

Aftermarkets, systems, and antitrust: a primer

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I. INTRODUCTION

The American Antitrust Institute's Invitational Symposium on the Future of Aftermarkets in Systems Competition is extremely timely in light of a number of developments in business theory and practice and in antitrust law.¹ For those unfamiliar with the area, some of the questions that may initially come to mind when aftermarkets, systems, systems competition, and antitrust are considered include: What is an "aftermarket"? What is a "system" and how do aftermarkets relate to "systems competition"? How are aftermarkets, systems, and systems competition relevant to antitrust? Why is the study of the antitrust aspects of aftermarkets important now? What are some examples of current developments in aftermarkets and their antitrust concerns? What features of aftermarkets and systems competition complicate their antitrust analysis? How do (should) these features affect the antitrust analysis of aftermarkets? Given my introductory objective, each of these questions is addressed in a manner that pro-

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¹ See *infra* section V.

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vides background and initial understanding rather than in-depth insights and extended analysis. Other articles, including those appearing in this special issue, from which this overview draws, provide more depth and analysis on many of these topics.

II. WHAT IS AN "AFTERMARKET"?

Aftermarkets (also called "secondary markets") comprise the markets for complementary products (or what are often labeled "secondary products or services") that are often purchased subsequent to the purchase of another, related product (termed the "primary product or service"). Common examples of aftermarkets are found all across our economy, including within markets for durable goods (i.e., automobiles and repair parts and services) as well as consumables (i.e., razors and razor blades; printers and ink cartridges).

As to further distinctions, aftermarkets can involve any form of "product" including tangible products, services, ideas, or their combination.² Further, although they do not have to be, aftermarkets are said to be "proprietary" where they are brand specific, that is, where the secondary product can be used with only one brand of primary product and cannot easily be used with another brand of primary product, although there exist primary product substitutes. Common examples include some automobile repair parts, razor blades and ink cartridges. Proprietary aftermarkets of the kind just described often have embedded within them intellectual property of some significance.³

III. WHAT IS A "SYSTEM" AND HOW DO AFTERMARKETS RELATE TO "SYSTEMS COMPETITION?"

Products sold in aftermarkets, together with the primary product to which they relate, are components of a product system. By definition, product systems comprise two or more products that work together. Aftermarket products and the primary product to which

² I use the term "product" to refer to any of these differing forms.

³ For an excellent discussion, see Joseph Bauer, *Refusals to Deal With Competitors by Owners of Patents and Copyrights: Reflections on the Image Technical and Xerox Decisions*, 55 DEPAUL L. REV. 1211 (2006).

they relate are a special form of product system. They differ from more general product systems by virtue of the fact that the components are complements to one another and generally, but not always, by virtue of the order and timing of their subsequent purchase and usage by consumers. Aftermarket products may or may not be essential to the usefulness of the primary product.

Like individual products that compete in various ways against one another, product systems also can compete against other product systems in various ways. Called "systems competition" and of increasing interest in antitrust, competition involving product systems can include "intrasystem" competition as well as "intersystem" competition.⁴ Intrasystem competition refers to the nature and extent of rivalry that occurs between different primary or different secondary product providers. For example, Schick and Gillette each offer a standard razor that competes against the other. These firms also offer standard razor blades and compete against one another as secondary product providers.⁵

Intersystem competition refers to the nature and extent of rivalry that takes place between providers of different primary and secondary product combinations. For example, Schick and Gillette also offer distinct product systems (Schick "Quattro" and Gillette "M³Power") that are not interchangeable; they compete against one another in the primary market but not in the aftermarket. In such instances they engage in intersystem competition.

IV. HOW ARE AFTERMARKETS, SYSTEMS AND, SYSTEMS COMPETITION RELEVANT TO ANTITRUST?

As with individual products, competition issues and antitrust concerns can occur in circumstances involving aftermarket products

⁴ For an overview of the nature of antitrust issues that may attend systems competition, see Diana Moss, *American Antitrust Institute's Systems Competition Project: Workshop #1 Summary and Recommendations* (2006), available at <http://www.antitrustinstitute.org/recent2/508.cfm>.

⁵ It should be noted that intrasystem competition can include the rivalry that occurs between primary product providers that produce their own secondary products and other providers that also produce the secondary product.

and the systems to which they relate. These generally involve restrictions on intrasystem and intersystem competition. Intrasystem-related competition issues can arise when a supplier of a primary product attempts to reserve (and then exploit) the secondary market for itself. Intersystem-related competition issues can arise when a supplier of a primary and secondary product in the form of an integrated system attempts to reserve (and then exploit) the entire system for itself.

