Reconsidering *Kodak*: The Cost of Aftermarket Protection

David Walchak*

ABSTRACT

Many companies that sell long-lasting products also sell related “aftermarket” products, such as repair services and replacement parts. In *Eastman Kodak Co. v. Image Technical Services*, 504 U.S. 451 (1992), the Supreme Court held that a company may face antitrust liability for exploiting its monopoly power in these aftermarkets even if it lacks market power in the original product market. This paper reconsiders that decision along two dimensions. First, despite both praise and criticism of the decision, there has been no historical investigation into the actual motivations underlying Kodak’s conduct in the copier and micrographics equipment aftermarkets. By drawing on original research and interviews with former Kodak employees and executives, this paper casts doubt on explanations for Kodak’s behavior offered by the Court and scholars and provides a new account of Kodak’s practices in those markets. Second, this paper takes a fresh look at the Kodak doctrine’s development in the years since the Supreme Court’s decision. What emerges from this analysis is a picture of an antitrust doctrine ill-adapted to the world of software-based equipment and, worse still, an antitrust doctrine that raised the cost of aftermarket segmentation, likely promoting the very sort of aftermarket monopoly it sought to prevent.

Abstract ........................................................................................................................................... 165
Introduction .......................................................................................................................................... 166
I. The *Kodak* Doctrine .......................................................................................................................... 169
   A. The *Kodak* Decision .................................................................................................................... 169
   B. The Evolution of the *Kodak* Doctrine ....................................................................................... 174
   C. Theories of Kodak’s Behavior ...................................................................................................... 175
      1. The Price Discrimination Account ......................................................................................... 176
      2. The Lock-In Account .............................................................................................................. 178

DOI: https://doi.org/10.15779/Z38CR5ND12
*
J.D., Yale Law School, 2018. I want to thank the former Kodak employees I spoke to for taking the time to speak with me and answer my questions. I also want to thank the John M. Olin Center for Law, Economics, and Public Policy at Yale Law School for providing financial support for this research, as well as Lucy Prather and Linus Recht for comments on later drafts. Finally, I want to thank Professor George Priest for his continued guidance throughout this research and his valuable comments on drafts of this paper. All errors are mine.
D. What Kodak Did and Why It Did It .......................................................... 181
   1. Kodak Loses Control Over the Micrographics Service Market .. 181
   2. Kodak Attempts to Regain Control of the Micrographics Service Market .......................................................... 183
   3. Anticompetitive Practices in the Copier Market ....................... 185
II. The Impact of Kodak Doctrine .......................................................... 187
   A. The Kodak Doctrine’s Limited Protections ............................ 188
   B. The Avaya Case ................................................................. 194
   C. Weighing the Kodak Doctrine’s Costs and Benefits ............... 197
Conclusion ......................................................................................... 199

INTRODUCTION

Companies that sell long-lasting products often sell related “aftermarket” products as well, such as a service to repair the product or replacement parts. The Supreme Court’s decision in Eastman Kodak Co. v. Image Technical Services, 504 U.S. 451 (1992) established that a company may face antitrust liability for exploiting its monopoly power in its aftermarkets even if the company lacks market power in its original product market. At issue in Kodak were the company’s practices in the markets for photocopi- ers and micrographics equipment—particularly the repair service and replacement parts aftermarkets for that equipment. At the time, Kodak had monopolies in the sale of service and replacement parts for its equipment. When some independent firms began providing service for Kodak machines, Kodak instituted policies apparently designed to restrict the firms’ access to parts necessary to service Kodak machines. In examining this practice, the Supreme Court held that Kodak could face antitrust liability for restricting customers’ access to competitor service providers, and thereby taking advantage of “locked-in” customers who bought the expensive equipment and could not easily switch to a competitor when Kodak forced them to buy its more expensive service. After explaining the Court’s

1. 504 U.S. 451, 453-54 (1992). After the Supreme Court decision in Eastman Kodak Co. v. Image Technical Services came down in 1992, the case was litigated for a number of years, culminating in a denial of certiorari in April of 1998. In the years following the decision, Kodak employees would have been unavailable to comment on the company’s motivations for the policies in question. As a result, many discussions of the decision at the time were unavoidably speculative. With the benefit of time—and a massive reduction in Kodak’s workforce—I was able to speak with former employees about Kodak’s historical policies and the strategic motivations for its decisions. I spoke to employees who held a variety of positions within the Kodak organization. One employee was a Development Manager working with Kodak copiers and printers. Another was a Vice-President closely involved in Kodak’s imaging business and the parts restriction policies at issue in this case. The third was a long-time employee who worked first as a microfilm sales representative and later in marketing. The fourth was a high-level manager in the copy products division. These employees spoke candidly about their time at Kodak and the corporation’s response to the litigation. Three of the four employees agreed to be recorded. While I have maintained the employees’ anonymity, I have preserved all recorded interviews quoted in this piece. I have also preserved notes from all four interviews.

RECONSIDERING KODAK

holding and its immediate aftermath, Part I of this paper argues that the Supreme Court’s decision, and the scholarly assessments that followed, were based on misunderstandings of the motivations underlying Kodak’s business practices.

The two major scholarly assessments of the Kodak decision are rooted in different accounts of Kodak’s motivations for imposing aftermarket restrictions. The first account, offered by Benjamin Klein, argues that Kodak was not an exploitative monopolist, but instead used an aftermarket tying arrangement to price discriminate among its consumers.3 The second account, offered by Severin Borenstein, Jeffrey K. MacKie-Mason, and Janet S. Netz, defends the Supreme Court’s lock-in account as a plausible description of Kodak’s actions and defends the holding as a valuable protection for aftermarket consumers.4

The next section of Part I rejects both of these accounts. The traditional lock-in story alleges that Kodak customers bought the company’s equipment and planned to use an independent service provider. Kodak then surprised the buyer with a market restriction that forced the buyer to use more costly Kodak service. Based on interviews with former Kodak employees, however, Part I shows that Kodak was not attempting to take advantage of locked-in consumers when it established the tying practices at issue in the case. The interviews, along with facts about Kodak’s pricing model, also demonstrate that Kodak was not using the tying arrangement to price discriminate.

Part I explains that Kodak’s business practices were instead motivated by an attempt to recover from an unforeseen consequence of its own vertical de-integration. Kodak, which had once controlled the labs that processed the film used in its microfilmers, sold these labs off to independent owners. These labs, already providing film processing, began competing to provide service for the machines as well. Contrary to the lock-in story, those who switched to competitor service generally appear to have purchased Kodak equipment with the intention of using Kodak service. These buyers switched after buying aftermarket micrographics service from Kodak, usually for a number of years. What emerges is a story of antitrust liability arising from competitors Kodak itself created when it opted to exit the film processing business.

The copier market followed the same general pattern, but only to a limited extent. The independent service providers (“ISPs,” also called “independent service organizations,” or “ISOs”) had very limited success in the copier service market and it does not appear that Kodak made a substantial effort to limit the ISPs’ access to those markets. This is another surprising finding from this research, considering that the case is sometimes summarized as a case wholly

---

about the copier market.\textsuperscript{5} In reality, Kodak’s restrictive practices in the copier market were largely an afterthought.

Part I’s historical revision of the \textit{Kodak} decision sets up an assessment in Part II of the decision’s aftermath. The \textit{Kodak} doctrine has been substantially pared back so that it now provides very little protection for aftermarket consumers. As Part II explains, the resulting doctrine provides for antitrust liability in circumstances closely analogous to Kodak’s: a company (1) fails to negotiate aftermarket terms with buyers of a particular product, (2) decides to exit a particular aftermarket or aftermarket segment, (3) unwittingly creates new found competitors for another aftermarket or aftermarket segment, and (4) attempts to block this new competition, leading to an antitrust suit.

The \textit{Kodak} doctrine did not anticipate the more creative methods equipment manufacturers were developing to control aftermarkets. Even as the \textit{Kodak} case progressed, Kodak and other equipment manufacturers determined that tying arrangements were not the best way to lock out aftermarket competitors. First, equipment manufacturers began repeatedly redesigning parts to limit the ability of service firms to use old machines to obtain replacement parts that were not freely sold. Yet the software revolution soon offered equipment manufacturers a simpler solution: service software that limited access to authorized service providers. Drawing on the decision in \textit{Avaya Inc., RP v. Telecom Labs, Inc.}, the final portion of this paper shows how software-protected aftermarkets have all but eliminated the possibility that the \textit{Kodak} doctrine will promote third-party aftermarket competition.\textsuperscript{6} As \textit{Avaya} shows, the doctrine instead lives on as a weapon by which third-party firms that partner with equipment manufacturers can breach their contracts and prevent effective aftermarket segmentation.

Given firms’ ability to legally control entire equipment aftermarkets with software, the sort of aftermarket competition that benefits consumers is unlikely to arise without equipment manufacturers’ express coordination. Therefore, the primary hope for consumer welfare-enhancing aftermarket competition likely rests in firms voluntarily ceding aftermarket control to third-party suppliers. Firms that initially opt to control entire aftermarkets may be prevented by the \textit{Kodak} doctrine from ceding partial control of service contracts to third-party suppliers. As the \textit{Avaya} case shows, even contracts with the third-party firms themselves will not suffice to prevent the competition. Thus, the \textit{Kodak} doctrine perversely drives up the costs of equipment manufacturers’ vertical de-

\textsuperscript{5} See, e.g., Digital Equip. Corp. v. Uniq Digital Technologies, 73 F.3d 756, 762 (7th Cir. 1996) ("Kodak sold plain paper copiers in a market with three substantial rivals. At the time of the sale, the Court assumed, Kodak sold replacement parts, enabling users to repair their copiers or hire independent service organizations (ISOs) to do so. Later Kodak changed its policy and refused to sell parts to ISOs, who alleged that this enabled Kodak to claim the repair business for itself, at supra-competitive prices. The Court held that evidence in the record that prices had increased prevented a grant of summary judgment.").

\textsuperscript{6} 838 F.3d 354 (3rd Cir. 2016).
integration and promotes the very aftermarket monopolies it was designed to restrain.

I. THE KODAK DOCTRINE

A. The Kodak Decision

In addition to its well-known film and camera businesses, the Eastman Kodak Company sold photocopiers and micrographics equipment (“microfilmers”). Although Kodak did not have a monopoly over the sale of the copiers and microfilmers, it did have a monopoly over the sale of parts and the provision of service for both types of equipment. When independent companies began competing with Kodak to provide service for Kodak equipment, Kodak enacted policies to restrict those independent service providers’ access to replacement parts needed for equipment service. First, Kodak restricted ISPs’ ability to purchase replacement parts directly. Then, when ISPs began having service customers purchase parts from Kodak for the ISPs to use, Kodak instituted the tying arrangement at the heart of the case against the company. Kodak required that its equipment customers either purchase repair service from Kodak or, if they wanted to buy replacement parts without Kodak service, agree to repair the machines themselves (not use an ISP). In response to Kodak’s policies, ISPs brought an antitrust action under Sections One and Two of the Sherman Act. The ISPs alleged that Kodak violated Section One of the Sherman Act by conspiring to restrain trade and by illegally tying the sale of service to parts. The ISPs also alleged that Kodak violated Section Two of the Sherman Act by attempting to monopolize the aftermarket for service. 

