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***Harvard Journal of Law & Public Policy*,**
Forthcoming

George Mason University Law and Economics Research Paper Series

10-25

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GOOGLE AND THE LIMITS OF ANTITRUST: THE CASE AGAINST THE CASE AGAINST GOOGLE

Geoffrey A. Manne[*]*& Joshua D. Wright*[**]

ABSTRACT

The antitrust landscape has changed dramatically in the last decade. Within the last two years alone, the United States Department of Justice has held hearings on the appropriate scope of Section 2, issued a comprehensive Report, and then repudiated it; and the European Commission has risen as an aggressive leader in single firm conduct enforcement by bringing abuse of dominance actions and assessing heavy fines against firms including Qualcomm, Intel, and Microsoft. In the United States, two of the most significant characteristics of the "new" antitrust approach have been a more intense focus on innovative companies in high-tech industries and a weakening of longstanding concerns that erroneous antitrust interventions will hinder economic growth. But this focus is dangerous, and these concerns should not be dismissed so lightly. In this article we offer a comprehensive cautionary tale in the context of a detailed factual, legal and economic analysis of the next *Microsoft*: the theoretical, but perhaps imminent, enforcement action against Google. Close scrutiny of the complex economics of Google's technology, market and business practices reveals a range of real but subtle, pro-competitive explanations for features that have been held out instead as anticompetitive. Application of the relevant case law then reveals a set of concerns where economic complexity and ambiguity, coupled with an insufficiently-deferential approach to innovative technology and pricing practices in the most relevant precedent (the D.C. Circuit's decision in *Microsoft*), portend a potentially erroneous—and costly—result. Our analysis, by contrast, embraces the cautious and evidence-based approach to uncertainty, complexity and dynamic innovation contained within the well-established "error cost framework." As we demonstrate, while there is an abundance of error-cost concern in the Supreme Court precedent, there is a real risk that the current, aggressive approach to antitrust error, coupled with the uncertain economics of Google's innovative conduct, will nevertheless yield a costly intervention. The point is

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not that we *know* that Google's conduct is procompetitive, but rather that the very uncertainty surrounding it counsels caution, not aggression.

1. INTRODUCTION

Much has changed in the monopolization law landscape since the watershed *Microsoft* decision over a decade ago. Within the last two years alone, the United States Department of Justice has held hearings on the appropriate scope of Section 2, issued a comprehensive Report, and then repudiated it; the European Commission has risen as a leader in single firm conduct enforcement by bringing abuse of dominance actions and assessing heavy fines against firms including Qualcomm, Intel, and Microsoft; and China has passed its own antitrust law and become an important stakeholder in debates over the future of international antitrust. Most recently, the Federal Trade Commission, in a controversial move, invoked its authority under Section 5 of the Federal Trade Commission Act to challenge Intel's pricing practices in the microprocessor market.[1]

Application of antitrust laws to innovative companies in dynamic markets has always been a perilous proposition, and, despite significant advances in economics and jurisprudence, remains so. Successful firms—including Google—competing in markets characterized by innovation, rapid technological change and intellectual property are especially likely, and especially problematic, targets.[2]

Contemporary monopolization enforcement in the US is focused substantially on innovative companies in high-tech industries, creating substantial concerns that antitrust error in the form of successful interventions against pro-competitive innovations and business practices will hinder economic growth. Given the fundamental difficulty of identifying the competitive consequences of business practices generally, and innovations especially, concern with the social costs of these errors ("error costs") has been a mainstream consideration in antitrust policy discourse for the last quarter century. Unfortunately, current antitrust enforcers in the US have minimized

[1] FTC Administrative Complaint, *In the Matter of Intel Corporation*, Docket No. 9341, *available at* http://www.ftc.gov/os/adjpro/d9341/index.shtm.

[2] Among others, the United States Assistant Attorney General for Antitrust, Christine Varney, has suggested that Google, in particular, is of concern to the government. Christine Varney, Remarks Before the American Antitrust Institute (Feb. 11, 2008), *available at* http://www.antitrustinstitute.org/Archives/Varney.ashx.

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these error cost concerns, with one even declaring that "*there is no such thing as a false positive.*"[3] At the same time, enforcers at the FTC have brought a complicated and controversial case against Intel under Section 5 of the FTC Act, precisely in order to make an end-run around Sherman Act jurisprudence that enshrines error cost concerns.[4] Less than a year after the Supreme Court reinforced that error costs were a central component of monopolization doctrine, antitrust enforcers in the United States have adopted a dramatically different – and opposing – view of the role that antitrust errors should play in future enforcement decisions.[5]

Things have also changed in the web-based economy. As is to be expected in dynamic markets, it would have been difficult to predict in 1998 the challenge that Linux would pose to Microsoft, the growth of Google, the commercial success of the iPod, the transformative role of mobile and cellular computing, and many other welfare-enhancing innovations over the last decade. But despite these apparent changes in the legal and economic environment, the antitrust community finds itself facing the same debate that raged before the *Microsoft* wars: what is the appropriate role of antitrust, and monopolization law in particular, in the New Economy? Much has been written on this topic, with virtually every conceivable policy position having been taken in some form or another. Some have argued that the economy moves too fast for antitrust remedies to be fully effective.[6] Others have argued that antitrust

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[3] Christine Varney, Remarks Before the American Antitrust Institute (Feb. 11, 2008), *available at* http://www.antitrustinstitute.org/Archives/Varney.ashx.

[4] Statement of Chairman Leibowitz and Commissioner Rosch, *In the Matter of Intel Corporation, Docket No. 9341 available at* http://www.ftc.gov/os/adjpro/d9341/091216intelchairstatement.pdf.

[5] Pac. Bel. Tel. Co. v. Linkline Commc'ns, Inc., 129 S. Ct. 1109, 1113-14 (2009) ("Recognizing a price-squeeze claim where the defendant's retail price remains above cost would invite the precise harm we sought to avoid in *Brooke Group*: Firms might raise their retail prices or refrain from aggressive price competition to avoid potential antitrust liability" and finding it "most troubling [that] firms that seek to avoid price squeeze liability will have no safe harbor for their pricing practices.").

[6] Robert W. Crandall & Clifford Winston, *Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence* 17 J. ECON. PERSP. 3 (2003). In the *Microsoft* context, see also William H. Page & Seldon J. Childers, Measuring Compliance with Compulsory *Licensing Remedies in the American Microsoft Case*, 76 ANTITRUST L.J. 239 (2009); William H. Page, *Mandatory Contracting Remedies in the American and European Microsoft Cases*, 75 ANTITRUST L.J. 787 (2008); William H. Page & Seldon J. Childers, *Software Development as an Antitrust Remedy: Lessons from the Enforcement of the Microsoft Communications Protocol Licensing Requirement*, 14 MICH. TELECOMM. & TECH.

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rules simply should not apply where innovation and dynamic competition are at stake because of the potential chilling effects on innovation.[7] Still others have argued that anticompetitive abuses are even more likely to stifle innovation and harm consumers in the modern economy, and thus antitrust enforcers should be especially active in these markets.[8]

In this paper, we discuss the problems of antitrust enforcement in the face of the technological and business-method innovations of the Internet economy and the theoretical case against the antitrust community's contemporary bête noir, Google. Our approach embraces the cautious and evidence-based approach to uncertainty, complexity and dynamic innovation contained within the "error cost framework," a mainstream and well-developed method of evaluating legal rules generally, and, in this case, balancing the full social benefits and costs of proposed antitrust interventions. While this approach is well accepted in the antitrust literature among lawyers and economists, unfortunately, it has been shunned by many antitrust enforcers and a vocal subset of commentators who view the error-cost framework as an annoying impediment to more vigorous enforcement.[9] For example, at least one Federal Trade Commissioner has lamented the evolution of antitrust rules that, in his view, systematically under-deter anticompetitive behavior because of the incorporation of the error-cost framework and concomitant concerns about false positives into Sherman Act jurisprudence.[10]

Taken together, these recent developments (and others) portend a movement away from competition policy informed by error-cost analysis, impelled by the implicit belief that antitrust intervention is essentially always

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L. REV. 77 (2008).

