ANTITRUST LAW & THE RIGHT TO REPAIR MOVEMENT: WHY KODAK MAY NOT BE SUCH A BAD APPLE

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ABSTRACT

Product manufacturers have increasingly used proprietary software and predatory design to prevent independent servicers from repairing their products, forcing consumers to seek repairs through manufacturer-authorized servicers, often at an inflated price. In response to this, the Right to Repair Movement seeks to promote competition within repairs aftermarkets to reduce costs, mitigate the environmental

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impacts of consumer waste, and increase the overall utility of consumer goods. Right to repair advocates typically lobby for legislative goals, but I argue that antitrust law, namely prohibitions on anticompetitive tying arrangements, can be a useful tool to achieve similar goals in the absence of such legislation. I use the MacBook Pro laptop as a case study to illustrate the law's utility in this context. Furthermore, I argue that the leading Supreme Court case on aftermarket tieins, Eastman Kodak Co. v. Image Technical Services, Inc., may be worthy of revival despite its skeptics.

Introduction

Manufacturers of consumer goods have increasingly used embedded software and predatory designs to prevent independent servicers from repairing their products. These restraints on independent repair force consumers to seek repairs directly from the manufacturer or through authorized service networks, often at an inflated price. Faced with such prices, it may then become cost-effective for consumers simply to discard their equipment and purchase an upgraded model, causing unnecessary waste. In response to these anticompetitive behaviors and their negative externalities, an insurgent Right to Repair Movement has emerged, seeking to counter manufacturers' attempts at monopolizing repairs aftermarkets.¹

This coalition movement, made up of a cross-section of consumer advocates and independent service organizations, typically lobbies for legislation that guarantees consumers' right to self-repair or the right to seek repairs at a servicer of one's choosing.² Momentum has gained in recent years, but the Right to Repair Movement also faces a coordinated opposition of equipment manufacturers, tech firms, and trade associations.³ In 2021, right-to-repair bills were introduced in half of all state legislatures, but none passed.⁴ In 2022, two repair laws were

^{1.} See generally Thorin Klosowski, What You Should Know About Right to Repair, N.Y. TIMES (July 15, 2021), https://www.nytimes.com/wirecutter/blog/what-is-right-to-repair/ (explaining the Right to Repair Movement).

^{2.} See Leah Chan Grinvald & Ofer Tur-Sinai, The Right to Repair: Perspectives from the United States, 31 Austl. Intell. Prop. J. 98, 99 (2020).

^{3.} See Chris Stanton, Do You Have the Right to Repair Your Phone?, N.Y. MAG. (Dec. 30, 2022), https://nymag.com/intelligencer/2022/12/the-right-to-repair-movements-biggest-battle.html.

^{4.} See Elaine S. Povich, Colorado Enacts First 'Right to Repair' Law, But Only for Wheelchairs, STATELINE (June 3, 2022, 12:00 AM), https://www.pewtrusts.org/en/research-and-analysis/blogs/state-line/2022/06/03/colorado-enacts-first-right-to-repair-law-but-only-for-wheelchairs.

passed in Colorado and New York, but the former is tailored to one product and the latter has broad categorical exceptions.⁵

Scholarly literature is divided over whether a right to repair should be sought through legislative action.⁶ Adding to this chorus, I argue that another path towards advancing the right to repair is found in antitrust law, namely prohibitions on anticompetitive tying arrangements, effected through civil enforcement. Tying arrangements, also known as tie-ins, are when a seller abuses their market power to condition the sale of one product on the purchase of another.⁷ Legal scholars, practitioners, and consumer advocates have acknowledged the evident connections between the Right to Repair Movement and antitrust law, since both are ultimately concerned with promoting market competition.⁸

Through this Note, I intend to explore the relationship between antitrust and the right to repair in-depth. To do so, I use Apple's Mac-Book Pro laptop as a case study to examine the utility of tying doctrines in the context of aftermarket repairs while underscoring the need for increased enforcement. In Part I, I provide a brief overview of the Right to Repair Movement's history and policy goals. In Part II, I survey applicable tying doctrines in federal antitrust law. And in Part III, I argue that the top case component of Apple's more recent MacBook

^{5.} *Id.*; Keshia Clukey, *NY Becomes First State With Electronics Right to Repair Law*, Bloomberg Law (Dec. 29, 2022, 12:44 PM), https://news.bloomberglaw.com/us-law-week/ny-becomes-first-state-to-pass-electronics-right-to-repair-law.

^{6.} See Nicholas A. Mirr, Note, Defending the Right to Repair: An Argument for Federal Legislation Guaranteeing the Right to Repair, 105 IOWA L. REV. 2393, 2396 (2020); Jared A. Mark, Note, Realizing a New Right: The Right to Repair at the Federal Stage, 23 N.C. J.L. & TECH. 382, 388 (2021) (arguing for congressional reinforcement of executive action); Leah Chan Grinvald & Ofer Tur-Sinai, Intellectual Property Law and the Right to Repair, 88 FORDHAM L. REV. 63, 70 (2019) (identifying instances where intellectual property rights may conflict with repair legislation, but ultimately arguing that IP law should accommodate the right to repair); Emily G. Brown, Note, Time To Pull the Plug? Empowering Consumers To Make End-of-Life Decisions for Electronic Devices Through Eco-Labels and Right to Repair, 2020 U. ILL. J.L. TECH. & POL'Y 227, 229 (2020) (noting the advantages of updated product labeling standards over repair legislation to reduce consumer waste); Marissa MacAneney, Note, If It Is Broken, You Should Not Fix It: The Threat Fair Repair Legislation Poses to the Manufacturer and the Consumer, 92 St. John's L. Rev. 331, 355–56 (2018) (arguing that industry self-regulation is more efficient than overly broad legislation).

^{7.} E.g., N. Pac. Ry. Co. v. United States, 356 U.S. 1, 5–6 (1958).

^{8.} E.g., Anti-Trust, THE REPAIR ASS'N, https://www.repair.org/anti-trust (last visited Oct. 4, 2023) ("[M]ost anti-trust actions [related to repair] involve . . . tying agreements, exclusive dealings, and price discrimination.").