7. The courts and commentators often blur Kodak’s practices in these two equipment markets, most often simply ignoring Kodak’s micrographics business altogether. See, e.g., Uniq Digital Technologies, 73 F.3d at 762 (“Kodak sold plain paper copiers in a market with three substantial rivals. At the time of the sale, the Court assumed, Kodak sold replacement parts, enabling users to repair their copiers or hire independent service organizations (ISOs) to do so. Later Kodak changed its policy and refused to sell parts to ISOs, who alleged that this enabled Kodak to claim the repair business for itself, at supra-competitive prices. The Court held that evidence in the record that prices had increased prevented a grant of summary judgment.”). This is likely the result of some confusing facts; but understanding Kodak’s behavior requires keeping these markets distinct.

8. Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1206, 1212 (9th Cir. 1997) (“Kodak has both undisputed 100% monopoly shares for certain parts and an alleged monopoly share in the entire parts market. . . . The record reflects the following: Kodak has a 95% share of the Kodak high volume photocopier service market and an 88% share of the Kodak micrographic service market.”).


10. See Section I.D.2, infra.

11. Kodak, 504 U.S. at 463 (“The record indicates that Kodak would sell parts to third parties only if they agreed not to buy service from ISO’s.”).


14. Id.
The District Court granted summary judgment for Kodak on all of the plaintiffs’ claims. The plaintiffs challenged Kodak’s practice of preventing manufacturers of Kodak parts from selling to the ISPs. If the ISPs could not buy parts from manufacturers, they would be less able to compete in the market for service, which required regular part replacement. The court ruled that the ISPs had failed to provide non-hearsay evidence that Kodak had entered into these arrangements with manufacturers. Furthermore, the court concluded that the type of agreement alleged would not constitute an illegal conspiracy under the Sherman Act. The court also rejected the plaintiffs’ Section Two claim that Kodak illegally leveraged its monopoly power in the aftermarket for parts and service. After noting the uncertain legal ground for this theory, the court rejected the argument for lacking factual support. In the district court’s view, the mere fact that Kodak had refused to sell replacement parts to the plaintiff ISPs was not sufficient to support a Section Two claim.

Finally, the court disposed of the plaintiffs’ Section One tying claim. Under the classic tying arrangement, a company “ties” the sale of one product to the sale of another in an attempt to use its monopoly power in one market to grow its market share in another. The court held that the plain text of Kodak’s contracts with its customers foreclosed the possibility of a tying arrangement. Because Kodak did not condition the sale of one product on the sale of another, customers were free to buy Kodak equipment without purchasing contracts to buy service and parts from Kodak.

The Ninth Circuit reversed. The court first noted that the District Court had misconstrued the plaintiffs’ tying claim. While it was true that Kodak had not tied the purchase of equipment to the purchase of an aftermarket product, the court explained, the plaintiffs maintained that Kodak had tied the purchase of one aftermarket product (parts) to the purchase of another aftermarket product (service). Specifically, the court noted Kodak’s concession that it had prevented the sale of parts to equipment purchasers who used ISP service. The Ninth Circuit reasoned that these facts fit the definition of a tying arrangement offered in Northern Pacific Railroad: “an agreement by a party to sell one product but only on the condition that the buyer also purchase a different (or tied)
RECONSIDERING KODAK

product, or at least agrees that he will not purchase that product from another supplier.”23 Since the purchase of parts was tied to use of Kodak’s service, the plaintiff ISPs’ tying claims survived summary judgment. The court went on to conclude that the ISPs raised triable questions of fact as to whether the markets for parts and service were economically separable and whether Kodak had sufficient power in the market for parts to execute the tying arrangement.24

Before the Supreme Court, the plaintiff ISPs presented a streamlined argument that focused on the contention that Kodak had sought to take advantage of customers who were “locked in” to owning Kodak equipment:

Kodak Equipment buyers are locked-in. They cannot change equipment brands when confronted with a price increase for parts or service above the competitive level. The lock-in occurs because the cost of replacing the basic equipment exceeds the cost of paying monopoly prices for parts and service over the life of the machine. By 1987, a Kodak Ektaprint 150AF copier which costs $75,000 new, had an open market resale value of only $2,500-$3,500. Any Kodak customer with several relatively new copiers was therefore constrained, locked-in, from buying competing new equipment in response to higher service prices. One customer, CSC, for example, owns more than 100 pieces of Kodak micrographic equipment which would cost about $1.5 million to replace.25

The plaintiff ISPs went on to argue that Kodak had used a tying arrangement in violation of Section One of the Sherman Act and attempted to monopolize the aftermarket for parts and service in violation of Section Two of the Sherman Act—all in an effort to take advantage of “locked-in” equipment buyers who could not abandon the equipment when Kodak suddenly restricted access to cheaper aftermarket competitors.26

This argument has intuitive force. Buyers who purchase a piece of durable equipment are, no doubt, temporarily “locked in.” They cannot immediately abandon the equipment in favor of a competitor’s equipment without incurring substantial costs. Like many long-lasting products, office equipment brings costs throughout its lifecycle. Just as cars require gasoline, maintenance, and repairs, office equipment may require any number of aftermarket products and services, including toner, film, repair, and replacement parts. So long as multiple companies compete to provide aftermarket products and services—like gas stations and mechanics—this lock-in may be of little concern. But risk of aftermarket lock-in is said to arise when the same firm sells the original durable good and controls an aftermarket product for that durable good. Supporters of the aftermarket lock-in theory allege that firms in these circumstances have an incentive to drive up the cost of aftermarket products they control, such as service or parts for the equipment they sell, in order to extract value from locked-in

24. Id. at 615-18.
26. Id. at 35.
So long as this increased cost does not exceed the cost of switching, lock-in theorists argue, the aftermarket consumers will rationally choose to hold on to the equipment despite the aftermarket monopolist’s opportunism.28

Kodak countered the plaintiff’s lock-in story by arguing that any attempt to raise prices on customers in the aftermarkets would provoke a loss of market share in the equipment market, since consumers would opt for competitors’ equipment when the lifecycle cost of Kodak equipment increased.29 According to Kodak, a competitive equipment sales market meant the company had nothing to gain from anticompetitive aftermarket practices. This back-and-forth has been replayed in the academic literature assessing the Kodak opinion and is considered in more detail in the Section I.C., infra.

The Supreme Court ruled in favor of the ISPs.30 Eastman Kodak Co. v. Image Technical Services established that a company could be held liable for an aftermarket tying arrangement or an attempt to monopolize the aftermarket in its own product even when it lacked market power over the original product.31 The Supreme Court thus affirmed the Ninth Circuit’s reversal of summary judgment for Kodak and allowed the case to go to trial.32

The aftermarket “lock-in” theory was central to the Supreme Court’s decision. The Court reasoned that Kodak could profitably raise aftermarket prices on locked-in consumers who had purchased equipment and could not switch to a competitor’s equipment without incurring additional costs.33 The Court added that the difficulty of calculating lifecycle costs and the ability to price discriminate among customers who did and did not calculate those costs would further enable an equipment manufacturer to illegally exert market power over the aftermarket.34 Yet the Court did not clearly restrict its holding to

---

27. Id. at 20 (“Kodak’s unanticipated change in its service policy in late 1985 allowed Kodak to raise the price of service to captive owners of Kodak Equipment.”). Fears about “captive consumers” are familiar. For instance, fans routinely complain about the price of concessions at sports stadiums. Upon entering the stadium, the fans are “locked in” to the restricted market for food and drink the stadium makes available. While fans can leave, they lose the value of watching the game if they do so. Some would say a reasonable fan builds in the cost of concessions into the decision to purchase tickets. This retort predicts the back-and-forth in the aftermarket lock-in debate discussed in this paper. (As would the retort to this retort—that sometimes the high prices are a surprise to consumers, or that prices are sometimes raised without warning).

28. Id. at 18 (“The lock-in occurs because the cost of replacing the basic equipment exceeds the cost of paying monopoly prices for parts and service over the life of the machine.”).

29. Kodak, 504 U.S. at 472 (“To review Kodak’s theory, it contends that higher service prices will lead to a disastrous drop in equipment sales.”).

30. Id. at 483 (“[R]espondents have presented evidence that Kodak took exclusionary action to maintain its parts monopoly and used its control over parts to strengthen its monopoly share of the Kodak service market. Liability turns, then, on whether ‘valid business reasons’ can explain Kodak’s actions.”).


32. Id.

33. Id. at 476 (“If the cost of switching is high, consumers who already have purchased the equipment, and are thus ‘locked in,’ will tolerate some level of service-price increases before changing equipment brands. Under this scenario, a seller profitably could maintain supracompetitive prices in the aftermarket if the switching costs were high relative to the increase in service prices, and the number of locked-in customers were high relative to the number of new purchasers.”).

34. Id. at 475-76.
circumstances where an equipment manufacturer took advantage of locked-in consumers. The Court also affirmed the Ninth Circuit’s ruling on the Section Two monopolization claim, explaining, “If Kodak adopted its parts and service policies as part of a scheme of willful acquisition or maintenance of monopoly power, it will have violated § 2.”\textsuperscript{35}

While not restricted to lock-in, the holding appears to have been driven by the ISPs’ account of Kodak’s motivations. The Court did not accept Kodak’s argument that long-run competition prevented the firm from taking advantage of locked-in customers.\textsuperscript{36} According to the Court, Kodak had an incentive to drive up the price for aftermarket service and parts because the owners of Kodak’s expensive equipment were “locked in” and could not abandon that equipment when Kodak raised the price of service.\textsuperscript{37} As Section I.C., infra, will show, there is truth to both the ISPs’ claim that Kodak sought to lock in consumers and Kodak’s response that any such lock-in efforts would drive away customers in the long run. Kodak undoubtedly used its restrictive policies to maintain its aftermarket monopoly on service. At the same time, the Court was wrong to ascribe Kodak’s actions to short-sighted opportunism.

After the case went to trial, Kodak was held liable for attempting to monopolize the market for service on its micrographics and copier equipment by restricting access to replacement parts.\textsuperscript{38} The ISPs were awarded damages and granted a 10-year permanent injunction requiring that Kodak sell them replacement parts at non-discriminatory prices.\textsuperscript{39} This article will focus on the Supreme Court’s holding that a company’s attempted monopolization of an equipment aftermarket may violate antitrust law even when the company lacks a monopoly in the original equipment market, not the litigation against Kodak that followed this decision.\textsuperscript{40}

The Supreme Court’s decision would require further development in subsequent case law. The Court did not spell out the precise market conditions and practices that could lead to aftermarket liability. It instead noted some relevant considerations, took particular care to identify the dangers of aftermarket lock-in, and held that, as a matter of law, competition in a product’s

\textsuperscript{35} Id. at 483.


\textsuperscript{37} Kodak, 504 U.S. at 476 (“If the cost of switching is high, consumers who already have purchased the equipment, and are thus ‘locked in,’ will tolerate some level of service-price increases before changing equipment brands.”).