One particular form of intrasystem restriction on competition (and a principal focus of the symposium) involves the earlier mentioned "proprietary" aftermarkets. As described, proprietary aftermarkets are those in which the secondary market is considered brand-specific—secondary products that can be used with one brand of primary product cannot be used with another brand of primary product, although the primary products themselves are substitutes. The aforementioned description of certain razor and razor blade systems provides an example. Schick and Gillette each offer proprietary razor systems whose blades do not work with the other's system, but whose razors are substitutes. A competition issue that can arise in such circumstances is that the supplier of the branded primary product may attempt to reserve the proprietary secondary market for itself. Antitrust concerns can result where such conduct restricts intrasystem competition to the detriment of consumers.⁶

V. WHY IS THE STUDY OF THE ANTITRUST ASPECTS OF AFTERMARKETS IMPORTANT NOW?

Although the focus of ongoing study in antitrust, economics, marketing and related fields, current developments in technology, standard-setting, and intellectual property are redefining aftermarkets issues. As described below, these developments have been argued by some to threaten to substantially curtail or eliminate intrasystem-related competition within aftermarkets to the detriment of consumers through inhibiting the ability of competing aftermarket providers to offer a competitive alternative to products and services available from branded primary product suppliers.

⁶ As to the nature of such concerns and their address in antitrust, see HERBERT HOVENKAMI, *THE ANTITRUST ENTERPRISE, PRINCIPLE AND EXECUTION* (2005).

In addition to these developments, because aftermarket questions often involve allegations of monopoly abuse, three ongoing events give the study of aftermarkets particular currency. First, the Antitrust Modernization Commission is examining a variety of antitrust topics, including standards and standard-setting relating to single-firm conduct.⁷ Second, the Federal Trade Commission and Department of Justice have recently held a series of high profile joint public hearings on single-firm conduct.⁸ And third, the European Commission (EC) is considering guidelines for dealing with abuse of dominance that contain specific treatment of aftermarkets.⁹

⁷ The Commission was created pursuant to the Antitrust Modernization Commission Act of 2002, Pub. L. No. 107-273, §§ 11051-60, 116 Stat. 1856 and consists of 12 members, 4 of whom were appointed by the President, 4 of whom were appointed by the leadership of the Senate, and 4 of whom were appointed by the leadership of the House of Representatives. *Id.* § 11054(a). The Commission is charged by statute: (1) to examine whether the need exists to modernize the antitrust laws and to identify and study related issues; (2) to solicit views of all parties concerned with the operation of the antitrust laws; (3) to evaluate the advisability of proposals and current arrangements with respect to any issues so identified; and (4) to prepare and submit to Congress and the President a report. For commentary on the Commission and its pursuits, see Albert A. Foer, *Putting the Antitrust Modernization Commission into Perspective*, 51 *BUFF. L. REV.* 1029 (2003) and Albert A. Foer, *Half-Time at the Antitrust Modernization Commission*, 40 *U. S. F. L. REV.* 601 (2006).

⁸ The Federal Trade Commission together with the Antitrust Division of the U.S. Department of Justice held a series of public hearings in the spring of 2006 to examine the antitrust implications of single-firm conduct under the antitrust laws. The primary goal of the hearings was to examine whether and when specific types of single-firm conduct are procompetitive or benign, and when they may harm consumers. Specific topics addressed in the hearings included bundled loyalty discounts and market share discounts, product tying and bundling, exclusive dealing, predatory pricing, refusals to deal, product design, and misleading or deceptive statements or conduct.

⁹ See EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR COMPETITION DISCUSSION PAPER ON THE APPLICATION OF ARTICLE 82 OF THE TREATY TO EXCLUSIONARY ABUSES 68-72, available at <http://europa.eu.int/comm/competition/antitrust/others/discpaper2005.pdf>. See also accompanying information at EUROPEAN COMMISSION, ART 82 REVIEW, <http://europa.eu.int/comm/competition/antitrust/art82/index.html> and AMERICAN ANTITRUST INSTITUTE, RESPONSE TO PUBLIC CONSULTATION ON THE EUROPEAN COMMISSION DIRECTORATE-GENERAL FOR COMPETITION DISCUSSION PAPER ON THE APPLICATION OF ARTICLE 82 OF THE