Pro models represents an anticompetitive tie-in which restrains competition in the aftermarket for replacement parts.

I. THE RIGHT TO REPAIR MOVEMENT

A. The Movement's Goals

The Right to Repair Movement is a decentralized movement which advocates for the increased repairability of consumer goods, from headphones and coffee machines to agricultural equipment and medical devices. The movement is conceptually premised on the right of consumers to exercise control over goods they have purchased without undue interference from the manufacturer. In other words, if you own it, you should be able to fix it too—or at least decide who will fix it for you. The movement is comprised of a broad coalition of consumer advocates, independent service organizations, repair technicians, small businesses, environmentalists, agricultural workers, disability rights advocates, and others, all of whom have different but complementary reasons to lobby for similar policy objectives under the repair banner. In

In practice, the right to repair takes many forms. It is perhaps best understood, then, in contrast with its conceptual opposite, planned obsolescence. To propel consumption even during periods of economic downturn, manufacturers chose to build obsolescence into their products. ¹¹ The phenomenon gained a foothold in the automotive industry a hundred years ago. ¹² Originally, it involved updated stylings to induce consumer demand for products that would be considered "better" solely by virtue of their novelty. But soon, obsolescence also became a feature of industrial design. ¹³

Planned obsolescence can be accomplished through several means.¹⁴ The most straightforward method is to incorporate physical restrictions into a product's design which impair the ability to open the device or remove its component parts. This may be done by welding parts together or using highly specialized parts that require unique

^{9.} See Stanton, supra note 3.

^{10.} See Grinvald & Tur-Sinai, supra note 2, at 99.

^{11.} See generally GILES SLADE, MADE TO BREAK: TECHNOLOGY AND OBSOLESCENCE IN AMERICA (2006) (surveying the history of planned obsolescence in the American economy).

^{12.} Id. at 4-5.

^{13.} Id.

^{14.} For a detailed overview, *see* U.S. Fed. Trade Comm'n, Nixing the Fix: An FTC Report to Congress on Repair Restrictions 17–24 (2021).

tools.¹⁵ Another common strategy is to limit the availability of parts, manuals, and tools by providing them only to authorized servicers, creating an artificial shortage in the market.¹⁶ Moving into the twenty-first century, software locks, digital rights management tools, and technological protection measures can be used to ensure that consumer-electronics repairs can only be performed by authorized servicers.¹⁷ By making repairs difficult, if not impossible, for independent servicers, manufacturers can monopolize the market for repair parts and services, either to raise prices or to encourage upgrade purchases.¹⁸

The Right to Repair Movement aims to prevent these very harms by advocating for equal access to tools and information, among other goals. For example, the Repair Association, a prominent repair advocacy group, lists its policy objectives as follows: making manuals, schematics, diagrams, diagnostic tools, and machine code publicly accessible; making service parts and tools available to independent servicers at non-discriminatory pricing; legalizing device unlocking to allow modification and custom software installation; and integrating repairability into product design practices. ¹⁹ This list is not exhaustive, but it represents central pillars of repair advocacy.

B. Recent Developments

The Right to Repair Movement has gained considerable momentum in recent years. In 2021, right-to-repair bills were introduced in more than half of all state legislatures, but none passed.²⁰ In 2022, Colorado became the first state to pass right-to-repair legislation specifically for powered wheelchairs.²¹ New York also became the first state to enact a right-to-repair law for consumer electronics which requires manufacturers to make diagnostic and repair information reasonably available. However, there are carve-outs for motor vehicles, medical devices, and industrial offroad equipment.²²

^{15.} Id. at 18.

^{16.} Id. at 18-19.

^{17.} Id. at 23.

^{18.} See John Harris, Planned Obsolescence: The Outrage of Our Electronic Waste Mountain, The Guardian (Apr. 15, 2020, 1:00 PM), https://www.theguardian.com/technology/2020/apr/15/the-right-to-repair-planned-obsolescence-electronic-waste-mountain.

^{19.} Policy Objectives, THE REPAIR ASS'N, https://www.repair.org/policy (last visited Oct. 4, 2023).

^{20.} Povich, supra note 4.

^{21.} *Id*.

^{22.} Clukey, supra note 5.

In addition to state legislatures, the federal government has taken interest in Right to Repair issues. In July 2019, the Federal Trade Commission held a workshop on repair restrictions.²³ In response to that workshop, Congress directed the FTC to a submit a report on "anticompetitive practices related to repair markets" along with policy recommendations.²⁴ That report was submitted in May 2021.²⁵ Two months later, President Biden signed a wide-ranging executive order to promote competition that instructed the FTC to draft regulations addressing "unfair anticompetitive restrictions on third-party repair or self-repair of items, such as the restrictions imposed by powerful manufacturers that prevent farmers from repairing their own equipment."²⁶

II. TYING PROHIBITIONS IN FEDERAL ANTITRUST LAW

A. Elements of an Illegal Tie-in

A tying arrangement, or tie-in, is when a seller conditions the sale of one product, the "tying" product, on the purchase of another, the "tied" product.²⁷ Such arrangements may be created between goods, services, or both. Because a product can almost always be broken down into component parts, the law's prohibition is limited in scope.²⁸ Similarly, tie-ins are not necessarily harmful; it may be economically efficient for goods or services to be sold together.²⁹ Instead, the law is

^{23.} Nixing the Fix: A Workshop on Repair Restrictions, U.S. FED. TRADE COMM'N, https://www.ftc.gov/news-events/events/2019/07/nixing-fix-workshop-repair-restrictions (last visited Oct. 4, 2023).

^{24.} H.R. REP. No. 116-456, at 67 (2020).

^{25.} See FTC, supra note 14.

^{26.} Exec. Order No. 14,036, 86 Fed. Reg. 36,987, 36,992 (July 9, 2021). For an in-depth discussion of the executive order, see generally Herbert Hovenkamp, President Biden's Executive Order on Competition: An Antitrust Analysis, 64 ARIZ. L. REV. 383 (2022). The reference to the agricultural sector reflects ongoing concern about the manufacturer John Deere's use of proprietary software in its tractors and other equipment. In January 2023, the company signed a memorandum of understanding with the American Farm Bureau Federation addressing repair issues. See Patience Haggin, Deere to Allow Farmers to Repair Their Own Equipment, WALL St. J., https://www.wsj.com/articles/deere-to-allow-farmers-to-repair-their-own-equipment-11673228580 (last updated Jan. 8, 2023, 10:53 PM).

