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Information in an Antitrust Age

Salil Kumar Mehrat

It has become well-accepted that some information age industries possess distinctive characteristics that may constitute reasons either to invoke antitrust law or to refrain from doing so. One of these characteristics is the presence of “network effects”—simply put, the idea that “consumers place greater value on large networks than small ones.” While network effects have featured prominently in the discussion concerning these industries, the general principle that previous antitrust experience may not be relevant to these new contexts applies more broadly. Specifically, established antitrust presumptions may not serve courts and regulators well in addressing the use or sale of information, as opposed to more traditional product markets.

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1 See Mark Lemley and David McGowan, Legal Implications of Network Economic Effects, 86 Cal L Rev 479, 500–23 (1998) (discussing a number of recent antitrust cases involving network effects). Compare George Priest, Antitrust Enforcement in the Information Age, 4 Tex Rev L & Polit 141, 143 (arguing that the “network effect” of [Microsoft] Windows . . . is an efficiency, not a barrier”) with Carl Shapiro, Exclusivity in Network Industries, 7 Geo Mason U L Rev 673, 674 (1999) (arguing that network effects exacerbate the possibility that an incumbent monopolist can use exclusive contracts with customers to prevent new entry).

2 The term “network effects” is generally applied to describe markets characterized by increasing returns to scale. See, for example, Lemley and McGowan, 86 Cal L Rev at 611 n 5 (1998) (cited in note 1) (distinguishing “network effects” from “network externalities”).

3 Id. Note that commentators often distinguish between “strong” and “weak” forms of network effects. Id at 500–04, 590–99 (cited in note 1) (giving the internet as an example of the former and contract law as an example of the latter).

4 See Robert Pitofsky, Antitrust Analysis in High Tech Industries, 4 Tex Rev L & Polit 129, 130 (1999) (arguing that with respect to the question of “whether antitrust principles, developed primarily in the context of smokestack industries, should apply comparably . . . to new problems . . . it is essential to acknowledge that high-tech industries are different and [antitrust] enforcement must take those differences into account”).

5 Compare Priest, 4 Tex Rev L & Polit at 141 (cited in note 1) (advocating “adaptation of our interpretation of the antitrust laws to novel industrial situations and
The Supreme Court began the 1990s in antitrust with *Eastman Kodak Co v Image Technical Services, Inc.*, a case that seemed to indicate that information costs were a concern that antitrust courts should consider, and ended the 1990s with *California Dental Association v FTC* ("CDA"), which focused on how such courts should treat arrangements affecting the dissemination of price information. Notably, the Court in *CDA* concluded that an agreement affecting how member dentists could convey information to their prospective patients by advertising price discounts or service quality should not be governed by the presumptions of "quick look" review, particularly rejecting the idea that non-price restrictions on the dissemination of such information amounted to "output restrictions." Given the Court's concern in *Kodak* that consumers' relative inability to gather accurate pre-purchase information about product quality could yield exploitable market power for producers, the question of how courts should treat product information appears ripe for examination. Indeed, in the emerging context of the internet, where the product is often information itself, the distance from the experiential basis of conventional antitrust presumptions increases.

While the relationship between information and antitrust law is certainly beyond the scope of any single article, this piece examines the implications of *CDA* and *Kodak* for the relationship between antitrust law and three types of information: (a) information about price; (b) information about product quality; and (c) information that is the product itself. Producers' creation of and consumers' access to information are in a state of rapid flux. As a result, courts should hesitate to apply the per se rules and structured rules of reason because of the dubious

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7 See id at 473–76.
9 For a general discussion, see id.
10 Id at 779–80.
11 504 US at 473.
12 Compare Priest, 4 Tex Rev L & Polit at 141–43 (cited in note 1) (contrasting the source of market power in information technology with the source of market power in manufacturing industries; comparing the economic efficiency of an operating system to the efficiency of a language; comparing internet browsers to components of a language).
13 See Nicholas Khadder, *National Basketball Association v Motorola, Inc*, 13 Berkeley Tech L J 3, 3 (1998) ("[T]he Internet has enabled users to distribute and sell information very widely at a negligible marginal cost to the distributor.").
applicability of presumptions developed in different, earlier contexts. Eventually, similar presumptions should be developed for the traditional reasons that they encourage judicial efficiency and create certainty for businesspeople. But given the new realities of how internet markets work, and the potential obsolescence of some established antitrust presumptions, it is too soon yet.

I. PRICE INFORMATION

The idea that antitrust law should be concerned with the availability of information about prices seems unremarkable. After all, a market economy depends on the price mechanism working properly—and indeed, the price of a given good or service has been described as a mechanism whereby the free market conveys information about supply and demand that is dispersed among many consumers and producers that otherwise cannot be accurately coordinated. Accordingly, because consumers must know about prices to act upon them, consumers’ ability to get information concerning the prices of goods and services is crucial to economic efficiency.

Despite this fact, the Supreme Court in CDA rejected the proposition that all agreements restricting the dissemination of price information may be “dismiss[ed] as presumptively wrong.” In doing so, the Court acknowledged the possibility of a meaningful distinction between more information on the one hand, and better quality information on the other, suggesting that the two objectives may not be furthered by the same rule or practice.

The idea that more information may not be better information—familiar to scholars in areas such as administrative law—suggests that, in considering how agreements that restrict information about prices affect competition, the standard presumptions

14 For a general discussion, see Friedrich Hayek, The Constitution of Liberty (Chicago 1960).
15 See notes 102–03 and accompanying text.
16 CDA v FTC, 526 US at 775.
17 See id (noting that the rule in question “appear[ed] to reflect the prediction that any costs to competition associated with the elimination of across-the-board [discount] advertising will be outweighed by gains to consumer information (and hence competition) created by [itemized] discount advertising that is exact, accurate, and more easily verifiable”).
18 See Richard Pildes and Cass Sunstein, Reinventing the Regulatory State, 62 U Chi L Rev 1, 108 (1995) (stating that “[e]ffective information disclosure requires knowledge of the beliefs on which citizens are likely to draw” and “[m]ore information might even make people less informed”).
that apply to antitrust examination of restrictions on output or on prices may not hold. Rather, a more plenary investigation may be warranted.

In CDA, the Court rejected the quick look approach to reviewing restrictions on member dentists' use of broad discount claims in their advertising. The Court noted that the restraints involved were "at least on their face, designed to avoid false or deceptive advertising in a market characterized by striking disparities between the information available to the professional and the patient" and concluded that such a restriction on information should ultimately be reviewed under a full rule-of-reason analysis. The fact that the Federal Trade Commission had originally treated the California Dental Association's restrictions on discount advertising as a price restraint that was illegal per se makes the CDA decision all the more radical.