[7] Daniel F. Spulber, *Unlocking Technology: Antitrust and Innovation*, 4(4) J. COMP. L. & ECON. 915 (2008).

[8] *See, e.g.*, Carl Shapiro, *Exclusivity In Network Industries*, 7 GEO. MASON L. REV. 673, 674-75 (1999).

[9] This conflation of activity level with success has come from a number of sources, including President Obama. *See* Barack Obama, Senator, Statement to the American Antitrust Institute (Nov. 5, 2009), *available at* http://www.antitrustinstitute.org/archives/files/aai-%20Presidential%20campaign%20-%20Obama%209-07_092720071759.pdf (promising to "reinvigorat[e] antitrust enforcement" and asserting that the activity level of enforcement during the Bush administration caused negative consequences for consumers). *See also* Varney, *supra* note 5.

[10] J. Thomas Rosch, Thoughts on the Withdrawal of the Section 2 Report, *available at* http://ftc.gov/speeches/rosch/090625roschibareport.pdf.

beneficial from a long-term consumer welfare perspective. This belief stands in stark contrast to the error cost approach which presumes that errors are an inevitable and core feature of the antitrust enterprise. The new approach implies that over-deterrence is not a concern that should motivate either enforcement decisions or the design of liability rules. Indeed, advocates of this approach have suggested that error-cost concerns are antiquated in the New Economy, and that false positives are no longer a concept capable of contributing to the antitrust policy debates. This is a problematic stance that is contrary to modern economics and the logic of legal rules, and one that portends a costly mistake in the (inevitable?) antitrust case against Google.

In Part 2, we begin by making the case that, contrary to these recent critics and agency authorities, error-cost analysis is not only helpful, but essential to identifying and designing optimal antitrust rules in the New Economy. The application of the error cost framework in antitrust originates with Judge Frank Easterbrook's seminal analysis, in his *The Limits of Antitrust,* itself built on twin premises: first, that false positives are more costly than false negatives because self-correction mechanisms mitigate the latter but not the former, and second, that errors of both types are inevitable because distinguishing pro-competitive conduct from anti-competitive conduct is an inherently difficult task in the single-firm context.[11] At its core, the error cost framework is a simple but powerful analytical tool that requires inputs from state of the art economic theory and empirical evidence regarding the competitive consequences of various types of business conduct and produces outputs in the form of legal rules. While legal scholars typically avoid rigorous attempts to work through the available economic theory and evidence when discussing the optimal design of legal rules, economists frequently fail to assess their analyses in a realistic institutional setting and avoid incorporating the social costs of erroneous enforcement decisions into their analyses and recommendations for legal rules. This Part outlines the common sources and some of the history of antitrust error, setting the stage for an assessment of the case against Google.

In Part 3, we discuss the markets, the business conduct, and the economics of online search advertising relevant to the primary monopolization arguments leveled against Google. In particular, this Part highlights the indeterminateness and the complexity of the economic implications of Google's market and its conduct—characteristics that contribute significantly to the risk of an inefficient intervention.

[11] 63 TEX. L. REV. 1 (1984).

In Part 4, we discuss the potential monopolization claims against Google and highlight the pitfalls of the hypothetical case, concluding that the suit is a recipe for a costly false-positive outcome. Our goal in this paper is to harness the power of the error-cost framework to introduce an Easterbrookian, error-cost-minimizing approach to antitrust intervention in Google's primary activities—areas where innovation is a critical part of the competitive landscape. Given recent activities in the antitrust enforcement arena—identifying innovative firms in high-tech markets as likely antitrust targets combined with recent discussions of error costs from leading enforcers,[12] at the Section 2 Hearings,[13] and elsewhere[14]—this systematic analysis of the relationships between innovation, antitrust error, optimal liability rules and the business and economics of Google is timely and essential.

In Part 5 we conclude.

2. INNOVATION, ERROR COSTS AND THE LIMITS OF ANTITRUST[15]

The primary contribution of Judge Easterbrook's *The Limits of Antitrust* was to force the antitrust community to think much more rigorously about the relationship between errors and antitrust liability rules. The key policy tradeoff, Easterbrook explained, was that between Type I ("false positive") and Type II ("false negative") errors.

While the error-cost framework is a critical conceptual tool that can comfortably be applied to any area of the law, it is especially useful in antitrust given the often-underappreciated difficulty of the task antitrust law assigns to judges: to distinguish anticompetitive behavior from pro-competitive given limited evidence, along with the clues economic theory can provide. Thus, the problem of dealing with error in the design of the liability rules themselves in

[12] *See* Varney, *supra* note 5.

[13] U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT viii (2008), *available at* http://www.usdoj.gov/atr/public/reports/236681.pdf (internal citations omitted).

[14] *See, e.g.*, Stacey L. Dogan & Mark A. Lemley, *Antitrust Law and Regulatory Gaming*, 87 TEX. L. REV. 685 (2009).

[15] Part 2 is distilled from our recent work, Geoffrey A. Manne and Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMP. L. & ECON. 153 (2010). We thank the Oxford University Press for permission to use material drawn from that article.

antitrust is an important innovation. From simple legal and economic assumptions, this framework provides a coherent structure within which judges can think about the optimal design of antitrust rules in the face of expected errors. The framework's assumptions are as follows: (1) both types of errors are inevitable in antitrust cases because of the difficulty in distinguishing efficient, pro-competitive business conduct from anticompetitive behavior;[16] (2) the social costs associated with Type I errors are generally greater than the social costs of Type II errors because market forces offer at least some corrective with respect to Type II errors and none with regard to Type I errors, or as Easterbrook articulated it, "the economist's system corrects monopoly more readily than it corrects judicial [Type II] errors;"[17] and (3) optimal antitrust rules will minimize the expected sum of error costs subject to the constraint that the rules be relatively simple and reasonably administrable.[18]

This framework gives rise to number of simple filters that can be used to minimize error costs, including requirements that a plaintiff affirmatively demonstrate that the firm at issue actually has market power, that the practices at issue are likely substantially to harm consumers, whether firms in the industry use different methods of production or distribution, whether the evidence is consistent with a reduction in output, and whether the complaining firm is a rival in the relevant market.[19]

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[16] There are really two separate points here. The first is the inevitability of errors with decision by legal rule generally. *See* Easterbrook, *supra* note 17, at 14-15 (reiterating that "one cannot have the savings of decision by rule without accepting the costs of mistakes."). The second point is that the likelihood of antitrust error depends crucially on the development of economic science to produce techniques and methods by which we can successfully identify conduct that harms consumers. *See also* Frank H. Easterbrook, *Workable Antitrust Policy*, 84 MICH. L. REV. 1696 (1986).

[17] Easterbrook, *supra* note 17, at 15.

