NOTES

DODGING THE BULLET AGAIN: *MICROSOFT III*'S REFORMULATION OF THE *FOREMOST* TECHNOLOGICAL TYING DOCTRINE

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INTRODUCTION

Antitrust regulation is concerned with keeping the market fair and competitive. But too much regulation could hamper innovation – especially in innovative industries like the computer software market. As courts have realized the potential negative effects of too much regulation, interpretation of antitrust statutes has shifted. This shift is especially apparent in tying law, which developed before the technological industry came into being. This law was founded upon a premature understanding of economic leveraging theory that did not realize the potential economic efficiencies surrounding tying arrangements.[1] The particular evolution of technological tying law reflects

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[1] *See* N. Pac. Ry. Co. v. United States (*Northern Pacific*), 356 U.S. 1, 5 (1958) (explaining that tying is an agreement "which because of [its] pernicious effect on competition and lack of any redeeming virtue [is] conclusively presumed to be unreasonable

how courts have struggled to regulate competition without hampering possible innovations.

Tying occurs when a seller requires a consumer to purchase a second good in order to purchase the first good. The sale of a combination raises antitrust concerns because a consumer has to buy both goods rather than buying each separately or only one.[2] However, the combination could be a more efficient way of selling complex and often complementary technology products. For example, selling computer hardware with software installed may be relatively more efficient because it 1) assures that the products are compatible and 2) eliminates search costs for the consumer. The special efficiencies that may accompany such integration make the traditional per se tying standard incompatible with the technological industry.

This Note addresses the development of technological tying law. Specifically, it reviews how courts have attempted to resolve the conflict between strict per se tying and the special innovation concerns technological tying raises. As technological tying claims become increasingly more common in the American legal system, a clear articulation of technological tying doctrine is necessary.[3]

Part I explains the economic theory behind tying law. Part II reviews the application of technological tying law. This Part also tracks the development of technological tying law, which includes the *Leasco* sole purpose test and the *Foremost* approach to the per se rule's coercion and separate products requirements. Part II ends with *Microsoft III*'s reformulation of technological tying law, and how this new standard has been applied. This standard allows courts explicitly to be more lenient in the technological integration context.[4] This Note observes that *Microsoft III* did not suddenly break from tying law, but rather updated the *Foremost* technological tying approach, which lower

and therefore illegal without elaborate inquiry as to the precise harm [it has] caused or the business excuse for [its] use").

[2] Effects in the tied product market are the primary concern because a potentially inferior product may be insulated from competition and given an undeserved advantage. Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 14 (1984).

[3] *See, e.g.*, Apple iPod iTunes Antitrust Litig., No. C 05-00037 JW, 2008 WL 5574487, at *4 (N.D. Cal. Dec. 22, 2008); Slattery v. Apple Computer, Inc., No. C 05-00037 JW, 2005 WL 2204981, at *1 (N.D. Cal. Sept. 9, 2005). This is partly attributable to the growth in private plaintiff suits. *See* Joseph Ostoyich et al., *More of the Same: Growth in Private Antitrust Litigation and Cutbacks by the US Supreme Court*, 2009 GLOBAL COMPETITION REVIEW: THE ANTITRUST REVIEW OF THE AMERICAS 2 ("One . . . catalyst that is likely causing private antitrust plaintiffs to file more cases is increasingly vigorous government enforcement."). The growth in private enforcement of antitrust laws raises concerns if courts run a non-negligible risk of finding efficient conduct to be illegal. *See* R. Preston McAfee, Hugo M. Mialon & Sue H. Mialon, *Private v. Public Antitrust Enforcement: A Strategic Analysis*, 92 J. PUB. ECON. 1863, 1864 (2008).

[4] *See* United States v. Microsoft Corp. (*Microsoft III*), 253 F.3d 34, 84 (D.C. Cir. 2001) (refusing to apply the per se tying rule to platform software).

courts had taken throughout the 1980s and 1990s. Part III examines the implications of each technological tying standard. This Part also argues that, given the high, costly risk of hampering innovation in the technological tying context, the *Leasco* sole-purpose standard is the best approach to technological tying claims.

I. WHAT IS TYING?

A. *Economic Theory*

Tying is a firm behavior that occurs when a producer will only sell a particular product to those who also purchase a second product.[5] A buyer might refuse the precondition and buy the desired "tying" product from another seller. For example, if one of many grocery stores in a neighborhood refused to sell flour unless the buyer also bought sugar, this behavior would not significantly restrain competition because other competitors in the market are willing to sell flour by itself.[6] However, if the seller has power in the tying product market, the buyer may not have other options. The buyer may ultimately have to purchase both the desired "tying" product and the undesired "tied" product. In this situation, tying coerces a purchaser into buying something he does not want. The firm was able to coerce this transaction because it has underlying monopoly power and it may be expanding its monopoly power by selling these bundles.[7]

This consumer harm is illustrated by an economic model of supply and demand, where monopoly power allows a profit-maximizing firm to capture some consumer surplus.[8] A firm in a perfectly competitive market sells for the price and quantity where supply equals demand. If the firm sold at a higher price, it would lose customers to other sellers; if it produced at a higher quantity, it would drive down the market price. However, a monopoly firm does not operate in a perfectly competitive market. A monopoly firm can capture some consumer surplus by charging prices above the equilibrium price and producing below the equilibrium quantity.[9] Selling below equilibrium quantity reduces total social welfare, because although the monopoly firm

[5] PHILLIP AREEDA, LOUIS KAPLOW & AARON EDLIN, ANTITRUST ANALYSIS: PROBLEMS, TEXT AND CASES 587 (6th ed. 2004).

[6] *See, e.g.*, *Northern Pacific*, 356 U.S. at 7.

[7] *See* KEITH N. HYLTON, ANTITRUST LAW: ECONOMIC THEORY AND COMMON LAW EVOLUTION 281 (2003).

[8] *See* AREEDA ET AL., *supra* note 5, at 13 ("The monopolist, in contrast [to the perfect competitor], contrives a scarcity of its product. It 'withholds' some output from consumers to raise its price and thereby maximize its personal gain at expense of society. It thus affects both the distribution of income and the efficiency of the economy . . . .").

[9] *Id.*

captures some of what used to be consumer surplus, some surplus remains unrecovered.[10]

Tying law initially formed around the belief that all tying behavior is anti-competitive and therefore reduces social welfare.[11] Over time, economic theory deviated from this model, recognizing efficiencies derived from tying behavior and that tying may not necessarily be an effective way to gain monopoly power.[12] The Chicago School set forth this theory that tying is not automatically anti-competitive.[13] However, tying may still harm consumers in certain circumstances. Under the Whinston theory, tying deters competitors from entering the tied product market because a monopolist will then charge prices below the market rate to put the new competitor out of business.[14] Keeping competitors out of the tied product market allows a monopolist to maintain monopoly profits at the expense of consumer welfare. Presumably, net social welfare is reduced because the monopolist's increased surplus does not make up for the corresponding loss. Richard Craswell proposes that a monopolist may benefit from tying by making it more difficult for consumers to distinguish a product's implicit price from the total bundle cost.[15] If consumers cannot determine the competitive price of the tied good, tying may stunt competition in that good because consumers cannot compare prices across competitors.[16]

Tying may not only allow a firm to achieve market power, it may also enable a firm to increase preexisting market power. The arrangement might enhance a monopolist's market power because of its interaction with transaction costs, price discrimination, and collusion.[17] Additionally, tying might facilitate price discrimination because a firm could use the tied good to distinguish consumers. For example, a seller might design its copy machine so that only its own copy paper will operate with it.[18] Certain buyers may plan to use the machine often and therefore may be willing to pay more than seldom-

[10] *See* HYLTON, *supra* note 7, at 12.

[11] *See* Standard Oil Co. v. United States, 337 U.S. 293, 305-06 (1948) ("Tying agreements serve hardly any purpose beyond the suppression of competition.").

[12] *See* HYLTON, *supra* note 7, at 280-81.

[13] *Id.*

[14] *See id.* at 281; Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 839 (1990).

[15] *See* Richard Craswell, *Tying Arrangements in Competitive Markets: The Consumer Protection Issues*, 62 B.U. L. REV. 661, 672 (1982).

[16] HYLTON, *supra* note 7, at 282.

[17] *See id.* at 282-83.