The Court's rejection of a quick look or structured rule of reason approach was based on disagreement with the premise that a bar on "advertisement of across-the-board discounts" would necessarily "have a net anticompetitive effect." In particular, the Court posited that "[i]n a suspicious world, the discipline of specific example may well be a necessary condition of plausibility" for "claims that for all practical purposes defy comparison shopping". As a result, the California Dental Association's rule would "appear[] to reflect the prediction that any costs to competition associated with the elimination of across-the-board advertising will be outweighed by gains to consumer information (and hence competition) created by discount advertising that is exact, accu-

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19 526 US at 765.
20 Id at 771. The Court noted that "[t]he fact that a restraint operates upon a profession as distinguished from a business is . . . relevant in determining whether that particular restraint violates the Sherman Act." Id at 771 n 10. However, lest one conclude that the informational asymmetry the Court was considering only appears in markets for professional services, it should be noted that the Court also cited a classic study of market failure due to asymmetrical information in the market for used cars. Id at 772, citing George Akerlof, The Market for 'Lemons': Quality Uncertainty and the Market Mechanism, 84 Q J Econ 488 (1970).
21 526 US at 759.
22 California Dental Association v FTC, 128 F3d 720, 726 (9th Cir 1997) (noting that "[t]he Commission [below] concluded that the CDA's restrictions on price advertising—namely, the effective ban on volume discounts and statements describing prices as 'low' or 'reasonable'—were per se violations of § 1 of the Sherman Act and § 5 of the FTC Act"), vacated in 526 US 756. Alternatively, the Commission also held these restrictions to be violations of the Sherman and FTC Acts under an abbreviated rule-of-reason or "quick look" standard. See 128 F3d at 725 n 4.
23 526 US at 774.
24 Id.
rate, and more easily verifiable. The Court noted that, although such a view might be correct or incorrect, it was not implausible, and therefore it was inappropriate to dismiss it as anticompetitive based on a per se or structured rule-of-reason analysis.

The Court's decision concerning price advertising implies that antitrust courts and regulators should be wary of attempts to apply per se rules or structured rules of reason beyond the context of the experiences in which such presumptions developed, particularly where agreements concern information. When courts confront new or different phenomena than the observed phenomena that led courts to develop such presumptions, the rationales behind the presumptions do not apply. The experience that justified the presumption may not be relevant.

This logic accords with the justifications found in the case law for such presumptions. The Supreme Court in Jefferson Parish Hospital District No 2 v Hyde stated that the goal of presumptions that underlie per se rules is "to avoid a burdensome inquiry into actual market conditions in situations where the likelihood of competitive conduct is so great as to render unjustified the cost of determining whether the particular case at bar involves anticompetitive conduct." Similarly, in Continental TV, Inc v GTE Sylvania, Inc, the Court recognized that strict application of the per se rule will sometimes result in incorrect rulings, while the administrative benefits of the per se rule outweigh the costs of such incorrect determinations. In plainer terms, per se rules and structured rules of reason ultimately stem from a judgment that certain restraints, practices, and other phenomena are highly correlated with anticompetitive effects. The correlation is so high, in fact, that an irrebuttable presumption against such phenomena, in the case of per se rules, leads to so great an increase in efficiency of enforcement and adjudication that it outweighs the potential for mistakes and the cost of chilling procompetitive agreements that would benefit society. Ultimately, the

25 Id at 775.
26 Id.
28 Id at 15–16 n 25.
30 Id at 50 n 16.
31 See Frank Easterbrook, The Limits of Antitrust, 63 Tex L Rev 1, 15 (Aug 1984) (agreeing with administrative benefit versus cost of overenforcement rubric, but stating that "errors on the side of excusing questionable practices are preferable"). But see Oliver Williamson, Delimiting Antitrust, 76 Geo L J 271, 289 (Dec 1987) (questioning view that,
irrebuttable presumptions that underlie per se rules and the rebuttable presumptions, or burden shifting steps, that underlie intermediate forms of review such as structured rules of reason, would be unnecessary in a world without enforcement and adjudication costs.\textsuperscript{32} However, in the real world, courts optimize by generating such rules, which are selected from experience to reduce enforcement and adjudication costs.

In \textit{CDA}, the Supreme Court rejected the argument that the per se rule against price restraints should be extended to restraints on information about price discounts, at least in the context of dentist advertising.\textsuperscript{33} This makes sense, because the per se rule against restraints on product price information implicates somewhat different concerns than restraints on price information about a good, such as a professional service, whose exact price may not be known in advance, or the price of an experience good, a product about whose characteristics a consumer may be uncertain prior to purchasing it. As the Court noted explicitly, it could not confirm from experience that the restraint at issue was inherently anticompetitive.\textsuperscript{34} It was at least plausible that by restricting claims of price discounts or quality that patients could not verify, the CDA member dentists (not all California dentists were CDA members\textsuperscript{35}) were actually creating value for their patients. Though the court did not consider the point, it might be objected that, even if the CDA had allowed unverifiable advertising, patients might be no worse off, since they would tend not to believe unverifiable claims, much as they might discount puffery.\textsuperscript{36} But this hypothesis oversimplifies the potential information in weighing incentives behind antitrust legal rules, "the costs of monopoly wrongly permitted are small, while the costs of competition wrongly condemned are large".\textsuperscript{32}

32 Real-world legal rules ideally should be designed to minimize the sum of the cost of making errors and the litigation costs of the parties and the courts. See Richard Posner, \textit{An Economic Approach to Legal Procedure and Judicial Administration}, 2 J Legal Stud 99, 399–400 (1973) ("[L]egal procedure is conceived to be the minimization of the sum of two types of costs: 'error costs' (the social costs generated when a judicial system fails to carry out the allocative or other social functions assigned to it), and the 'direct costs' (such as lawyers', judges' and litigants' time."); see also Timothy Muris, \textit{The Federal Trade Commission and the Rule of Reason}, 66 Antitrust L J 773, 774–76 (1998). Accordingly, without litigation costs, it would be suboptimal to create presumptions that lead to false negatives and false positives.

33 526 US at 759.

34 Id at 781.

35 Id at 759 (stating that the CDA’s membership comprises “about three-quarters of the dentists practicing” in California).

36 See, for example, \textit{Maio v Aetna, Inc}, 1999 WL 800315 (E D Pa) (rejecting allegations of fraud since defendant health plans’ “statements concerning their commitment to quality health care are ‘mere puffery’”).
asymmetry at work in the professional service context. One might imagine an additional level of complexity: patients may not even know which claims are verifiable and which are not. Or imagine there is even a further level of patient ignorance: they may not even realize, with respect to certain claims, that any issue of verifiability exists.

With additional layers of patient ignorance, individual dentists may face an incentive to make unverifiable claims, since patients' ignorance may give dentists an edge over other their competitors who refuse to make such claims. If many dentists did so, the result could be an overall erosion of trust in dentists. Further, the dentists may be worse off than if they—as CDA member dentists—had tried to foster an overall reputation for honesty and integrity through restraints on unverifiable advertising. This is especially true if, as is likely, dentists themselves are not hampered by the same ignorance as their patients in enforcing the CDA rules.

Of course, this scenario was not part of the record in CDA, and it may not even be an accurate description of reality. But it may have been the concern to which the Court alluded in describing the plausible procompetitive nature of the restraints at issue. At any rate, the lack of judicial experience with the point at issue—compared with the wealth of experience regarding competitor agreements to restrict prices or output—counsels against using traditional tools of antitrust analysis like evidentiary presumptions antagonistic to the defendant.