[18] This is a point most often attributed to then Judge Breyer's well known admonition that antitrust rules "must be administratively workable and therefore cannot always take account of every complex economic circumstance or qualification." Town of Concord v. Boston Edison Co., 915 F.2d 17, 22 (1st Cir. 1990). But the Chicago School of antitrust has traditionally shared with Breyer's Harvard School a preference for using economics to generate simple and administrable rules rather than overly sophisticated economic tests. *See* Joshua D. Wright, *The Roberts Court and the Chicago School of Antitrust: the 2006 Term and Beyond*, 3 COMP. POL'Y INTL. 25, 27 (2007); William Kovacic, *The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: the Chicago/Harvard Double Helix*, 2007 COLUM. BUS. L. REV. 1, 32-35 (2007) .

[19] Easterbrook, *supra* note 17, at 18.

Error Costs and Innovation

Easterbrook's analysis of antitrust errors lends itself to a Bayesian decision-theoretic framework designed to address problems of decision-making under uncertainty, and economists have applied the framework to identify optimal rules for a range of practices including tying, exclusive dealing, mergers and RPM.[20] Applying this approach, the regulator, court or policymaker holds a prior belief about the likelihood that a specific business practice is anticompetitive. These prior beliefs are updated with new evidence either as the theoretical and empirical understanding of the practice evolves over time or with case-specific information. The optimal decision rule is then based on the new, updated likelihood that the practice will be anticompetitive by minimizing a loss function measuring the social costs of Type I (false positive) and Type II (false negative) errors.[21]

The fundamental insight from the *Limits of Antitrust*, and the insight that drives a wedge between the treatment of Type I and Type II errors, is that Type I errors are likely, on average, to be more costly to society and consumers than Type II errors because market forces place some constraints on the latter but not the former.[22] Indeed, this insight becomes more and not less important

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[20] *See generally* Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, 5 COMP. POL'Y INTL. 179 (2009) (hereinafter "*Overshot the Mark*"); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001); C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999).

[21] *See generally* James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005). *See also* Keith N. Hylton, *The Law and Economics of Monopolization Standards*, *in* ANTITRUST LAW AND ECONOMICS (forthcoming 2010).

[22] Multiple academics review the existing theory and evidence on vertical restraints and single firm conduct more generally and uniformly conclude that the practices at issue are generally pro-competitive and that antitrust rules should "slant" towards requiring plaintiffs to demonstrate clear anticompetitive effect before condemning finding violations. *See, e.g.,* Cooper et. al, *supra* note 24; Francine Lafontaine and Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, *in* HANDBOOK OF ANTITRUST ECONOMICS (Paolo Buccirossi, ed., forthcoming 2009); Daniel P. O'Brien, *The Antitrust Treatment of Vertical Restraints, in* Report: The Pros and Cons of Vertical Restraints 40 (2008), *available at* http://www.konkurrensverket.se/upload/Filer/Trycksaker/Rapporter/Pros&Cons/rap_pros_and_cons_vertical_restraints.pdf.

as our collective economic wisdom about a new business practice decreases—when, in other words, a challenged practice or setting is innovative. All things equal, the error-cost framework calls for a more interventionist antitrust rule when Type II error costs are substantial, there are strong priors that the given practice is anticompetitive, and theory and evidence suggest a strong likelihood that the practice is anticompetitive.

There are several potential sources of error in antitrust analysis and enforcement. In this discussion we focus almost exclusively on what we believe to be the most significant type of error: A court's or regulator's erroneous conclusion that a practice is anticompetitive. The root cause of this type of error lies at the core of the antitrust enterprise: it is a difficult task to identify anticompetitive conduct and distinguish it from pro-competitive conduct in any specific case. On the one hand it is problematic (and unfortunately common) for judges to condemn business practices that economists either do not yet understand or misunderstand to be anticompetitive: Antitrust lawyers and economists have a long and storied history of systematically assigning anticompetitive explanations to conduct that is novel and not well understood. On the other hand judges not generally trained in economics are asked to make increasingly sophisticated economic determinations, and errors are inevitable, not because the economic theory is demonstrably "wrong" or inadequate (although sometimes it may be), but rather because reliance on the theory may be inappropriate.[23]

Consider, for example, the body of economic knowledge concerning the relationship between market concentration and price. The late 1950s and early 1960s were a period of time in which state of the art economic analysis viewed the problem of market concentration and oligopolistic collusion as the "principal defect of present antitrust law."[24] Scholars urged Congress to pass new legislation aimed at reducing market concentration across the economy and a, White House Task Force Report on Antitrust Policy endorsed various forms of such proposals.[25] Kovacic and Shapiro have described the era

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[23] *See generally* Michael R. Baye & Joshua D. Wright, *Is Antitrust Too Complicated for Generalist Judges? The Impact of Economic Complexity & Judicial Training on Appeals*, __ J. L. & ECON. __ (forthcoming 2010)(finding a statistically significant tendency for economically trained judges to perform better in simple antitrust cases, but not those involving sophisticated economic evidence).

[24] CARL KAYSEN & DONALD TURNER, ANTITRUST POLICY: AN ECONOMIC AND LEGAL ANALYSIS 110 (1959).

[25] *White House Task Force Report on Antitrust Policy,* 2 ANTITRUST L. & ECON. REV. 11, 14-

producing well known and universally criticized decisions like *Vons Grocery*,[26] *Procter & Gamble,*[27] *Pabst Brewing,*[28] and *Brown Shoe*[29] as exhibiting "considerable consistency between judicial decisions and economic thinking."[30]

That is not to say that the economic errors and contradictions in the Court's analyses were invisible to all at the time. In dissent in *Vons Grocery*, for example, Justice Stewart argued that "even the most superficial analysis of the record makes plain the fallacy of the Court's syllogism that competition necessarily reduced when the bare number of competitors has declined."[31] Nor did the relationship between antitrust error and innovation escape Justice Stewart, who admonished the majority in *Vons* that "the Clayton Act was never intended by Congress for use by the Court as a charter to roll back the supermarket revolution" and made the obvious economic point that "the numerical decline in the number of single-store owners is the result of transcending social and technological changes that positively preclude the inference that competition has suffered because of the attrition of competitors."[32] But the costly errors in those cases were largely attributable to the courts' reliance on, rather than rejection of, then-current economic science.

At the same time, without a serious methodological commitment to economic science, the incorporation of economics into antitrust is merely a façade allowing regulators and judges to select whatever economic model fits their prior beliefs or policy preferences rather than the model that best fits the real world data. Economic theory remains essential to antitrust law; it is economic analysis that constrains antitrust law and harnesses it so that it is used to protect consumers rather than competitors. And, to be sure, the relationship between economics and antitrust is responsible for the successful evolution of antitrust from its economically incoherent origins to its present state. But in our view, the fundamental challenge for antitrust is one that is

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15, 65-76 (1968-69).

[26] U.S. v. Vons Grocery, 384 U.S. 270 (1966).

[27] *Federal Trade Commission v. Procter & Gamble Co.,* 386 U.S. 568 (1967).

[28] *United States v. Pabst Brewing Co.,* 384 U.S. 546 (1966).

[29] *Brown Shoe Co. v. United States,* 370 U.S. 294 (1962).

[30] William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Legal and Economic Thinking*, 14 J. ECON. PERSP. 43, 52 (2000). *See also* William E. Kovacic*, The Influence of Economics on Antitrust Law*, 30 J. ECON. INQ. 294, 295-96 (1992) (describing features of U.S. competition policy system that give economists major role in shaping antitrust rules).

[31] U.S. v. Von's Grocery Co., 384 U.S. 270, 281 (1966) (Stewart, J., dissenting).

