer, they are unlikely to consider their assignment as leading upward on the employment ladder. Close monitoring

is essential to counter-balance the incentives of the company and its employees to do just enough to get by.⁷⁶

There is, of course, another way to incentivize company compliance: impose a monetary fine for non-compliance. The European Commission has authority to fine, and the EC exercised that power in its own case against Microsoft, which called for CP documentation that heavily overlapped that required in the U.S. case.⁷⁷ Neither the Antitrust Division nor the FTC has comparable authority, although including penalty authority in a remedial decree may be possible. The Antitrust Division's recent amended judgment in the Ticketmaster case, entered on consent after substantial compliance issues arose, permits a penalty of \$1,000,000 per violation going forward.⁷⁸ If this approach were to become standard in antitrust judgments, company incentives could be expected to change.⁷⁹

C – Implementation Challenges Generally

As noted above, while information asymmetry usually favors the company, both the enforcer and the company face uncertainty in decree implementation. General decree provisions will outline implementation, but ambiguity is inevitably introduced when translating provisions into business operations.⁸⁰ However specific the court's decree may appear, in the technology space the compliance work required is fraught with uncertainty. The risks are all the greater because: (a) the system changes the company is required to make probably are not ones the company planned to make voluntarily, and thus lack ordinary course of business documentation; and (b) the company's incentives militate toward maximizing short-cuts and corner-cutting, resulting at the outset in an under-specified engineering project and an under-commitment of implementation resources. Therefore, both sides should expect the unexpected. As *Microsoft* and *Bazaarvoice* demonstrate, doing what the court's judgment calls for may turn out more difficult than either the company or the enforcer (or both) thought it would be. Monitor and expert oversight is imperative.

⁷⁶ See Decree Extension Opinion, *supra* note 18, at 160 (“admonishing Microsoft [at the October 26, 2005 status conference] that if there is an issue of resources, then put them in, whatever it takes to make this work”) (alterations added); Hearing Transcript at 17:1-2, 17-18, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Sept. 25, 2008) (counsel criticizing Microsoft position on the system documents—“they are not really required, we’re acting as a volunteer”—as failing to “send a good message to the individual engineers . . . doing the work.”), ECF No. 896. The court agreed the documentation “was integral to making this work.” *Id.* at 25:11.

⁷⁷ See Commission Decision, Case COMP/C-3/37.792 *Microsoft* (July 12, 2006) (fine of €280.5M); Commission Decision, Case COMP/C-3/37.792, *Microsoft* (Feb. 27, 2008) (fine of €899M). While the EC's fines could be expected to incentivize Microsoft to create more useable documentation, the EC lacked the technical resources, available to the U.S. enforcers, to monitor the quality of the documentation Microsoft produced.

⁷⁸ See Amended Final Judgment § XVIII.C, *United States v. Ticketmaster Entertainment, Inc.*, No. 10-cv-00139-RMC (D.D.C. Jan. 28, 2020).

⁷⁹ A recently introduced bill by Senator Klobuchar would create civil penalties for Sherman Act violations, but it is not clear the provision, if enacted, would cover judgment non-compliance S. 225, § 10, 117th Cong., 1st Sess. (Feb. 04, 2021).

⁸⁰ See generally Decree Extension Opinion, *supra* note 18, at 158 (summarizing issues arising under the *Microsoft* MCPP); Order Administratively Closing the Case, *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO (N.D. Cal. Aug. 28, 2018), ECF No. 294 (noting the resolution of decree enforcement issues without requiring the court's intervention).