^{27.} E.g., N. Pac. Ry. Co. v. United States, 356 U.S. 1, 5–6 (1958) ("[A] tying arrangement may be defined as an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier.").

^{28.} HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 519 (6th ed. 2020).

^{29.} Id.

concerned with identifying tie-ins that harm competition.³⁰ These tie-ins may violate Sections 1 or 2 of the Sherman Act, Section 3 of the Clayton Act, or Section 5 of the FTC Act under different burdens of proof as to their anticompetitive effects.³¹

The Supreme Court has never provided its own test for an illegal tie-in. Instead, the courts of appeals have developed their own formulations using different combinations of the same overall requirements.³² For example, under the Second Circuit's five-part test, a plaintiff must show that: (1) "the sale of one product (the tying product) is conditioned on the purchase of a separate product (the tied product);" (2) "the seller uses actual coercion to force buyers to purchase the tied product;" (3) "the seller has sufficient economic power in the tying product market to coerce purchasers into buying the tied product;" (4) "the tie-in has anticompetitive effects in the tied market;" and (5) "a not insubstantial amount of interstate commerce is involved in the tied market."³³

B. The Demise of Per Se Illegality

Tie-ins were originally considered *per se* violations of federal antitrust laws. If the seller had sufficient economic power to injure competition in the tied product market, then no fact-finding was necessary to show economic harm.³⁴ Furthermore, a seller could not rebut by arguing that the tie-in reduced costs or promoted competition.³⁵ However, the ambiguity of the "anticompetitive effects" element led to considerable variation among the courts in the law's application. Some will allow a broad inquiry into a tie-in's economic harms, while others will equate these effects with coercion or competitive injury.³⁶

The courts' increased willingness to examine the effects of tie-ins has led to an apparent contradiction, because the purpose of a *per se* rule is to avoid the effort and expense of that very type of individualized inquiry.³⁷ Thus, the tie-in's status as a *per se* violation has

^{30.} See id. at 519-20.

^{31.} See id. at 517–18; see also 15 U.S.C. §§ 1–2 (Sherman Act Sections 1 and 2); 15 U.S.C. § 14 (Clayton Act Section 3); 15 U.S.C. § 45 (FTC Act Section 5).

^{32.} HOVENKAMP, supra note 28, at 517–18.

^{33.} Kaufman v. Time Warner, 836 F.3d 137, 141 (2d Cir. 2016).

^{34.} See, e.g., N. Pac. Ry. Co., 356 U.S. at 6.

^{35.} See, e.g., Int'l Salt Co. v. United States, 332 U.S. 392, 396-97 (1947).

^{36.} HOVENKAMP, *supra* note 28, at 518.

^{37.} Id.

significantly eroded, and the Supreme Court has gradually adopted a more scrupulous form of analysis that incorporates the rule of reason.³⁸

The trend towards increased judicial scrutiny culminated in *Jefferson Parish Hospital District No. 2 v. Hyde.*³⁹ At issue was an exclusive contract for a hospital's anesthesiology services.⁴⁰ An anesthesiologist who was denied admission to the hospital's staff because he was not employed by the supplier challenged the contract, arguing that the hospital had tied the supplier's services to its operating rooms.⁴¹ While the Supreme Court found that the hospital had, in fact, tied the two services together (i.e., that they were not offered as a single, comprehensive service which included anesthesia), the Court held that the arrangement was not illegal *per se* because the hospital lacked sufficient market power to coerce consumers in the regional medical-services market.⁴² (The Court also held that the arrangement was lawful under the rule of reason.)⁴³

Through this framing of market power, the Court modified the *per se* rule by predicating it on the probability of anticompetitive coercion in the tied product market. Per se condemnation—condemnation without inquiry into actual market conditions—is only appropriate if the existence of forcing is probable. Thus, application of the per se rule focuses on the probability of anticompetitive consequences. Note the inconsistency of this statement, which effectively says a court should engage in economic analysis to determine whether it ought to apply a *per se* rule and avoid further economic analysis. This contradiction is likely why Justice O'Connor, in concurrence, called to abandon the *per se* rule altogether in favor of the rule of reason. The consequence of the *per se* rule in *Jefferson Parish*, she argued, is to unjustifiably prohibit the seller from arguing for a tie-in's procompetitive effects.

Regardless, Jefferson Parish's significance lies in its emphasis on market power. This power, the Court noted, is the "essential

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38. See id.
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^{39.} Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2 (1984).

^{40.} *Id.* at 4–5.

^{41.} *Id.* at 5.

^{42.} Id. at 24-25, 28-29.

^{43.} Id. at 29-30.

^{44.} Jefferson Parish, 466 U.S. at 15–16.

^{45.} *Id*.

^{46.} Id. at 35 (O'Connor, J., concurring).

^{47.} Id. at 34–35 (O'Connor, J., concurring).

characteristic" of an illegal tie-in, because the seller's exploitation of its market power "force[s] the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." Previous decisions spoke in broad terms about a firm's "market dominance" or limited the scope of market power to "the ability of a single seller to raise price and restrict output." Now, the Court defined market power as the power "to force a purchaser to do something that he would not do in a competitive market," effectively equating it with coercion. ⁵⁰

Subsequent decisions have honed the Court's definition of market power. Most notably, in *Illinois Tool Works Inc. v. Independent Ink, Inc.*, the Court held that a patent for the tying product does not instill in the seller a presumption of market power.⁵¹ Previously, the Court extended this presumption because the buyer was unable to purchase the product from another seller.⁵² However, *Illinois Tool Works* partially abrogated these cases, and a plaintiff must now prove that a defendant possesses market power in the tying product market.⁵³

C. Kodak & Aftermarket Tie-ins

So far, in surveying the development of tying doctrines, we have examined products from discrete markets, even if those markets are sufficiently related to encourage tying or bundling. Next, we turn to aftermarkets—those accessed through the purchase of a product—which are the domain of the Right to Repair Movement. A familiar example of an aftermarket would be a pre-installed app store on a smartphone. Consumers may purchase apps to download to their phones, but they may only access this market after having already purchased the phone. These derivative markets raise novel issues when assessing a seller's market power in tying claims.