[32] *Id*. at 278-88.

created by having "too many theories" without methodological commitments from regulators and courts on how to select between them.

The proliferation of economic models that came along with the rise of Post-Chicago economics, integration of game theory into industrial organization, and now increasing calls to incorporate insights from behavioral economics into antitrust and competition policy has led to a state of affairs where a regulator or court has a broad spectrum of models to choose from when analyzing an antitrust issue, but antitrust has not provided that decision-maker with sensible criteria for making that model selection decision. Taken to the extreme, this model selection problem threatens to strip the disciplining force that economics has placed on antitrust law and which was a key part of the successful evolution of that body of law over the last fifty years.[33] The power of the error-cost framework is that it allows regulators, judges and policy makers to harness the power of economics (and the state of the art theory and evidence) through the formulation of simple and sensible filters and safe harbors, rather than convert themselves into amateur econometricians, game-theorists, or behaviorists.

Innovation has the potential to magnify these errors in two important ways. The first is that innovation by definition generally involves new business practices or products. Novel business practices or innovative products have historically not been treated kindly by antitrust authorities and economists have had a longstanding tendency to ascribe anticompetitive explanations to new forms of conduct that are not well understood. As Nobel Laureate Ronald Coase described in lamenting the state of the industrial organization literature:

> if an economist finds something—a business practice of one sort or another—that he does not understand, he looks for a monopoly explanation. And as in this field we are very ignorant, the number of understandable practices tends to be very large, and the reliance on a monopoly explanation, frequent.[34]

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[33] Joshua Wright, *Commissioner Rosch, Rhetoric, and the Relationship Between Economics and Antitrust*, TRUTH ON THE MARKET (June 12, 2009, 11:55 AM), at http://www.truthonthemarket.com/2009/06/12/commissioner-rosch-rhetoric-and-the-relationship-between-economics-and-antitrust/; *see also* Wright, *supra* note 23.

[34] Ronald Coase, *Industrial Organization: A Proposal for Research, in* POLICY ISSUES AND RESEARCH OPPORTUNITIES IN INDUSTRIAL ORGANIZATION (Victor R. Fuchs, ed., 1972). For more modern critiques of the industrial organization literature in the same vein, *see* Timothy J. Muris, *Economics and Antitrust*, 5 GEO. MASON. L. REV. 303 (1997), Bruce H.

With the increasing integration of economic concepts into antitrust law and almost universal agreement over the assertion that modern economics contains useful tools for incorporating innovation effects into traditional antitrust analysis,[35] the anti-market bias in the antitrust economics profession described by Coase is likely to have even more-significant policy consequences in modern antitrust. From an error-cost perspective, the critical point is that antitrust scrutiny of innovation and innovative business practices is likely to be biased to assign higher likelihood that a given practice is anticompetitive than the subsequent literature and evidence will ultimately suggest is reasonable or accurate.

This bias toward committing Type I error is skewed only further by the fact that, as a general rule, economists know much less about the relationship between competition and innovation, and in turn, consumer welfare, than they do about standard price competition.[36] The antitrust community appears enthusiastically to endorse the proposition that not only should antitrust analysis more rigorously incorporate dynamic efficiencies and innovation effects, but could comfortably do so within its current analytical framework:

> "[C]urrent antitrust analysis has a sufficient grounding in economics and is sufficiently flexible to reach appropriate conclusions in matters involving industries in which innovation, intellectual property, and technological change are central features."[37]

But this claim is almost certainly over-stated. While we know that innovation is critical to economic growth, the theoretical literature relating to

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Kobayashi, *Game Theory and Antitrust: A Post Mortem*, 5 GEO. MASON L. REV. 411 (1997) (reviewing critiques of the IO literature); Evans and Padilla, *supra* note 18.

[35] ANTITRUST MODERNIZATION COMMISSION, REPORT AND RECOMMENDATIONS 32 (2007) (recommending that "in industries where innovation, intellectual property, and technological change are central features . . . antitrust enforcers should carefully consider market dynamics in assessing competitive effects . . . .").

[36] *See, e.g.*, Joshua D. Wright, *Antitrust, Multi-Dimensional Competition, and Innovation: Do We Have An Antitrust Relevant Theory of Competition Now?, in* REGULATING INNOVATION: COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY (Geoffrey A. Manne & Joshua D. Wright, eds., Cambridge University Press, forthcoming 2010); *see generally* Geoffrey A. Manne & Joshua D. Wright in *id*. at ch.1 (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1462489).

[37] ANTITRUST MODERNIZATION COMMISSION, REPORT AND RECOMMENDATIONS 38 (2007)

competition and innovation remains insufficient to instill any great confidence in our ability to determine what antitrust policies will encourage innovation and result in net consumer welfare gains. Specifically, our ability to apply antitrust standards depends on our ability to predict how a rule will impact the *mixture* of competitive forms that will exist after the policy is implemented and to rank these mixtures on consumer welfare or efficiency criteria.[38] On this dimension state of the art economic theory is currently indeterminate at best. [39]

Moreover, one key problem with the economist's incentives to identify theoretical possibilities of anticompetitive behavior, and the inhospitality tradition in antitrust law that takes advantage of it, is the enormous difficulty of identifying when specific application of the theory can be rejected. "Whenever an antitrust court is called on to balance efficiency against monopoly, there is trouble; legal uncertainty, and the likelihood of error, soar."[40] Certainly it is not always the case that an exclusionary innovation is necessarily anticompetitive. Even an innovation that might be anticompetitive *sometimes* will be unlikely to be anticompetitive *all the time*. Thus, a key critique of the modern industrial organization literature and its possibility theorems involving anticompetitive behavior has been that it fails to consistently produce testable implications.[41] Indeed, a review of the leading modern industrial organization textbooks and literature surveys reveals game theoretic models identifying conditions under which just about every contractual arrangement, product innovation, or business activity could result in consumer harm.[42]

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[38] *See* Wright, *supra* note 36.

[39] Richard J. Gilbert, *Competition and Innovation*, *in* 1 ISSUES IN COMPETITION LAW AND POLICY 577, 583 (W. Dale Collins ed., 2008) ("economic theory does not provide unambiguous support either for the view that market power generally threatens innovation by lowering the return to innovative efforts nor the Schumpeterian view that concentrated markets generally promote innovation.").

[40] Posner, *supra* note __, at 932.

[41] *See generally* Evans & Padilla, *supra* note 18; Wright, *supra* note 23, at ___. In addition to a general insensitivity to the facts and market conditions of the particular cases in which these theorems are to be applied, as noted above, the literature is particularly insensitive to the institutional and political economy limitations of enforcers and courts.

[42] *See generally* JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION (1988); *see also* Comments from Timothy J. Muris, Antitrust Law, Economics, and Bundled Discounts (July 15, 2005), *available at* http://govinfo.library.unt.edu/amc/commission_hearings/pdf/Muris.pdf ("In the same way that a visitor from Mars who reads only the mathematical IO literature could mistakenly conclude that the U.S . economy is rife with monopoly power, it would be a

The critical point here is that innovation is closely related to antitrust error. Because innovation involves new products and business practices, courts and economists' initial understanding of these practices will skew initial likelihoods that innovation is anticompetitive and the proper subject of antitrust scrutiny. To the extent that modern antitrust analysis relies even more heavily on economics, the problem is exacerbated. Further, to the extent that economists have less systematic theoretical and empirical knowledge about the relationship between competition and innovation on policy-relevant margins than they do about other traditional forms of competition, this bias is likely to do more damage.