[18] *See, e.g.*, *id.* ("[T]he monopolist can in effect sort buyers into different categories and apply a different surcharge to each according to willingness to pay."); *cf.* Eastman Kodak Co. v. Image Technical Servs. Inc., 504 U.S. 451, 455 (1992) (tying photocopy and micrographic machines with service by adopting policies that made it difficult for other servicers to compete with Kodak's servicing of its own equipment).

use buyers. However, in a competitive market the seller may have difficulty finding this information or might not be able to enforce different prices.[19] By tying the paper with the machine, the seller ultimately can charge a higher price to the "frequent use" buyers because they will buy more paper.[20]

In some cases, tying may be pro-competitive.[21] Consider the flour and sugar tying example.[22] Some consumers may prefer to buy both flour and sugar together. In that case, the seller acts competitively by offering the bundle. This behavior is consistent with the pro-competitive goals of the Sherman Act.[23] Other efficiencies may include providing convenience to consumers, protecting the seller's reputation, and facilitating more effective distribution.[24] Tying products together could ultimately increase social welfare because the tied product might not otherwise be offered, or the consumer may prefer to buy both products together.[25] For example, a firm with limited shelf space may tie a variety of foreign wall socket adaptors together. This tie may maximize consumer welfare because it ensures that many consumers can find the adaptor they need.[26] Antitrust laws have struggled to resolve the conflicting effects of tying behavior.

B. *Tying Law*

The Sherman Act[27] and the Clayton Act[28] are antitrust laws that prohibit certain tying arrangements. There are some differences between the behavior

[19] HYLTON, *supra* note 7, at 282-83.

[20] *See id.*

[21] *See* David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 YALE J. ON REG. 37, 38 (2005) (explaining that tying is a common practice in competitive markets where leveraging is not possible and therefore "leveraging cannot be the only economic explanation for tying"); *see also* Fortner Enters., Inc. v. U.S. Steel Corp. (*Fortner I*), 394 U.S. 495, 514 n.9 (1969) (White, J., dissenting) (indicating that tying functionally related products may reduce distribution and production costs).

[22] *See supra* text accompanying note 6.

[23] *See* Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 12 (1984).

[24] *See* HYLTON, *supra* note 7, at 283-84. Hylton finds two defenses particularly relevant to tying cases: the "goodwill defense" and the "economies of scale defense." *Id.* at 287. The goodwill defense is that "the manufacturer's tying is an attempt to protect its reputation for quality." *Id.* The economies of scale defense argues that "tying is necessary in order to exploit economies in joint production or marketing." *Id.*

[25] *See* Evans & Salinger, *supra* note 21, at 65 (explaining that firms may tie products when "there are fixed costs of offering a products separately and there are not enough consumers who want that product separately").

[26] *Id.* at 74.

[27] Sherman Act, ch. 647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1-7 (2006)). The tying behavior could qualify as monopolization or attempted monopolization under Section 2 of the Sherman Act, or be an unreasonable restraint under Section 1. 15 U.S.C. §§ 1-2.

regulated under the Sherman Act and Clayton Act, but the tying analysis is similar under each.[29] The central policy of the Acts is to maintain competition.[30] The Sherman Act is founded upon the principle that "unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic political and social institutions."[31] Although the Sherman Act specifies that "[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce . . . is hereby declared to be illegal,"[32] only behavior that "unreasonably" restrains competition falls within this provision.[33] Certain firm behaviors are presumed to unreasonably restrain competition under the Acts.[34] Tying is one of these unreasonable restraints.[35]

A tying arrangement may qualify as an unreasonable restraint on competition through either a per se[36] or rule of reason approach.[37] Unreasonable restraint analysis considers the market power of the tying firm, the firm's leveraging of that market power to gain access to the tied market, and its use of that market power to force the buyer to consume the tied product.[38] A per se approach is appropriate only if an unreasonable restraint

[28] Clayton Act, ch. 232, 38 Stat. 730 (1914) (codified as amended at 15 U.S.C. §§ 12-27). The tying behavior could qualify as a lease, contract, or sale of goods that requires the buyer "not [to] use or deal in the goods . . . of a competitor" where the effect of such lease, contract, or sale of goods "may be to substantially lessen competition or tend to create a monopoly in any line of commerce." 15 U.S.C. § 14.

[29] The Clayton Act's applicability is more limited because it only covers tangible products, although it is more specifically directed towards tying. *See* 15 U.S.C. § 14 ("It shall be unlawful for any person engaged in commerce . . . to lease or make a sale or contract for sale of goods, wares, merchandise, machinery, supplies, or other commodities . . . ."); *see also* United States v. Jerrold Elecs. Corp., 187 F. Supp. 545, 554 (E.D. Pa. 1960), *aff'd*, 365 U.S. 567 (1961) (per curiam) ("The Government concedes that § 3 of the Clayton Act . . . does not apply to tie-ins involving services.").

[30] *See Northern Pacific*, 356 U.S. 1, 4 (1958) ("The Sherman Act was designed to be a comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade.").

[31] *Id.*

[32] 15 U.S.C. § 1.

[33] *Northern Pacific*, 356 U.S. at 5.

[34] *Id.* (listing price fixing, division of markets, group boycotts, and tying arrangements as per se unreasonable behavior).

[35] However, increased appreciation of the efficiencies associated with tying has led to a more nuanced per se approach to tying arrangements. *See id.* at 7.

[36] *See* Int'l Salt Co. v. United States, 332 U.S. 392, 396 (1947).

[37] *See* Nat'l Collegiate Athletic Ass'n v. Bd. of Regents, 468 U.S. 85, 103 (1984).

[38] *See* Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469, 474 (2001).

on competition is probable.[39] Although *International Salt* established the per se tying rule,[40] the test was first considered in *Northern Pacific Railway Co.*, which established that tying arrangements are per se unreasonable "whenever a party has sufficient economic power with respect to the tying product to appreciably restrain free competition in the market for the tied product and a 'not insubstantial' amount of interstate commerce is affected."[41] The rule has evolved to require that 1) the seller has "'appreciable economic power' in the tying product market," 2) the arrangement affects a "substantial volume of commerce in the tied market," 3) the two tied products are distinct, and 4) the seller "has tied the sale of the two products."[42] The law gradually required these factors because of developments in tying theory.[43] The rationale behind the per se rule is that anti-competitive effects are so likely in particular tying cases that an inquiry into the actual anti-competitive harm is unnecessary.[44]

The third factor, whether the two products are distinct, is especially relevant to the technological tying industry. Distinct products analysis considers whether there is sufficient consumer demand for each separate product.[45] The products can simultaneously have a functional link and separate consumer demand.[46] Specific examination of the product markets in dispute is necessary to determine separate consumer demand.[47]

Determining a distinct product market is only the threshold inquiry; coerciveness is also required. A tying arrangement only has anti-competitive

[39] *See* Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 15 (1984).

[40] *Int'l Salt*, 332 U.S. at 396.

[41] *Northern Pacific*, 356 U.S. 1, 6-8 (1958) (finding tying of land leases with use of railroad's shipping service per se illegal under the Sherman Act). The Court also considered that the purpose of the tying arrangement "obviously was to fence out competitors, to stifle competition." *Id.* at 8.

[42] Eastman Kodak Co. v. Image Technical Servs. Inc., 504 U.S. 451, 462 (1992) (citing *Fortner I*, 394 U.S. 495, 503 (1969)).

[43] *See* Hylton & Salinger, *supra* note 38, at 469.

[44] *See Jefferson Parish*, 466 U.S. at 15-16 n. 25 (1984).

[45] *See Eastman Kodak*, 504 U.S. at 462; *Jefferson Parish*, 466 U.S. at 21-22 (explaining that "in this case no tying arrangement can exist unless there is a sufficient demand for the purchase of anesthesiological services separate from hospital services to identify a distinct product market in which it is efficient to offer anesthesiological services separately from hospital services"); *Northern Pacific*, 356 U.S. at 5; Times-Picayune Publ'g Co. v. United States, 345 U.S. 594, 614 (1953) (finding no violation of the Sherman Act because morning version and evening version of newspaper were only one product).

[46] *See Jefferson Parish*, 466 U.S. at 19; *see also Eastman Kodak*, 504 U.S. at 463 (rejecting Kodak's argument that because there is no demand for parts separate from service there is not a separate market for service and parts).

[47] *See Jefferson Parish*, 466 U.S. at 22 (finding that separate billing of anesthesiological services, ability of the doctor to request a specific anesthesiologist, and choice of the patient to request a different anesthesiologist indicate consumer demand for anesthesiological services distinct from other hospital services).

consequences if consumers are forced to purchase a tied product as a result of a seller's market power.[48] The market power required for tying liability is not limited to monopoly power because a seller with relatively less market power can still restrict competition.[49] Economic power in the tying context is the ability to coerce the purchaser into buying a product he would not have purchased in a competitive market.[50] It may involve the ability of a single seller to increase prices and restrict output.[51] For example, if a firm has appreciable market power, it may increase the price of its product without a substantial decrease in sales because consumers do not have competitive options to buy that product from another seller. Therefore the main inquiry for determining market power is whether the seller has the "power to raise prices, or impose other burdensome terms such as a tie-in, with respect to any appreciable number of buyers within the market."[52] This economic power may be inferred from the seller's dominant market share,[53] the tying product's desirability to consumers,[54] or the tying product's uniqueness.[55]

If the per se conditions are not satisfied, a rule of reason analysis takes a more detailed look at the competitive effects of the tying arrangement.[56] An arrangement may be unreasonable if the contract or surrounding circumstances give rise to the "inference or presumption that they were intended to restrain trade and enhance prices."[57] This rule of reason inquiry should be applied even if a firm is not liable under the per se rule.