The Supreme Court had the occasion to consider tie-ins within aftermarkets in *Eastman Kodak Co. v. Image Technical Services, Inc.*⁵⁴ Kodak, of film photography fame, manufactured and sold

^{48.} Id. at 12.

^{49.} See Fortner Enters., Inc. v. U.S. Steel Corp., 394 U.S. 495, 503 (1969); see also Times-Picayune Publ'g Co. v. United States, 345 U.S. 594, 608 (1953); Int'l Salt Co. v. United States, 332 U.S. 392, 395–96 (1947).

^{50.} *Jefferson Parish*, 466 U.S. at 13–14.

^{51.} Ill. Tool Works Inc. v. Indep. Ink, Inc., 547 U.S. 28, 31 (2006).

^{52.} Jefferson Parish, 466 U.S. at 16.

^{53.} Ill. Tool Works, 547 U.S. at 46.

^{54.} Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 454-55 (1992).

commercial photocopiers and micrographic equipment.⁵⁵ In addition to equipment sales, Kodak also sold repair parts and services for these machines. Some repair parts were made by Kodak and the rest were made by other manufacturers.⁵⁶ In the 1980s, several independent service organizations began repairing Kodak equipment at a substantially lower price than Kodak. To do so, the independent servicers kept an inventory of repair parts that were purchased from Kodak or the original manufacturers.⁵⁷

In 1985, Kodak implemented a policy of selling replacement parts only to customers who would either use Kodak's repair services or repair their own machines. Kodak also sought to limit the independent servicers' access to its parts. It formed an agreement with the manufacturers that prohibited them from selling Kodak-fitting parts to anyone other than Kodak, and it further restricted the availability of used machines. Consequently, many of the independent servicers lost substantial revenue and even shut down, causing their customers to switch to Kodak's repair services.

The independent servicers filed suit against Kodak, alleging it had unlawfully tied its repairs services to the sale of replacement parts. The district court granted summary judgment for Kodak. At issue on appeal was whether, as a matter of law, competition in a primary market precludes a finding of market power in derivative aftermarkets. Kodak argued that even if it possessed a monopoly *share* of the parts aftermarket, it lacked market *power* over those products because it did not have power in the preceding market for the original equipment. By extension, Kodak could not raise prices for

^{55.} Id. at 456.

^{56.} Id. at 457.

^{57.} Id. at 458.

^{58.} Id. at 458.

^{59.} Kodak, 504 U.S. at 458.

⁶⁰ *Id*

^{61.} *Id.* at 459. Specifically, the claims were brought under Sections 1 and 2 of the Sherman Act. It should be noted that in this case the tying products are the replacement parts to which Kodak tied its repair services. Both are situated within the aftermarket stemming from the sale of Kodak's photocopiers and micrographic equipment. The independent servicers did *not* allege that Kodak tied its replacement parts or services to the original equipment. *Id.*

^{62.} Kodak, 504 U.S. at 459.

^{63.} Id. at 454.

^{64.} *Id.* at 465. Kodak's share of the equipment market was estimated at 30%. Transcript of Oral Argument at 52–53, Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451 (1992) (No. 90-1029). However, Kodak's share of the repair parts market was unclear and highly disputed. *Id.* at 31–32. The Court found that the

aftermarket parts and services, because any increase in profits would be offset by a corresponding loss in equipment sales as consumers went to other sellers with lower service costs. ⁶⁵ In other words, there was cross-elasticity of demand in the original equipment market. ⁶⁶ The Supreme Court disagreed with Kodak's theory. In a six–three decision, the Court based its reasoning on the significant costs associated with gathering information and switching servicers. Together, these factors "create a less responsive connection between service and parts prices and equipment sales."

In the first instance, repair information such as price, quality, availability, and cost is often difficult to obtain at the time of purchase, and it frequently changes over the lifetime of the product. ⁶⁸ Competitors don't always provide the information necessary for an informed consumer to compare products between sellers, and many consumers choose not to inquire into repair costs at all. ⁶⁹ The information gap between "knowledgeable" and "unsophisticated" consumers then creates an opportunity for price discrimination—which the Court found Kodak had already done by selling parts to self-service customers but refusing to sell to those who wanted an independent servicer. ⁷⁰

As for the cost of switching repair servicers, the Court recognized that purchasers who are already "locked in" will tolerate a certain level of price increases before they change brands.⁷¹ Thus, a seller can "maintain supracompetitive prices in the aftermarket if the switching costs [are] high" compared to a service-price increase.⁷² Additionally, a seller can price discriminate between locked-in purchasers and prospective customers since it can charge a new customer below the product's marginal cost and subsequently recoup that loss through repair services.⁷³

The Court's holding surprised many because of its significant departure from previous tying cases in which market power serves as a

servicers' evidence that Kodak controlled nearly 100% of the parts market was sufficient to survive summary judgment. *Kodak*, 504 U.S. at 481.

^{65.} Kodak, 504 U.S. at 465-66.

^{66.} Id. at 469.

^{67.} Id. at 473.

^{68.} Id. at 473–74.

^{69.} *Id.* at 474–75.

^{70.} Kodak, 504 U.S. at 475-76.

^{71.} Id. at 476.

^{72.} *Id*.