The second critical link between antitrust error and innovation is that, relative to non-innovation cases, the stakes are higher. While the empirical literature does not contain reliable information on the relative magnitudes of Type I and Type II error costs, the well-established empirical link between innovation and economic growth tells us that the stakes of error are much higher.[43] Moreover, new goods are generally quite valuable, and the cost to deterring the introduction of new goods and expenditures on innovation, both of which are potentially costly and extremely risky, is high.[44] For the same reason, regulatory interventions of all sorts, especially antitrust cases, undertaken against a product innovation are particularly risky. Furthermore, based on Easterbrook's central assumption, itself based in turn on bedrock economic principles, Type I errors are likely to be significantly more costly than Type II errors because market forces offer at least a partial corrective in the case of the latter. In the innovation context, successfully challenging business or product innovations is likely to dampen innovation across the economy whereas Type II errors are at least mitigated in part by entry and other competition.

And while some innovations—particularly technological advances—are

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mistake to infer that the growing volume of theoretical papers examining bundling or bundled rebates as an exclusionary device implies that there is *any* growing or significant danger from the anticompetitive use of bundling").

[43] *See, for example,* Charles I. Jones & John C. Williams, *Measuring the Social Return to R&D*, 113 Q. J. ECON. 1119 (1998) (estimating that the social return to R&D investment far exceeds the private return, meaning existing incentives for innovation are already lower than optimal).

[44] *See generally* THE ECONOMICS OF NEW GOODS 209 (Timothy F. Bresnahan & Robert J. Gordon, eds., 1997); *see also* Easterbrook, *supra* note ___, at ___.

evident, others may be somewhat more difficult to identify but nonetheless generate enormous welfare gains for consumers.[45] It is because of these dynamic and often largely-unanticipated consequences of novel technological innovation that both the likelihood and social cost of erroneous interventions against innovation are increased. Less obviously, but of at least equal importance, it is also the case that *business* innovations—innovations in organization, production, marketing, and/or distribution—can have similar, far-reaching consequences.[46]

Unfortunately, a significant portion of important antitrust cases can be characterized as interventions undertaken under uncertainty, in the face of a novel business practice or product, relying on fundamentally flawed or misapplied economic analysis, subsequently demonstrated to have been mistaken. In some cases the courts do, indeed, correct the error of the initial enforcement or litigation decision; in most they do not.

When viewed through the error cost lens, the combination of (1) the anti-market bias in favor of monopoly explanations for innovative conduct that courts and economists do not understand and (2) the increased stakes of antitrust intervention against innovative business practices is problematic from a consumer welfare perspective.

A proper application of error-cost principles would deter intervention in such cases until empirical evidence could be amassed and assessed. Nevertheless, it is precisely in these situations, unfortunately, that intervention may be more likely. On the one hand this may be because in the absence of information *disproving* a presumption of anticompetitive effect, there is an easier case to be made against the conduct—this despite putative burden-shifting rules that would place the onus on the complainant. On the other hand, successful innovations are also more likely to arouse the ire of competitors and/or customers, and thus both their existence and their negative characterization are more likely brought to the attention of courts or enforcers—abetted in private litigation by the lure of treble damages.

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[45] *See, e.g.*, Jerry Hausman, *Valuation of New Goods Under Perfect and Imperfect Competition*, *in* THE ECONOMICS OF NEW GOODS 209-67 (Bresnahan & Gordon eds., 1997) (discussing the consumer welfare gains from new product introductions and product line extensions).

[46] Oliver E. Williamson, MARKETS AND HIERARCHIES, ANALYSIS AND ANTITRUST IMPLICATIONS: A STUDY IN THE ECONOMICS OF INTERNAL ORGANIZATION (1975).

This hostile stance toward novel economic behavior and the institutionalization of laws and processes that tend to condemn innovative behavior absent procompetitive justification are particularly problematic because there may be only a weak connection between corporate actors' actions and their consequences. Judge Easterbrook highlights this problem:

> Wisdom lags far behind the market. It is useful for many purposes to think of market behavior as random. Firms try dozens of practices. Most of them are flops, and the firms must try something else or disappear. Other practices offer something extra to consumers—they reduce costs or improve quality—and so they survive. In a competitive struggle the firms that use the best practices survive. Mistakes are buried.
>
> Why do particular practices work? The firms that selected the practices may or may not know what is special about them. They can describe what they do, but the why is more difficult. Only someone with a very detailed knowledge of the market process, as well as the time and data needed for evaluation, would be able to answer that question. Sometimes no one can answer it.[47]

It makes little sense to demand that economic actors identify, understand, and assess the procompetitive, profit maximizing basis for their behavior, as they are hampered by "imperfect foresight and human inability to solve complex problems containing a host of variables even when an optimum is definable."[48]

A fortiori, these limitations apply even more strongly to regulators and courts, and should counsel them against assumptions based on inferences about the anticompetitive consequences of unexplained, novel economic behavior (or worse, the anticompetitive intentions of economic actors). But these assumptions are frustratingly common, and the dominant approach to assessing the economic consequences of novel conduct in monopolization cases is problematic.

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[47] Easterbrook, *supra* note 17, at 5.
[48] Armen Alchian, *Uncertainty, Evolution, and Economic Theory*, 58 J. POL. ECON. 211, 212 (1950).

Consider, for example, the *Microsoft* case,[49] the jurisprudential approach in which is now the standard for high-tech monopolization cases. The fundamental error in Microsoft was not necessarily in the court's conclusion but rather in its approach to assessing the complex and novel economics of the case. On the one hand, given the court's finding of monopoly power, its approach to fairly standard categories of specific exclusionary conduct undertaken by Microsoft (like, for example, in its interactions with Netscape), is fact-specific, difficult to generalize and relatively uncontroversial.

But the approach to the monopoly power determination itself is more troubling, based as it is on some tenuous economic assumptions, ad hoc resolution of complex economic disputes, and a dearth of direct economic evidence. In perhaps predictable fashion, the court in Microsoft bases its decision on the presumed implications of a theoretical analysis of a set of market conditions and business conduct that, the court says, grants market power to Microsoft. Evidence of harm to the competitive process from specific acts that result in monopoly power—as required by modern Sherman Act jurisprudence—is unfortunately lacking.[50]

In fact the court's approach shunned Microsoft's offer of direct evidence on market power, substituting instead a set of conclusions built on controversial economic theory without empirical support. As we have suggested, such an approach is particularly problematic in the face not only of the court's necessary ignorance about the economics and technology involved, but also the economic ramifications of over-deterring investment in innovative technologies and business practices.

For the remainder of this article we will discuss the application of the principles of the error cost framework and in the context of what may be the next great monopolization case: Google. We don't have any special crystal ball available to us, but even if no government enforcement action is ever brought against Google, it presents a fascinating set of facts.[51] In particular, although most commentators seem to view Google largely as a *product* innovator, it is in

[49] U.S. v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001).

[50] Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 (2004).

[51] Google has already been the defendant in several private antitrust suits—surely this will not be the last. *See*, , *e.g.*, Kinderstart.com LLC v. Google, Inc., No. C 06-2057 JF (RS), 2007 WL 831806 (N.D. Cal. Mar. 16, 2007).

fact both a product innovator as well as a *business* innovator. Moreover, the two categories of innovation are inextricably intertwined, perhaps multiplying the likelihood (and incidence?) of erroneous antitrust enforcement decisions. In the absence of obvious exclusionary business practices (or innovations), Google may well escape significant government antitrust attention or liability (rightly or wrongly). Nevertheless, Google presents a unique melding of business and product innovation and, thus, is an interesting and important case for study.