C. *Technological Tying Law*

This Note addresses a particular type of tying behavior: technological tying. Technological tying is a functional form of tying where a firm designs a product so that it functions only when used with a complementary product.[58] Technology tying may have special pro-competitive effects. Many technology products run on a common platform. The more individuals that buy that

[48] *See id.* at 25.

[49] *Fortner I*, 394 U.S. 495, 502-03 (1969).

[50] *Eastman Kodak*, 504 U.S. at 464 (citing *Jefferson Parish*, 466 U.S. at 14).

[51] *Id.*

[52] *Fortner I*, 394 U.S. at 504.

[53] *See Eastman Kodak*, 504 U.S. at 464.

[54] *See Fortner I*, 394 U.S. at 503.

[55] *Id.* However, owning a patent in the tying product market is no longer dispositive. *See* Ill. Tool Works, Inc. v. Indep. Ink, Inc., 547 U.S. 28, 31 (2006).

[56] *See* Nat'l Collegiate Athletic Ass'n v. Bd. of Regents, 468 U.S. 85, 103 (1984). However, often courts do not appear to apply a rule of reason analysis after dismissing a per se claim. Whether this is due to the court's application of the tying doctrine or because plaintiffs did not state an alternative rule of reason claim is unclear.

[57] Nat'l Soc'y of Prof'l Eng'rs v. United States, 435 U.S. 679, 690 (1978).

[58] *See* Daniel E. Gaynor, *Technological Tying* 1 (FTC Bureau of Econ., Working Paper No. 284, 2006), *available at* http://www.ftc.gov/be/econwork.shtm.

particular platform, the more products will be produced and available to the consumer. Technology markets therefore have network effects, where the value of a product to an individual consumer increases with the number of consumers that adopt that same product.[59] The integration of two products may provide other efficiency benefits, such as convenience to the consumer or increased functionality. Given rapid innovation and shifting understanding of consumer preferences in the technology industry, technological integration may be particularly likely to foster efficiencies and increase consumer welfare. The Supreme Court developed the per se tying rule outside of the technological tying framework. As a result, lower courts have struggled to reconcile the strict per se tying rule with concerns about hampering technological innovation. This Part analyzes current technological tying law within the context of its historical development. Technological tying law currently lies within the framework of two different tying standards: the sole-purpose test of *Leasco* and the rule of reason test of *Microsoft III*.[60]

II. APPLICATION OF TECHNOLOGICAL TYING LAW

Leasco and *Microsoft III* show differing approaches to technological tying claims. This Part explores the case law in greater detail to determine the history of technological tying law and the dominant analysis used in lower courts. Some courts that did not adopt the *Leasco* sole-purpose test, particularly those in the Ninth Circuit, found ways of avoiding the per se rule for technological tying cases. These courts used analysis in the *Foremost* case to dismiss technological tying claims for either lack of coerciveness or lack of distinct products. Ultimately, *Microsoft III* may have been a response to the unavailability of *Foremost*'s distinct products analysis, in light of *Jefferson Parish*'s narrow separate products test.

A. *Pre*-Leasco

The earliest technological tying case under federal antitrust laws is *Telex Corp. v. International Business Machines Corp.*, which involved IBM's tying of central processing units ("CPUs") with peripheral devices.[61] IBM originally sold these products separately, but gradually IBM began incorporating more

[59] *See* Pietro Crocioni, *Leveraging of Market Power in Emerging Markets: A Review of Cases, Literature, and a Suggested Framework*, 4 J. COMPETITION L. & ECON. 449, 450 (2008) (explaining that these network effects can also accelerate anti-competitive harm).

[60] *See Microsoft III*, 253 F.3d 34, 84-85 (D.C. Cir. 2001); Response of Carolina, Inc. v. Leasco Response, Inc., 537 F.2d 1307, 1330 (5th Cir. 1976) (requiring that the defendant integrated the products for the sole purpose of tying them and therefore not for any efficiency reason).

[61] *See* Telex Corp. v. Int'l Bus. Machs. Corp. (*Telex I*), 367 F. Supp. 258, 347 (N.D. Okla. 1973), *aff'd in part, rev'd in part*, *Telex II*, 510 F.2d 894 (10th Cir. 1975) (reversing the lower court's determination of the relevant market in regards to the monopolization claim).

devices into its computer bundle.[62] These bundles hurt small manufacturers who sold the peripheral devices alone. The *Telex* court realized the difficulty in defining the peripheral products as a market separate from central processing units. IBM devoted significant research and development to make peripherals compatible, which was essential to the CPU's operation.[63] While the court did find illegal monopolization, it did not find an illegal tying arrangement.[64] The court concluded that the integration of CPUs with peripheral products was a technological advancement, "a desire to make available in the market improved devices at the earliest practicable time," and that the integration "cannot be fairly regarded as predatory within the contemplation of antitrust policy."[65] The court applied the per se tying test, but found that the integration resulted in a single product, therefore failing the distinct products prong, and that IBM did not coerce its customers into buying the peripherals.[66]

Concerns about the uncertainty surrounding the emerging computer industry were apparent and shaped the *Telex* court's application of the per se standard. In particular, the *Telex* court found that technological integration resulted in a single product for tying purposes. This single product approach accommodated the district court's concerns that finding technological integration to constitute illegal tying would "enmesh the courts with technical and uncertain inquiry into the technological justifiability of functional integration and cast unfortunate doubt of the legality of product innovations in serious detriment to the industry and without any legitimate antitrust purpose."[67] This opinion established the analytical difference between functional tying and contractual tying, setting the foundation for a separate approach to technological integration followed in *Leasco*.

Leasco involved a franchise-franchisee relationship.[68] The plaintiff franchisee alleged that Leasco illegally tied the franchise with lease of computer hardware.[69] Given that the franchise system software was only compatible with Leasco hardware, the plaintiff claimed that Leasco illegally

[62] *See id.* at 275.

[63] *Id.* at 278. The court also explained how CPUs also could function as a peripheral device if the consumer chose a data processing system based on memory capacity. *See id.* at 279.

[64] *Id.* at 341-42.

[65] *Id.* at 342.

[66] *Id.* at 347 (explaining how IBM also offered CPUs without controllers – one of the peripheral devices at issue).

[67] *Id.* at 347.

[68] *See* Response of Carolina, Inc. v. Leasco Response, Inc., 537 F.2d 1307, 1310 (5th Cir. 1976).

[69] *Id.* The plaintiffs also alleged that Leasco imposed territorial restrictions in violation of antitrust laws. *Id.*

tied its hardware to the technology necessary for the franchise.[70] The court affirmed a directed verdict for the defendant, finding that there was no coercion to use the Leasco hardware.[71] More importantly, the court adopted a special standard for technological tying cases. Leasco made changes to the hardware and software because the components could not support the franchise's time-sharing environment. These changes included technological integration of the separate components.[72] Concerned that the traditional tying analysis "would enmesh the courts in a technical inquiry into the justifiability of product innovations," the Fifth Circuit held that a sole purpose test, rather than a per se rule, was appropriate for technological tying situations.[73] In order to support a finding of an antitrust violation, this sole purpose test requires that the sole purpose of the integration was to tie the products, rather than to achieve a technological efficiency.[74] This test proved to be a strong barrier against plaintiffs' claims in a series of tying cases against IBM.[75] These early technological integration cases were concerned with hampering innovation.[76]

B. *Post*-Leasco

Still struggling with how to define the emerging computer industry, courts were slow to adopt the *Leasco* standard.[77] Some did not realize the potential

[70] *Id.* at 1329.

[71] *Id.*

[72] *Id.* at 1330-31. Leasco increased the memory capacity of the hardware and accordingly refined the operating system. *Id.* This hardware may have just been better; plaintiffs were able to buy the hardware somewhere else, but, according to a plaintiff witness, "it would not have made good business sense." *Id.* at 1330; *cf. Telex I*, 367 F. Supp. at 347, *aff'd in part, rev'd in part*, 510 F.2d 894 (10th Cir. 1975) (*Telex II*).

[73] *Leasco*, 537 F.2d at 1330 (citing *Telex I*, 367 F. Supp. at 347).

[74] *Id.* The court gave an example of when technological integration may be illegal: "If, for example, the systems software was designed only to be compatible with a specific hardware configuration, and that specific hardware configuration, because it is based on information held only by the seller, is only available from that seller, then a violation might be found." *Id.*

[75] *See, e.g.*, Transamerica Computer Co., Inc. v. Int'l Bus. Machs. Corp., 481 F. Supp. 965 (N.D. Cal. 1979) (interpreting the *Leasco* standard to require that technological design changes had no purpose and effect other than reducing competition).