^{73.} Id. at 476–77.

protective threshold for judicial scrutiny.⁷⁴ Given the controversy, scholarly appraisals have seriously questioned *Kodak*'s holding.⁷⁵ Nevertheless, *Kodak* opened the door to more creative applications of tying doctrines within aftermarkets. Most notably, circuit courts have increasingly recognized "negative" tie-ins, where the coercive effect comes from a seller's conditioning the sale of a product on the buyer's agreement *not* to purchase another product from a competitor.⁷⁶ Relatedly, courts have acknowledged that the seller's coercion need not be explicit, giving rise to implicit tying claims.⁷⁷ Finally, the Ninth Circuit has recognized the possibility of "technological" ties in which the functional relationship between products forecloses competition.⁷⁸

III. A "TOP CASE" STUDY: APPLE'S MACBOOK PRO

Amidst a rising tide of antitrust scrutiny against Big Tech firms in the U.S. and elsewhere, Apple introduced a self-service repair program in 2021.⁷⁹ As part of the program, Apple began publishing repair manuals for certain products and making replacement parts and tools available for purchase online. In many ways, this represents progress for the Right to Repair Movement. But one product, the MacBook Pro, stands out for its hostility to independent repair despite its inclusion in Apple's program.

^{74.} See Carl Shapiro, Aftermarkets and Consumer Welfare: Making Sense of Kodak, 63 ANTITRUST L.J. 483, 484 (1995); Lawrence T. Festa, III, Comment, Eastman Kodak Co. v. Image Technical Services, Inc.: The Decline and Fall of the Chicago Empire?, 68 NOTRE DAME L. REV. 619, 622–25 (1993).

^{75.} See, e.g., David Walchak, Reconsidering Kodak: The Cost of Aftermarket Protection, 18 Berkeley Bus. L.J. 165, 165–66 (2021); Herbert Hovenkamp, Post-Chicago Antitrust: A Review and Critique, 2001 Colum. Bus. L. Rev. 257, 288 (2001); Daniel J. Gifford, The Damaging Impact of the Eastman Kodak Precedent upon Product Competition: Antitrust Law in Need of Correction, 72 Wash. U. L.Q. 1507, 1508–09 (1994); Jill Dickey Protos, Comment, Kodak v. Image Technical Services: A Setback for the Chicago School of Antitrust Analysis, 43 Case W. Res. L. Rev. 1199, 1201–02 (1993); Michael S. Jacobs, Market Power Through Imperfect Information: The Staggering Implications of Eastman Kodak Co. v. Image Technical Services and a Modest Proposal for Limiting Them, 52 Md. L. Rev. 336, 339 (1993).

^{76.} E.g., Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1178 (1st Cir. 1994).

^{77.} E.g., Collins Inkjet Corp. v. Eastman Kodak Co., 781 F.3d 264, 272 (6th Cir. 2015).

^{78.} *E.g.*, Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 542 (9th Cir. 1981).

^{79.} Press Release, Apple Inc., Apple Announces Self Service Repair (Nov. 17, 2021), https://www.apple.com/newsroom/2021/11/apple-announces-self-service-repair/.

At issue is the battery component of Apple's MacBook Pro laptop which, over time, has been progressively incorporated into other component parts such as to render them inseparable. Thus, when it comes time to replace the battery, an independent technician or a self-repair consumer must purchase other undamaged parts with it—parts they would not have purchased but for their attachment to the battery. However, if a consumer goes directly to Apple for a new battery, they do not have to purchase the additional parts, and the price of battery replacement is significantly lower compared to the self-repair program. Given Apple's ability to exploit the laptop's design, I argue that this constitutes a *de facto* anticompetitive tie-in since Apple can raise competitors' costs to disincentivize independent repair.⁸⁰

What distinguishes the MacBook Pro is that Apple is using different means to reach the same ends that were alleged in *Kodak*: restraining competition on the merits in the repairs aftermarket through high switching costs. In this sense, the MacBook Pro is like a film negative of the *Kodak* case, and shining a light on—or rather, through—it will reveal the exact anticompetitive harm for which the Supreme Court expressed its concern. The discussion below is meant to illuminate the applicability of *Kodak*'s tying doctrines in the right-to-repair context as well as the need for greater enforcement, lest these tie-ins become more commonplace.

A. Apple's Business Model & the MacBook Pro's Design

The MacBook Pro serves as a useful case study because the specific tie-in alleged here is part and parcel with Apple's business model. Since the early aughts, Apple has focused on building and growing a thoroughly integrated digital ecosystem that locks in consumers through high switching penalties, both in financial and informational terms. In short, the Apple business model is designed to drive consumers into its ecosystem and then hold them there, which has been hugely successful to date and allowed Apple to wield enormous power in the end-to-end supply chain." After attracting consumers to its

^{80.} I remain agnostic as to whether it may be ultimately characterized as an explicit, negative, implicit, or technological tie-in. There are plausible arguments for each.

^{81.} Johnna Montgomerie & Samuel Roscoe, Owning the Consumer—Getting to the Core of the Apple Business Model, 37 ACCT. F. 290, 291 (2013).

82. Id.

unique retail experience, Apple may then use them as leverage to maintain high price points over low-cost manufacturing.⁸³

This corporate strategy stands in contrast with Apple's early days. For example, in the late 1970s, Apple allowed outside companies to enhance the base model of its Apple II personal computer with specialized software and hardware components. Real And later, in the 1990s, Apple began using Intel processors so that users could simultaneously run Mac and Windows operating systems. The digital ecosystem model truly began in 2003 with the joint introduction of the third-generation iPod and the iTunes music store, which instigated a "dramatic ascent" in Apple's share price. Apple captured these profits by integrating the user interfaces of the iPod, iTunes software, and the iTunes music store, all while using its digital rights management system to keep users and their data within the platform.

The MacBook Pro is a higher-end model in Apple's lineup of laptop computers. As opposed to the less expensive MacBook Air models, the Pro is marketed toward consumers who require more processing power than the Air. Apple first introduced the MacBook Pro in 2006, and early models had a user-removable battery.⁸⁸ Then, in early 2009, Apple announced a seventeen-inch MacBook Pro model which included a built-in lithium polymer battery.⁸⁹ Within months of that announcement, Apple decided that all Pro models would include

^{83.} Alina Sorescu et al., *Innovations in Retail Business Models*, 87 J. RETAILING (SUPP.) S3, S9 (2011).

^{84.} John Hagel III & Marc Singer, *Unbundling the Corporation*, HARV. BUS. REV., Mar.—Apr. 1999, at 133.