3. THE UNCERTAIN ECONOMICS OF GOOGLE'S BUSINESS AND GOOGLE'S MARKET

Antitrust agencies and commentators have already taken significant interest in Google and its activities. Among other things, Google has faced an investigation by the DOJ into its proposed joint venture with Yahoo!,[52] as well as a possibly-ongoing investigation by the FTC into Google and Apple's interlocking boards.[53] It faces ongoing scrutiny (and a formal DOJ investigation) over its settlement of a suit over its Google Books project.[54] Moreover, it has faced a full antitrust review in multiple jurisdictions of its merger with DoubleClick.[55] Meanwhile, Google has been the target of private litigation that has included antitrust claims.[56]

Google is a large, arguably dominant, interesting, innovative, high-tech company. Each of these factors unto itself historically provokes untoward

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[52] *See, e.g.*, Stephen Shank land, *Yahoo-Google deal doomed? No, they insist*, CNET.COM NEWS, http://news.cnet.com/8301-1023_3-10071478-93.html (last visited Dec. 31, 2009).

[53] Paul Suarez, *FCC on Apple, DOJ on Google – the Feds are Tackling Tech*, PC WORLD, http://www.pcworld.com/article/172295/fcc_on_apple_doj_on_google_the_feds_are_tackling_tech.html (last visited Dec. 31, 2009).

[54] Miguel Helft, *Justice Dept. Opens Antitrust Inquiry Into Google Books Deal*, NYTIMES.COM, http://www.nytimes.com/2009/04/29/technology/internet/29google.html (last visited Dec. 31, 2009). Note the DOJ's brief in the case, the court's grant of a delay and ongoing renegotiations.

[55] Steve Lohr, *Google Deal Said to Bring U.S. Scrutiny*, NYTIMES.COM, http://www.nytimes.com/2007/05/29/technology/29antitrust.html (last visited Dec. 31, 2009); Press Release, Federal Trade Commission, Federal Trade Commission Closes Google/DoubleClick Investigation (Dec. 20, 2007), *available at* http://www.ftc.gov/opa/2007/12/googledc.shtm.

[56] *See generally* Kinderstart, *supra* note __.

antitrust scrutiny; when taken together, they render Google ripe for erroneous antitrust intervention. Google's competitors are both powerful and feel threatened,[57] and Google enjoys a ubiquitous brand. Its business is in the high-tech world from whence almost all modern monopolization cases come. Moreover, its business is information, the economics of which is poorly understood and of peculiar concern in today's world of ultra-low transaction cost communication.[58]

At the same time, defining relevant antitrust markets for Google poses an interesting problem: because Google in part performs a traditional function but in a novel medium, and because the economics of its business are poorly understood, there is a question as to whether Google's businesses—particularly its advertising businesses—exist in the same economically-relevant market as more traditional forms of advertising. Compounding this complexity is the unique fact that many of Google's innovations have served to differentiate its product in important ways from more traditional versions—offering, for example, much more targeted advertising than is possible in many other settings. Thus, not only the medium, but also Google's technological and business innovations seem to differentiate it from more traditional competitors.

Of course, Google appears to have a large share, by some measures, of some markets in which it participates. Whether these large shares are economically relevant is a difficult, but essential, question—turning not only on whether the market is properly defined, but also on whether we understand the implications of high concentration and the nature of competition and contestability in these markets. Moreover, as mentioned, Google's particular contractual and pricing practices are undertaken in an uncertain context, generally unanticipated by current models and often misunderstood by businessmen and policymakers themselves.

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[57] Nicholas Thompson & Fred Vogelstein, *The Plot to Kill Google*, WIRED, http://www.wired.com/techbiz/it/magazine/17-02/ff_killgoogle (last visited Dec. 31, 2009).

[58] On the economics of information, we've progressed little since George Stigler's important account of the economics of information and the importance of search—of obviously important application here. *See* George J. Stigler, *The Economics of Information*, 69 J. POL. ECON. 213 (1961). Although much of the economics of networks and IP—information technology—has made important advances, Stigler's fundamental point (also Hayek's) that information is a good like any other, subject to the economics of scarcity, still undergirds our understanding today.

Finally, Google has extremely active competitor-complainants, and confronts today a relatively hostile antitrust enforcement community itself explicitly hostile to the error cost concerns we raise here.[59] Whether this hostility is rooted in ideological predisposition to alternative models or a stringent preference for more interventionist antitrust policy, it nonetheless threatens to cast a broad shadow over Google's future business decisions.

The difficulty, of course, is in parsing out the difference between anticompetitive conduct undertaken by a monopolist, and "growth or development as a consequence of superior product, business acumen, or historic accident,"[60] particularly in the environment of uncertainty and problematic incentives that we have described. The remainder of this section offers an overview of Google's business and the markets in which it operates. The discussion here is intended to highlight some of the complexities of Google's business structure and some of the basic dynamics of Google's markets—including importantly the role of network effects in its primary search advertising business.

Although Google engages in a wide array of businesses and sells a wide array of products, its antitrust challenges to date (with the exception of its ambitious Book Search project) have centered around its search and display advertising businesses. As some have noted, Google is, at root, in the advertising business.[61] Our discussion here centers most heavily on Google's search advertising business, where it has the most significant presence. To the extent that we discuss Google's display advertising business, it is largely ancillary to the discussion of its search advertising business.

Some basics of online search

When a user enters a query on Google's search website, two types of results are generated: Organic or natural results, and sponsored or paid links. Google's organic search results are generated at no direct cost to the websites to which they link. In essence, Google's search engine reviews webpage content and produces a list of the pages most relevant to each user's particular search query. The search engine also assesses how relevant a website's content is to a user's query by looking at how many other relevant websites link to it. The

[59] *See* Varney, *supra* note 10.
[60] 384 U.S. at 571.
[61] *See, e.g.*, KEN AULETTA, GOOGLED: THE END OF THE WORLD AS WE KNOW IT 16 (2009) (quoting Google CEO, Eric Schmidt saying "We are in the advertising business").

final organic results are located on the left-hand side of Google's search results page.

Google's sponsored links are produced for businesses interested in advertising and willing to pay when users click on their ads. These advertisements are generated based on the keywords a user enters as his query using Google's search engine. These sponsored links are located on the top and/or right-hand side of the search results page. The majority of Google's revenue comes from the sale of these sponsored links and other similarly-generated search advertisements.

Google's products—whether paid or organic—are built on its innovative PageRank method, an algorithm developed by Larry Page and Sergey Brin, who founded Google. PageRank (some variation of which is now used by all search engines) remains an essential part of Google's search business, but is embedded within a complex of additional innovations, as well as a set of innovative business methods that facilitate the sale of search results to advertisers. In addition to PageRank, Google's search results are built on a host of innovative technologies, including

> language models (the ability to handle phrases, synonyms, diacritics, spelling mistakes, and so on), query models (it's not just the language, it's how people use it today), time models (some queries are best answered with a 30-minutes old page, and some are better answered with a page that stood the test of time), and personalized models (not all people want the same thing).[62]

The amount Google charges for sponsored links is calculated according to a keyword auction conducted through Google's AdWords platform. These auctions are automated based on a set of parameters specified by each advertiser and occur essentially instantaneously every time a keyword is entered into Google's search engine. An advertiser who places a higher bid for a keyword will, in return, receive better placement of its advertisements when a user enters that keyword as part of his search. In addition, Google employs an innovative quality metric that adjusts the placement and cost to the advertiser of sponsored links based on the links' relevance to the search query and the

[62] Google, Inc., Introduction to Google Search Quality, http://googleblog.blogspot.com/2008/05/introduction-to-google-search-quality.html (last visited Dec. 31, 2009).

quality of the underlying webpage. In the end, advertisers pay Google only if a user actually clicks on the displayed advertisement, and the amount they pay is generally determined by the amount of the next-highest bid and the quality score adjustment (where higher quality scores may result in lower costs).