II. INFORMATION ABOUT PRODUCT QUALITY

In making purchase decisions, consumers do not only consider information about price, but also consider information about product quality. In the 1990s, the Supreme Court has twice considered—in the two different contexts of CDA and Kodak—the difficulty consumers have in obtaining quality-related information and the implications for antitrust enforcement.

Of course, in classical economic analysis, which assumes perfect information, a court need not analyze product quality sepa-
rately from price, because under that assumption, consumers dis-
count the price they are willing to pay accordingly for inferior
quality. However, in the real world, consumers make choices in
markets every day without the benefit of perfect information.

The two instances in which the Court considered the implications
for antitrust in CDA and Kodak both involved information
asymmetries. In CDA, the Court concluded that an agreement
that restricted the dissemination of information about product
quality could not be presumed to be anticompetitive. Although
the Court in Kodak concluded that consumers' difficulty in ob-
taining information about product quality could yield market
power in aftermarket that opportunistic sellers could exploit,
the degree of that danger—assuming that such a danger ex-
isted—has been greatly lessened by the development of more and
cheaper product information due to technological advances such
as the internet.

A. The Problem of Product Quality Information Gaps

To address the implications for antitrust of CDA, Kodak, and
the development of more, cheaper information, an understanding
of information gaps is helpful. The possible effect of cheaper,
more accessible information can be illustrated by two examples of
how information costs relate to the concept of aftermarket mo-
nopolies as considered in Kodak. First, consider a consumer who
must buy both original equipment and aftermarket products. Un-
der the assumptions of classical economics, the consumer pos-
sesses perfect (that is, costless and complete) information about

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40 J.A.K. Huntley, Unfair Competition, Consumer Deception, and Brand Copying, 15
Intl Rev L and Econ 443, 15 (1995) (explaining how imperfect information inhibits the
ability of consumers to make price/quality tradeoffs).
41 See, for example, B. Furrow, et al, Health Law 57 (West 1995) (stating that "the lay
public is incapable of adequately evaluating the quality of medical services"); Akerlof, 84 Q
J Econ at 490-92 (cited in note 20) (discussing the possibility that asymmetrical informa-
tion can lead to inefficient market outcomes).
42 526 US at 771–73.
43 504 US at 475.
44 See Part III.
45 For simplicity, both examples are grounded in the assumptions of perfect competi-
tion. However, the first model has perfect information about price, quality, and sources of
supply, while the second does not. Perfect information is one of the three conditions of a
perfectly competitive market in classical economics. The other two conditions are that (1)
buyers and sellers must be numerous, and consequently price takers in the sense that
their individual transactions do not affect the market price, and (2) the product sold by the
firms in the industry must be homogeneous. Edwin Mansfield, Principles of Microeconom-
price and other attributes of all goods in the market.\textsuperscript{46} Thus, consumers can estimate the costs of original equipment and aftermarket needs together as if they were a single product. If an original equipment manufacturer ("OEM") tried to sell this aggregate product at higher than the equilibrium price in the market, the informed consumer would purchase elsewhere.\textsuperscript{47} As a result, Kodak-style aftermarket monopolies cannot exist in the classical economic world of perfect competition.\textsuperscript{48}

By contrast, in a world of imperfect information, an OEM could theoretically make a consumer pay prices that are higher than the market price would be in a world of perfect competition.\textsuperscript{49} For example, suppose that the consumer is at the OEM's store, and that the consumer possesses some knowledge about the OEM's products,\textsuperscript{50} but no knowledge, good or bad, about those of the OEM's competitor. Suppose that it costs the consumer time and effort to learn more about what is available at competitors' stores and about competitors' products. We can sum

\begin{itemize}
    \item cost of buying from the OEM > cost of buying elsewhere
    \item \( P + M + p + m > P + p \)
    \item Subtracting \((P + p)\) from each side,
    \item \( M + m > 0 \). \textsuperscript{46}
\end{itemize}

Thus, whenever the OEM in question charges any total margin on original equipment and aftermarket goods greater than zero, consumers will purchase elsewhere.

Granted, those consumers who have already purchased may be stuck with the OEM if the OEM is the only maker of aftermarket goods for its product. This could result if OEMs possess intellectual property protection for the design of aftermarket products such as replacement parts. See John J. Voortman, \textit{Curbing Aftermarket Monopolization}, 38 Antitrust Bull 221, 222–23 (1993). But with perfect information, new consumers will factor such an OEM's overpricing into their assessment of the OEM's original equipment.

\textsuperscript{48} For a more detailed description of which departures from perfect competition must exist in order for OEMs to benefit from higher aftermarket prices, see Richard A. Posner, \textit{Economic Analysis of Law}, 311–13 (Little, Brown 4th ed 1992).

\textsuperscript{49} Note that under the assumptions of perfect competition (which include perfect information) the price a producer charges and the producer's marginal cost are equal. See Herbert Hovenkamp, \textit{Federal Antitrust Policy} §3.1a at 79–80 (West 1994) (illustrating that a producer's real-world market power may thus be gauged in a philosophical sense by reference to the degree to which the marginal cost of a product differs from a product's price).

\textsuperscript{50} Product-specific knowledge is an important cause of switching costs. See Joseph Kattan, \textit{Market Power in the Presence of an Installed Base}, 62 Antitrust L J 1, 11–13 (1993). Consider the difficulty a Macintosh user often has making the transition to using DOS.
up these various costs in time and effort and call them "information costs."\textsuperscript{51} Because of these information costs, the OEM could charge a higher-than-market price for the combination of the original equipment and aftermarket goods or services, so long as the margin between the market price and the price the OEM charges is less than the amount of the information costs.\textsuperscript{52} In that event, the consumer will find it less costly to pay supracompetitive prices than to incur the information costs necessary to avoid such prices.

Though simplistic, this example illustrates the effect that information costs can have. As a result of information costs, an OEM can set prices above the competitive level, and consumers will find it preferable to pay those prices. The higher the information costs, the greater the ability to price above the market. This is important because the touchstone of any antitrust claim against a monopolistic firm's "market power" has been defined as the "power [of a seller] to set higher than competitive prices."\textsuperscript{53}

In addition to the restraints on advertising across-the-board price discounts, in \textit{CDA}, the Court also considered the validity of an agreement that restricted "[a]dvertising claims as to the quality of services ... not susceptible to measurement or

\begin{equation}
\text{cost of buying from the OEM} < \text{cost of buying elsewhere} \\
P + M + p + m < P + p + i \\
\text{Subtracting (P + p) from each side,} \\
M + m < i.
\end{equation}

Thus, when the total margin by which the OEM in question overcharges is less than the information costs that must be incurred to purchase elsewhere, the consumer will buy from the OEM in question. This method of approaching the problem proceeds from the idea that one party bases its optimization decision on the assumption that the other party will also choose the alternative that maximizes its own gain. For a general discussion, see Douglas G. Baird, Robert H. Gertner, and Randal C. Picker, \textit{Game Theory and the Law} 50–57 (Harvard 1994) (using a game theory approach to determine parties' optimal decision trees). The greater the information costs, the greater the ability to impose supracompetitive pricing. See also Herbert Hovenkamp, \textit{Market Power in Aftermarkets: Antitrust Policy and the Kodak Case}, 40 UCLA L Rev 1447, 1447–49 (1993) (arguing that in product differentiated markets, firms may possess the ability to price above the competitive level indefinitely) ("[T]he policy question becomes one of degree: how many and what kinds of deviations should be tolerated."). Id at 1448–49.