^{85.} In from the Cold: How Apple Has Blossomed, 24 STRATEGIC DIRECTION, no. 3, 2008, at 13, 13; Mac Computers with Apple Silicon, APPLE INC. (June 14, 2023), https://support.apple.com/en-us/HT211814 (noting Apple's replacement of Intel processors with its own self-made ones beginning in 2020).

^{86.} Montgomerie & Roscoe, *supra* note 81, at 291.

^{87.} See Jason Dedrick et al., Who Profits from Innovation in Global Value Chains?: A Study of the iPod and Notebook PCs, 19 INDUS. & CORP. CHANGE 81, 91 (2009).

^{88.} See Unibody MacBook Pro Q&A, EVERYMAC.COM (May 9, 2016), https://everymac.com/systems/apple/ macbook_pro /macbook-pro-unibody-faq/macbook-pro-13-unibody-how-to-replace-battery.html ("The battery . . . is 'integrated' – which means it is not designed to be easily replaced by consumers nor is it easily 'swappable' like the battery in earlier MacBook and MacBook Pro models.").

^{89.} Press Release, Apple Inc., Apple Introduces 17-inch MacBook Pro With Revolutionary New Built-in Battery That Delivers Eight Hours of Use & 1,000 Recharges (Jan. 6, 2009), https://www.apple.com/newsroom/2009/01/06Apple-Introduces-17-inch-MacBook-Pro-With-Revolutionary-New-Built-in-Battery-That-Delivers-Eight-Hours-of-Use-1-000-Recharges/.

the non-user-removable battery. 90 (The MacBook Air still retains a removable battery.) 91

The MacBook Pro's design was overhauled in 2012 with the introduction of the Retina Display model. Whereas the built-in batteries had previously been screwed into place. Apple began gluing the batteries in.⁹² At the same time, the battery was also subsumed into the "top case" component, in which the battery is attached to several other parts.⁹³ 2021 models saw a notable improvement where Apple swapped the adhesive material, perhaps in a tacit concession to repair advocates. Instead of directly applying glue between the battery and the rest of the top case, Apple inserted stretch-release pull tabs that allow for easier removal.⁹⁴ But even with this change, the question remains as to who it is intended to benefit—independent servicers or Apple's own technicians? (The change to pull tabs was only brought to light through a device teardown published by the independent repair site iFixit.)95 Apple has outwardly maintained that "batteries must be replaced with the top case assembly," that "the battery alone is not a replaceable part," and that "batteries should not be separated from the top case assembly for any reason" Apple's justification for not permitting technicians to remove the battery is due to the risk of fire or injury from puncturing it.⁹⁷

^{90.} See Press Release, Apple Inc., Apple Updates MacBook Pro Family with New Models & Innovative Built-in Battery for Up to 40 Percent Longer Battery Life (June 8, 2009), https://www.apple.com/newsroom/2009/06/08Apple-Updates-MacBook-Pro-Family-with-New-Models-Innovative-Built-in-Battery-for-Up-to-40-Percent-Longer-Battery-Life/.

^{91.} See Apple Inc., MacBook Air (M1, 2020) Repair Manual 118–23 (2022).

^{92.} See MacBook Pro 15" Retina Display Mid 2012 Teardown, IFIXIT (June 13, 2012), https://www.ifixit.com/Teardown/MacBook+Pro+15-Inch+Retina+Display+Mid+2012+Teardown/9462.

^{93.} See How to Replace the Battery in the 15-inch MacBook Pro, EVERYMAC.COM (Jan. 19, 2021), https://everymac.com/systems/apple/macbook_pro/macbook-pro-retina-display-faq/macbook-pro-retina-display-how-to-replace-battery.html.

^{94.} See Sam Goldheart, 2021 MacBook Pro Teardown: A Glimpse at a Better Timeline, IFIXIT (Oct. 26, 2021), https://www.ifixit.com/News/54122/macbook-pro-2021-teardown.

^{95.} See New MacBook Pro Uses Battery Pull Tabs for Easier Replacement, APPLEINSIDER (Oct. 28, 2021), https://appleinsider.com/articles/21/10/28/new-macbook-pro-uses-battery-pull-tabs-for-easy-replacement.

^{96.} EVERYMAC.COM, supra note 93.

^{97.} *Id.* Recall that original equipment manufacturers provided no data to substantiate the claim that consumers or technicians have been injured through independent repair. FTC, *supra* note 14, at 28.

In 2021 models, the top case is comprised of the battery and five other components including the battery management unit board, the keyboard, the keyboard flex cable, the microphone, and the speakers. To replace a battery, independent servicers are instructed to remove a total of fourteen parts to separate the top case before being told that they cannot remove the battery itself: "The battery is part of the top case. Don't attempt to remove the battery from the top case." Instead, the entire top case must be returned to Apple for replacement.

These design features have drawn much criticism and have contributed to the perception that the MacBook Pro's overall repairability is unnecessarily difficult.¹⁰¹ For example, the product specifications archive EveryMac.com noted that the inflated price of battery repair by third-party technicians "would not be cost-effective" and described the need "to throw away parts that work properly just to replace the battery" as "[f]oolishly wasteful." Furthermore, the site questioned the use of adhesives since MacBook Air batteries are screwed into the case: "Consequently, as the . . . MacBook Pro is thicker than the Mac-Book Air models, it is not particularly believable that it was necessary to create a glued in place battery design as a 'thinness' requirement for the Retina models, either."¹⁰³ In another instance, iFixit, which assigns consumer electronics a repairability score between zero and ten points, has never given the MacBook Pro a score higher than two since the introduction of the Retina Display model, whereas preceding models got up to seven points. 104

^{98.} APPLE INC., MACBOOK PRO (14-INCH, 2021) REPAIR MANUAL 161 (2022). 99. *Id*.

^{100.} *Id.* These instructions apply to sixteen-inch models too. *See* APPLE INC., MACBOOK PRO (16-INCH, 2021) REPAIR MANUAL 162 (2022).