\textsuperscript{39} Id.

\textsuperscript{40} Kodak, 504 U.S. at 483.
primary market is insufficient to protect a business from antitrust liability in that product’s aftermarket.41

B. The Evolution of the Kodak Doctrine

After the Supreme Court’s decision, commentators expected the Kodak aftermarket doctrine to be influential.42 Instead, twenty years after the decision, “[n]either the Department of Justice nor the Federal Trade Commission ha[d] ever brought a case against an equipment manufacturer alleging anticompetitive aftermarket conduct.”43 Commentators also predicted that private plaintiffs would quickly bring a number of antitrust suits premised on the Kodak aftermarket theory.44 Although private plaintiffs did bring cases,45 narrow readings of the Kodak decision substantially limited its scope and private plaintiffs lost these early cases.46

Circuit courts largely limited the Kodak holding to situations in which equipment manufacturers unexpectedly change their aftermarket parts policy, thereby restricting locked-in consumers’ access to competitors in the aftermarket.47 The first case to take this view of the Kodak decision was Digital Equipment Corp. v. Uniq Digital Technologies, 73 F.3d 756 (7th Cir. 1996).48 Rejecting a distributor’s claims under a Kodak aftermarket theory, Judge Frank Easterbrook summarized the Kodak decision as follows:

Competition among manufacturers fully protects buyers who accurately calculate life-cycle costs. But not all customers do this, if only because they do not anticipate all changes of policy. Thus Kodak had some ability to extract additional money by raising prices. It could not so do again; once the new policy was known, consumers could shop with full information; but there was a material dispute about the effect of its change of policy. Kodak assumed that fooling consumers in this way is an antitrust rather than a deception problem, because the parties had not debated this question; we need not inquire whether it would convert this assumption into a holding. . . . The

41. Id. at 476, 483.
42. See, e.g., Carl Shapiro, Aftermarkets and Consumer Welfare: Making Sense of Kodak, 63 ANTITRUST L.J. 483, 484 (1995) (“One reason Kodak has attracted so much attention is that the Court incorporated in its opinion economic thinking of the past fifteen years in a way not often seen before.”).
45. See Gleklen, supra note 43, at 58 (noting that private antitrust actions premised on the Kodak decision were brought against a number of companies, including Alcatel, Digital Equipment, and Honeywell).
46. Id. (“[C]ases filed against Digital Equipment, Alcatel, Honeywell, and others all failed because—looking to the Kodak dissent—the courts held there could be no aftermarket claim absent a manufacturer’s change in policy after locking in consumers.”).
47. See Goldfine & Vorrasi, supra note 44, at 221 (“[C]ourts have restricted Kodak to situations where the manufacturer originally dealt with independents and later cut them off. Those courts hold that only a surprise change in policy after some customers have already been locked in can justify finding separate aftermarkets that can be monopolized when the primary market is competitive.”).
RECONSIDERING KODAK

Court did not doubt in Kodak that if spare parts had been bundled with Kodak’s copiers from the outset, or Kodak had informed customers about its policies before they bought its machines, purchasers could have shopped around for competitive life-cycle prices.49

Easterbrook frames the antitrust enforcement in Kodak as a sort of consumer protection law for naïve corporate buyers who fail to insist on contract terms that protect them from aftermarket price increases.

While Easterbrook sought to cabin the Kodak decision to a “surprise lock-in” theory, other circuits offered more expansive readings. Since the Supreme Court did not base its holding directly on the lock-in theory, a recent Third Circuit decision acknowledged the possibility that another form of aftermarket exploitation could lead to antitrust liability: “[W]e interpret Kodak as standing for two propositions: (1) that firms operating in a competitive primary market are not thereby categorically insulated from antitrust liability for their conduct in related aftermarkets; and (2) that exploitation of locked-in customers is one theory that courts will recognize to justify such liability.”50 So a more robust Kodak aftermarket doctrine lives on. The doctrine continues to block surprise changes to locked-in consumers’ access to replacement parts and service—as well as raise the specter of liability whenever a company engages in restrictive aftermarket practices without a valid business purpose.

C. Theories of Kodak’s Behavior

By restricting equipment purchasers’ access to cheaper aftermarket service, Kodak would have increased the lifecycle cost of its machines. Since rational consumers would purchase Kodak equipment based on the lifecycle cost of the machines, it would seem Kodak had no incentive to drive up that lifecycle cost by eliminating inexpensive service providers. This was the core of Kodak’s defense: “To review Kodak’s theory, it contends that higher service prices will lead to a disastrous drop in equipment sales.”51 This defense was drawn from traditional Chicago School antitrust theory. Chicago School assumptions would suggest any gains in the short-run service profits would lead to losses in the equipment market. While the company might briefly increase total profits by forcing existing equipment owners to buy service contracts, the added lifecycle cost of more expensive, lower quality service would drive future buyers to competitors’ equipment in the long run.52 In fact, Chicago School assumptions would suggest a tying arrangement like Kodak’s is especially irrational. Given that service contracts are part of the equipment sales aftermarket, any losses in

51. Kodak, 504 U.S. at 472.
52. Robert Bork summarized the argument as follows: “When a seller of product A, the tying product, requires that purchasers also take product B, the tied product, the Court assumes that some market power inhering in A is extended or transferred to B, so that the seller now has two monopolies or positions of strength in place of one. This is the same fallacious transfer-of-power theory that underlies so many fields of antitrust law.” ROBERT BORK, THE ANTITRUST PARADOX 366 (1993).
the equipment market would reduce profits in the service market, rather than merely cancel out those profits.

So why did Kodak institute the tying arrangement? Commentators advanced two major theories in the wake of the Supreme Court decision. The first argues that in predating the purchase of parts on the purchase of service, Kodak sought to price discriminate among high- and low-volume users of its machines. This view, outlined in Benjamin Klein’s “Market Power in Antitrust,” leads to the conclusion that the Supreme Court erred in developing the aftermarket tying doctrine as it did in the Kodak decision. The second view supports the Supreme Court’s decision by arguing that Kodak would have had good reasons to opportunistically raise aftermarket prices on locked-in consumers, contrary to Chicago School reasoning. This view is advanced by Severin Borenstein, Jeffery K. MacKie-Mason, and Janet S. Netz in “Antitrust Policy in Aftermarkets.” These two theories are examined below. While each has theoretical appeal, neither fits fundamental facts about Kodak’s business model at the time. After rejecting each of these scholarly positions, Section I.D., infra, offers an alternative account of Kodak’s decisions in the equipment aftermarkets.

I. The Price Discrimination Account

In “Market Power in Antitrust,” Benjamin Klein argues that the Kodak tying arrangement may have enabled the firm to price discriminate between more and less intensive users of its equipment. Kodak’s equipment buyers differed in both the quantity and quality of service demanded. Klein reasons that the value Kodak customers placed on equipment would have been correlated to the value they placed on service. Therefore, more intensive users of Kodak machines would have placed greater value on the machines and required more frequent service. By enforcing a tying arrangement that made buyers choose between purchasing a service contract or self-servicing their machines, Kodak could have separated those customers who placed substantial value on service (relatively price insensitive or high-frequency users, perhaps) from those who did not. High-volume users would be willing to purchase service contracts priced above marginal cost so long as the total cost of the equipment was a price they were willing to pay, while lower-volume users would have avoided this increased price by opting for self-service arrangements.

To segment aftermarket consumers along these lines, Kodak would have had to ensure that customers would not have the option to obtain cheaper service from independent providers. That is why, in Klein’s view, Kodak had to restrict

---

53. Klein, supra note 3.
54. Borenstein, supra note 4.
55. Klein, supra note 3.
56. Id. at 69.
57. Id. at 66.
58. Id. at 65-66.
IPS’ access to parts and restrict self-service customers’ rights to transfer Kodak parts to ISPs. Instead of Kodak attempting to charge high-volume users more for equipment, Klein posits that Kodak used its parts restrictions to ensure that high-volume users would purchase high-priced service contracts. This arrangement would elicit from high-volume customers a price they were willing to pay without losing the business of low-volume customers who would not pay more than they already were for equipment (and would opt for self-service). In this way, the tie would have served as a creative form of price discrimination.

One would also expect that a tying arrangement of this sort would be accompanied by lease arrangements, as it was in the case of Kodak’s copiers. Leases are critical in this sort of arrangement to prevent low-volume users from buying machines and reselling them to high-volume users. To more effectively price discriminate, Kodak would tailor pricing to low- and high-volume users while reducing equipment prices to accommodate above-market service pricing. The tying arrangement Klein describes is therefore a sensible explanation of Kodak’s behavior based on the facts in the record.

Nonetheless, it does not appear that Kodak used the tying arrangement to price discriminate. In fact, the company had much finer tools for price discrimination available than the blunt instrument of a tying arrangement. In pricing its copiers, Kodak charged by rate of usage. For the period relevant to the case, Kodak was leasing machines to buyers, who then paid based on their rate of usage. As a former Kodak Vice-President in charge of the copier and business imaging divisions explained, “Copier is a click business... You charge by the click and by the copy... That’s the business model.”

59. Kodak, 504 U.S. at 458.
60. Klein notes that we might expect Kodak to add an upcharge for parts (and presumably cut equipment costs) and thereby charge more to high-volume users. Kodak could not have easily taken this route, however, because any upcharge for parts would have led buyers to shift spending to service in order to reduce the frequency of part replacement. See Klein, supra note 3, at 67.
61. Oddly, Justice Scalia’s dissenting opinion dismisses the possibility that Kodak could have price discriminated, given that the company lacked market power in equipment sales. See Kodak, 504 U.S. at 499 (Scalia, J., dissenting) (“That sort of enduring opportunity to engage in price discrimination is unavailable to a manufacturer—like Kodak—that lacks power at the interbrand level.”). As Klein rightly points out, price discrimination does not require monopoly power—only that a firm not occupy a perfectly competitive market. See Klein, supra note 3, at 72. (“[M]ost firms in the real world have negatively sloped demands and, therefore, the ability to price discriminate.”). The equipment markets, with only a few equipment manufacturers selling differentiated products, were not perfectly competitive.
62. See Bork, supra note 52, at 376-77 (“Tie-ins may also be used to accomplish price discrimination... First, the machines should be leased only, so that cross-selling is made impossible. The leases could be at different rentals, but this would require rather crude guesses as to the elasticity of each customer’s demand and would entail the risk of significant changes in elasticity during the term of the lease.”).
63. Interview with anonymous former Kodak microfilm sales representative, in Fairport, N.Y. (Jan. 10, 2017).
64. Interview with anonymous former Kodak Vice-President, in Rochester, N.Y. (Jan. 11, 2017).
price discriminating indirectly through the tying arrangement.\textsuperscript{65} Kodak was directly metering usage and pricing its copiers accordingly. At least in its copier sales, Kodak did not need the complex tying scheme Klein describes.