Ambiguity in decree implementation can arise not only from on-going activity, but also from complaints by intended beneficiaries of the court's decree. In these circumstances, both the ambiguity and the merits of the complaint itself need to be resolved. Both the enforcers and the defendant company face risks in this process. There are limits to how far decree language can be construed. Action arguably consistent with the text of the decree may still frustrate its intent. And non-party complaints may implicate specific decree provisions, or simply not fall within the decree's scope at all. If the two sides cannot resolve the matter, the court must do so. However, decree modification is not easy, and each side may be reluctant to test its position before the court.⁸¹ At bottom, if two reasonable constructions of the decree exist, the decree's goals—to remedy past anticompetitive conduct (and deny the defendant its fruits), and to promote future competition—should inform its interpretation. A “tie” therefore probably should go to the enforcer, rather than to the antitrust violator. The district court may modify a final judgment to assure that it “achieve[s] its ‘principal objects,’ namely, ‘to extirpate practices that have caused or may hereafter cause monopolization, and to restore workable competition in the market’”⁸²

Besides enlisting the court for relief, the parties may also rely on the monitor to resolve decree ambiguity. In hi-tech judgment enforcement cases, the monitor will likely have retained a software engineer to assist, and the two can be particularly valuable as a decision-making team.⁸³ Besides having software and IT system expertise, the software expert will likely have access to relevant parts of the company IT systems. The software expert will be invaluable when the company protests that “it can't be done,” “it will take too long to do it,” or “it's way too expensive to do it that way.” The monitoring expert will be able to query the company's IT systems and analyze data to probe company objections. Informed by, or simultaneous with, this work, the attorney-monitor can request the company to provide prepared information or produce documents and data. The attorney-monitor similarly can require employee interviews, which can be taken under oath and recorded stenographically or by video. Working together, the monitors can determine whether there is merit to the company's position, or whether it is simply an excuse. Equally important, the monitor's software engineer, not handicapped by business pre-conceptions, may be able to suggest alternative approaches that company tech personnel have not considered. If the company disagrees with the decision, resort to the enforcer and, if necessary, to the court will be available.

The monitor will need to pay particular attention to a company assertion that implementing a compliance feature in a particular way will “take too long.” This

⁸¹ See generally Decree Extension Opinion, *supra* note 18, at 166-71 (discussing case law); *Rufo v. Inmates of the Suffolk County Jail*, 502 U.S. 367 (1992) (motion by defendant to modify); *United States v. United Shoe Machinery Corp.*, 391 U.S. 244 (1968) (motion by the United States to modify); *System Federation v. Wright*, 364 US 642 (1961) (consent decree).

⁸² *United Shoe*, 391 U.S. at 251-52, quoting the court below, 110 F. Supp. 295, 346-47 (D. Mass. 1953); see also *United States v. E. I. DuPont de Nemours & Co.*, 366 U.S. 316, 326 (1961) (“The key to the whole question of an antitrust remedy is of course the discovery of measures effective to restore competition.”). *But see United States v. Armour & Co.*, 402 U.S. 673, 682 (1971) (“The scope of a consent decree must be discerned within its four corners, and not by reference to what might satisfy the purposes of one of the parties to it”—here, the United States).

⁸³ See Decree Extension Opinion, *supra* note 18, at 157-58 (noting the “success” of the decree's voluntary dispute resolution mechanism and the TC's role in assisting resolution).

objection may mask the company's disinclination to commit the resources needed to implement the compliance feature. Time taken for decree implementation matters. Today, antitrust decrees invariably last for a fixed period of time, and if, as noted earlier, decree features intended to restore competition take too long to put into place, the remedy may be ineffective. Or else the enforcer may need to apply to the court to extend the life of the decree, as in *Microsoft*, where final judgments initially set to expire in November 2007 continued, under court orders, until May 2011. Even without considering the decree lifespan, a long delay in implementing the remedy can leave consumers, as well as rivals, with a market structure distorted by anticompetitive conduct for years.

D – Monitoring Visibility

Effective monitoring needs to be visible within the company. The company will, of course, identify an employee, often an in-house attorney, to liaison and serve as the point of contact. Other company employees may be assigned to assure compliance on an ongoing basis. These company employees will meet with the monitor and its experts as the compliance oversight begins. However, that is not enough. The monitor and its experts should also arrange an introduction with top-level management, and should schedule a site visit to the company's facilities. Both sides need to put faces to names, and company executives need to appreciate that the monitor is not merely an abstraction to be dealt with by others.