\textsuperscript{51} "Information costs" would also include the costs a buyer would incur in estimating future aftermarket needs and the market prices of those aftermarket needs for different brands of a product. See Richard Craswell, \textit{Tying Requirements in Competitive Markets: The Consumer Protection Issues}, 62 BU L Rev 661, 690–91 (1982).

\textsuperscript{52} Suppose that the competitive price is P for the original equipment and p for the aftermarket goods and services, and information costs that must be incurred to purchase elsewhere are i. Suppose the margins by which the OEM in question charges above the competitive price are M and m respectively for the original equipment and the aftermarket goods and services. The consumer will purchase from the OEM in question when:

\textsuperscript{53} Matsushita Electric Industrial Co v Zenith Radio Corp, 475 US 574, 590 (1986).
The Federal Trade Commission had concluded that this agreement was sufficiently anticompetitive that it did not require a full-blown rule-of-reason inquiry to condemn; rather, the Commission concluded it could apply a "quick look" analysis. Under such a quick look analysis, the agreement would be presumed to be anticompetitive and the defendants would be required to show otherwise. The Ninth Circuit affirmed this conclusion on the ground that restrictions on quality claims "are in effect a form of output limitation, as they restrict the supply of information about individual dentists' services."

The Supreme Court rejected the idea that restrictions on quality claims are a form of output restriction. Noting that "the relevant output for antitrust purposes ... is presumably not information or advertising, but dental services themselves," the Court focused on whether the agreement "tend[ed] to limit the total delivery of dental services." In that vein, the Court acknowledged that it was "entirely possible to understand the CDA's restrictions on unverifiable quality ... advertising as nothing more than a procompetitive ban on puffery."

CDA held that a restriction on claims of product quality could not be considered presumptively anticompetitive. Accordingly, a full rule-of-reason inquiry was warranted. Although this idea was contrary to the conclusion of the Federal Trade Commission and the Ninth Circuit, it is hardly extraordinary given that a restraint on making quality claims is not economically equivalent to a restraint on making quality products or providing quality service.

A comparison with trademark law, another area implicating concerns about product information and competition, illustrates the reasoning behind CDA. Trademark protection enables a seller to build brand loyalty, which confers a degree of market power.

54 526 US at 761 n 1.
55 128 F3d at 726.
56 526 US at 775 n 12.
57 128 F3d at 729 (citations omitted). The Ninth Circuit did not explain why, if the court believed restrictions on quality claims did amount to output restrictions, they should not be condemned per se as with other output restrictions.
59 Id at 776.
60 Id at 778.
61 Id at 775.
63 At least one commentator has suggested that "many popular brands do possess sufficient brand loyalty to constitute distinct product markets." Glynn Lunney, Jr.,
In other words, a consumer may exhibit a high degree of resistance to purchasing a lower-priced, potential substitute product that does not possess the trademark of the desired brand. 64

Despite this apparent harm to price competition, sellers nevertheless receive legal protection of their trademarks. 65 Traditionally, trademark protection has been justified on the basis of a mark's function in conveying information. 66 In particular, the consumer can use the mark as a proxy for the characteristics that would otherwise not be readily observable—for example, one relies, without opening the can, on the belief that the contents of a can of Coca-Cola will taste like Coca-Cola. 67 A mark can also serve this function with respect to conveying the overall quality of a good whose efficacy one cannot be reasonably sure of without expert knowledge—such as the “American Dental Association Accepted” mark on certain brands of toothpaste.

Trademark protection exemplifies the balance between overall welfare and reduced consumer willingness to switch products based on price. This balance may also have been at work in the California Dental Association’s restrictions. Consumers were denied the opportunity to learn about various dentists’ claims about their services, at least to the extent that such claims were “unverifiable.” 68 But potentially, by limiting puffery, these restrictions may have amplified whatever sources of verifiable quality information existed, including consumers’ own experience.

In CDA, the Court took a more benign look than did the FTC at an agreement that, on its face, limited how dentists could convey information in order to improve the quality of the information their patients received. 69 The Court’s treatment of a restriction on

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64 See 504 US at 456–78, 482 n 31 (finding sufficient evidence that Kodak-brand copiers constituted distinct product market and citing other cases that concluded that a single brand could constitute a distinct product market).

65 See Lunney, 48 Emory L J at 421 (cited in note 63) (describing Department of Justice “opposition” to key provisions of the trademark bill on the grounds that they would limit competition and promote undesirable monopoly”).

66 See Jessica Litman, Breakfast with Batman: The Public Interest in the Advertising Age, 108 Yale L J 1717, 1719–20 (1999) (describing and arguing for resurrection of traditional notion of trademarks based on “the public’s interest inherent in the ability of trade symbols to inform and prevent confusion”).

67 See Lunney, 48 Emory L J at 432 (cited in note 63).

68 526 US at 757.

69 Id at 762, 771.
information concerning product quality appears to exist in some tension with its previous endorsement of the view that consumers’ inability to get information about product quality may itself create exploitable market power for a manufacturing company. However, that view itself may be ripe for reexamination.

The application of per se rules or structured rules of reason to restrictions on information presents an especially thorny problem because of the different and changing context within which restrictions on information operate. To illustrate the implications of such changes for access to information about product quality, consider one of the most cited Supreme Court cases of the decade: Eastman Kodak, Co v Image Technical Services, Inc.

In Kodak, defendant Eastman Kodak faced competition in the primary market for photocopiers enough companies manufactured copiers that no one company could charge supracompetitive prices and still maintain its market share. Relying on existing case law, Kodak argued that it could not charge monopolistic prices in the aftermarket for parts and supplies, because consumers would factor the higher aftermarket prices over the life of the photocopier into their purchasing decision. The Supreme Court rejected this argument and denied Kodak summary judgment. The Court concluded that “[t]he fact that the equipment market imposes a restraint on prices in the aftermarkets by no means disproves the existence of [market] power in those [after]markets.” The Court noted that lack of information could prevent consumers from factoring in possible future higher aftermarket prices into their original purchasing decisions. Purchasers who did not anticipate high-priced service and parts would have to pay such prices because their sizable initial in-

70 See Thomas Arthur, The Costly Quest for Perfect Competition: Kodak and Nonstructural Market Power, 69 NYU L Rev 1, 74 (1994) (arguing that the Court should revise its apparent recognition in Kodak of treating “supracompetitive prices” attributable to “information gaps” as redressable by antitrust).

71 504 US 451.

72 Id at 465 n 10.

73 See Herbert Hovenkamp, Federal Antitrust Policy § 3.3 at 93 (West 1994) (noting that Kodak had a 20–23 percent market share in photocopiers, which is below what courts usually require “to support market power claims of any sort, including tying claims”). See also, for example, Jefferson Parish Hospital District No 2 v Hyde, 466 US 2, 7 (1984) (finding that defendant had a 30 percent market share); id at 31 (ruling that this market share was insufficient for restraint to injure competition).