^{101.} See Ewan Spence, New MacBook Pro Details Reveal Apple's Hostile Decision, FORBES (Aug. 27, 2022, 4:56 PM), https://www.forbes.com/sites/ewanspence/2022/08/27/apple-macbook-pro-macbook-air-self-repair-battery/; Sam Goldheart, Apple's Self-Repair Program Manages to Make MacBooks Seem Less Repairable, IFIXIT (Aug. 23, 2022), https://www.ifixit.com/News/64072/apples-self-repair-program-manages-to-make-macbooks-seem-less-repairable; How to Replace the Battery in the 13-inch MacBook Pro, EVERYMAC.COM (Jan. 19, 2021), https://everymac.com/systems/apple/macbook_pro/macbook-pro-retina-display-faq/macbook-pro-retina-display-13-how-to-replace-battery.html (describing battery replacement as a "a needlessly difficult and dangerous procedure").

^{102.} EVERYMAC.COM, supra note 93.

^{103.} Id.

^{104.} See Laptop Repairability Scores, IFIXIT, https://www.ifixit.com/laptop-repairability (last visited Oct. 7, 2023).

B. The Top Case Component: One Product, or Multiple?

It may be said that the top case component is really one part and that, consequently, there is no tie-in to speak of because two products are not being sold together. However, such an interpretation is contradicted by both the facts and the law. Apple implicitly concedes that the top case is made up of discrete parts because they are willing to replace the battery individually if service is purchased directly through them. Moreover, the demand for replacement batteries is qualitatively different from the demand for any other parts included in the top case—or the entire laptop, for that matter.

As the Supreme Court noted in both *Jefferson Parish* and *Kodak*, whether two products are truly distinct depends not on their functional relationship but the character of their demand.¹⁰⁵ For MacBook Pros, as with all laptops, the demand for replacement batteries differs from that for other top case parts due to the natural degradation of lithium batteries.

Battery replacement is pretty much the only guaranteed Mac-Book repair. Even if you never use the laptop, you'll still need to replace the battery due to natural degradation. Every other component is subject to environment and use—how many times have you spilled your iced tea? Dinged the case? Stepped on the USB-C charging cable . . . ? Those factors will change what repairs you'll need, but battery replacement is inevitable. 106

The inevitability of battery replacement is ripe for exploitation because demand for batteries arises more frequently than other parts. Even still, in cases where demand for batteries and other parts may coincide, the damage is probably so extensive, and the replacement costs so great, that a consumer is more likely to replace the entire laptop.

The fact that two products are functionally linked does not relieve the seller from antitrust scrutiny, and courts have even found tie-ins where functionally linked products are useless without each other. 107 "In fact, in some situations the functional link between the two items may enable the seller to maximize its monopoly return on the tying item as a means of charging a higher rent or purchase price to a larger

^{105.} Jefferson Parish, 466 U.S. at 19; Kodak, 504 U.S. at 462-63.

^{106.} Goldheart, *supra* note 101.

^{107.} See Jefferson Parish, 466 U.S. at 19, n. 30; e.g., United States v. Jerrold Elecs. Corp., 187 F. Supp. 545, 558–60 (E.D. Pa. 1960) (identifying a tie-in between components of television antennae), aff'd per curiam, 365 U.S. 567 (1961).

user of the tying item."¹⁰⁸ While the "larger user" referred to here is typically a commercial purchaser, Apple may still take similar advantage of individuals because the MacBook Pro, as a higher-end model, is marketed towards professionals and upmarket consumers who can withstand greater price increases than downmarket consumers who will opt for the more economical MacBook Air.

C. Apple's Market Power

Apple became the first U.S. company to be valued at \$1 trillion in 2018, at \$2 trillion in 2020, and at \$3 trillion in 2022. 109 Notwithstanding legal definitions of market power, it is impossible to deny Apple's *de facto* market power as a tech giant. But the bulk of their profits come from the iPhone, which represented 52.1% of net sales in 2022. 110 Mac computers represented just 10.2%. 111 But Apple's business strategy towards MacBooks isn't to dominate the market through output, but to target the most profitable strata. In 2016, Mac computers represented only 7% of global PC shipments but captured over 60% of total profits. 112 Under *Kodak*, Apple's relatively small share of the laptop market does not preclude the possibility of market power in aftermarkets.

For our purposes, the law defines market power in aftermarkets more narrowly: the seller must have "appreciable economic power" in the tying product market and the arrangement must affect a substantial volume of commerce in the tied market.¹¹³ The Ninth Circuit has provided an apt summary of the relevant market identified in *Kodak*.

The antitrust plaintiffs in *Eastman Kodak* . . . alleged market power only in a submarket consisting of those customers that had already purchased Kodak-brand equipment and that

^{108.} Jefferson Parish, 466 U.S. at 19, n. 30.

^{109.} Jack Nicas, *Apple Becomes First Company to Hit \$3 Trillion Market Value*, N.Y. TIMES (Jan. 3, 2022), https://www.nytimes.com/2022/01/03/technology/apple-3-trillion-market-value.html.

^{110.} See Apple Inc., Annual Report (Form 10-K) for the Fiscal Year Ended September 24, 2022, at 21 (2022).

^{111.} See id.

^{112.} See Press Release, Gartner, Gartner Says 2016 Marked Fifth Consecutive Year of Worldwide PC Shipment Decline (Jan. 11, 2017), https://www.gartner.com/en/newsroom/press-releases/2017-01-11-gartner-says-2016-marked-fifth-consecutive-year-of-worldwide-pc-shipment-decline; Horace Dediu, Wherefore Art Thou Macintosh?, ASYMCO (Nov. 2, 2016), http://www.asymco.com/2016/11/02/wherefore-art-thou-macintosh/.

^{113.} See Kodak, 504 U.S. at 462 (quoting Fortner Enters., Inc. v. U.S. Steel Corp., 394 U.S. 495, 503 (1969)).

needed replacement parts and services for that particular equipment. The antitrust theory was that Kodak was engaging in illegal practices to prevent independent service companies from competing with Kodak in the aftermarket for service of Kodak-brand equipment. Owners of Kodak-brand equipment, the plaintiffs alleged, were forced to purchase replacement parts and services only from the Kodak corporation. 114

Following *Kodak*'s logic, the relevant market in our case would be the aftermarket for replacement batteries, namely the submarket of consumers who have purchased a MacBook Pro and are seeking Apple-brand replacement batteries. Apple necessarily has appreciable economic power over replacement batteries because it is the principal seller.