Connecting the monitoring team and top-level management is important for another reason. As we saw earlier, implementing decree provisions can take longer and can require more company resources than anticipated. In a similar vein, company management may underestimate the degree of inconvenience that can result from monitoring. This is particularly so where monitoring is proactive, requiring regular reporting from the company, and not simply reactive to problems brought to the monitor's attention. Early contact with top-level management gives the monitor an opportunity to explain that the monitoring process can often be iterative and to emphasize the importance of company cooperation. Further, even if monitoring proceeds relatively smoothly, it is a fair bet that, down the road, management and company personnel in general will come to regard monitoring as more intrusive than originally envisioned.

This overall message is best delivered as judgment enforcement begins, at a time when management is unlikely to be defensive, and when the importance of an open dialogue to minimize friction can be emphasized. Equally important, if, later on, the monitor determines that a course of action must be taken to ensure decree compliance, management may have to prioritize the action differently than if it were raised as a business proposition unrelated to decree compliance. Management, having met the monitor early on, can have a salutary effect on project approval.

E – Developing Milestones and Reporting

While some remedial decrees can identify specific time periods to achieve particular changes or results, others cannot. Regardless, effective monitoring may require setting up milestones to achieve particular objectives. Developed through dialogue with the TC, milestone schedules were pervasive in Microsoft's MCPP work.⁸⁴

Periodic reporting on progress in achieving identified milestones is also desirable. Reporting concentrates attention on whether progress is being made and can offer early warning signals of potential difficulty going forward. Where feasible, quantification of progress will be helpful. This is particularly so where the company must take recurring action, as quantification of performance allows for comparisons to be made, defined by time or another meaningful metric. Similarly, quantification lends itself to auditing, often with the aid of software expertise, to verify reported activity.

The court's judgment in *Bazaarvoice* required the monitor to file monthly reports with the court.⁸⁵ This had the salutary effect of assuring the company was never "too far away" from the monitoring. In *Microsoft*, the TC had Microsoft under virtually constant review, and status reports to the court were filed quarterly.⁸⁶ Where there are frequent, regular reports to the court, company reports to the monitor can be coordinated with reporting dates to the court. This assures the monitor has up-to-date information on relevant compliance matters and an opportunity to probe that information when preparing its reports to the court. However, if the monitor's reports to court are relatively infrequent—say, quarterly or longer—an internal reporting schedule to the monitor is probably appropriate. Deadlines get projects done.

For similar reasons, periodic compliance review sessions—either on-site or through a remote platform—should be scheduled on a regular basis far in advance. And the schedule should be adhered to, much the way regular company board meetings go forward. Setting four quarterly meetings at the beginning of a monitoring year, for example, will build compliance review sessions into the monitoring process. An agenda can be provided in advance of the session to enable the company to prepare and to have appropriate employees available to participate. These review sessions will help keep compliance activity on track. And if compliance is not on track, then more frequent, regularly scheduled meetings are imperative.

⁸⁴ See, e.g., Joint Status Report at 6-7, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Jan. 21, 2009), ECF No. 884 (milestone schedule for Microsoft's delivery of CP system documents); Joint Status Report at 6-7, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Apr. 16, 2009), ECF No. 887 (TC "devised" a "work plan" to provide for completing Microsoft's MCPP work); Joint Status Report at 3-4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. June 16, 2009), ECF No. 911 (schedule detailing plan to conclude MCPP rewrites and resolution of TDIs); Joint Status Report at 6-7, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. June 16, 2010), ECF No. 911 (describing schedule to close TDIs).

⁸⁵ *Bazaarvoice* Final Judgment, *supra* note 65, § VI.F.

⁸⁶ Decree Extension Opinion, *supra* note 18, at 156.