74 504 US at 465–66.

75 Id at 471.

76 Id.

77 Id at 475–76.
vestment would prevent easy switching, thereby giving Kodak market power.\textsuperscript{78}

Kodak also argued that market imperfections, though possible, did not in fact injure consumers in the market for photocopiers.\textsuperscript{79} According to Kodak, many of its customers were "sophisticated purchasers" who could undertake comparative studies and demand competitive life-cycle prices.\textsuperscript{80} Sophisticated consumers, Kodak argued, would not buy original equipment at supracompetitive prices.\textsuperscript{81} Kodak also stressed that the behavior of sophisticated consumers would bring unduly high aftermarket costs to the attention of unsophisticated consumers.\textsuperscript{82}

Although the Court accepted the idea that well-informed consumers did not need antitrust protection from information-driven market imperfections, the Court concluded that Kodak might be able to overcharge "unsophisticated" consumers,\textsuperscript{83} thereby still reaping monopoly profits.\textsuperscript{84} Alternatively, the Court suggested that Kodak might forgo sales to sophisticated buyers to soak the unsophisticated.\textsuperscript{85}

\textsuperscript{78} 504 US at 476.
\textsuperscript{79} Id at 475.
\textsuperscript{80} Id.
\textsuperscript{81} Id.
\textsuperscript{82} 504 US at 475.
\textsuperscript{83} Id. Antitrust law attempts to protect unsophisticated consumers in other areas, including the determination of which mergers to bar as anticompetitive. See Hovenkamp, Federal Antitrust Policy §12.5a at 479 (cited in note 73) ("Courts have often cited the presence of powerful or sophisticated buyers or suppliers as militating against the likelihood of any exercise of market power by a merging firm."). See also FTC v Elders Grain, Inc, 868 F2d 901, 905 (7th Cir 1989) ("A concentrated and knowledgeable buying side makes collusion by sellers more difficult.").
\textsuperscript{84} 504 US at 475–76. Price discrimination occurs when a firm makes sales at more than one rate of return. Hovenkamp, Federal Antitrust Policy §14.1 at 516 (cited in note 73). If the favored purchaser is paying a competitive price, then the disfavored purchasers must be paying a price higher than the competitive price. "For this reason, the ability to price discriminate is evidence that the seller has a certain amount of market power." Id at 517.
\textsuperscript{85} 504 US at 475. Note that the Court here seemed to have in mind a “pooling equilibrium” in which a party makes an offer in order to strategically separate groups who possess different levels of information. See Baird, Gertner, and Picker, Game Theory and the Law at 140–47 (cited in note 52). Given certain conditions, one party can ask a question or make an offer to another party that will force the second party to reveal information about themselves that otherwise might remain private, nonverifiable information. Id at 147. In the Kodak context, the Court posited that if there were two types of consumers, sophisticated and unsophisticated, Kodak might deliberately price its products so that sophisticated consumers would not consider them, in order to deal only with unsophisticated consumers. 504 US at 475–76.
In effect, the Supreme Court's ruling opened up a new line of argument in the litigation of OEM aftermarket monopolies.\textsuperscript{86} The Court pointed out that an OEM in a competitive primary market could still possess market power in the aftermarket, so long as certain information-driven market imperfections were prominent enough.\textsuperscript{87} However, shortly after the Court's decision was issued, the internet started to change the ability of producers to convey information and consumers to use it.

B. The Effect of the Internet on Product Quality

Information Gaps

Information gaps drove the Court's opinion in \textit{Kodak}. Whether due to the cost or unavailability of information, the Court reasoned that consumers would be unable to estimate accurately the life-cycle costs of durable equipment.\textsuperscript{88} However, the new era of cheaper, more accessible information made possible by the internet requires a re-evaluation of the risk that a firm could use information costs to exercise or achieve market power.

The importance of information costs to the \textit{Kodak} Court's view of market power in aftermarkets suggests that the availability to consumers of higher quality information about a manufacturer's product could significantly ameliorate one of the Court's major concerns.\textsuperscript{89} The \textit{Kodak} decision came out fairly re-

\textsuperscript{86} The Ninth Circuit's \textit{Kodak} opinion was the first by a court of appeals to reject arguments such as Kodak's because of the possibility of market imperfections. See 504 US at 501 (Scalia dissenting) (citations omitted). "Dozens" of "aftermarket rights cases" were filed in the first five years after the Supreme Court's opinion. See Daniel M. Wall, \textit{Aftermarket Monopoly Five Years After Kodak}, 11-SUM Antitrust 32, 32 (1997).

\textsuperscript{87} 504 US at 477–78.

\textsuperscript{88} Id at 473–74.

\textsuperscript{89} See Joseph Kattan, \textit{Market Power in the Presence of an Installed Base}, 62 Antitrust L J 1, 17 (1993) (stating that "[t]he quality of information available to consumers is a key point in the Court's analysis of the \textit{Kodak} case" and that "the Court believed that informational imperfections that facilitate the exercise of market power in markets for [aftermarket] goods is pervasive"). Note, however, that many commentators have suggested that the market power involved here, however, could only be exploited by an OEM willing to engage in sales policy changes regarding aftermarket goods or services \textit{after} an installed base of customers had bought the OEM's durable equipment. See, for example, \textit{Digital Equipment Corp v UNIQ Digital Techs, Inc}, 73 F3d 756, 763 (7th Cir 1996) (finding that the "material dispute that called for a trial [in Kodak] was whether the change in policy enabled Kodak to extract supra-competitive prices from customers who had already purchased its machines"); \textit{Lee v Life Insurance Co of North America}, 23 F3d 14, 20 (1st Cir 1994) (concluding that "[h]ad previous customers known, at the time they bought their Kodak copiers, that Kodak would implement its restrictive parts-service policy, Kodak's 'market power', i.e., its leverage to induce customers to purchase Kodak servicing, could only have been as significant as its [market power] in the copier market"). However, possible arguments against aftermarket monopolies—other than the "bait-and-switch" problem
recently, in 1992. However, with respect to information availability, 1992 was another era. The internet makes information cheaper in at least two ways. First, it reduces the transaction costs of manufacturers that desire to share information about product quality with customers on a voluntary basis. Second, the internet makes it easier for third parties to aggregate and distribute information about consumer experience. Now, estimates of repair costs, including information about photocopiers, can be readily found online at www.repairnow.com or from Consumer Reports Online. A dedicated information-gathering operation or months of research time is no longer necessary.

Of course, it might appear from the preceding example that more accessible, cheaper information automatically obviates problems relating to consumer information costs. However, as the Court in CDA recognized, the verifiability of information is crucial. Verification may be increasingly important in an era when the product itself is information or access to information. Opportunities for strategic disclosure remain. For example, a recent study conducted by a Wharton professor suggested that an individual online travel agent was setting up two different types of web sites—one that was simple for consumers to use and that charged higher prices, and one that was extremely difficult for consumers to use and that charged relatively lower prices. In another example, the study showed that some retailers use the greater availability of information about their competitors’ in-stock product from on-line sales sites—information meant for

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90 Indeed, manufacturers may have an incentive to share such information to attract consumers, especially if concerns about product quality could diminish the market's efficiency due to competition with lower-quality—but hard to distinguish—competitors. See, for example, Akerlof, 84 Q J Econ at 495 (cited in note 20). Of course, it is not enough that manufacturers make quality claims—they must also make their claims credible. See also Salil Kumar Mehra, Parts and Services Included: An Information-Centered Approach to Kodak and the Problem of Aftermarket Monopolies, 62 U Chi L Rev 1521, 1523 (1995).