The former Kodak employees also cast doubt on price discrimination as a motivation for the microfilm tying arrangement. Kodak sold the film for its microfilm machines, so it once again had a direct method to raise additional revenue from high-volume users. The former Kodak Vice-President explained that microfilm “was a sale business. You sold film and it was a razor/razor-blade kind of business—and the film was profitable.”\textsuperscript{66} By this he meant that the firm was able to price discriminate between low- and high-volume users by raising the price of film and lowering the price of the microfilmers themselves. Once again, Kodak had little need to use the tying arrangement as a roundabout method of price discrimination.

Kodak’s practices in negotiating service contracts for microfilm machines cast further doubt on the price discrimination theory. The former Kodak sales representative explained that the company sold service contracts on a year-to-year basis in microfilm.\textsuperscript{67} These service contracts were negotiated and could have been used as another direct method of price discrimination. In fact, Kodak did strategically price these service contracts. The sales representative noted that Kodak would raise prices in its yearly micrographics service contracts to increase service prices on older machines.\textsuperscript{68} He explained that this was an effort to drive these buyers to purchase new machines, instead of continuing to use older models.\textsuperscript{69} The fact that Kodak had more direct methods of price discrimination suggests it likely did not use the less precise method of tying service to parts to accomplish the same ends. In short, Kodak was certainly seeking to price discriminate in its copier and micrographics businesses, but it does not appear that the tying arrangement was its chosen method.

2. The Lock-In Account

The traditional account of Kodak’s behavior, and the account endorsed by the Court, suggests that the company tied service to parts in an effort to extract additional revenue from customers who had already bought a machine and were thus “locked in” to owning the equipment.\textsuperscript{70} As explained above, Kodak defended against this argument on traditional, Chicago School antitrust grounds: while it was possible to earn a short-run profit by raising prices on locked-in

\begin{itemize}
  \item \textsuperscript{65} Id.
  \item \textsuperscript{66} Id.
  \item \textsuperscript{67} Interview with anonymous former Kodak microfilm sales representative, supra note 63.
  \item \textsuperscript{68} Id.
  \item \textsuperscript{69} Id.
  \item \textsuperscript{70} See Kodak, 504 U.S. at 476 (“If the cost of switching is high, consumers who already have purchased the equipment, and are thus ‘locked in,’ will tolerate some level of service-price increases before changing equipment brands.”).
\end{itemize}
RECONSIDERING KODAK

consumers, such a strategy would drive up lifecycle costs and damage Kodak’s equipment sales (and in turn its aftermarket sales) in the long-run.\textsuperscript{71}

Severin Borenstein and co-authors have attempted to address the Chicago School objection to the lock-in story and defend the Court’s economic reasoning in \textit{Kodak}. The authors’ argument begins by recognizing that firms are able to price equipment differently for past and present customers. Once a firm has secured buyers with low equipment prices, firms will seek to exploit locked-in consumers by raising parts prices, all the while preventing any loss in equipment sales by reducing the price for new buyers.\textsuperscript{72} So, while parts prices go up for the market as a whole, new buyers are not deterred by those prices because a firm can reduce equipment prices to compensate. Of course, the firm can then increase parts prices on these new buyers—and the cycle continues.

Central to the model is the authors’ claim that firms are unable to compete on a reputation for low parts costs: “Given the time it takes to build a reputation, and the rapid rate of entry and exit among high-tech firms, there may be little gain in future equipment profits as a result of building a reputation for low service pricing.”\textsuperscript{73} Moreover, the authors believe that firms cannot credibly commit to not exploiting locked-in consumers. In their view, firms have an incentive to commit to low or stable aftermarket prices when entering the market, but this incentive disappears once the manufacturer has a sizable customer base.\textsuperscript{74} At some point, a firm that makes such a commitment will be induced by the potential profits to break that commitment and charge above-market prices on parts.\textsuperscript{75} This effect is only exacerbated by the fact that firms discount future earnings. Any earnings that might accrue in the future must be discounted based on the opportunity cost of forgoing increased profits \textit{now}, and presumably any uncertainty in this long-run strategy only further exacerbates the discounting effect.\textsuperscript{76} So the market drives firms to raise the cost of parts and lower the cost of equipment, even if doing so earns these firms no long-run market advantage or long-run profit.

Borenstein and co-authors go on to identify concrete economic harms from potential consumer lock-in. First, higher aftermarket prices will lead equipment owners to use sub-optimal amounts of aftermarket products (service, toner, etc.).\textsuperscript{77} So, even if equipment prices are reduced to compensate for high aftermarket prices, consumers still bear a cost through the inefficient use of

\textsuperscript{71} See Brief for Petitioner at 12, Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451 (1992) (No. 90-1029) (acknowledging that raising aftermarket prices could produce short-run profits for Kodak, “but at a devastating cost to its long term interests.”).

\textsuperscript{72} Borenstein, supra note 4, at 463 (“Firms may even price equipment below cost in order to ‘buy’ market share that will yield profits from high aftermarket prices.”).

\textsuperscript{73} \textit{Id.} at 465.

\textsuperscript{74} \textit{Id.} at 472.

\textsuperscript{75} \textit{Id.} at 465.

\textsuperscript{76} \textit{Id.}

\textsuperscript{77} \textit{Id.} at 469-70.
purchased equipment. Second, high aftermar
ket prices lead consumers to abandon machines inefficiently early.

Benjamin Klein disputes the model offered by Borenstein and co-authors. He counters that Kodak’s “sophisticated” buyers could have anticipated opportunistic price increases if those increases were a real risk and contracted to protect themselves. Recall that Kodak was selling high-end office equipment for corporate clients—not personal copiers for consumers. As a result, even if Kodak could not credibly commit to keeping parts prices low, its buyers could contract to ensure prices remained low. Through “most favored purchaser” clauses, or similar provisions, these sophisticated buyers could have ensured that they were not locked into higher prices while Kodak charged new buyers lower aftermarket prices. Klein further argues that the absence of “most favored purchaser” clauses should be a reason to doubt that there was a real risk of Kodak using opportunistic pricing to extract profits from locked-in consumers.

Borenstein and co-authors argue in turn that buyers had only a limited ability to protect themselves from aftermarket lock-in by contract alone. They write, “[P]erfect long-term contracts are generally not possible for a variety of reasons: equipment lives are long, the future is uncertain . . . , and there are many aftermarket policies the firm could use to raise profits as an alternative to a previously contracted price.” They add that consumers are more prone to being locked in when they have imperfect information about aftermarket prices. Finally, consumers are locked in to a greater extent when the cost of switching to new equipment is higher. The theoretical debate thus reaches the particulars of the case. The Borenstein model, and Klein’s critiques of it, ends up turning on the assumptions the authors make about how buyers would likely react in the specific situation and market structure at issue in Kodak. While this speculation is undoubtedly important in economic modeling, it is not likely to resolve the question of what actually happened in the lead up to the Kodak case.

Understanding the events that precipitated the Kodak case requires historical research. The next section of this article will show that, regardless of its plausibility, the lock-in story is a poor fit for the facts of Kodak. The Kodak case is a story of a firm charging above-market rates for service (at least in microfilm) and using the tools available to it to block low-priced competitors as they appear. Instead of “locking in” buyers based on promises of low prices and surprising

78. Id.
79. Id. at 470.
80. Klein, supra note 3, at 52.
81. Id. at 51.
82. Id. at 52 (“The fact that we do not observe such contractual protection is evidence that either the ‘hold-up’ potential is not as large as the Court believed or that buyers of Kodak equipment were relying on the more flexible reputational enforcement mechanism to prevent ‘hold-ups.’”).
83. Borenstein, supra note 4, at 473.
84. See id. at 467.
85. Id.
them with higher prices, Kodak was effectively “locking out” buyers from accessing lower prices as they appeared. This might appear to be a distinction without a difference: to lock in customers to an aftermarket is no different than locking out competitors. But it means the number of customers who purchased Kodak micrographics machines expecting to use inexpensive service was likely very small. Through its tying arrangement, Kodak was not seeking to raise prices on these customers opportunistically; it was instead seeking to prevent long-time customers from being poached by third-party service companies. This defensive use of market power is not consistent with the standard aftermarket lock-in story.

D. What Kodak Did and Why It Did It

What follows is an account of Kodak’s market practices leading up to the litigation. It draws most heavily on interviews from two individuals mentioned above: first, a former Kodak Vice-President substantially involved in Kodak’s decisions in the copier and micrographics markets during the relevant time period; and second, a regional micrographics sales representative for Kodak during this time. Kodak’s practices in the micrographics market are discussed first.

1. Kodak Loses Control Over the Micrographics Service Market

For many years, Kodak ran a vertically integrated micrographics business. Kodak had virtually total control over every aspect of its micrographics equipment. Kodak built the machines, sold the film, processed the film, and serviced the machines. By controlling all aspects of the microfilmers, Kodak was better able to deliver “a high-quality product.” But the control had other advantages as well: microfilmers were highly reliable. The sales representative explained that a service contract on an approximately $160,000 Komstar microfilmer might have cost a customer $35,000 per year, but the machine “never broke.” Therefore, service contracts were, in essence, “free money.”

The service representative estimated that Kodak’s profit margin on micrographics service was “remarkable”—approximately “65-80%.”

One mystery of the Kodak case is that the company operated this micrographics service business for many years before facing serious competition in the service market. The Ninth Circuit noted, but did not explain, the sudden emergence of these competitor independent service providers (what it called “independent service organizations,” or “ISOs”): “Prior to 1982, Kodak serviced almost all of its micrographic and copier equipment. . . . ISOs developed and began to compete significantly with Kodak in 1984 and 1985. ISOs offered

---

86. Interview with anonymous former Kodak microfilm sales representative, supra note 63.
87. Id.
88. Id.
89. Id.
service for as little as half of Kodak’s price.**90** Even at the start of the litigation, Kodak controlled 95% of the copier service market and 88% of the micrographics service market.**91** This is consistent with the accounts provided by Kodak employees. The micrographics sales representative explained that Kodak sold service to 90% of its equipment purchasers, and those yearly service contracts were consistently renewed year after year (sometimes at rates as high as 98-99% of existing contracts).**92**

There are two mysteries here. First, how was Kodak able to protect its highly profitable service business for so long? Second, what changed? There does not appear to be any account in the literature explaining the evolution of competition in the service market for Kodak equipment. Yet understanding why Kodak faced competition is critical to understanding its subsequent conduct.