[76] Professors Hylton and Salinger cite two motivations behind these decisions: 1) "an uncertain doctrine that threatens harsh penalties for integrating products could deter innovation" and 2) "where the advantage or efficiency is in the product design itself . . . courts should be especially reluctant to impose liability." Hylton & Salinger, *supra* note 38, at 480-81.

[77] For example, *In re Data General Corp. Antitrust Litigation* completely ignored the *Leasco* standard. The case involved the tying of central processing units with operating system software and central processing units with memory boards. *In re* Data Gen. Corp. Antitrust Litig., 490 F. Supp. 1089, 1097 (N.D. Cal. 1980). Although the district court recognized that exceptional business justifications may exempt a tying arrangement from

efficiencies of technological tying.[78] Others may have felt uncomfortable with determining what "technological" tying was, preferring instead to use a single product analysis to dismiss technological integration cases.[79] Most courts superficially applied the per se test but looked to *Foremost*, a post-*Leasco* Ninth Circuit case, to find that the tying behavior did not meet the per se standard.[80] Courts developed two methods of using *Foremost* to avoid the per se rule: 1) failing to find coerciveness because the technological interrelationship between products was not enough to establish coercive tying[81] and 2) concluding that technologically integrated products were in fact one product and therefore failed the two distinct products requirement.[82] This

the per se rule, it did not apply the *Leasco* sole-purpose test. *See id.* at 1101. The court ultimately applied the per se tying test in denying cross-motions for summary judgment. The decision included a determination that both of these tying claims involved separate products. *Id.* at 1105 (ruling that the CPU/software arrangement indicated separate products because of "separate availability, separate pricing, and separate marketing of CPUs and software, and the existence of numerous companies that market either software or CPUs, but not both"). The court differentiated the *Data General* facts from *Telex I* and *ILC Peripherals*. *See id.* at 1111 (explaining that *Telex*'s integration was "wholly optional" and *ILC Peripherals*'s "produced technological and economic benefits that were not available with unbundled equipment and reflected widespread industry practice") (citing *Telex I*, 367 F. Supp. at 347; ILC Peripherals Leasing Corp. v. Int'l Bus. Machs. Corp., 448 F. Supp. 228 (N.D. Cal. 1978)).

[78] *Data General* illustrates the beginning stages of the computer industry. Today CPUs are always tied to operating system software, and memory boards are always included with CPUs. The court's discussion of why these ties satisfy the separate products requirement is understandably dated. Possible consumer benefits to having widely-adopted operating system software were not mentioned, and the practicality of including memory boards with CPUs was given little weight. *See Data Gen.*, 490 F. Supp. at 1109-10 (dismissing arguments that a computer cannot operate without memory because "at least some customers choose, even in the face of [defendant's] bundled sales, to substitute foreign memory for the . . . memory they have already purchased"). If courts had adopted the *Data General* approach to computers, modern computer systems would be considered illegal bundles and the industry may have been significantly hampered.

[79] *See* Innovation Data Processing, Inc. v. Int'l Bus. Machs. Corp., 585 F. Supp. 1470, 1476 (D.N.J. 1984) ("IBM would have [been] justified in offering only an integrated version of IPO 'J' – as a single product and at a single price."); *ILC Peripherals Leasing Corp.*, 448 F. Supp. at 233-34.

[80] *See, e.g.*, *Innovation Data Processing*, 585 F. Supp. at 1475 (referencing *Foremost* to support the decision that the plaintiff had "failed to show the requisite coercion necessary to establish a per se illegal tying arrangement").

[81] If the firm's behavior is not coercive, then it does not have economic power under tying antitrust law. Economic power is an essential element for an antitrust claim. *See* Eastman Kodak Co. v. Image Technical Servs. Inc., 504 U.S. 451, 464 (1992).

[82] *See* Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 542 (9th Cir. 1983). *But see* Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 21-22 (1984)

approach effectively took technological integration cases out of the per se framework. The courts that applied *Foremost* to avoid application of the per se rule did not clearly apply an alternative test. Many seemed to end their analysis with per se, rather than applying the alternative rule of reason as set out in *Fortner I*.[83] A few courts have interpreted *Foremost* as holding that technological ties are simply not within the per se rule.[84]

In *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, a photofinisher challenged Kodak's integration of its new instant film developing camera with film processing equipment.[85] Foremost argued that Kodak illegally tied its instant cameras to film, film to photoprocessing chemicals, and chemicals to processing paper and film.[86] Foremost's tying theory was that because their current film, chemicals, and paper were not compatible with the new Kodak camera, Foremost necessarily had to purchase these Kodak materials along with the Kodak camera.[87] The Ninth Circuit decided that Foremost had not adequately pleaded the coercion element of its per se tying claim.[88] Specifically, a manufacturer that makes a product incompatible with then existing technology has not necessarily coerced the purchaser into buying the tied products.[89] This technological tying behavior did not require Foremost to purchase one product as a condition of the sale of cameras.[90] When purchase of tying products is only "a prerequisite to practical and effective use of the tying products," rather than a "condition of sale of the alleged tying products," coercion is not satisfied under the per se tying standard.[91] This coercion analysis effectively placed technologically integrated products outside of the per se tying standard.[92]

(establishing a new separate products analysis focusing on whether there is separate demand for the products at issue).

[83] Tying arrangement can still be illegal under rule of reason even if there is not enough evidence under the per se rule. *Fortner I*, 394 U.S. 495, 500 (1969) ("A plaintiff can still prevail on the merits whenever he can prove, on the basis of a more thorough examination of the purposes and effects of the practices involved, that the general standards of the Sherman Act have been violated.").

[84] *See, e.g.*, Condesa Del Mar Inc. v. White Way Sign & Maint. Co., No. 86 C 9116, 1987 WL 17474, at *2 (N.D. Ill. Sept. 24, 1987).

[85] *Foremost*, 703 F. 2d at 537.

[86] *See id.*

[87] *Id.* at 540-41.

[88] *Id.* at 541-42.

[89] *See id.*

[90] *See id.*

[91] *Id.* at 542.

[92] The court discussed the particular innovative nature of technology markets and expressly declined to place technological ties within the per se standard. *Id.*

> Foremost's tying allegation basically involves the so-called technological tie. In other words, because the new film could not be processed with the old chemicals, and because the needed new photographic paper similarly could not be processed with the

In addition to finding that technological interrelationships do not necessarily show coercion, the court also found that technological incompatibility does not necessarily foreclose competition.[93] It went so far as to conclude that technological incompatibility actually *increases* competition by improving consumer choice and encouraging other manufacturers to enter the new product market by producing similarly advanced products.[94] More notably, the court observed that the lack of compatible competing products may be due to the fact that the integrating firm is producing technologically advanced products more quickly than competitors. Rather than abusing market power, the integrating firm may just be innovating products so quickly that competitors have not yet caught up with the production of a compatible product.[95] The court rejected Foremost's claim of monopolization and attempted monopolization under Section 2 of the Sherman Act on similar grounds, finding that creating technological incompatibilities was a competitive practice and did not qualify as "an anti-competitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market."[96]

The court concluded that the per se rule "does not logically fit and should not be applied" to technological tying cases.[97] However, it is unclear what standard *Foremost* would apply to technological tying. The court conceded that tying arrangements can be analyzed under rule of reason, but did not apply that analysis because Foremost did not allege a tying violation under rule of reason.[98] This decision has led to a series of cases where courts engaged in a truncated analysis of technological tying claims, taking technological tying outside of the per se rule but failing to apply a rule of reason analysis in the alternative.

> old chemicals, it was necessary to purchase an entire package of film, chemicals and paper. We do not believe that, standing alone, such technological interrelationship among complementary products is sufficient to establish the coercion essential to a *per se* unlawful tying arrangement. Indeed, such a rule could become a roadblock to the competition vital for an ever expanding and improving economy. Product innovation, particularly in such technologically advancing industries as the photographic industry, is in many cases the essence of competitive conduct.

Id.

[93] *Id.*

[94] *Id.*

[95] *Id.* ("Thus, the *per se* rule does not logically fit and should not be applied.").

[96] *Id.* at 545-46.

[97] *Id.* at 542.

[98] The court limited its discussion to "whether, under the *per se* rule, Foremost adequately pleaded the requisite coercion in its complaint." *Id.* at 541 ("Of course, conduct which does not meet the requirements of the *per se* prohibition against tying arrangements may still constitute a violation of section 1 of the Sherman Act under the 'rule of reason' test. But Foremost has not challenged the alleged tying arrangement under rule of reason." (citation omitted)).