91 See, for example, R. Riley, Northworst Air, A resource about airline service and passenger rights dedicated to Northwest Air (visited Apr 13, 2000) <http://www.northworstair.org/>; United (visited Apr 13, 2000) <http://www.united.com/> (collecting grievances about United Air Lines). Admittedly, some of this is anecdotal data.


93 See text accompanying note 60.

consumers—to figure out when they can raise their prices on certain items without fear of being undercut. Though there is the potential of a long-term procompetitive result, this tactic has resulted in higher prices due to less fear of competition.\(^9\) As these examples suggest, information can be used to price discriminate between consumers or to perfect strategic behavior vis-à-vis competitors. Moreover, information may actually make it harder to verify what among the flood of information is in fact misinformation.\(^9\) A rapid expansion in available information may have unpredictable results, a possibility that calls into question the wisdom of applying rigid presumptions.

Given the recent increase in the availability of “life-cycle pricing” information on the internet, perhaps it is time to reexamine the continuing importance of information gaps that drove the Court’s concerns about aftermarket monopolies in *Kodak*. However, it may be too soon to conclude that such information gaps have disappeared. Questions about the verifiability by consumers of information or claims about quality—an issue highlighted by *CDA*\(^9\)—may still be cause for concern. In this context, changed circumstances justify building a new body of experience with such information gaps before applying preexisting presumptions.

### III. INFORMATION AS PRODUCT

While it may be important to avoid a rush to apply established antitrust presumptions to information about a product’s price or quality, it may be even more important to avoid such undue haste with respect to industries where the product itself is information. That is not to say that antitrust may not play a role in such industries. Rather, industries that produce information or facilitate access to information are undergoing a period of tremendous change, consolidation and reconfiguration, during which oversimplified antitrust enforcement could present serious dangers.\(^9\) New presumptions should be developed in line with new

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\(^9\) Id.

\(^9\) See text accompanying note 18.

\(^9\) See text accompanying note 60.

\(^9\) See Priest, 4 Tex Rev L & Polit at 143 (cited in note 1) (suggesting that the efficiency of the configuration of information into networks that benefit consumers is a factor that distinguishes some new industries from the traditional manufacturing industries more typical of antitrust enforcers’ experience).
experiences relative to concerns about anticompetitive conduct or over-enforcement.

Certain characteristics distinguish an "information" product or "information access" product from other products. For one thing, the ownership of information does not generally imply an easy way to exclude others from consuming the same product—even without paying a price for it. This is not the case with the ownership of a physical product, such as an apple.99 Similarly, software, once produced, can be so cheaply distributed that the marginal cost of producing each consumer's "unit" of information access can be negligible.100

Furthermore, the internet can create new ways to profitably gather and redisseminate information. By reducing the transaction costs of both gathering and disseminating information, the internet can make possible entirely new businesses, such as online education, which produces information and access to information.101

The internet has also generated opportunities for businesses that aggregate and condense information from many sources that otherwise would be much more difficult for ordinary consumers to process.102 The fact is that consumers need information in forms that they can digest.103

99 But see Lawrence Lessig, Code and Other Laws of Cyberspace 131–12 (Basic 1999) (explaining and questioning Jeffersonian notion that ideas are not excludable).
100 Lawrence Lessig, The Law of the Horse: What Cyberlaw Might Teach, 113 Harv L Rev 501, 519 n 70 (1999); Nicholas Khadder, National Basketball Association v Motorola, Inc, 13 Berkeley Tech L J 3, 3 (1998) ("Recently ... the Internet has enabled users to distribute and sell information very widely at a negligible marginal cost to the distributor.") (cited in note 13).
101 See, for example, Jacques Steinberg and Edward Wyatt, Boola, Boola: E-Commerce Comes to the Quad, NY Times section 4 page 1 (Feb 13, 2000) (describing efforts by Columbia, Carnegie-Mellon, Stanford and the University of Chicago, in partnership with Unext.com, to teach classes over the internet to thousands of students simultaneously).
102 Among other types of information now available at no fee to consumers is the SEC's entire database of recent securities filings by public companies and flight availability and airfares for virtually all major airlines. See, for example, <http://www.sec.gov/edgar.htm> (website providing publicly-traded companies' SEC filings) (visited July 20, 2000); <www.expedia.com> (website providing information on price and availability of flights on most scheduled airlines) (visited July 20, 2000). While this information was publicly available in the past, its gathering into more convenient forms for consumer comparison ameliorates the problem of consumers' limited time, effort and mental resources. See, for example, Herbert A. Simon, From Substantive to Procedural Rationality, in 2 Models of Bounded Rationality 424, 430 (MIT 1982) (noting that while rational actors are assumed to be infinitely capable of calculation in order to optimize their behavior, in the real world we must consider the limits on human mental abilities to gather and process information). See also Howard Rachlin, John H. Kagel, and Raymond C. Battalio, Substitutability in Time Allocation, 87 Psychol Rev 355, 359 n 1 (1980) ("Economics is often said to be a science of rational behavior, but 'rationality' means no more to economists than conformity to
Furthermore, increased ease of gathering data from multiple sources makes it harder for businesses to withhold information from consumers. The internet’s low transaction costs allow third parties to aggregate and disseminate consumer experience data in new ways. As a result, these businesses can produce information access that improves overall efficiency by defeating producer attempts to strategically withhold information about inferior product or service quality. For example, the market for used cars might generate more transactions if better data about the historical performance of individual models of cars and even specific individual cars becomes available. The increased accessibility of information reduces producers’ individual incentives to strategically withhold information in order to increase each individual producer’s share of the gains from contracting; ironically, producers may nonetheless wind up better off if the market thereby becomes more efficient and more transactions occur.

Courts have dealt with antitrust problems in industries that produce information or access to information before, particularly

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103 See Oskar Morgenstern, Thirteen Critical Points in Contemporary Economic Theory: An Interpretation, 10 J Econ Lit 1163, 1175 (1972) (given the conditions of perfect competition, making an economically efficient, rational decision may be a simple concept; however, such a decision may require computations of such difficulty that they would be nearly impossible for a real-world consumer).

104 See, for example, Thomas Weber, Can Your Complaints, Adroitly Repackaged, Build a Web Business?, Wall St J B1 (Jan 10, 2000) (discussing internet companies that gather “consumer wrath” and “then collate, cross-reference and sell it as market research”).

105 This is the converse of the proposition that the attraction of “lemon” sellers to the used car market, and the absence of information about which cars are lemons, makes the market less efficient. For a general discussion, see Akerlof, 84 Q J Econ (cited in note 20).

in the context of the media. However, developments concerning the internet are beginning to spawn unprecedented antitrust actions. As just one example of the contrast between the two contexts, a prominent issue in antitrust cases involving newspapers is deciding the extent of the geographic market—that is, what other competitors exist in a local area. By contrast, one of the hallmark characteristics of the internet is its worldwide access and worldwide presence.