Microfilers produced film that required processing. For many years, Kodak owned the laboratories that processed this film and required customers to use its processing labs if they wanted Kodak to provide service for their machines. Kodak appears to have justified this tying arrangement on the grounds that service and film processing were interconnected. Kodak could not reliably determine the source of a film problem if it did not also process the film. In the words of the sales representative, “Total control of it delivered to the customer a high-quality product.”**93** He estimated that 90% of Kodak customers used the company’s processing labs as a result of the tying arrangement between film processing and machine service.**94**

This tying arrangement, as well as the synergies underlying it, made it difficult for competitors to gain a foothold. But in the mid-1980s, Kodak decided to exit the microfilm film processing business. In an attempt to cut costs, it sold off its local film processing centers to individual owners nationwide.**95** As the former Kodak Vice-President explained, Kodak “didn’t want that business.”**96** The result of this vertical de-integration, however, was that Kodak began facing competition in the service market. The former Vice-President confirmed that the

---

**90.** *Image Tech. Serv., Inc.*, 903 F.2d at 614.

**91.** *Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1212 (9th Cir. 1997).

**92.** Interview with anonymous former Kodak microfilm sales representative, *supra* note 63.

**93.** *Id.*

**94.** *Id.*

**95.** *Id.*

**96.** Interview with anonymous former Kodak Vice-President, *supra* note 64. Kodak’s sale of the film processing labs may call into question the business justification for the tying arrangement in the first place. This remains a puzzle, but Kodak’s seemingly contradictory behavior might be explained by the shift to digital storage. Kodak at the time was introducing digital storage microfilers. See Gerard A. Santelli, *Com Recorders Viable at Remote Sites*, *COMPUTERWORLD*, May 31, 1982, at 43-44, https://books.google.com/books?id=QghOwt8gQsEC (describing how Kodak’s Komstar 200 microfilmer eliminates the need for chemical processing). This coming shift to digital microfilers may have motivated Kodak to exit the processing business before it lost value while simultaneously reducing the need to control processing to ensure quality service.
The sale of microfilm processing centers created “a lot of little mom-and-pop shops.”

Instead of restricting themselves to film processing, these individual processing centers took advantage of the synergies that had previously driven Kodak to handle service and processing together. The newly independent processing labs began offering to bundle service with film processing. The sales representative explained that these independent processing labs (now independent service providers) began hiring away Kodak service technicians.

These technicians brought their service manuals and stores of knowledge with them. Kodak was upset to be losing service technicians it had trained to third-party competitors.

Soon these mom-and-pop film processors were competing to provide service for microfilers. The Kodak employees said the effect of the sell-off of processing centers was felt quickly. The sales representative explained that service renewal rates, in particular, began to fall. Those customers who did not renew were generally long-time customers with large contracts for older machines. He described the sudden loss of these large, longstanding service contracts as akin to “losing clumps of hair.”

2. Kodak Attempts to Regain Control of the Micrographics Service Market

In selling its film processing labs, Kodak had accidentally created its own competition in its service aftermarkets. The former sales representative explained that the company reacted to the early loss of these service contracts with a haphazard “block and tackle” strategy. To check the loss of service contracts, Kodak sought to prevent ISPs from obtaining parts. When it ceased selling parts to some ISPs directly, equipment buyers began buying parts themselves and passing them along to ISPs. Kodak representatives then required firms that bought parts to self-service their machines and attempted to block these firms from selling purchased parts to ISPs. Critically, none of the Kodak employees recalled the company ever introducing a centralized policy to enforce these various parts restrictions. “They were reacting. And policies were not

97. Interview with anonymous former Kodak Vice-President, supra note 64.
98. Id.
99. Interview with anonymous former Kodak microfilm sales representative, supra note 63.
100. Id.
101. Interview with anonymous former Kodak Vice-President, supra note 64.
102. Interview with anonymous former Kodak microfilm sales representative, supra note 63.
103. Id.
104. Id.
105. Id.
consistently implemented,” the former sales representative noted. “[I]n Helena, Montana it was maybe handled one way, but in New York City it might be handled a different way.” He explained that these decisions were based on the relationships between salespeople and the ISPs, who may have once been Kodak employees. Parts-restriction policies were generally the product of low-level decision-making on a regional basis in an attempt to prop up sales numbers. But what resulted were scattered policies precisely like those described in the litigation. Kodak representatives would attempt to block parts sales to service providers, and the service providers would find an “end-around.” Kodak employees would then come up with a different policy to “lock them out.” ISPs even began using the now-common practice of buying “cadaver” machines (both new and used) and stripping them for parts.

Kodak’s efforts to restrict the flow of parts to ISPs appear to have been particularly ineffective with respect to service of older machines. The early loss of these established customers was likely driven by the availability of cadaver machines. The older the machine, the more cadaver machine parts were available, allowing ISPs to strip parts from these cadavers even when they could not purchase them directly from Kodak. Kodak also had a practice of raising prices on service for older machines in an attempt to drive those customers to purchase new machines. This approach to service pricing would have only increased established customers’ demand for independent service contracts. Kodak’s concerns about ISP service were focused on these long-time customers’ sudden failure to renew their service contracts.

Though the Supreme Court lacked these details, the Kodak employees provided no facts that call the ISPs’ claimed timeline of Kodak’s actions into question: in 1985, at least some Kodak representatives said they would no longer sell ISPs replacement parts for new micrographics machines; in 1986, some representatives announced that they would restrict the sale of parts for old micrographics machines to “established” ISPs; and finally, later in 1986, Kodak representatives announced that equipment buyers could only receive replacement parts if they self-serviced machines. On April 14, 1987, a group

107. Interview with anonymous former Kodak microfilm sales representative, supra note 63.
108. Id.
109. Id.
110. Id.
111. Id.
112. Id.
113. Id.
115. See id.
116. See id.
of ISPs filed a lawsuit in the Northern District of California. It would take ten years, but these service providers would ultimately prevail.\footnote{117}{See Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195 (9th Cir. 1997). By that point, Kodak had sold its copier sales and service businesses to Danka, a British office equipment company. See also Dana Canedy, Danka to Buy Part of Kodak Copier Unit for $684 Million, N.Y. TIMES (Sept. 10, 1996), http://www.nytimes.com/1996/09/10/business/danka-to-buy-part-of-kodak-copier-unit-for-684-million.html?mcubz=3.}

3. \textit{Anticompetitive Practices in the Copier Market}

Any similar parts-restriction practices in the copier market appear to have been incidental to Kodak’s concerns about the micrographics market. Unlike the micrographics equipment market, in which Kodak was an established firm, Kodak was a relatively new entrant in the market for copiers. Kodak debuted its first copier-duplicator, the Ektaprint 100, in 1975.\footnote{118}{KODAK TIMELINE, http://www.kodak.com/Kodak/corp/aboutus/heritage/milestones/default.htm (last visited Jan. 11, 2018).} The machine was designed in large part by engineers who had previously designed Kodak’s space reconnaissance satellites.\footnote{119}{Interview with anonymous former Kodak Development Manager, in Rochester, N.Y. (Jan. 10, 2017).} It took competitors by surprise and Kodak quickly established a strong market share.\footnote{120}{Id.}

At first, Kodak largely rented the copiers, charging customers on a per-copy basis. In the 1980s, it moved into leasing the machines.\footnote{121}{Telephone interview with anonymous former manager in Kodak Copy Products Division, (Jan. 13, 2017); Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.} In some ways, these market structures did not much differ. Just as with a rental, Kodak received a stream of lease payments for some of the leased machines by financing leases through its own credit arm.\footnote{122}{Id.; Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.} Kodak also continued to charge per click and sell toner and service to buyers of leased machines.\footnote{123}{Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.} The primary differences, it seems, were that (1) the machines were also leased by third-party companies, and (2) the customer could arrange to own the product outright at the end of the lease term (a “lease-to-own” arrangement).\footnote{124}{Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.}

None of the Kodak employees I spoke to recalled significant losses in copier service. The former Vice-President recalled that the company had not been concerned about losses in the copier service division and recalled no significant effort to prevent those losses.\footnote{125}{Telephone interview with anonymous former manager in Kodak Copy Products Division, supra note 121.} Another Kodak executive also remembered very little competition in service for copiers.\footnote{126}{Interview with anonymous former Kodak Vice-President, \textit{supra} note 64.} A Manager in the Copy Products Division noted that customers almost universally purchased service contracts for

\begin{itemize}
  \item \footnote{117}{See Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195 (9th Cir. 1997). By that point, Kodak had sold its copier sales and service businesses to Danka, a British office equipment company. See also Dana Canedy, Danka to Buy Part of Kodak Copier Unit for $684 Million, N.Y. TIMES (Sept. 10, 1996), http://www.nytimes.com/1996/09/10/business/danka-to-buy-part-of-kodak-copier-unit-for-684-million.html?mcubz=3.}
  \item \footnote{118}{KODAK TIMELINE, http://www.kodak.com/Kodak/corp/aboutus/heritage/milestones/default.htm (last visited Jan. 11, 2018).}
  \item \footnote{119}{Interview with anonymous former Kodak Development Manager, in Rochester, N.Y. (Jan. 10, 2017).}
  \item \footnote{120}{Id.}
  \item \footnote{121}{Telephone interview with anonymous former manager in Kodak Copy Products Division, (Jan. 13, 2017); Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.}
  \item \footnote{122}{Id.; Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.}
  \item \footnote{123}{Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.}
  \item \footnote{124}{Interview with anonymous former Kodak microfilm sales representative, \textit{supra} note 63.}
  \item \footnote{125}{Telephone interview with anonymous former manager in Kodak Copy Products Division, \textit{supra} note 121.}
  \item \footnote{126}{Interview with anonymous former Kodak Vice-President, \textit{supra} note 64.}
\end{itemize}
their Kodak copiers.\textsuperscript{127} He acknowledged the existence of some third-party efforts to poach service contracts, but said this mostly related to fully owned machines after lease terms had expired.\textsuperscript{128} The leases themselves were priced to include service, he explained.\textsuperscript{129} These remarks are supported by the record, which suggests that Kodak retained 95\% of the market for copier service through the start of the litigation.\textsuperscript{130}

Nonetheless, Kodak salespeople did restrict the sale of copier parts to ISPs. A former Kodak Vice-President confirmed that the company made efforts to restrict copier parts access in 1985.\textsuperscript{131} In the ISP litigation, Kodak consistently maintained that it had never knowingly sold copier parts to these companies in the first place (making any restrictions not a change in policy, but a reaffirmation of policy).\textsuperscript{132} The ISPs, in contrast, argued that Kodak made exceptions to this practice before finally putting the policy in writing in 1985.\textsuperscript{133} The former Kodak Vice-President confirmed that the company made exceptions.\textsuperscript{134} The regional sales representative also described a highly informal sales structure, with little centralized direction and even less documentation of sales practices.\textsuperscript{135} He too believed the company likely made exceptions and for a time sold the ISPs copier parts as they had claimed.\textsuperscript{136}

The Ninth Circuit ultimately settled on the following facts: “In 1985, Kodak stopped selling copier parts to ISOs, and in 1986, Kodak halted sales of micrographic parts to ISOs. Additionally, Kodak secured agreements from their contracted original-equipment manufacturers not to sell parts to ISOs.”\textsuperscript{137} While these facts are broadly consistent with the Kodak employees’ accounts, neither the Ninth Circuit nor any other court provided an accurate account of Kodak’s motivations for instituting these policies. Kodak instituted parts restrictions to prevent the loss of micrographics service contracts. It appears that it instituted similar policies in the copier division to prevent the loss of service contracts from spreading. Kodak’s practices in the copier and micrographics market do not accord with stories of opportunistic attempts to take advantage of locked-in

\begin{flushright}
\textsuperscript{127} Telephone interview with anonymous former manager in Kodak Copy Products Division, supra note 121.
\textsuperscript{128} Id.
\textsuperscript{129} Id.
\textsuperscript{130} Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1212 (9th Cir. 1997).
\textsuperscript{131} Interview with anonymous former Kodak Vice-President, supra note 64.
\textsuperscript{134} Interview with anonymous former Kodak Vice-President, supra note 64.
\textsuperscript{135} Interview with anonymous former Kodak microfilm sales representative, supra note 63.
\textsuperscript{136} Id.
\textsuperscript{137} Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1201 (9th Cir. 1997).
\end{flushright}
RECONSIDERING KODAK

consumers. The company was instead attempting to prevent the independent processing labs it had created from encroaching on its aftermarket customer base.