Reporting designed to assess competitive conditions in the market can also be desirable, regardless of whether the court's judgment requires collection of this information. In a litigated case decided in the enforcer's favor, the remedy, as noted earlier, should restore competition. So too for a merger, where a divestiture is intended to replace competition lost by the deal. Not uncommonly, the monitored company will collect market data statistics in the ordinary course of its business or will have the means to do so. Those data can be reported periodically during the monitoring and compared to market conditions at the time of trial or the merger.⁸⁷

F – Assessing and Achieving Compliance

A court's decree can effectively define compliance in various ways. In *Microsoft*, the MCPP program was intended to provide industry participants with CP documentation that could be used to enable non-Windows servers to interoperate with workstations and laptops running Windows. Accordingly, the standard that evolved to satisfy the CP provisions required Microsoft's documentation to be "complete, accurate, and useable" by industry licensees.⁸⁸ This required an expression of expert opinion on whether a skilled software engineer could use the documentation to build what was required. The TC could provide this opinion. An attorney could not.

By contrast, the *Bazaarvoice* decree sought to reintroduce competition by the divested PowerReviews company, achieved in part by affording PowerReviews the opportunity to have product ratings and reviews from its customers displayed on Bazaarvoice's customer network. To accomplish this, Bazaarvoice had to ingest and display content from PowerReviews' customers on "non-discriminatory terms," compared to Bazaarvoice's treatment of content from its own customers. Furthermore, nondiscrimination had to be verifiable, thus requiring data capture and presentation through appropriate metrics. This end objective was not particularly technical, although the processes that Bazaarvoice had to put into place to get there were. Again, working without an expert, an attorney monitor would be adrift without either a compass or a paddle.

Both cases required the defendant to enable or disclose information to allow systems that had never before talked to each other to do so. Moreover, interoperability had to be achieved despite the absence of prior documentation or experience providing a roadmap. Entire industry conferences have been convened to accomplish this kind of interoperability among companies that actually *want* the ability to interconnect, and it takes hard work even then. Trying to do this with an antitrust defendant whose incentives are at best suboptimal will be that much harder. Integrating engineering expertise into compliance oversight is crucial.

⁸⁷ For example, in *Bazaarvoice*, a publicly available source compiled use of R&R services by the top 500 internet retailers—the "IR500." "Before the merger, Bazaarvoice and PowerReviews, in the regular course of business, closely tracked their IR500 market share." Bazaarvoice Opinion, *supra* note 64, at *33(¶ 149). At trial, IR500 customer counts by R&R provider, and IR500 retailer revenue, were presented as evidence of market share. *Id.* at *33-36 (¶¶ 149-66).

⁸⁸ See generally Joint Status Report at 4, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. Oct. 8, 2004), ECF No. 804; Decree Extension Opinion, *supra* note 18, at 144, 181.

G – Computational Enforcement

As both *Microsoft* and *Bazaarvoice* show, computer automation can assist decree enforcement. For example, the TC instrumented Microsoft international data centers and captured system test traffic at wire speed, resulting in *petabytes* of data that were later *programmatically* compared to the CP documentation. This proof of concept demonstrates that although certain important analyses cannot be performed by human monitors, computers can perform the task. Similarly, Bazaarvoice computer systems could be instrumented to quantitatively measure the treatment of ratings and reviews to ensure compliance with consent decree requirements.

Modern antitrust enforcement often includes restrictions on worldwide web activity, such as online advertising limitations or restrictions on linking between websites. These types of restrictions are likely to lend themselves to analyses of, for example, web traffic, user website interactions, and non-discriminatory treatment—all well-suited for computer-automated enforcement support, developed and implemented via collaboration between enforcement agencies and technical experts.

IV. Conclusion

Crafting and implementing effective remedies in cases involving digital players presents significant challenges. We believe the experiences of the *Microsoft* and *Bazaarvoice* cases are probably typical, not aberrational. The ordered relief will rarely be beneficial to the defendants. At the same time, the relief is likely to be designed to offer competitors, complement developers, or users access to the platform, data portability, or other benefits not available absent the court's remedy. The relief also is likely to require disclosure of proprietary company information and to cover technology, much of which is not well-documented, developed internally over time by many individuals, some of whom are gone. Company incentives will militate toward under-commitment of resources until bumps in the compliance road require reinforcements.

Government enforcers need to recognize these considerations. Pick your aphorism. Forewarned is forearmed. An ounce of prevention is worth a pound of cure. Luck is the residue of design.