The problem with applying established antitrust presumptions to internet cases is that we lack the experience we need in order to avoid a rule making that prohibits beneficial conduct whose utility outweighs both savings in judicial resources and the cost of conduct that should be prosecuted but which is not in the rule’s absence. For example, the per se rule against output restrictions may involve different interests where the output restricted is information. This uncertainty stems from the inherent difference between information and the traditional products of manufacturing industries with which antitrust is more familiar. Indeed, the crucial role that information plays in markets should give us pause. After all, it is far from clear whether or not the policy that “the costs of monopoly wrongly permitted are small, while the costs of competition wrongly condemned are large” applies to antitrust investigations of businesses that generate superior information or greater access to preexisting inferior information. Two examples may illustrate the problem.

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107 See, for example, Lorain Journal, Co v United States, 342 US 143, 154 (1951) (concluding that newspapers’ boycott of radio advertisers was anticompetitive).
108 See, for example, United States v Microsoft Corp, 87 F Supp 2d 30, 51 (D DC 2000) (addressing tying claim concerning Windows and Internet Explorer and addressing possibility that “mechanically applying ‘separate demand’ test could lead to condemnation of ‘integrations’ that represent genuine improvements to software.”).
109 For a general discussion, see Community Publishers, Inc v Donrey Corp, 1995-1 Trade Cases (CCH) ¶ 71,049 (W D Ark) (concluding that newspaper participated in two markets: one for readers and one for advertisers).
110 See, for example, Lessig, Code and Other Laws of Cyberspace at 192 (cited in note 99) (asking how behavior “will systematically be governed within multiple, noncoordinating jurisdictions”).
111 See, for example Williamson, 76 Geo L J at 289 (cited in note 31) (framing the issue in terms of a trade-off between administrative benefit and the risk of possibly punishing beneficial practices).
112 “Quality information” has been described as “the lifeblood of strong vibrant, markets,” at least with respect to capital markets. SEC Wants New Rule on Issuing Info, Houston Chron at 2 (Dec 16, 1999) (quoting SEC Chairman Arthur Levitt).
113 Easterbrook, 63 Tex L Rev at 15 (cited in note 31).
A. Blocking "Bots" as an Antitrust Problem?

Suppose, for example, that a new internet-based firm, AuctionCo, emerges, whose primary benefit to consumers is to make it possible for them to receive information about the price and availability of products which they otherwise would not know are available. The firm does not actually "own" or "sell" these products itself; it merely serves as a "meeting place" for buyers and sellers by providing a forum to facilitate information exchange. AuctionCo does this by contracting with sellers to offer their products on its web site. Suppose further that the dominant method by which these sales occur is via an online auction system under which the firm charges a commission on each sale pursuant to its agreements with the sellers. This commission, together with revenue derived from selling advertising on its web site, forms the bulk of the company's income.114 AuctionCo is wildly successful, and in fact succeeds in garnering nearly 90 percent of daily web-auction traffic.

Now suppose that another company, BotCo, develops a software robot, or "bot"—in this case, a piece of software that probes other web sites—to gather information on the prices and products available on various auction web sites, including that of AuctionCo. BotCo then displays the information gathered from various auction web sites on its own web site, providing a level of increased convenience to consumers. AuctionCo then develops and implements software to thwart BotCo's bot. BotCo then brings an antitrust suit against AuctionCo, alleging that AuctionCo's agreements with competing sellers and AuctionCo's conduct in preventing BotCo from competing in the provision of information to buyers amount to a prohibited conspiracy to inhibit the output of such information.115

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114 This example will, to anyone familiar with the internet, greatly resemble eBay, Inc. However, in fairness to that company, it has not traditionally derived a significant portion of its income from advertising on its web site. See eBay, Inc, Form 10-K Annual Report, 20 (1999), <http://www.sec.gov/Archives/edgar/data/1055088/0001012870-99-00878.txt> (visited July 18, 2000) (stating that the company "to date, has chosen to sell almost no advertising on its web site"). Nonetheless, reliance on web site advertising has been a familiar business plan for many other "e-commerce" firms, including its largest auction on-line competitor, Yahoo! Inc, which, like eBay, also has non-auction components. See Yahoo! Inc, Form 10-K Annual Report 6 (2000), <http://www.sec.gov/Archives/edgar/data/1011006/0000912057-00-014598-d1.html> (visited July 18, 2000) (stating that the company "derives significant revenues from the sale of advertising" on its Web pages including "hyper-text links . . . to advertisers' Web sites").

115 This case will, for some, resemble a current controversy involving eBay, Inc. See eBay, Inc v Bidder's Edge, Inc, 2000 WL 764197 (N D Cal). See also Carl Kaplan, Judge Bans Web Site's Use of eBay Data, NY Times C7 (May 26, 2000) (reporting judge's
There is, of course, a per se rule against agreements limiting output.116 Assuming that AuctionCo's very existence is based on agreements with sellers (who themselves are in competition), is AuctionCo's attempt to exclude BotCo's bot illegal per se? Whether or not the action itself is anticompetitive, it is clear that any attempt to apply the traditional per se rule at this point is potentially misguided. Several questions loom, including the questions of what output is being restricted, and whether this is appropriately considered single-firm (AuctionCo) or multi-firm (including individual sellers) behavior.117 Certainly, the output of "web sites" may be restricted if BotCo cannot gather the information it desires. The output of "information" may be reduced in the sense that consumers will not be able to compare different auction web sites' prices in one place. Of course, defining output in such terms makes about as much sense as defining the output of an airline to be time spent sitting on an airplane as opposed to relatively rapid transportation.118 But if enough consumers substitute BotCo's web site for AuctionCo's web site, this diversion of traffic could threaten AuctionCo's advertising revenues, and thereby its profitability. If AuctionCo folds as a result, there will be an overall reduction in information and information access. Further complicating all of this is that, if AuctionCo constitutes the product of numerous agreements with competing sellers, it is hard to see what interest AuctionCo would have in blocking price comparisons. In particular, sellers would not have an interest in blocking price comparisons because "bargains"—or relatively

117 Given the rather wide definition of "joint venture" that exists under antitrust law today, see, for example, Hovenkamp, Federal Antitrust Policy § 5.2 at 197–98 (cited in note 49), AuctionCo could well be so defined as an example of multifirm activity.
118 Certainly, it often seems like airlines produce the former rather than the latter. But, in antitrust terms, airlines are generally seen as producers in a market for transportation. See, for example, Complaint in United States v AMR Corp, American Airlines, Inc, and AMR Eagle Holding Corp, No 99-1180 ¶ 13 (D Kan) (filed May 13, 1999), <http://www.usdoj.gov/atr/cases/f2000/2400/2438.htm> (visited Feb 13, 2000) (describing relevant market as air transportation between pairs of cities).
“cheap” (or in classical economic terms, inefficiently low) prices for buyers—are only possible if an auction is inefficient in the sense that the buyer who would bid the most is unaware that the product is being auctioned, or the buyer is otherwise unable to participate. The point of this is not to argue that AuctionCo has engaged in perfectly legal conduct. Rather the point is that the case itself can only be handled, with our contemporary understanding of this business model, by a full rule-of-reason inquiry.