This account also differs substantially from those accounts offered by Klein and Borenstein. Klein argued that Kodak tied service to parts in an attempt to raise prices on high-volume users and more effectively price discriminate,\textsuperscript{138} While Klein’s account has substantial theoretical appeal, it does not comport with Kodak’s business practices at the time. Kodak had more effective tools for price discrimination through its pay-per-click pricing for copiers, sale of film for microfilmers, and renegotiation of microfilmer service contracts. Furthermore, the former Kodak Vice-President to whom I spoke candidly rejected price discrimination as a motive for the company’s decisions in these markets.\textsuperscript{139}

Borenstein and co-authors provide powerful reasons to believe a firm with an aftermarket monopoly might opportunistically take advantage of locked-in consumers.\textsuperscript{140} But a careful look at the facts shows that Kodak did not seek to take advantage of its locked-in buyers. It instead sought to “lock out” up-and-coming competitors from whom buyers had never anticipated purchasing in the first place. It is understandable that neither ISPs nor Kodak would have offered this third explanation. The ISPs had an incentive to frame Kodak as an opportunistic actor using its monopoly power to exploit its customers’ expectations. At the same time, while Kodak had good reason to claim that it was not taking advantage of its customers’ expectations, the company was not eager to offer a story in which it did in fact attempt to monopolize the aftermarket, even if for reasons different than those alleged by the ISPs. Neither side stood to benefit from the true story; likely for that reason, it was not presented.

II. THE IMPACT OF KODAK DOCTRINE

The Supreme Court appears to have misunderstood the motivations underlying Kodak’s market practices. This misunderstanding led the Court to use the blunt instrument of antitrust liability to address a problem of little significance. The resulting doctrine was not only ineffective, but it may have had the perverse consequence of promoting the very market concentration it sought to constrain.

The first section of Part II considers a hypothetical company introducing a durable product with substantial aftermarket. The company might structure this aftermarket in a few different ways. Looking at these various market structures, the first section shows how the legal doctrine established in Kodak did little to protect consumers in the way the Supreme Court intended. The Court’s aftermarket rule did not prevent firms from entirely foreclosing aftermarket competition or from prospectively reserving the right to foreclose aftermarket

\textsuperscript{138} Klein, supra note 3, at 66.
\textsuperscript{139} Interview with anonymous former Kodak Vice-President, supra note 64.
\textsuperscript{140} Borenstein, supra note 4, at 463.
competition. As a result, the *Kodak* rule is likely to benefit only aftermarket customers who bought equipment not expecting access to a particular aftermarket.

The discussion then turns to a potential defense of the *Kodak* doctrine: even if it provides limited protections for consumers, it may promote market entry by third-party aftermarket competitors and thereby improve consumer welfare. Yet this apparent benefit is a double-edged sword. Restrictions on the sort of aftermarket lock-outs Kodak engaged in *do* nominally enable greater competition by third-parties, but these protections also drive firms to prevent aftermarket entry in new and different ways. By regularly redesigning parts, and by installing protective software, firms can effectively lock-out third-party competitors in ways not contemplated by the Supreme Court. In fact, Kodak adopted these very alternatives in the wake of the *Kodak* litigation. These alternative strategies for restricting aftermarkets have only advanced with the rise of software in durable equipment. A picture emerges of the *Kodak* doctrine as an antitrust rule with few competition-enhancing benefits—particularly in the age of software-enabled office equipment. A close look at a recent case demonstrates how software has been used to allow equipment manufacturers to effectively regulate the exit and entry of aftermarket firms.

The third and final section shows the implications of this dated doctrine. Not only is the *Kodak* doctrine unable to prevent software-based control of equipment aftermarkets, but it may actually promote market concentration in aftermarkets. One benefit of software-controlled service aftermarkets is that firms can partner with third-parties to offer lower cost service for some or all of their equipment. Software enables the sort of measured vertical de-integration that eluded Kodak. Standing in the way, however, is the *Kodak* doctrine. Aftermarket companies can now wield the *Kodak* doctrine as a tool to break agreements with equipment manufacturers. The result is that vertically integrated firms cannot easily cede control of their aftermarkets. The *Kodak* doctrine, poorly adapted to the age of software, not only does little to promote aftermarket competition, but likely inhibits a major potential route to lower market concentration in equipment aftermarkets.

*A. The Kodak Doctrine’s Limited Protections*

Consider a company that has developed an innovative piece of durable office equipment—call it the Codox machine. The market for this machine is competitive, but the Codox has impressive new features and will likely be popular. The machine is expensive and durable. As is often the case with durable equipment of this sort, Codox Corp. expects to earn limited profits from the sale
RECONSIDERING KODAK

of the machine itself.141 The majority of the profit will be found in the
aftermarkets: replacement parts and service for the machine.142

Codox is planning to roll out the new product and needs to determine how to
structure its aftermarket. What restrictions does the Kodak aftermarket doctrine
place on Codox’s conduct? Consider the following aftermarket arrangements
Codox Corp. might adopt:

(1) Codox might decide to fully control the markets for parts and
service. In this scenario, the aftermarket is fully monopolized.

(2) Codox might decide to sell only equipment and parts, encouraging
third parties to provide service.

(3) Codox might decide to compete in the service aftermarket with
independent providers while making parts available to all buyers.

In scenario (1), the buyers of Codox equipment will be fully aware of the
aftermarket monopoly, and will be locked into the aftermarket from the start. So
long as customers are fully aware of this market arrangement at the time of
purchase, and the market remains fully monopolized, the Kodak aftermarket rule
is not implicated.143 Conversely, in scenario (2), where Codox continues as an
equipment and parts manufacturer and sells parts to all aftermarket service
providers, the Kodak doctrine will not be implicated because there is no
aftermarket restriction. Scenario (3), where Codox decides to fully compete in
the aftermarket for service with independent providers, is much the same; if
Codox never restricts ISPs’ access to parts, the Kodak doctrine is not implicated.

However, if Codox later attempts to reverse course and stop selling parts to
independent providers—perhaps in an attempt to take over the market for service
on its machines—the Kodak doctrine may provide buyers in scenarios (2) and
(3) some protection. This would be a form of the opportunistic lock-in the Kodak
Court appears to have envisioned in reaching its decision: Codox sells equipment
while buyers have access to third-party service, but then Codox decides to revoke
access to this cheap service and extract additional profits from locked-in
consumers.

The value of this protection is more limited than it appears. As an initial
matter, the antitrust doctrine provides no protection for consumers that is not
already available by contract. A buyer could contract for a guarantee that parts
and service of equivalent price and quality would be available throughout the
lifecycle of the lease. Buyers could do this by negotiating the lease to require

141. See e.g., Avaya Inc., RP v. Telecom Labs, Inc., 838 F.3d 354, 367 (3d Cir. 2016) (describing
how Avaya and its competitors who make durable office equipment “follow a similar business model of
low-margin equipment and high-margin maintenance.”).

142. For the sake of simplicity, assume there are no “consumables” needed for this high-tech machine
to function (such as toner for copiers and film for microfilmers).

143. Digital Equipment Corp. v. Uniq Digital Technologies, 73 F.3d 756, 763 (7th Cir. 1996) (“The
Court did not doubt in Kodak that if spare parts had been bundled with Kodak’s copiers from the outset,
or Kodak had informed customers about its policies before they bought its machines, purchasers could
have shopped around for competitive life-cycle prices.”).
continued access to low-cost service providers—or at least Codox-provided service and parts at equal cost. Buyers could also negotiate for a “most favored purchaser” clause, as Benjamin Klein suggested in critiquing the Kodak Court’s concerns about aftermarket lock-in.144 These contractual protections would be just as effective at protecting individual consumers from aftermarket lock-in as the Kodak doctrine.

But in a world where buyers must negotiate these terms into the lease, surely some will fail to do so and consequently be harmed by surprise monopolistic pricing down the line. Judge Easterbrook dismissed this advantage shortly after the Kodak decision, noting that the Kodak aftermarket doctrine only prevents companies from playing a very short-term game. Once a company has restricted the aftermarket in a way that is disadvantageous to prior purchasers, “[i]t could not do so again; once the new policy was known, consumers could shop with full information.”145 But the Court in Kodak seems to have been concerned that the reputational effect Judge Easterbrook describes would be an insufficient check on the company’s behavior. The majority expressed concern that Kodak could “discriminate between sophisticated and unsophisticated consumers” such that “the sophisticated consumers will be unable to prevent the exploitation of the uninformed.”146 One might think that buyers who fail to negotiate necessary pricing protections might also be less informed about Codox’s reputation for locking in its buyers. It is not incomprehensible, therefore, that the company could successfully take advantage of a certain subset of unsophisticated consumers without fear of long-term harm.

Unfortunately, the Kodak doctrine provides only limited protection for these unsophisticated consumers. The Kodak aftermarket doctrine merely shifts the burden of negotiating future guarantees about parts and service from the buyer to Codox. As explained in the Third Circuit’s 1997 Domino’s Pizza decision, an express contract clause reserving the right to later restrict access to aftermarket supplies is usually sufficient to insulate the seller from Kodak aftermarket liability.147 Domino’s franchisees were notified in their franchise contracts that

144. Klein, supra note 3, at 51.
145. Uniq Digital Technologies, 73 F.3d at 762.
147. Queen City Pizza, Inc. v. Domino’s Pizza, Inc., 124 F.3d 430, 440 (3d Cir. 1997) (“The Kodak case arose out of concerns about unilateral changes in Kodak’s parts and repairs policies. When the copiers were first sold, Kodak relied on purchasers to obtain service from independent service providers. Later, it chose to use its power over the market in unique replacement parts to squeeze the independent service providers out of the repair market and to force copier purchasers to obtain service directly from Kodak, at higher cost. Because this change in policy was not foreseen at the time of sale, buyers had no ability to calculate these higher costs at the time of purchase and incorporate them into their purchase decision. In contrast, plaintiffs here knew that Domino’s Pizza retained significant power over their ability to purchase cheaper supplies from alternative sources because that authority was spelled out in detail in section 12.2 of the standard franchise agreement. Unlike the plaintiffs in Kodak, the Domino’s franchisees could assess the potential costs and economic risks at the time they signed the franchise agreement. The franchise transaction between Domino’s Pizza, Inc. and plaintiffs was subjected to competition at the pre-contract stage. That cannot be said of the conduct challenged in Kodak because it was not authorized by contract terms disclosed at the time of the original transaction.”).
RECONSIDERING KODAK

Domino’s reserved the right to restrict their access to pizza-making supplies and ingredients. When the company began imposing restrictions to eliminate a competing dough-supplier, the franchisees brought an antitrust action under a Kodak aftermarket theory. The Third Circuit, however, ruled that the original contract provision insulated Domino’s from Kodak aftermarket liability. The court noted that the “plaintiffs here knew that Domino’s Pizza retained significant power over their ability to purchase cheaper supplies from alternative sources because that authority was spelled out in detail in section 12.2 of the standard franchise agreement.” The Kodak decision, in its focus on aftermarket surprise, has not been interpreted to bar prospective reservation of the right to tie parts to service—either for particular customers or, as in scenario (1) above, for all equipment purchasers. When customers are “put on clear notice” that a purchase “preclude[s] the use of ISP maintenance,” there is no risk of aftermarket liability in later restricting those buyers’ access to service through parts restrictions. So long as Codox includes in its lease contract a provision reserving the right to restrict access to these aftermarket service and parts providers in the future, it will likely have a broad, if not unlimited, right to restrict aftermarket service access going forward.