C. *Utilization of* Leasco *and* Foremost

The Ninth Circuit initially retreated from its *Foremost* analysis. In *Digidyne v. Data General*, the court refused to apply *Foremost* in the contractual tying, as opposed to technological tying, context.[99] The court found that the defendant's refusal to sell its operating system software without its own central processing units was an illegal tying arrangement.[100] Plaintiff Digidyne manufactured computers that operated on defendant Data General's operating system, RDOS.[101] Data General refused to license RDOS without the purchase of its own computer.[102] On appeal, the issue was whether the district court properly set aside a jury verdict that defendant Data General had sufficient economic power with respect to the RDOS operating system.[103] The lower court improperly required monopoly power in the tying product market for per se tying illegality.[104] The Ninth Circuit found sufficient economic power to restrict competition in the tied product market and held Data General liable under the per se rule.[105]

This case illustrates how the application of technological tying law depends on whether the firm utilized contractual tying, such as mandatory licensing, or technological integration. Perhaps if the defendant manufactured its operating system so that it was only compatible with its own computers, the court would have ventured outside the per se rule.[106] This distinction leads to distorted incentives that may decrease consumer surplus. Under an antitrust regime that prefers technological tying over contractual tying, the defendant in this case might completely integrate its operating system and CPU rather than providing consumers with an option to negotiate a contract that would allow them to purchase the operating system without the computer.[107] It may be better for consumers to have the option of negotiating a separate sale of the operating system and using that system on any type of computer, but this decision creates incentives for the defendant to make the program only compatible with its own CPUs. Given that RDOS was "the best in the industry, the most

[99] *See* Digidyne v. Data Gen., 734 F.2d 1336, 1338 (9th Cir. 1984).

[100] *See id.*

[101] *Id.*

[102] *Id.*

[103] *See id.* at 1339.

[104] *See id.* at 1341.

[105] *See id.* at 1338.

[106] *See* Brief of Professor Lawrence Lessig as Amicus Curiae at 7, *Microsoft III*, 253 F.3d 34 (D.C. Cir. 2001) (No. 98-1232 (TPJ)).

[107] The recent Apple iTunes iPod litigation illustrates how firms may be reacting to these incentives to technologically tie products, rather than offering a contractual option. *See, e.g.*, *In re* Apple iPod iTunes Antitrust Litig., No. C 05-00037 JW, 2008 WL 5574487, at *4 (N.D. Cal. Dec. 22, 2008); Slattery v. Apple Computer, Inc., No. C 05-00037 JW, 2005 WL 2204981, at *3 (N.D. Cal. Sept. 9, 2005) (involving tying of online digital music files (sold through iTunes) and the iPod, and iPod and iTunes software).

comprehensive, compatible, field proven, and rapid," complete technological integration of RDOS with Data General's computers would prevent non-Data General computer users from enjoying a superior product.[108]

This case also raises *Foremost* concerns that perhaps tying of these two products is good for the industry.[109] RDOS's position as the best operating system may be due to Data General's superior innovation; tying its operating systems with computers could encourage other potential manufacturers to enter the market and develop a competing computer operating system.[110] In fact, the plaintiff's position seemed to have developed under such an incentive structure. Plaintiff produced NOVA CPUs, which were designed to emulate Data General's NOVA computer system.[111] The position of the RDOS operating system within the NOVA computer system framework also points to a strong single product argument. Data General developed RDOS to operate within its NOVA framework and could be considered part of the NOVA computer system rather than as a separate product.[112]

However, courts continued to apply *Foremost* in the technological integration context. In *Innovation Data Processing v. IBM*, the court found that technological integration of a software program into an operating system installation program was not illegal tying behavior.[113] Plaintiffs sought to meet the stringent *Leasco* standard, pleading that "the alleged tie was implemented by IBM for the purpose of impeding [plaintiff's] ability to market its own program product."[114] The court granted IBM's motion for summary judgment regarding the per se tying claim, but denied it in regards to general violations of the Sherman and Clayton Acts.[115] It held that because customers could buy either of the tied products alone, there was no per se tying claim.[116] The court

[108] *Digidyne*, 734 F.2d at 1341 n.2.

[109] *See* Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 542 (9th Cir. 1983).

[110] *See Digidyne*, 734 F.2d at 1346 ("[M]any competitors had entered the CPU market after the introduction of defendant's RDOS tied to defendant's CPU.").

[111] *Id.* at 1338.

[112] *See Microsoft III*, 253 F.3d 34, 84-89 (D.C. Cir. 2001) (discussing how the *Jefferson Parish* single product framework is incompatible with technological integration arrangements). However, the court upheld the distinct product finding under *Jefferson Parish*. *Id.* at 87-89 (emphasizing the separate demand for the two products).

[113] *See* Innovation Data Processing v. Int'l Bus. Machs. Corp., 585 F. Supp. 1470, 1476 (D.N.J. 1984).

[114] *Id.* at 1471; *see also* United States v. Microsoft Corp. (*Microsoft II*), 147 F.3d 935, 948 (D.C. Cir. 1998) (developing this standard in the context of technological incompatibilities).

[115] *Innovation Data Processing*, 585 F. Supp. at 1472.

[116] *See id.* at 1475.

looked to *Foremost* for the rule that integration is not sufficient evidence to show coercion.[117]

The court also granted summary judgment for the defendant on alternative grounds, viewing the tying arrangement as one single product.[118] During the discussion of these two grounds for granting summary judgment, the court mentioned that IBM had sufficient justification to package its two products.[119] This consideration is irrelevant to the per se analysis and would only come in under *Leasco*'s sole purpose or the rule of reason under *Fortner I*. It is unclear why the opinion mentioned this prong in the per se analysis; ultimately it allowed the plaintiff's tying claim to proceed under the *Fortner I* rule of reason standard.[120] The court seems to have used *Leasco* analysis to replace the per se rule with a rule of reason standard.[121]

Similar contractual tying versus technological integration concerns are apparent in *A.I. Root*, where the Sixth Circuit affirmed summary judgment for the defendant software company.[122] The defendant used contractual tying; it would not sell its BOSS operating system software unless the plaintiff also signed a licensing agreement.[123] The licensing agreement required the plaintiff to 1) only use defendant's computers with its application software and 2) pay a transfer fee each time it acquired a new computer and needed defendant's programming services.[124] The court upheld summary judgment under the per se rule, agreeing that the defendant did not have sufficient economic power in the tying product market to appreciably restrain competition in the tied product market.[125] This opinion emphasized that possession of a copyright does not

[117] *See id.* at 1475-76 (citing Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 542 (9th Cir. 1983)).

[118] *See id.* (following the Ninth Circuit in finding that the inclusion of multiple items in a required package is not unlawful if they are sufficiently interrelated so as to constitute a single product).

[119] *Id.*

[120] *See id.* at 1477.

[121] Other courts have also used *Leasco* to exempt technological ties from the per se rule. *See, e.g.*, Condesa Del Mar v. White Way Sign & Maint. Co., No. 86 C 9116, 1987 WL 17474, at *2 (N.D. Ill. Sept. 24, 1987) ("What may present itself here is a technological tie, and such ties are not within the ambit of the *per se* prohibitions of the Sherman Act."). The court applied the *Leasco* sole purpose test to the defendant's manufacture of signs that had parts unavailable to other companies. *Id.* at *3. The plaintiffs did not allege that the sole purpose of the tie was to suppress competition, so the court dismissed the illegal tying claim. *Id.* The *Condesa* court used a per se or nothing approach, while *Innovation Data Processing* applied rule of reason even though the defendant was not liable under the per se standard.

[122] A.I. Root Co. v. Computer/Dynamics, Inc., 806 F.2d 673, 677 (6th Cir. 1986).

[123] *Id.* at 674.

[124] *Id.* at 675.

[125] *See id.* (finding "2-4% of the small computer market" does not allow inference of "market dominance").

necessarily imply market power and distinguished *Digidyne* because the tying product, the RDOS computer operating system, was unique.[126]

In *Caldera v. Microsoft*, where the plaintiff alleged that Microsoft illegally tied its operating system with its graphical user interface, the court incorporated *Foremost* single product analysis and technological innovation concerns to form its own muddled standard.[127] Plaintiff Caldera, a competing operating system manufacturer, incorporated the *Leasco* standard into its allegations.[128] Caldera reconciled the *Leasco* standard with the concerns set out in *Foremost* by emphasizing that Microsoft made its GUI incompatible with Caldera's operating system "not for any technologically significant reason, but for the sole purpose of eliminating DR DOS [Caldera's operating system] as a competitor."[129] Caldera's antitrust theory was that Microsoft's creation of incompatibilities, along with other behavior such as requiring computer manufacturers to pay per-processor license fees whether or not they installed Microsoft's GUI, forced manufacturers to purchase both MS-DOS (the operating system) and the Windows interface (the GUI) combined in Windows 95.[130]

The *Caldera* court rejected the plausible product improvement standard used by the D.C. Circuit in *Microsoft II*,[131] believing it gave too much weight to concerns about technological innovation relative to antitrust law.[132] It also rejected the *Leasco* standard and the *IBM* cases because "Microsoft has taken an additional step beyond the defendants in the *IBM* cases by not only bundling two products together, but also by prohibiting the unbundling of the two."[133] Ultimately the court decided on a technological tying standard that combined technological efficiencies with a single product analysis: "if the evidence

[126] *See id.* at 676-77.