VI. WHAT ARE SOME EXAMPLES OF CURRENT DEVELOPMENTS IN AFTERMARKETS AND THEIR ANTITRUST CONCERNS?

There are a number of industries and recent events that illustrate current aftermarket developments and provide excellent examples of the types of antitrust concerns that may arise. In the automobile industry, for example, primary original equipment manufacturers (OEMs) are alleged to be increasingly using patents and copyrights to encumber independent repair and service competitors' access to technical interfaces, software, documentation, and other aftermarket technologies.¹⁰ In the automated teller machine (ATM) market, new encryption standards adopted in the industry will require the replacement or retrofitting of ATMs. However, primary OEMs are alleged to be attempting to restrict competing aftermarket providers' access to the software and security necessary to service the new-generation ATMs.¹¹ Aftermarket issues also arise in the aftermath of the Supreme Court's recent opinion in *Independent Ink*, relating specifically to ink refills for printing equipment, but more generally to a patent holder's ability to utilize its intellectual property rights to foreclose aftermarket competitors.¹²

These developments are argued to be of antitrust concern because they possess the potential of restricting competition in aftermarkets through increasing the costs to competing providers of attempting to gain access to primary providers, parts and specifications. The contention is that diminished competition in aftermarkets harms consumers through placing them at the mercy of the primary provider's integrated system or of their network proprietors who are

TREATY TO EXCLUSIONARY ABUSES 13-14, available at <http://www.antitrustinstitute.org/recent2/491.pdf> and <http://europa.eu.int/comm/competition/antitrust/others/048.pdf>.

¹⁰ See Consumer Aftermarket Coalition, Case Study: Auto Parts and Accessories, <http://www.consumeraftermarket.org/index.html>.

¹¹ See Consumer Aftermarket Coalition, Case Study: OEM v. Aftermarket Inks, <http://www.consumeraftermarket.org/Ink.html>.

¹² *Illinois Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281 (2006).

said to possess significant incentives to exploit consumers through raising prices, lowering quality and other adverse conduct.

Among other arguments, aftermarket competitors and others contend that given the lapse of time before a consumer purchases in the aftermarket, it is difficult for some consumers to make informed purchase decisions in the primary market. As a result, once these consumers adopt a particular primary product offering, limited competition in the aftermarket makes it difficult if not impossible for them to control the cost or quality of repairs or replacement parts in the aftermarket. Further, competitors argue that while there may be the option of switching to a competing primary product, this will frequently be unrealistic due to the fact that consumers are often "locked in" to the primary product system originally purchased. Consumers are said to be "locked in" due to the switching costs that arise from abandoning their investment in the original primary product and the potential loss of benefits stemming from intrasystem compatibility sought through the original purchase. Given the nature of aftermarkets and systems competition, however, the antitrust analysis of the foregoing developments and contentions is not easy.

VII. WHAT FEATURES OF AFTERMARKETS AND SYSTEMS COMPETITION COMPLICATE THEIR ANTITRUST ANALYSIS?

Among the features that complicate antitrust analysis for aftermarkets and systems competition is their distinctive nature, apart from individual products and the nature of competition that attends them.¹³ This distinctive nature includes, in particular for aftermarkets, the complementary nature of the secondary and primary products and the intertemporal dynamics of their purchase by consumers. As described below, concepts and theory developed in economics, marketing, and related fields of inquiry describe these features and our understanding of them. In addition, legal developments involving antitrust cases, including the Supreme Court case involving Eastman

¹³ Important additional complicating factors previously mentioned are the intellectual property rights that may attend some aftermarkets. See Bauer, *supra* note 3.

Kodak, have dealt extensively with them.¹⁴ To this end, an important observation to be made with regard to this body of knowledge is that considerable disagreement, sometimes based in ideology and sometimes based upon empirical observation, attends these concepts and theories in relation to whether and to what extent they apply in a given circumstance.

A. *Feedback effects, network effects, and network externalities*

Given the complementary nature of aftermarket products and the primary products to which they relate, the demand for one product is affected by the demand and usage of the other product. This phenomenon is known as a feedback effect and often referred to as a network effect.¹⁵

Feedback and network effects are present in aftermarkets because increased demand for one product enhances the value of the other product. These effects can result in what are called externalities (i.e., a cost or benefit from an economic transaction that parties "external" to the transaction bear) that may impact consumers' expectations and subsequent purchase behavior in ways that affect the conduct of those providing both primary and secondary aftermarket products and the overall performance of the market to which they relate.

Together, feedback and network effects and their resultant conditions help to explain the types of market structures, marketer conduct, and consumer behavior that emerge in circumstances where they are

¹⁴ See *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992). See also Carl Shapiro & David J. Teece, *Systems Competition and Aftermarkets: an Economic Analysis of Kodak*, 39 ANTITRUST BULL. 135 (1994); Thomas C. Arthur, 'Formalistic Line Drawing': Exclusion of Unauthorized Servicicers from Single Brand Aftermarkets Under Kodak and Sylvania, 24 J. CORP. LAW 603 (1999); Jill Boylston Herndon, *Intellectual Property, Antitrust and the Economics of Aftermarkets*, 47 ANTITRUST BULL. 309 (2002).