If the Kodak doctrine places its faith in the protection of unsophisticated buyers in those same buyers carefully scrutinizing their purchase contracts, it is unlikely to provide robust protection. Firms are likely to reserve the right to impose future restrictions and therefore be shielded from liability should they ever restrict the supply of parts in aftermarkets. Given the vagueness of the Kodak ruling, restrictions imposed that are not justified by a valid business purpose might lead to liability, but an antitrust claim of that sort would be difficult for plaintiffs to prove and far from certain to succeed. The Kodak doctrine thus provides only limited protection for buyers in the traditional lock-in story that could arise in scenarios (2) and (3).

It turns out that the Kodak aftermarket doctrine primarily limits firms’ ability to impose aftermarket restrictions in a narrow set of cases: when a firm both allows aftermarket competition in the first place and also fails to reserve its right to restrict aftermarket competition in the future. Even then, not all consumers will be protected from future aftermarket restrictions; a firm facing newfound competition from ISPs may begin restricting the use of service from these providers in its new equipment contracts. This means that the Kodak doctrine

148. Id.
149. Id.
151. Id. at 404 (“[W]e interpret Kodak as standing for two propositions: (1) that firms operating in a competitive primary market are not thereby categorically insulated from antitrust liability for their conduct in related aftermarkets; and (2) that exploitation of locked-in customers is one theory that courts will recognize to justify such liability.”).
152. See id. at 405 (“[N]o antitrust liability for a Kodak-style attempted monopolization claim could lie after May 2008 when customers were put on clear notice that purchasing an Avaya PBX precluded use of ISP maintenance.”).
mostly protects buyers who purchased old equipment for which the equipment manufacturer failed to reserve a future right to restrict aftermarkets. The value of this protection, which buyers could similarly obtain by contract, should be weighed against its costs.

The *Kodak* doctrine is poorly targeted. A company is unlikely to forget to reserve the right to restrict aftermarkets if it is concerned about aftermarket competitors. Instead, an equipment manufacturer will most likely fail to reserve the right to restrict the use of aftermarket competitors when there are no significant aftermarket competitors at the time the equipment is sold. For this reason, the *Kodak* doctrine is not well designed to address circumstances of aftermarket opportunism. Instead of cases where a buyer calculates a lower lifecycle price based on the existence of third-party aftermarket providers and is then caught off-guard by aftermarket restrictions, the *Kodak* doctrine is structured in such a way that it is implicated in circumstances where third-party aftermarket suppliers arise after the buyers purchased the durable equipment. Whatever the merits of the rule, it is not effectively targeted to address aftermarket opportunism.

Some may argue that this is a valuable use of antitrust doctrine all the same. If aftermarket competitors appear organically, the *Kodak* doctrine may promote market competition by enabling these competitors to compete for contracts on old equipment. As occurred with Kodak, ISPs could buy up cadaver machines, strip them for parts, and compete for service contracts on already-sold equipment. This competition would very likely benefit consumers.

However, there are good reasons to doubt that aftermarket competitors will frequently appear in this way. Not only have companies become more creative in how they lock out third party entrants, but the software revolution has made locking out competitors in aftermarket very easy. By the time the *Kodak* decision came out, durable equipment manufacturers had developed highly effective ways to regulate aftermarkets. If the organic aftermarket competition protected by the *Kodak* doctrine would ever have seriously advanced consumer welfare, the repeated redesign of parts and the software revolution made such organic competition without the consent of the equipment maker considerably less likely.

First came the attempts to lock out competitors by redesign. Kodak aftermarket competitors were in part able to compete in service by accessing cadaver machines to obtain machine parts and hiring away Kodak service technicians.\(^{153}\) Kodak and other equipment manufacturers subsequently went to substantial lengths to limit the ability of ISPs to strip old machines for parts. The former Kodak Vice-President explained that the company was attempting to design its machines to prevent this practice at the time of the litigation.\(^{154}\)

---

\(^{153}\) Interview with anonymous former Kodak microfilm sales representative, *supra* note 63.

\(^{154}\) Interview with anonymous former Kodak Vice-President, *supra* note 64.
had realized that the restrictions on part sales at issue in the case would not be enough to prevent third-party competition. The Vice-President described “looking at Xerox and thinking, ‘How are they making all their money?’ . . . Well, they’ve created a monopoly in spare parts. So why don’t we create a monopoly in spare parts? Well, you can’t do that. You’ve got a whole bunch of spare parts out there.”\(^{155}\) The company had to protect against the use of cadaver machines as a substitute for sold parts. The Kodak executive explained the company’s next strategy: “So what we want to do is come up with some new products. . . . And we’re going to design those so that they are not interchangeable with earlier products and we can create a monopoly in those products and we can make all the money that Xerox is making.”\(^{156}\) In other words, in addition to tying service to parts, Kodak sought to preserve its aftermarket monopoly by designing its new equipment so that old parts could not be used to service new machines. Note that this inefficient, superfluous redesign is another substantial cost of aftermarket antitrust liability.

Creative part design did not fully eliminate aftermarket competitors’ ability to use stripped parts. Even if each machine had wholly unique sets of parts, which was not the case, aftermarket competitors could still eventually obtain a stock of each machine’s necessary parts and create a robust service business for old equipment. But soon a more efficient form of aftermarket protection arose in the form of software-based service.

The Kodak litigation coincided with the rise of software-heavy equipment. The Kodak employees I spoke to described how Kodak and its competitors moved from parts restrictions and redesign to building service restrictions into the equipment software—and how this is now standard practice. One employee, now an independent service provider for Kodak equipment, explained that the company managed in the years following the start of the Kodak litigation to use software-based service to obtain the sort of aftermarket lock-out the company had sought with part restrictions:

In that day it was, “How do we block people from getting our product? How do we block them from getting parts? How do we block people from getting that.” . . . [T]oday what they do is design it into the product. They build a scanner driver—well that driver, which does all the diagnostic work for the scanner, is proprietary. It’s part of the design of the device. So if I want to service that machine, I can’t get the tool to be able to see—to run this component to see where it’s broken. . . . [O]ver thirty years they’ve figured it out—how to lock out the competition.\(^{157}\)

Companies are now able to control access to equipment service through software, making it more difficult for unlicensed technicians to access and work on machines. Now technicians either obtain licensed access from equipment manufacturers like Kodak directly, or they face unprecedented difficulty competing in aftermarket.

\(^{155}\) Id.

\(^{156}\) Id.

\(^{157}\) Interview with anonymous former Kodak microfilm sales representative, supra note 63.
Software allows a company to restrict access codes necessary to service equipment to only those companies authorized to provide service. Having spare parts is no longer enough. As a result, market entry for aftermarket competitors may be literally blocked by a password. The *Avaya* case, discussed below, shows how software-based equipment service allows companies to fully control their service aftermarkets from the start. *Avaya* demonstrates that, in a world of software-enabled equipment, *Kodak*-style aftermarket liability is only likely to arise in circumstances where a company has willingly ceded some vertical control of its aftermarket to ISPs. The result is an antitrust doctrine wielded as a weapon by aftermarket companies which exist only by the grace of the equipment manufacturer. By imposing substantial costs on companies’ decisions to cede aftermarket control to independent providers, the *Kodak* doctrine raises the costs of vertical de-integration. As a result, to the extent the *Kodak* doctrine substantially affects aftermarket practices, it likely promotes the very concentration in aftermarkets that it sought to prevent.

**B. The Avaya Case**

Avaya Inc. manufactured, sold, and serviced telecom equipment. A group of small service providers operating as a unit the court refers to as TLI (“Telecom Labs, Inc.”) also provided service for Avaya’s private branch exchange, a form of computerized switchboard, as well as Avaya’s predictive dialing systems, a type of software that improves the chances that a call will be answered. TLI also sold Avaya equipment. The companies had a cooperative relationship from 1996 to 2003 through Avaya’s Business Partners program. Avaya even subsidized TLI’s hiring of laid-off Avaya maintenance technicians.

Avaya took full advantage of software restrictions to control its aftermarket. As is common in durable equipment sales, Avaya made limited profits on the sale of its original private branch exchange equipment. Service was much more profitable and Avaya wanted to keep much of that business to itself. Servicing Avaya products required using the company’s maintenance software, which included a number of features that remained deactivated until customers or service providers were given access. Therefore, the company fully controlled...
the maintenance aftermarket and was able to selectively unlock service features depending on the license customers purchased. The top-tier service enabled all of the software’s maintenance features. Avaya kept these top-tier service contracts for its own technicians, but Avaya also chose not to fully control the equipment aftermarket. Avaya allowed Business Partners, like TLI, to provide middle-tier service—but only if they completed trainings through Avaya and agreed not to poach top-tier service customers to whom Avaya sold service. Like Kodak, Avaya also offered a self-service option, which gave clients access to service codes, but required that they not contract with ISPs.

Avaya Business Partners, such as TLI, were limited to providing the middle-tier service. The companies’ legal dispute began when Avaya claimed that TLI was poaching business from customers who used Avaya for equipment service, contrary to TLI’s contractual agreements as a Business Partner. Avaya contended that it severed its relationship with TLI and eliminated the company’s access to the necessary login codes to provide service. According to Avaya, TLI then managed to obtain unauthorized access to the equipment by hiring former Avaya employees to crack the passwords, by obtaining passwords from other Business Partners, and by using default passwords TLI learned during its time as a Business Partner. In 2006, Avaya responded with a suit claiming certain business torts as well as breach of contract.

The facts surrounding the breakdown of TLI and Avaya’s relationship were confused and contested. After seven years of pre-trial discovery and motion practice, TLI moved for and obtained judgment as a matter of law on all of Avaya’s remaining affirmative claims. TLI brought antitrust claims as counterclaims to Avaya’s original action. The case went to trial on TLI’s antitrust counterclaims, and the jury found Avaya liable for attempted monopolization of the market for private branch exchange maintenance and for unlawfully tying predictive dialing system software patches to the purchase of service contracts. The District Court granted a post-trial motion for an injunction requiring Avaya to provide maintenance license keys to ISPs for private branch exchange equipment purchased before 2008. Avaya’s attempt to enforce its contract

purchasers with MSPs ‘turned off.’ MSPs have to be turned on or ‘activated’ by Avaya to allow an equipment owner to run the set of maintenance commands permitted by MSPs.” (citations omitted)).