[127] In response to dissatisfaction with Microsoft's MS-DOS operating system in the early 1980s, the computer industry developed these graphical user interfaces ("GUIs") that operated along with MS-DOS. *See* Caldera, Inc. v. Microsoft Corp., 72 F. Supp. 2d 1295, 1298 (D. Utah 1999). These GUIs replaced some of the computer character commands of DOS with graphical commands, which were more user-friendly. *See id.* The graphical commands allowed the user to control the computer by using a "mouse" that sent commands by pointing and clicking on graphics. *Id.*

[128] *See id.* at 1303 (using the term "sole purpose" in its allegations).

[129] *Id.*

[130] Caldera alleged that Microsoft's anti-competitive practices, viewed in totality, amounted to a violation of § 2 of the Sherman Act. *See id.* at 1305. Caldera also alleged that Windows 95 was an illegal tie under Sections 1-2 of the Sherman Act and Section 3 of the Clayton Act. *See id.* at 1319-20. Eventually Microsoft technologically integrated both products into Windows 95. *See id.* at 1325.

[131] *See Microsoft II*, 147 F.3d 935, 950 (D.C. Cir. 1998).

[132] *See Caldera*, 72 F. Supp. 2d at 1323.

[133] *Id.* at 1324 (citing Innovation Data Processing, Inc. v. Int'l Bus. Machs., 585 F. Supp. 1470, 1476 (D.N.J. 1984); ILC Peripherals Leasing Corp. v. Int'l Bus. Machs., 448 F.Supp. 228 (N.D. Cal. 1978); *Telex I*, 367 F. Supp. 258 (N.D. Okla.1973)).

shows that a valid, not insignificant, technological improvement has been achieved by the integration of two products, then in essence a new product has been created, and a defendant is insulated from §1 tying liability."[134]

The *Caldera* facts show the complex interplay between contractual versus technological integration. Much of the evidence offered concerning the single product determination focused on whether the products could operate separately.[135] For example, Caldera's expert argued that the operating system and GUI were separate products within Windows 95 because there was no shared software code, that the two products could be separated, and that the products could work properly once separated.[136] Emphasis on separate functionality may not be a substantive deciding factor for determining whether single products are separate, and this analysis highlights the incompatibility of the separate products test with technological integration issues.[137] The court's focus here merely encourages firms like Microsoft to intermingle code and create dependencies between newly integrated products. Ultimately the court found a genuine issue of material fact as to whether this test was satisfied and denied Microsoft's summary judgment motion on the technological tying claim.[138]

D. Microsoft III*'s Reformulation of* Foremost

The D.C. Circuit stood apart from the *Foremost* followers by developing a definitive standard for particular technological tying arrangements in *Microsoft III*. The United States challenged Microsoft's contractual and technological tying of its Internet Explorer web browser with its Windows operating system.[139] The D.C. Circuit held that rule of reason, rather than the per se standard, should apply to the tying of "platform software products."[140] The court seemed to limit this rule of reason exception to the particular Microsoft arrangement. It emphasized that this behavior involved a "novel category of dealings" which was "the first close-up look at the technological integration of added functionality into software that serves as a platform for third-party applications."[141]

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[134] *Caldera*, 72 F. Supp. 2d 1325. To determine whether the technological integration has created a new product, "the two products that have been integrated must be joined for technological reasons. . . . [T]his analysis requires the integration to be driven by technology rather than by marketing." *Id.* at 1326.

[135] *See id.* at 1327.

[136] *Id.*

[137] *See* Lessig Brief, *supra* note 106, at 39 ("But the benefit of this rule – treating two products as one – should be presumptive only, subject to being defeated . . . .").

[138] *See Caldera*, 72 F. Supp. 2d at 1328.

[139] *See Microsoft III*, 253 F.3d 34, 47 (D.C. Cir. 2001).

[140] *Id.* at 84.

[141] *Id.*

The District Court found that Microsoft 1) required buyers of Windows 95 and 98 to also buy Internet Explorer at a single, bundled price; 2) refused to allow computer manufacturers to uninstall or remove Internet Explorer from the Windows platform; 3) designed Windows 98 so that consumers could not remove Internet Explorer with the Add/Remove Programs utility; and 4) designed Windows 98 to override the consumer's choice of default web browser.[142] On appeal, Microsoft did not dispute these findings.[143]

After affirming these facts, the D.C. Circuit then explained that standard per se tying analysis was not appropriate in this case because it "creates undue risks of error and of deterring welfare-enhancing innovation."[144] It emphasized how the court had no "considerable experience" with this business arrangement and how the Supreme Court has never considered a similar case.[145] More notably, it explained how the *Jefferson Parish* "separate-products test is a poor proxy for net efficiency from newly integrated products" because the first firm to integrate functions or eliminate the need for a second product will risk antitrust liability for efficient integration.[146] This observation is reminiscent of the problem posed in the *IBM* cases, where the defendant integrated memory and operating systems – an integration that is now undisputedly efficient.[147] The court noted how this separate products threat is particularly astute in the platform software market because such integration is common, even "among firms without market power."[148] In contrast to earlier antitrust cases that reasoned that tying behavior is evidence of market power, the D.C. Circuit observed that "[f]irms without market power have no incentive to package different pieces of software together unless there are efficiency gains from doing so."[149]

Concerns about suppressing efficiencies in this industry, coupled with the difficulty of using the single product analysis to take technological tying cases out of the per se rule, may have prompted the D.C. Circuit to adopt a new standard. The court observed that the "pervasively innovative character of platform software markets" implies that tying these markets may produce efficiencies that the Supreme Court may not have considered when developing the per se rule.[150] Lower courts may have ignored such efficiencies when adopting the per se rule for tying cases.[151] Some courts, concerned about

[142] *See id.*

[143] *Id.* at 85.

[144] *Id.* at 89-90.

[145] *See id.* at 90-91.

[146] *Id.* at 92.

[147] *See supra* Part II.C (examining the court's apparent confusion over which tying standard to apply).

[148] *See Microsoft III*, 253 F.3d at 92-93.

[149] *Id.* at 93.

[150] *Id.*

[151] *See id.* at 94.

interfering with possible efficiencies, used the single product analysis to avoid application of the stringent per se rule.[152] The *Microsoft III* court may have realized that under the *Jefferson Parish* consumer demand test, which points to liability for technological integration, the *Foremost* single product analysis was no longer a valid way to avoid a confrontation between technological integration and the per se tying rule. The *Foremost* single product test had been trumped by the *Jefferson Parish* single product/consumer demand analysis.

Realizing that courts needed a consistent, valid method of analyzing technological tying, the D.C. Circuit decision contributed a valuable doctrine to tying law by providing a clear exception to the per se rule. At first, this exception may seem to be just a variation on the *Foremost* method; both *Microsoft III* and *Foremost* exempt technological tying claims from the per se rule. However, the D.C. Circuit went further by contributing a more sophisticated framework. While other cases used a truncated antitrust analysis of tying claims – in that once *Foremost* coercion analysis (as opposed to single product analysis) was applied, the court simply dismissed the claims – the D.C. Circuit clearly applied the alternative rule of reason analysis. The application of rule of reason, rather than completely dismissing claims, is important because some technological tying may be anti-competitive overall despite its efficiencies.[153] However, the rule of reason approach is strongly pro-defendant relative to the per se approach; whether applied in the platform software context or beyond, this standard is much less likely to stifle product innovation.

E. *Post*-Microsoft III

In *Microsoft III*, the D.C. Circuit deviated from both the traditional per se tying standard and the *Leasco* technological tying standard. The court viewed the tying of software and operating systems as a particular species of technological integration.[154] This Section examines how courts have dealt with *Microsoft III*'s rejection of the general per se standard, the tension between

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[152] *See id.* (citing ILC Peripherals Leasing Corp. v. Int'l Bus. Machs., 448 F. Supp. 228, 233 (N.D. Cal. 1978)).

[153] This approach is also more consistent with *Fortner I*. *See generally Fortner I*, 394 U.S. 495 (1969).

[154] *See Microsoft III*, 253 F.3d at 95 ("Because this claim applies with distinct force when the tying product is *platform* software, we have no present basis for finding the per se rule inapplicable to software markets generally."); *cf.* United States v. Microsoft Corp., No. Civ. A. 98-1232 (TPJ, Civ. A. 98-1233 TPJ), 1998 WL 614485 (D.D.C. Sept. 14, 1998) (differentiating the Microsoft tying behavior from the *IBM* cases because Microsoft took the additional step of contractually prohibiting manufacturers from unbundling Internet Explorer and Windows 98); Lessig Brief, *supra* note 106, at 26-29 (discussing how software integration is different than contractual and technological bundling).

Microsoft III and *Leasco*, and whether they have applied *Microsoft III*'s rule of reason standard beyond its intended narrow scope of platform software tying.