Google also receives advertising revenue by selling advertisements through its AdSense application. AdSense allows Google to place advertisements in designated spaces on third-party websites. Just as AdWords does, Google's AdSense application displays advertisements based on the keywords a user enters as part of his query (if there is one) along with a quality score adjustment. Again, advertisers pay Google only when a user clicks on the displayed advertisement. Google then splits the revenue with the third-party website that hosted the advertisement.

Google's Market

A preliminary issue for assessing Google and Google's business is determining in which relevant market it operates. While colloquially it is understood that Google is the dominant search provider and search advertising provider in an online search market comprised of Google, Microsoft and Yahoo!, the antitrust relevance of this assessment must be doubted.

The competitive landscape confronting Google is complex, and Google plainly faces competitive threats from a range of sources, both actual and potential; the notion of a well-cabined, "online search advertising market" is decidedly messy. The antitrust-specific question is whether this messiness is significant enough to cast doubt, absent viable econometric data, on the antitrust relevance of a simplified "online search advertising market." There is reason to be skeptical.

One set of facts, taken from a website recounting European search engine statistics from 2006-2007 suggests a range of problems with the simplified market story. The website notes (with our own comments here interspersed), among other things, that:

- On average searchers spent 27 minutes on search engines each month and viewed 93 search pages, accounting for 3.4% of total time spent online *[meaning the vast majority of time spent online is spent on websites other than search engines—each of which presents a possible advertising outlet]*.

- Over 60% of search engine visitors use at least two different search engines *[meaning, as Google so often asserts, competition really is "just a click away" for a significant number of users]*.
- Many users use a search engine as their point of entry to the Internet *[but many don't—suggesting that it is important to investigate how these alternate internet access portals (including vertical search engines, social media sites and direct retail sites) compete with search engines]*.
- Searcher behaviour varies on different search engines *[suggesting that users may optimize for different search engine characteristics, permitting successful product differentiation]*.
- 62% of advertisers surveyed said they plan to increase search marketing spend over the next 12 months *[suggesting increasing advertising budgets devoted to online outlets and increasing pressure on the trade-off between traditional and online advertising].*
- The main objective for most search marketers is to generate online sales and build brand awareness *[hardly surprising, but important to note that online search advertising is not only about generating sales, but also about the sort of brand marketing associated with traditional advertising].*
- The main problem advertisers face was found to be increasing competition *[an important and unsurprising fact suggesting diminishing returns to scale, the absence of direct network effects, and an important opportunity for less-congested competitors to attract advertising revenues].*
- Mobile search, video search and pay per call are areas where advertisers plan to spend more in 2007 *[online search advertising faces competition from other non-traditional sources, as well, and the source of future competitive threats is uncertain].*[63]

[63] These statistics are taken from the webpage, "Search Engine Statistics for 2006-2007," on the website of AccuraCast, a UK-based search engine marketing agency, *available at* http://www.accuracast.com/seo-weekly/se-statistics.php (last visited December 28, 2009).

These are hardly scientific assessments, or a full blown economic analysis, but these facts and their implications do suggest that an assessment of the true economically-relevant market for search advertising is an extremely complicated endeavor. The assessment is highly prone to error and certainly more nuanced than colloquial assessments would suggest. That colloquial observations identify a given market by a specific product within that market does not obviate the need for critical, evidence-based analysis of the relevant product market in which Google operates.

In the absence of specific econometric data to determine the cross-elasticities of supply and demand, we are stuck with a more imprecise and qualitative assessment of Google's relevant market. Even a qualitative assessment, however, reveals that Google's market is almost certainly either broader or narrower than the presumed "online search advertising" market.

The first question, of course, is whether Google operates in a broad advertising market including all or most forms of advertising, online and offline. There is actually substantial reason to doubt the propriety of a narrow market definition limited to merely online search advertising. In the first place, the general defense of the proposition is neither economic nor econometric, but anecdotal: some advertisers suggest that they don't view print and online advertising as competitors, nor search and "contextual" or display advertising.[64] But other advertisers clearly see the connection, especially within the constraints of limited advertising budgets. One survey of 200 online retailers found that "online advertisers do in fact perceive the three channels of online advertising [search, display and contextual] to be substitutes."[65] Among other things, the survey found that "[i]n weighted terms, respondents representing 83 percent of all ad spending view graphic ads and search ads as substitutes."[66] At least one court has likewise determined that all forms of online advertising, at least, are in the same relevant market for antitrust analysis.[67]

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[64] "Thus, search engines provide a unique opportunity for advertisers to reach potential customers. Advertisers view online content providers differently." Statement of Federal Trade Commission c*oncerning* Google/DoubleClick, FTC File No. 071-0170 at 3 (December 20, 2007), *available at* http://www.ftc.gov/os/caselist/0710170/.

[65] Robert W. Hahn & Hal J. Singer, *An Antitrust Analysis of Google's Proposed Acquisition of DoubleClick*, AEI-Brookings Joint Center Related Publication 07-24 at 5, 24-32 (2008).

[66] *Id*. at 29.

[67] *See* KinderStart.com, *supra* note ___, at ___ (noting that "there is no logical basis for distinguishing the Search Ad Market from the larger market for Internet advertising"); Person v. Google, 456 F. Supp. 2d. 488 (S.D.N.Y. 2006).

Even where the "purpose" is different between the different types of advertising ("brand recognition" for display ads; "efforts to sell" for search ads), this is merely a difference in degree (both are forms of reducing the costs of search a la Stigler)—and the relevant question is whether the difference is significant enough to render decisions in one market essentially unaffected by decisions or prices in the other.

There is some additional anecdotal evidence that this is not the case. One recent example is Pepsi's decision not to buy TV advertising during the Super bowl in 2010 in order to focus instead on a particular type of online campaign. "This year for the first time in 23 years, Pepsi will not have ads in the Super Bowl telecast. . . . Instead it is redirecting the millions it has spent annually to the Internet."[68] Would Pepsi's decision have been different if online advertising were somewhat more expensive? One logically has to assume that it would (although we don't know how inelastic its demand is), given that apparently financial constraints impelled Pepsi to forbear from certain expensive (and highly sought after) TV advertising at the same time as engaging in its Internet strategy.[69]

Another study suggests that there is indeed a trade-off between online and more traditional types of advertising: Avi Goldfarb and Catherine Tucker demonstrate that display ad pricing is sensitive to the availability of offline alternatives.[70] This intuition is quite logical, of course. Companies have limited advertising budgets, distributed across a broad range of media and promotional efforts. As one commentator notes,

> By 2011 web advertising in the United States was expected to climb to sixty billion dollars, or 13 percent of all ad dollars. This meant more dollars siphoned from traditional media, with the largest slice probably going to Google.[71]

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[68] ABC editorial, "Pepsi Not Advertising in Super Bowl Next Year," December 17, 2009 *available at* http://abcnews.go.com/Sports/wireStory?id=9362942.

[69] Meanwhile, many advertisers do manage "comprehensive" advertising budgets that allocate spending between online and other media depending on a combination of effectiveness and price. This is hardly surprising.