165. Avaya, 838 F.3d at 367.
166. Id. at 367-68.
167. Id. at 368.
168. Id. at 371 (“According to Avaya, that unlawful conduct began when TLI, then still a Business Partner, improperly developed a disloyal commercial strategy based on poaching Avaya customers.”).
169. Avaya, 838 F.3d at 374-75.
170. Id. at 366.
171. Id. at 415 (Hardiman, J., dissenting).
172. Id. at 372.
173. Id.
with a Business Partner had resulted in an antitrust judgment under the Kodak tying doctrine.\textsuperscript{174}

On appeal, the Third Circuit vacated the judgment with respect to a number of TLI’s antitrust claims. Beginning in 2008, already two years into the prolonged litigation, Avaya had begun inserting into customer contracts clear notice of its restrictions on the use of aftermarket competitors. Citing the Domino’s Pizza decision, the Third Circuit held that Avaya could not face antitrust liability for aftermarket restrictions following this change to their contract in 2008.\textsuperscript{175}

TLI argued that, before 2008 and after Avaya terminated TLI as a Business Partner, Avaya sent threatening letters to TLI’s customers intimating that they might incur liability for using TLI’s services without Avaya’s authorization.\textsuperscript{176} TLI also alleged that Avaya used its control over customer software to disable TLI clients’ access to the maintenance software.\textsuperscript{177} Avaya argued that it was only seeking to enforce its agreements with TLI that TLI not compete with Avaya for other customers.\textsuperscript{178} This attempt to enforce restrictions on ISPs’ service contracting, the Third Circuit explained, presented a valid question under the Kodak doctrine as to whether it was motivated by a valid business purpose or monopolistic effort to “dissociate a competitive market from an aftermarket that the defendant dominates.”\textsuperscript{179} The Third Circuit concluded that Avaya’s use of proprietary service software was “sufficient to show exclusionary conduct” absent an affirmative defense on remand that the practice had a valid business purpose.\textsuperscript{180}

To summarize, Avaya had partnered with outside service providers to serve a portion of its aftermarket. It did so with the expectation, and contractual assurance, that those outside service providers would not poach certain

\textsuperscript{174} Id. at 398 (“TLI has proceeded under a specialized theory of tying developed in a Supreme Court case called Eastman Kodak Company v. Image Technical Services, Inc.”).

\textsuperscript{175} Id. at 405. In Domino’s Pizza, the Third Circuit held that a contractual term requiring franchisees to purchase Domino’s Pizza supplies was not an unlawful aftermarket restraint. See Queen City Pizza, Inc. v. Domino’s Pizza, Inc., 124 F.3d 430, 441 (3d Cir. 1997). Because the franchise agreement had explicitly stated Domino’s right to restrict franchisees aftermarket supply purchases, Domino’s had not involved the “unfair surprise” of the Kodak case. See Avaya, 838 F.3d at 372, 400-01 (3rd Cir. 2016) (citing Domino’s Pizza, 124 F.3d at 430). Like Domino’s, Avaya’s clear notice of the tying arrangement, added to contracts from 2008 on, was sufficient to preclude antitrust liability. See id. at 405. Also at issue in the case was Avaya’s decision to require customers purchasing new predictive dialing systems to purchase a one-year service contract as well. Id. at 369. The court also rejected TLI’s claims regarding Avaya’s tie of these predictive dialing systems to one-year service contracts. Id. at 408. There was no evidence that Avaya had restricted access to service patches prior to announcing the tie in 2007. Id. And critically, the tying arrangement was announced for new sales in 2007 and stated clearly in the contracts. Id. at 408-09.

\textsuperscript{176} Id. at 370.

\textsuperscript{177} Id. at 371.

\textsuperscript{178} Id. at 369 (“Avaya’s story is that it simply enforced long-standing policies against a disloyal former contractor that was breaching contractual duties and dishonestly undermining Avaya’s relationships with its customers.”).

\textsuperscript{179} Id. at 406. The Third Circuit also vacated the District Court’s judgment dismissing Avaya’s common law claims. Id. at 396-97.

\textsuperscript{180} Id. at 407.
aftermarket contracts. The relationship broke down (likely, it seems, because the outside provider violated the contract), and Avaya terminated its relationship with the outside service provider. Avaya was then unable to restrict a now-unauthorized service provider from poaching contracts without incurring potential antitrust liability because it had not reserved the right to restrict aftermarkets in its original contract.

This 2016 decision shows the continued vitality of the Kodak doctrine. As anticipated in the Codox hypothetical laid out above, the case falls into a narrow range of still-relevant cases: those in which an equipment manufacturer does not affirmatively contract for the right to restrict access to aftermarkets, is confronted with an unanticipated aftermarket competitor, and seeks to lock out that competitor from competing for additional customers. Moreover, it shows a set of circumstances likely to precede an aftermarket battle in a world where software enables total control of aftermarkets: a dispute with a competitor who is granted access to the service software through a partnership with the equipment manufacturer.

Avaya therefore reveals the Kodak doctrine in its mature form. Avaya took full advantage of software’s ability to control an aftermarket. Instead of controlling the aftermarket for service on its machines, Avaya invited business partners to provide lower-cost, middle-tier service for its private branch exchanges. It only did so, however, with the assurance that it could restrict these potential competitors to a particular segment of the service market. When one of these competitors ran afoul of that agreement, Avaya attempted to restrict its access to parts. But since Avaya had relied on its contractual agreements with these business partners, it had failed to reserve the right to restrict older customers’ access to ISPs. So, as in the Kodak decision, the Third Circuit held that Avaya’s attempt to restrict this newfound competitor’s unanticipated growth could lead to antitrust liability for any restrictions Avaya placed on those older customers. Just like Kodak, Avaya had opted not to control the full vertical market for its products. And as with Kodak, when a firm that benefitted from this reduced market concentration sought additional business, Avaya sought to prevent the expansion—but antitrust doctrine inhibited its efforts.

C. Weighing the Kodak Doctrine’s Costs and Benefits

As a result of the Kodak aftermarket doctrine, a small portion of Avaya’s past consumers may be able to access a greater variety of service options. These consumer welfare gains, however, are only temporary. Once Avaya inserted a contract term restricting its new customers’ access to aftermarket competitors, it

---
181. Id. at 368 (“Avaya forthrightly admits that it thus imposed vertical restraints on maintenance through the Business Partner program to encourage the Business Partners to ‘expand sales of Avaya PBXs in the competitive primary market, rather than simply to cannibalize existing maintenance business.’”) (citation omitted).
returned to full control of the aftermarket.\textsuperscript{182} The \textit{Kodak} doctrine provides an opportunity for enhanced price competition, but for a limited group of established consumers.

Once the \textit{Kodak} doctrine is better understood, one would expect firms to regularly insert the contractual protections necessary to restrict consumer aftermarket access. Avaya was only liable for the restrictions it imposed on TLI relating to pre-2008 purchasers. By 2008, all new buyers “were on notice” that they would not be able to use unauthorized ISPs like TLI.\textsuperscript{183} Avaya could have prevented liability for its pre-2008 sales, it seems, by including the type of contractual protections it added to the post-2008 contracts. This suggests that the frequency of consumer welfare-enhancing protections under the \textit{Kodak} doctrine will only go down as the doctrine is better understood by firms and better established in case law.

One substantial cost remains. The \textit{Kodak} doctrine locks firms into particular aftermarket structures, preventing firms from opting to reduce aftermarket concentration later on. Consider a hypothetical in which Codox Corp. initially controlled its service market, but has decided it would like to scale back its vertical integration. It might want to partner with outside firms to provide some of the aftermarket services it currently dominates. These businesses would exist due to affirmative decisions by Codox to reduce its control of product aftermarkets. In a world of software-controlled aftermarkets such as Avaya’s, this would be the norm. And because Codox was vertically integrated, it likely would not have reserved its right to restrict its customers’ access to (then non-existent) ISPs. So if Codox chooses to partner with ISPs, it would want to restrict these providers from competing for its high-value service contracts. But the \textit{Kodak} doctrine restricts Codox’s ability to enforce that contractual agreement.

First, Codox cannot restrict past customers from accepting service offers from the competitors it creates because it would not have reserved that right in those contracts. Second, Codox may not be able to contract to prevent these new business partners from pursuing other aftermarket segments. Avaya sought to enforce prior contractual agreements with its authorized ISPs, but faced antitrust liability on remand for doing so.\textsuperscript{184} As \textit{Avaya} demonstrates, if Codox attempts to bar these new business partners from breaching their contracts and poaching Codox service customers, it risks protracted litigation, an antitrust judgment, and an injunction ordering it to grant the third-parties access to the customers Codox specifically sought to reserve for itself. The Third Circuit concluded that Avaya’s use of proprietary service software to restrict TLI’s competition required that Avaya show a valid business purpose on remand to avoid antitrust liability.\textsuperscript{185} So long as Codox’s purpose was market control, it would be unable to take these

\textsuperscript{182} Id. at 405.
\textsuperscript{183} Id.
\textsuperscript{184} Id. at 406-07.
\textsuperscript{185} Id. at 407 & n.51.
steps without generating some pretextual reason for the restriction. The *Kodak* doctrine therefore makes it difficult for vertically integrated equipment manufacturers to vertically de-integrate in a controlled way, as equipment manufacturers who fully control their aftermarkets are inhibited from ceding some of that control.

Even if the *Kodak* doctrine does not prevent every firm from vertically de-integrating, it raises the costs of any de-integration decision. Moreover, if Codox does go ahead and scale back its vertical integration, it will likely want to choose its partners carefully. It will likely choose a smaller number of more reliable companies instead of spreading its aftermarket service contracts to partners big and small. It will also likely choose larger companies that will face more reputational costs if they breach the agreement. In more than one way, the *Kodak* doctrine ends up encouraging aftermarket concentration, as opposed to reducing it.

**CONCLUSION**

Perhaps the best place to look to understand the *Kodak* aftermarket doctrine is the plaintiff in the original case. It was not buyers of Kodak equipment who brought the antitrust action, but competitors hoping to provide services to those buyers. The aftermarket opportunism that drove the *Kodak* decision was a mirage. Historical evidence shows that Kodak’s buyers had not bought the equipment intending to use third-party service. Far from aftermarket opportunism, Kodak was the victim of its own vertical de-integration.

The Court’s attempt to use antitrust law to assure consumers access to aftermarkets looks, in retrospect, highly ineffective. The *Kodak* aftermarket doctrine provided few protections beyond those that have always been available through contract. The *Kodak* doctrine has proven itself to be primarily protective of third-party firms, like the plaintiffs in *Kodak*, not the consumers whom these companies compete to serve. Worse yet, it perversely promotes market concentration in aftermarkets to the detriment of the consumers it sought to help. The Supreme Court’s experiment with aftermarket antitrust protection has not shown promising results. It is time that the Court reconsidered its decision.