In *Medtronic Minimed Inc. v. Smiths Medical MD*, manufacturers of insulin infusion pumps designed the pumps to be compatible only with their own infusion injection sets.[155] The court recognized that the facts involved technological tying because the defendants tied the product together functionally, rather than by contract.[156] *Medtronic* seems to invoke a per se analysis, although its soft analysis of coercion implies a more lenient standard.[157] The court noted that law in the Third Circuit could be read to imply that technological tying is not, in and of itself, illegal, which hints that the court was deliberately applying a more lenient analysis to this technological tying case.[158] However, the opinion did not discuss efficiency or business justifications for the tying behavior, so it did not go outside the bounds of a per se analysis.

The confusion over which standard is appropriate for technological tying cases is illustrated by *HDC Medical, Inc. v. Minntech Corp.*[159] In *Minntech*, the defendant was a manufacturer of reprocessing equipment and products intended for multiple-use dialyzers.[160] Plaintiffs alleged that defendant illegally tied reprocessing agent with software; although defendant's software was not compatible with other agents, defendants offered customers their sources code to make it compatible.[161] The court discussed the implications of technological integration and decided that the "*per se* rule does not logically fit and should not be applied."[162] The court established a "general rule" that sale of technologically interrelated products is not sufficient to establish a per se unlawful tying arrangement "even if the new products are incompatible with the products then offered by the competition and effective use of any one of the new products necessitates purchase of some or all of the others."[163]

However, it is unclear which rule the court ultimately applied. The court did not seem to hold that the per se rule is inapplicable to technological tying, but that technological tying does not necessarily fit the "foreclos[ure] of

[155] *See* Medtronic Minimed, Inc. v. Smiths Med. MD, Inc., 371 F. Supp. 2d 578, 581 (D. Del. 2005). The insulin pumps are the main, non-disposable devices and the infusions sets are disposable devices that connect the pumps to the patient.

[156] *See id.* at 585-86 n.8.

[157] *See id.* at 586.

[158] *See id.* at 585-86 n.8.

[159] 411 F. Supp. 2d 1096, 1100-5 (D. Minn. 2006).

[160] *See id.* at 1101.

[161] *See id.* at 1099.

[162] *Id.* The court continued: "[i]t is clear that a mere technological tie does not present the competitive evils which the *per se* prohibition of tying arrangements is designed to prevent." *Id.*

[163] *Id.*

competition" requirement of a per se tying violation.[164] After establishing its general rule, the court discussed how the defendant's integration of its software and dialyzers benefitted consumers without foreclosing competition.[165] It dismissed the plaintiff's claim that the only purpose of the defendant's integration was to exclude competitors from the market.[166] This claim is reminiscent of *Leasco*'s sole purpose test.[167] Ultimately the court concluded by citing *Foremost*'s proposition that a technological interrelationship between products is not enough to establish coercive tying, affirming the continued influence of *Foremost*.[168]

Although *Minntech* shows that some courts continue to rely on *Foremost* in technological tying cases – at least for its coercion analysis – courts have generally not relied on *Microsoft III*. *In re eBay Seller Antitrust Litigation* relied on *Microsoft III* outside of the technological tying context. However, the court cited *Microsoft III* as merely affirming two established requirements for a prima facie case of anti-competitive behavior: "(1) the plaintiff must allege a harm to the competitive process as distinct from the a [sic] harm to one or more competitors; and (2) the plaintiff must demonstrate that the conduct indeed has the requisite anti-competitive effect."[169] The court found that eBay's acquisition of electronic payment system Paypal met the prima facie standard.[170]

Post-*Microsoft III* cases do not seem to rely on the D.C. Circuit's *Microsoft III* analysis. Overall, it seems that *Microsoft III* confirmed what many courts have been doing through their use of *Foremost* – technological tying is exempt from the per se rule. Although *Microsoft III* goes beyond *Foremost* to actually apply the alternative test, the extreme pro-defendant nature of the rule of reason standard, coupled with its required fact-intensive analysis, may be

[164] *Id.*

[165] *See id.*

[166] *Id.* ("Minntech possessed legitimate reasons for marketing its set of products . . . .").

[167] *See supra* notes 68-76 and accompanying text (recalling *Leasco* and articulating the sole purpose test).

[168] *See id.* (citing Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 542 (9th Cir. 1983)). Although *Foremost*'s single products analysis is invalid after *Jefferson Parish*, its holding that a technological interrelationship between products is not enough to prove tying is still viable.

[169] *In re* eBay Seller Antitrust Litig., 545 F. Supp. 2d 1027, 1032 (N.D. Cal. 2008) (citing *Microsoft III*, 253 F.3d 34, 58 (D.C. Cir. 2001)). After the prima facie case of anti-competitive behavior has been established, the burden shifts to defendant to show a procompetitive justification for its conduct. The plaintiff then has to show that "the anti-competitive harm outweighs the procompetitive benefit." *Id.*

[170] *Id.* The court did not consider eBay's procompetitive arguments because it was irrelevant to the plaintiff's survival of a motion to dismiss. *Id.* at 1033 ("A procompetitive benefit may rebut a *prima facie* case. However, to survive dismissal Plaintiffs are required only to establish a *prima facie* case.").

leading courts to stick to their previous strategy of dismissing technological tying cases after they are brought out of the per se framework.

III. IMPLICATIONS OF THE TECHNOLOGY TYING STANDARDS

As technological products capture an increasingly larger share of our economy, these differences in tying law will result in weightier implications for firm behavior.[171] In some markets, sellers may have a choice between contractual and technological tying; these sellers may opt for technological tying, even though this choice may not necessarily maximize social welfare, because it leaves a firm less vulnerable to antitrust liability.[172] In order to ensure an efficient, innovative market, technological tying law must account for these concerns. The current law, which involves conflicting and unclear standards, needs uniform revision.

The first step toward a better technological tying doctrine is realizing the incompatibility of a per se analysis and tying behavior in general. The various parts of the per se rule incorporate a rule of reason analysis, so it would be more straightforward to apply rule of reason in the first place.[173] Some courts have conceded this point, and now view all tying claims as requiring a "merged" per se and rule of reason standard.[174] This approach highlights the inherent uncertainty surrounding the per se rule; taking away ease of applicability leaves the rule as a mere per se label with potential for

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[171] *See* HYLTON, *supra* note 7, at 302.

[172] *See id.* ("The existence of the more lenient legal standard for technological integration suggests that software sellers can, in effect, evade application of the per-se rule to their tying decisions.").

[173] This criticism is not limited to technological tying; it applies to tying law as a whole. Justice O'Connor addressed this problem in her *Jefferson Parish* concurrence. *See* Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 27 (1984) (O'Connor, J., concurring) (asserting that the arrangement is "properly analyzed under the Rule of Reason"). The current per se tying label 1) "incurs the costs of a rule of reason approach without achieving its benefits" because it calls for a detailed economic analysis but could be interpreted to prohibit pro-competitive arrangements and 2) may confuse lower courts because it "invite[s] lower courts to omit the analysis of economic circumstances of the tie that has always been an [sic] necessary element of tying analysis." *Id.* at 34-35. Chief Justice Burger, Justice Powell, and then-Justice Rehnquist joined this concurrence. *Id.* at 27.

[174] *See* PSI Repair Servs., Inc. v. Honeywell, Inc., 104 F.3d 811, 815 n.2 (6th Cir. 1997); Lee v. Life Ins. Co. of N. Am., 23 F.3d 14, 16 (1st Cir. 1994) (observing the "fact-intensive inquiry" required for tying claims despite the "somewhat misleading epithet, '*per se*'"); *see also Jefferson Parish*, 466 U.S. at 34 (O'Connor, J., concurring) ("Some of our earlier cases did indeed declare that tying arrangements serve 'hardly any purpose beyond the suppression of competition.' However, this declaration was not taken literally even by the cases that purported to rely upon it . . . . The Court has never been willing to say of tying arrangements, as it has of price-fixing, divisions of markets and other agreements subject to *per se* analysis, that they are always illegal, without proof of market power or anti-competitive effect.").

unnecessary further confusion. Some courts may take the per se rule too literally and only haphazardly apply its various parts.

The per se rule does not consider anti-competitive effects and therefore runs a risk of finding liability for harmless activity. It is especially inappropriate in technological tying cases because competitors are more likely to use antitrust litigation as a tool to suppress competition against them, even though the behavior does not have an anti-competitive effect. Given the higher likelihood and cost of error when efficient tying arrangements are found to be illegal, a more lenient standard would allow courts discretion in evaluating claims. Courts have already been trying to avoid the stringent per se approach in technological cases, as shown by refusals to recognize technological integration as coercive tying and by viewing technologically connected items as one single product.[175]

The more difficult question is which standard should replace the per se rule. In order to determine the best technological tying standard, we must look to how courts analyze tying cases. Clearly courts are struggling to reconcile the pro-plaintiff origins of tying law with the constantly changing environment of technological innovation. The available options range from most pro-plaintiff to most pro-defendant; they run from the per se rule to the *Microsoft III* rule of reason (focusing on the effects of the arrangement) to the *Leasco* sole purpose (focusing on the intent behind the arrangement). Also available is the *Foremost* "escape path" option, which merely uses a single product finding or lack of coercion finding to remove the claim out of per se analysis and dismiss it.