¹⁵ See generally Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93 (1994); Peter R. Dickson, Paul W. Farris & Willem J.M.I. Verbeke, *Dynamic Strategic Thinking*, 29 J. ACAD. OF MARKETING SCI. 216 (2001).

present. Thus, understanding them is helpful to the analysis of antitrust issues associated with aftermarkets, including determination of the relevant product market, the assessment of market power, and understanding firm conduct and its effects in the marketplace. At the same time, as a general matter, these effects complicate the economic and antitrust analysis of aftermarkets in ways that make the determination of the most efficient market structure, marketer conduct, and system performance difficult to determine.

B. Life cycle costs and life cycle costing

Other important concepts that complicate antitrust analysis in aftermarkets include life cycle costs and life cycle costing.¹⁶ As described above, competitors and others may contend that given the lapse of time before a consumer purchases in the aftermarket, it is difficult for some consumers to make informed purchase decisions in the primary market using information about the aftermarket. They argue that as a result, once these consumers adopt a particular primary product offering, limited competition in the aftermarket makes it difficult if not impossible for them to control the cost or quality of repairs or replacement parts in the aftermarket.

The question of whether consumers who are making purchases in the primary market possess sufficient information about the aftermarket resolves to questions regarding their ability to contemplate life cycle costs and their conduct of life cycle costing. Life cycle costs include the initial purchase price as well as all subsequent costs associated with a product purchase, including search for information, installation, future maintenance, repair costs, and technological enhancements. Life cycle costing refers to a buyer's contemplation at the time of purchase of not only the initial purchase price, but also expected future costs including any subsequent maintenance, repairs, parts, or services purchased over the expected duration of the product's use.

¹⁶ For an excellent discussion of life cycle costs and life cycle costing in the context of aftermarkets, see EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR COMPETITION DISCUSSION PAPER ON THE APPLICATION OF ARTICLE 82 OF THE TREATY TO EXCLUSIONARY ABUSES, *supra* note 9, at 70-72.

Whether consumers are able to control the cost or quality of repairs and replacement parts in the aftermarket thus involves consideration and assessment of two separate questions: (a) whether they are able to contemplate life cycle costs with reasonable competence and (b) whether they do in fact conduct life cycle cost analyses as part of their purchase decision. Such determinations are important in antitrust because they impact the determination of the relevant product market, assessment of market power in the determined relevant market, and the antitrust effects of firm conduct in the marketplace. However, differing opinions exist in the literature as to whether, to what extent and how accurately consumers contemplate life cycle costs and conduct life cycle costing when making primary product purchases.

C. *Switching costs, consumer lock-in, and installed base*

Still other concepts important for the antitrust assessment of aftermarkets include switching costs, consumer lock-in and installed base.¹⁷ Switching costs refer to all the costs incurred by a consumer when replacing an existing product with another product. Switching costs arise when consumers have made investments in brand-specific skills or complementary assets and can include the costs of training employees to use a new product and rewriting programs for the new product. Locked-in customers are those that face high switching costs such that it is too costly for them to switch from an existing product to another. Customers who are locked into a particular product due to high switching costs are said to comprise the installed base of that product.

Some observers argue that while consumers who purchase a primary product and are subsequently concerned about purchases in the aftermarket have the option of switching to a competing primary product, this will frequently be unrealistic due to the costs of switching from their investment in the original primary product purchase and the potential loss of benefits stemming from intrasystem compati-

¹⁷ For a discussion of switching costs, consumer lock-in and installed base in the context of aftermarkets, see Katz & Shapiro, *supra* note 15; Joseph Farrell & Michael L. Katz, *The Effects of Antitrust and Intellectual Property Law on Compatibility and Innovation*, 43 ANTITRUST BULL. 609 (1998); and EUROPEAN COMMISSION, DIRECTORATE-GENERAL FOR COMPETITION DISCUSSION PAPER ON THE APPLICATION OF ARTICLE 82 OF THE TREATY TO EXCLUSIONARY ABUSES, *supra* note 9, at 68-72.

bility sought through the original purchase. Others counter, however, that under some circumstances consumers take account of these costs in their initial purchase decision.