B. Cutting Out Those Who Would Cut Out the Middleman?

AuctionCo’s attempts to stay profitable by preventing others from appropriating the information it gathers may excite sympathy. But consider another example. Suppose an organization of realtors and local realty boards, seeing the growth of the internet in other sales areas, decides that it too would like to become an online vendor, providing information about homes for sale on a web site and selling advertising to companies that would like to market to prospective home buyers. Its members, individual realtors and local realty boards, have contracts with homeowners to represent them in selling their homes. Accordingly, the organization creates a web site and displays information on the various homes that its members have for sale. In order to induce its member realtors and local realty boards to provide information to display on the website, the organization offers shares in the venture to the local realty boards. Recognizing that the web site will have more value to prospective home buyers the more home listings it has, and will have more value for home sellers given the more buyers it can expose to available homes, the organization seeks and obtains exclusive contracts with the local

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119 See Robert Ming, Delaware’s Duty to Auction After Paramount Communications, Inc. v. QVC Network, Inc., 22 Pepp L Rev 1541, 1597 n 246 (1995). This example could be even further complicated if it turned out that less information on sales and prices would be available if auction sites became “splintered” such that buyers were less able to compare prices, thereby making auctions less efficient. Consequently, sellers might receive lower prices as auctions became less efficient. Thus, utility to sellers of an all-encompassing auction could be a predicate to generating information about items for sale in the first place.

120 This example will seem familiar to those who have followed the dispute over the practices of Homestore.com’s web site venture realtor.com, which is partly owned by the National Association of Realtors. See John Wilke and Tristan Mabry, Virtual Realty: Homestore.com Uses its Lock on Listings to Widen Realtor Net, Wall St J Al (Aug 6, 1999) (discussing charges that “the real-estate industry is acting ‘to co-opt the Internet to protect its high-margin structure’”) (quoting Peter Sealey).

121 Realors traditionally receive a commission based on a percentage of the sale price.
realty boards. Under these exclusive contracts, the organization lists the homes that its agents have contracts to sell in order to start the market “tipping” towards its site.\textsuperscript{122}

These exclusive contracts also have the effect of preventing other competing sites from being able to offer information about homes for sale in many markets. Because they contain fewer properties due to the exclusive contracts, the sites omit valuable information about the market, and so become disadvantaged relative to the organization’s web site. Accordingly, these competing sites bring an antitrust suit against the organization.

Our concern should be focused on competition between alternative sources of valuable information. Accordingly, this example appears more troubling than the AuctionCo example, at least in part because of the concern that the realtors, who are participants in a pre-existing market, may be acting in concert to forestall internet-based competition. By contrast, AuctionCo appears more likely to have generated new information about products, thereby creating a market that did not previously exist. Although the two examples involve different acts—using software code to prevent a potential competitor’s access to a web site’s information versus using exclusive contracts to prevent gathering of the same information for a possible competitor—they have similar effects in thwarting alternative providers of information. As in the AuctionCo example, the actual sellers (sellers of homes in this example, perhaps sellers of tchotchkes in the AuctionCo example) may have conflicting interests: on the one hand, they may want a single, comprehensive web site that makes it more likely that the highest-value buyer sees their home or product for sale, but on the other hand, they might desire a competitive market to lower the commissions that their intermediary is charging them.

The point of this example, like the previous example, is that the per se rule on output restrictions that developed in the context of manufacturing industries may generate relatively more false positives, that is, wrongly condemned practices, in the context of businesses that produce information or access to information. Certain types of exclusive practices in these industries may counsel wariness.\textsuperscript{123} But we are far from the point at which we

\textsuperscript{122} The web site would thus seek to create network-effect-driven efficiencies for sellers by developing a single, focused site for buyers, thus seeking to ensure that the highest-valuing buyer knows about the particular house for sale, similar to the efforts of the auction site in the previous example.

\textsuperscript{123} See Shapiro, 7 Geo Mason L Rev at 679 (cited in note 1) (suggesting that the magnitude of potential harm to competition from exclusive contracts with individual custom-
can comfortably apply the types of presumptions that gird per se rules or structured rules of reason.

The foregoing two examples do not demonstrate that per se rules or other antitrust presumptions can have no application with respect to the internet or in the context of industries where information is the product. If the second example were altered so that the realtors involved were not in fact setting up a web-based venture to convey listing information, but were instead simply agreeing not to supply any information to any internet-related entity, the case might fit more squarely into the type of conduct to which the application of a per se rule is not problematic: the naked restriction of output. The point is not that per se rules do not make sense, but that the internet and information-producing industries may require a re-balancing of the costs and benefits behind per se rules.

CONCLUSION

If courts exercise greater caution in extending experience-based per se rules to new types of restraints and to the internet and information-producing industries, it may come at the expense of the predictability that is assumed to result from per se rules and structured rules of reason. However, the benefit of certainty as a result of fixed presumptions must be weighed against the cost of mistakes. This calculus is different due to certain characteristics of these industries that have been the focus of much recent attention, such as increasing returns to scale—the idea, for example, that e-mail as a form of communication becomes increasingly more valuable as the number of users increases. Other nonstandard characteristics include near-zero marginal costs of production, as with some software, and the concept that in these industries businesses need to set standards, even with competing entities, in order for the products of both businesses to be success-

ers “tends to be greater in network markets” because of the enhanced ability in such markets for exclusive contracts to create a serious problem for an entrant that needs to develop economies of scale to compete, and that this general problem identified by Rasmusen, Ramseyer and Wiley may be worse in network industries. See also Eric Rasmusen, J. Mark Ramseyer and John Wiley, Jr., Naked Exclusion, 81 Am Econ Rev 1137, 1137 (1991) (suggesting that an incumbent monopolist may be able to prevent entry by signing exclusive contracts with individual consumers in exchange for a small discount for signing the exclusive contract rather than a non-exclusive one).

124 Compare Lessig, Code and Other Laws at 222 (cited in note 99) (pointing out that courts' hesitance in resolving constitutional questions in cyberspace are "grounded in prudence," and within "th[e] ideal of prudence in general . . . [w]e should isolate the source of the [judicial] difficulty").
ful. The risk that over-enforcement may disrupt a virtuous cycle is a real one. There is a downside to the phenomenon of increasing returns to scale: disruption of a web site, software program or other similar product due to regulation or litigation can lead some users to stop using the product. The fact that some users flee the product would by itself lead other users to cease using the product due to the reduced utility of doing so, and so on in a "death spiral."\footnote{Indeed, in the ongoing Napster case, the district court has acknowledged that "even a narrow injunction may so fully eviscerate Napster, Inc. as to destroy its user base"—although the court decided this risk did not trump the rights of an infringed copyright holder. \textit{A&M Records v Napster}, 2000 WL 1182467, *26 (N D Cal), injunction stayed.} Courts can create a real hazard by prematurely imposing the presumptions of per se rules or structured rules of reason developed in the very different context of more conventional, mature industries.