Although courts have found *Foremost* to be a useful method of dismissing technological cases, it is not a stable doctrine. The single product analysis is moot in wake of *Jefferson Parish*'s consumer demand standard, and the lack of coercion analysis is merely conclusory. Additionally, *Foremost* is inconsistent with *Fortner I* because courts have used it to truncate established tying law; courts have dismissed cases after finding a *Foremost* exception to the per se rule rather than applying the alternative rule of reason test. The real choice is between *Leasco* and *Microsoft III*.

Leasco's sole purpose analysis and *Microsoft III*'s rule of reason standard pose logistical differences that determine the plaintiff's odds of success. *Leasco* sole purpose may be more favorable to defendants because it puts the burden on the plaintiff to establish the defendant's illegitimate motives. *Leasco*'s burden may fail to prevent many harmful tying arrangements,

[175] For more information, see this Note's discussion of the Foremost and IBM cases, *supra* Part II. *See also* Telex v. Int'l Bus. Machs. Corp., 367 F. Supp. 258, 267 (N.D. Okla. 1973) (explaining that the computer industry "appears unique in monopoly context by reason of its youth and apparent dynamics, but which by the same token in this ultramodern setting may be unprecedented also because of increased inducements for, and vulnerability to, sophisticated submarket control on the on hand, and massive industrial espionage on the other").

because if a plaintiff does not have much evidence regarding the purpose of the arrangement, the claim is insufficient. This burden dynamic differs dramatically from the application of the per se rule, where the plaintiff did not have to show the motivations of the defendant. The burden also deviates from the rule of reason test, where the defendant would have to show a legitimate business justification not only to prevent application of the per se test, but also to ultimately avoid liability. The *Leasco* and *Microsoft III* standards also have specific implications for technological tying. For example, Lawrence Lessig argues that software tying is different from other technological tying.[176]

Even though software tying may be somewhat different, a standard rule for technological tying seems to be the best approach. Cases early in the development of the computer industry highlight the danger of imposing restrictive antitrust rules in emerging technological industries.[177] Although there is now sophisticated economic understanding of the advantages in integrating operating systems with computer software, other emerging technological integrations may have similar efficiencies.[178] To impose different standards only for software and operating system tying would be to ignore the challenges that these complicated integrations pose for antitrust laws. The answer may be to impose a less restrictive tying standard for all technological tying.

However, the establishment of a single standard for technological tying does not resolve the conflict between *Leasco* and *Microsoft III*. The purposes behind the antitrust law point to aspects of both. *Microsoft III* makes bringing suits relatively easy for plaintiffs, which protects the goal of preventing anti-competitive practices that may harm consumers. However, this rule of reason standard may impair innovation and leave consumers with less choice and less overall utility because the best, utility-maximizing products might fail to reach development. *Leasco* does not allow plaintiffs to go after potentially anti-competitive conduct as easily, but overall it may maximize social utility (or protect consumer welfare).

It seems that maximizing social utility should be a goal of any public policy, but the motivations behind the Sherman Act are unclear. The Sherman Act does not specifically address the interests of consumer choice and product innovation. However, the intent behind the Sherman Act was vague when it was written.[179] Courts have established an approach of inferring the

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[176] *See* Lessig Brief, *supra* note 106, at 26-29.

[177] *See In re* Data Gen. Corp. Antitrust Litig., 490 F. Supp. 1089, 1109-10 (N.D. Cal. 1980) (dismissing defendant's arguments regarding the efficiency of tying operating software with a computer processor).

[178] For a discussion of network effects, see *supra* Part I.

[179] E. Thomas Sullivan observes:

> The antitrust laws are among the least precise statutes enacted by Congress. The central terms . . . are inherently vague and not self-defining. One commentator has observed that antitrust legislation, perhaps more than any other field, stimulated the

congressional policy behind the Act.[180] The exact policies behind the Sherman Act still have not been established. Thus, the Act is unique that its goals have been developed in the courts rather than at its outset through the legislative process.

Overall, the *Leasco* sole purpose standard may be best suited to the particular concerns surrounding technological tying. The *Leasco* pro-defendant approach is appropriate given the otherwise high cost and likelihood of finding efficient, beneficial tying behavior to be illegal.[181] Although the sole purpose standard may first appear to be an extreme burden that no plaintiff could reach, the case law over the past three decades indicates that the *Leasco* standard may function like a more stringent rule of reason test: courts will consider plausible efficiency justifications to determine whether the sole purpose of the integration was to suppress competition. This analysis is more beneficial to the defendant, because it will allow the defendant to win even if the efficiency argument is minimal relative to the potential for anti-competitive effects. Courts still have discretion to reject unreasonable efficiency arguments and find arrangements to be illegal. There is a risk that some anti-competitive practices will not fall within the *Leasco* standard. However, given the likelihood that a court may not fully appreciate the efficiency regarding a tying arrangement in an emerging technological industry, the overall risk of missing some anti-competitive conduct is outweighed by policy concerns regarding overall consumer welfare.

CONCLUSION

Courts have resolved the tension between technological tying and the per se rule by either using a different standard for technological tying, such as the *Leasco* or *Microsoft III* standards, or by using *Foremost* analysis to take the tying behavior out of the per se test. *Microsoft III* did not suddenly break from tying law, but rather updated the technological tying approach other courts had been taking throughout the 1980s and 1990s. Courts had been using *Foremost*, a Ninth Circuit opinion regarding the tying of an instant camera with photo processing equipment, to avoid applying the strict per se rule in the technological tying context.[182] They used this opinion to find that

> courts to consider, as an interpretative aid, the history of the era that gave rise to the legislation.
>
> It is not possible to ascertain with certainty the original goals of the antitrust laws.

E. THOMAS SULLIVAN, THE POLITICAL ECONOMY OF THE SHERMAN ACT: THE FIRST ONE HUNDRED YEARS 75 (1991).

[180] *See, e.g.*, Int'l Salt Co. v. United States, 332 U.S. 392, 396 (1947).

[181] *Leasco* minimizes the risk of finding efficient, consumer-friendly tying arrangements to be illegal. The costs of false positives may be especially high for technological tying given the network effects involved and potential for stunting innovation.

[182] *See* Foremost Pro Color v. Eastman Kodak Co., 703 F. 2d 534, 542-43 (9th Cir. 1983) ("As a general rule . . . the development and introduction of a system of technologically

technological tying did not consist of two separate products, or, in the alternative, did not involve actual coercion.[183]

Although this analysis allowed courts to avoid finding liability in potentially beneficial tying situations, the approach was flawed in several ways. After *Jefferson Parish* narrowly defined the separate products analysis, courts could no longer justify the *Foremost* single products approach; additionally, the way courts applied *Foremost* resulted in immediate dismissal of technological tying cases rather than applying the rule of reason test or a more appropriate standard.[184]

In *Microsoft III* the D.C. Circuit finally dealt with the issue courts had been trying to avoid through their application of *Foremost* – how to avoid applying a per se rule to technological tying cases, where the risk of condemning efficient behavior is especially high and the cost of false liability includes hampering innovation. This decision holds that a rule of reason test, not a per se test or a sole-purpose test, should be applied in cases involving the integration of a software application with an operating system.[185] *Microsoft III* has contributed to the development of technological tying law because it articulates the incompatibility of technological integration with the per se rule and the *Jefferson Parish* separate products test. This standard allows lower courts explicitly to consider the benefits surrounding technological tying rather than being stuck with the extreme options of per se liability or dismissal. However, *Microsoft III*'s founding principle – that technological tying should be exempt from the per se rule – merely restates what courts had been doing for decades with its use of *Foremost*.

Ultimately, a uniform standard should be adopted to accommodate the likely efficiency justifications for technological tying behavior. Given the high costs of suppressing innovation, the *Leasco* sole purpose test best balances the risk of false liability and the Sherman Act's goal of maintaining competitive markets.

interrelated products is not sufficient alone to establish a *per se* unlawful tying arrangement . . . ."). *But see* Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 21-22 (1984) (establishing a new separate products analysis focusing on whether there is separate demand for the products at issue).

[183] If the firm's behavior is not coercive, then it does not have economic power under the tying antitrust law. Economic power is an essential element for an antitrust claim. *See* Eastman Kodak Co. v. Image Technical Servs. Inc., 504 U.S. 451, 464 (1992).

[184] *See Jefferson Parish*, 466 U.S. at 21.

[185] *See* Hylton & Salinger, *supra* note 38, at 471-72 (emphasizing the importance of this decision because courts could apply it "across the board to all cases of technological integration").