We ought to restrict the market to this subgroup because Apple presumes that a consumer has already purchased a MacBook Pro from them. For purchasers going directly to Apple, the company's website has a feature which provides price estimates for different repair services. 115 For self-servicers and independent servicers using Apple's Self Service Repair Store, Apple does not publicize inventory or prices for its repair parts. Instead, to obtain this information, a consumer must enter their device's serial number to access the online parts aftermarket. 116 Even the most diligent consumer who always takes repair costs into account when deciding which laptop to buy would not come across this information through an official channel. So, for the average consumer, checking Apple's website for a price quote would give the false impression that battery replacement costs the same between the Apple Store and the self-service repair program. This has led tech reporters to gather these figures and publish them on their own platforms.117

^{114.} Newcal Indus., Inc. v. Ikon Off. Sol., 513 F.3d 1038, 1048 (9th Cir. 2008) (internal citations omitted).

^{115.} See Mac Repair & Service, APPLE INC., https://support.apple.com/mac/repair (last visited Oct. 15, 2023).

^{116.} See Order, SELF SERV. REPAIR STORE, https://selfservicerepair.com/order (last visited Oct. 12, 2023) ("The serial number is required and will be shared with Apple. This number must be from the device that is being repaired or you may encounter issues that prevent the completion of the repair.").

^{117.} See, e.g., Sean Hollister, Here's How Much Apple Charges for Every Part to Fix Your Own MacBook, The Verge (Aug. 23, 2022, 5:41 PM), https://www.theverge.com/2022/8/23/23318736/apple-macbook-part-prices-self-service-repair-program.

D. Anticompetitive Effects

So how does this affect consumers, and what does Apple's pricing scheme really look like? For 2021 MacBook Pro models, an out-of-warranty battery replacement purchased directly from Apple will cost \$249. However, a top case replacement (which includes the battery) for the same laptops purchased through Apple's self-service repair program will cost \$527.12 for the fourteen-inch model and \$615.12 for the sixteen-inch model. Hope does not supply individual batteries to third parties through the self-service repair program. This represents a price increase of 165% to 209%, respectively, before an \$88 rebate is applied for returning the broken top case.

The practical effect of this tying arrangement is to disincentivize independent repair by significantly undercutting the price for parts. As noted above, this model interestingly contradicts the "typical" tie-in while reaching similar results. In the *Kodak* case, Kodak refused to supply parts to independent servicers, and plaintiffs alleged that it tied repair services to its products to raise prices to supracompetitive levels. Here, Apple is supplying parts to independent servicers and tying only repair goods so that those technicians' prices are raised. But with such a stark price increase because of additional (and unnecessary) parts, it will almost always be more cost-effective for consumers to purchase battery replacements through Apple.

This outcome is akin to the phenomenon in antitrust law known as "raising rivals' costs," which may be achieved through tying in some instances. 121 This concept has been useful to determine whether vertical restraints have anticompetitive effects. It requires that the challenged firm's conduct "unavoidably and significantly" increased competitor's costs and that the raising of rivals' costs enabled the firm to raise prices above the competitive level. 122 "Under the [raising rivals' costs] paradigm, a monopolist may adopt an anticompetitive strategy, not to drive its competitors out of the market entirely, but instead to make that competitor's production or distribution more costly, thereby creating a price umbrella under which the strategizing

^{118.} APPLE INC., *supra* note 115 (First choose "Battery" from dropdown menu; then choose "MacBook Pro"; then choose either "MacBook Pro (16-inch, 2021)" or "MacBook Pro (14-inch, 2021)").

^{119.} Hollister, supra note 117.

^{120.} Id.

^{121.} See Thomas G. Krattenmaker & Steven C. Salop, Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price, 96 YALE L.J. 209, 214 (1986).

^{122.} Id.

firm can raise its prices."¹²³ We have already seen how, by tying the battery with other top case components, Apple has raised independent servicers' prices. And as for Apple's raising its own prices for replacement batteries, Apple announced price increases for out-of-warranty battery replacements across all products beginning March 2023, less than two years since it rolled out the self-service program.¹²⁴

Although Apple's tying arrangement differs from the facts in Kodak, that does not necessarily mean it is outside its reach. As the Court noted in declining to presume that Kodak lacked market power based solely on the pleadings, "[l]egal presumptions that rest on formalistic distinctions rather than actual market realities are generally disfavored in antitrust law. This Court has preferred to resolve antitrust claims on a case-by-case basis, focusing on the particular facts disclosed by the record." Even just from publicly available information we can observe the harm proscribed by *Kodak*: restraining competition through high switching costs imposed on consumers seeking independent repair, achieved through coercive tying arrangements within the aftermarket for repair parts and services. The burden of artificially inflated prices is still put upon consumers, albeit indirectly through independent repair servicers. That this strategy underlies a broader attempt to assuage consumer advocates and government regulators underscores the need for vigilance in this policy area, even as manufacturers make greater concessions of their own accord.

CONCLUSION

Antitrust law and the Right to Repair Movement share an evident ideological connection because their interests are aligned. While the movement has gained significant momentum in recent years as states have just begun passing repair legislation and the federal government has taken up the cause, there will be significant gaps until Congress passes uniform legislation, if it ever does so. Until then, tying doctrines in antitrust law may serve a useful purpose in the nearer term to redress and deter restraints on independent repair services, as demonstrated in our test case with the MacBook Pro. Perhaps, then, *Kodak*

^{123.} Willard K. Tom & Gregory F. Wells, *Raising Rivals' Costs: The Problem of Remedies*, 12 GEO. MASON L. REV. 389, 389–90 (2003).

^{124.} See Mitchell Clark, Apple's Battery Replacement Prices Are Going Up By \$20 to \$50, The Verge (Jan. 2, 2023, 9:58 AM), https://www.theverge.com/2023/1/2/23535428/apple-iphone-ipad-mac-battery-service-replacement-price-increase.

^{125.} Kodak, 504 U.S. at 466–67 (internal quotations omitted).

has finally met its moment, despite the criticism it has received over the past thirty years, and is keen for a revival by state enforcers and other private stakeholders.