Whether consumers who contemplate the purchase of a primary product and who become concerned about purchases in the aftermarket actually contemplate such costs or who, upon their purchase, have the realistic option to switch to a competing primary product thus depends on a number of considerations. In antitrust, switching costs, consumer lock-in, and installed base are important considerations in the determination of market power.

VIII. HOW DO (SHOULD) THESE FEATURES AFFECT THE ANTITRUST ANALYSIS OF AFTERMARKETS?

As may be surmised, the features that describe aftermarkets and systems competition also result in considerable incentives, if not the necessity, for primary and aftermarket providers to coordinate. A firm contemplating whether to offer aftermarket products must obtain an understanding of the primary products to which its potential secondary products relate. Similarly, a firm contemplating whether to offer a product system involving aftermarket products will desire to know the nature (and perhaps influence the timing of market introduction) of complementary secondary products that will be offered. At the same time, as already observed, some contend that a primary product provider and its network proprietors possess significant profit incentives (both prior to the product's introduction as well as later) to reserve the aftermarket for themselves through excluding competitors and then exploiting captive aftermarket consumers through raising prices, lowering quality or other adverse conduct.

It is because of these incentives (and others) that elaborate institutions and arrangements (both formal and informal) often emerge with respect to aftermarkets to manage and govern the relationships of relevant firms and their conduct in the marketplace.¹⁸ These include formal

¹⁸ For a discussion of these and other institutions and arrangements, see Katz & Shapiro, *supra* note 15; Daniel L. Rubinfeld, *Antitrust Enforcement in Dynamic Network Industries*, 43 ANTITRUST BULL. 859 (1998); Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998).

institutions, such as standard-setting bodies, long term contracts, and extended warranties, as well as informal mechanisms of governance, such as reputation-based considerations, resort to third-party sourcing and actions such as the previously mentioned life cycle costing. These institutions and arrangements also include those related to intellectual property such as patents, trademarks copyrights, and protections of other rights.

As previously observed, a particular contention of some is that the institutions and arrangements that emerge in some aftermarkets are not yielding their desired governance effects, but rather are actually being developed and employed in ways that are intended to exclude independent aftermarket providers through increasing their costs in ways that restrict competition and ultimately harm consumers. These offended firms argue that given this state of affairs, the intercession of antitrust law is needed to correct these marketplace failures. Thus, an important focus of antitrust analysis is upon those institutions and arrangements that emerge within aftermarkets and their related primary markets to govern marketplace conduct. Because not all agree on just how these incentives and the resulting coordinating institutions and arrangements work, it is important to understand them better and in particular, to understand when and how they are employed by primary product providers (1) to exclude competition and exploit consumers, (2) to benefit competition and consumers, and (3) how other safeguards might help to mitigate the occurrence of such exclusion and exploitation to begin with.

Some primary proprietary product providers may explain, for example, that their desire and conduct to reserve the aftermarket for themselves is not reflective of the pursuit of monopoly profits, but rather driven by their desire to break even through offsetting the costs and lost revenues incurred through discounting in developing and offering the original primary product. They also may argue they are protecting the quality of the customer experience with their primary product. Where the primary product market is competitive, these product providers explain that they must compete through discounting and other means to garner customer patronage. Where these costs and discounts are sufficiently large, their conduct to reserve the aftermarket for themselves and their pursuit of higher prices in that after-

market will be explained as intended to sufficiently recover the costs and discounts incurred so as to break even and yield a sufficient return to motivate them to offer the primary product to begin with. Similar arguments may be expressed by primary proprietary product providers in relation to capturing returns from their investment in intellectual property. Other explanations include control of free riding, quality control, inventory management, and distribution economies. For antitrust, such efficiency-based explanations provide a counterweight to the allegations of anticompetitive conduct. Where present, these procompetitive explanations must be considered and balanced against any anticompetitive effects that are found. As such, they are an important part of any discussion involving the antitrust analysis of aftermarkets and systems competition.

IX. CONCLUSION

The antitrust analysis of aftermarkets in systems competition is complicated by their distinctive nature, apart from individual products and the nature of the competition that attends them. As with individual products and the competition that takes place in the markets to which they relate, competition issues and antitrust concerns can occur in circumstances involving aftermarket products and the systems to which they relate. These can involve restrictions on intrasystem and intersystem competition that results from the elaborate institutions and arrangements that emerge within aftermarket settings to manage and govern the relationships of relevant firms and their conduct in the marketplace. Although a focus of ongoing study in antitrust, it is also the case that economics, marketing and related fields, technology development, standard-setting, and intellectual property debates are also redefining aftermarket issues. The articles appearing in this special issue address these issues and provide new insights for their understanding in antitrust.