[70] Avi Goldfarb & Catherine Tucker, *Search Engine Advertising: Pricing Ads to Context*, NET Institute Working Paper #07-23 (Sept. 2007) *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1021451&rec=1&srcabs=1008496 (determining the price of "ambulance chaser" lawyer ads was significantly more expensive in states prohibiting direct mail solicitation by attorneys).

[71] KEN AULETTA, GOOGLED, *supra* note __ at 16.

It is true that at least one study[72] concludes that online and offline advertising are *not* economically-relevant substitutes, and no doubt these interactions and cross-elasticities are complicated, nuanced, and difficult to detect, isolate, and identify with certainty. Nevertheless, it is worth pointing out that this study was limited to *local* advertising. While the reverse dynamic probably also exists (that is, online-only retailers probably find offline advertising less effective than online advertising[73]), the presence of a significant enough number of national or international advertisers without an online-only presence can exert a significant competitive pressure on advertising prices both online and offline, even if local-only advertising is not a significant constraint on online advertising.[74]

Advertising revenue on the Internet is driven initially by access to eyeballs—by the size of the audience—with a significant multiplier for the likelihood that those eyeballs will purchase the advertisers' products (based on a viewer's propensity to "click through" to the advertiser's site). Competition for Google thus comes, in varying degrees, not only from other search sites, but also from any other site that offers a service, product or experience that consumers might otherwise obtain by first searching through Google.

Social media sites like Twitter and Facebook are therefore significant competitors as well, occupying as they do a considerable amount of Internet "eyeball" time. In fact, the Pepsi deviation of advertising revenue from the Super Bowl to the Internet is not likely to inure much to Google's benefit as the

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[72] Leonard N. Reid, et al., *Local Advertising Decision Makers' Perceptions of Media Effectiveness and Substitutability*, 18 J. MEDIA ECON. 1 (2005).

[73] Although it is worth pointing out that Google itself—in online search, the essence of an online-only company—recently advertised its online search on television during the Super Bowl.

[74] And, not surprisingly, large national advertisers are among AdWords' top customers. During one 30-day period in September 2009, the top five AdWords spenders included Progressive, Target and Geico (the other two were Expedia and AOL, both of which have online-only presences). *See* http://fruition.net/ppc-management/biggest-online-ad-spenders-with-adwords-top-ppc-advertisers/ (last visited December 29, 2009).

It should also be noted that the Goldfarb and Tucker study refutes quite strongly even the claim that *local* advertisers don't see online and offline advertising as substitutes. *See* Goldfarb & Tucker, *supra* note ___ at 4 ("This implied substitutability of online and offline advertising suggests that when policy makers or market analysts seek to define advertising markets, they should consider both online and offline channels in their market definitions.").

strategy is a "social media play," building on the expressed brand loyalties and peer communications that propel social media.[75] In a world of scarce advertising dollars and effective marketing via social media sites, Google and all other advertisers, online and off, must compete with the growing threat to their revenue from these still-novel marketing outlets. "If Facebook's community of users got more of their information through this network, their Internet search engine and navigator might become Facebook, not Google."[76]

Most obviously (and perhaps most significantly) Google faces competition from its own (and other search engines') organic search results. As noted above, Google's paid search results appear on search result pages alongside organic results. Searchers—and thus advertisers—take advantage of different characteristics of the different types of search results and use organic and paid results accordingly, and the two sources of marketing plainly vie for advertising spend:

> Advertisers have been grappling with the trade-offs in each of these two forms of referrals. . . . Some anecdotal evidence suggests that there is a potential disconnect between the perception of sponsored listings by business and users, with consumers having a positive bias towards organic search listings . . . . Moreover, there is also some anecdotal evidence that suggests that paid search may lead to higher conversions than organic search . . . . These mixed findings then motivate the question that to what extent should firms invest in sponsored search advertisements when they also appear in the organic listings for a given search query in that search engine.[77]

Advertising firms and the companies that hire them spread their marketing budgets across these different sources of online marketing, and "search engine optimizers"—firms that help websites to maximize the likelihood of a valuable "top-of-list" organic search placement—attract significant revenue.

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[75] *See* ABC News Story, *supra* note __.

[76] GOOGLED, *supra* note __, at 172-73.

[77] Sha Yang & Anindya Ghose, *Analyzing the Relationship Between Organic and Sponsored search Advertising, Positive, Negative or Zero Interdependence?*, Working Paper (October 19, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1491315 (citations omitted).

It appears that the relationship between organic and paid search results is nuanced. In the first place, it is clear that both organic and paid search results compete for users' eyeballs and clicks:

> One distinction of the co-listing structure is that it creates two lists competing with each other for consumer attention . . . . [T]hose merchant websites interested in sponsored advertising may also appear in the organic list and thus could get significant attention from the organic list without paying anything. In this sense, the organic list not only competes for consumer attention but also plays a dominating role in such competition.[78]

The last point is particularly important, given that organic search results are available to advertisers at no cost (paid to the search engine[79]), suggesting they could have a strong disciplining effect on a search engine's ability profitably to charge a monopoly price.

More importantly, perhaps, the true interaction between paid and organic search results is exceedingly complex:

> Compared to the case with no organic list, organic listing results in lower revenue for the search engine in general, whereas it may induce a higher level of social welfare and sales diversity. On the one hand, organic listing essentially subsidizes the leading advertisers in prominence for free to dilute their bidding incentive for sponsored slots, which hurts revenue for the search engine. On the other hand, with a diluted incentive for leading advertisers, weak advertisers have a greater chance to win a prominent sponsored slot to complement their unsatisfactory prominence level in the organic list, which leads to a higher level of social welfare and sales diversity. From the search engine's perspective, organic listing serves as a balance between short-term and long-term benefit, sacrificing short-term revenue to enhance total

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[78] Lizhen Xu, et al., *Too Organic for Organic Listing? Interplay Between Organic and Sponsored Listing in Search Advertising*, McCombs Research Paper Series No, IROM-13-09 2-3 (May 2009), *available at* http://ssrn.com/abstract=1409450.

[79] Advertisers may incur costs, nevertheless, through the process of search engine optimization in an effort to maximize the likelihood that they will secure a better placement in organic search results.

> welfare and sales diversity, which could lead to long-term prosperity of the online community and the search advertising industry.[80]

One implication of this is that the extent of competition along these dimensions varies considerably by search term and by advertiser and industry characteristics. The implications for a market definition—and market power determination—are significant, and suggest that relevant markets may be narrower or broader than presumed. In either case, the complex interactions between products (organic search results and paid search results) that are at once both complements and substitutes dramatically complicates the Merger Guidelines' traditional, "narrowest possible market" test.[81]

This raises an interesting caveat to the facile claims of well-defined advertising markets: it is almost certainly the case that many distinct search terms and their search results pages—each the product of a particular auction and a particular set of web pages crunched through Google's PageRank algorithm—are, in fact, separate relevant markets under a SSNIP test.[82] The SSNIP test, a staple of American antitrust analysis under the 1992 Horizontal Merger Guidelines, determines the appropriate scope of a product market by imposing a small but substantial non-transitive price increase upon a product and measuring the resulting elasticity of demand for the theoretical market.[83] Google does not set uniform prices for ad placements across keywords and auctions; rather, each keyword is priced in its own repeated auction. Nor is there much trade-off among search terms for scarce space on search results pages; rather, each search term generates its own results page, and there is little competition between keywords for space. These features of online search advertising further complicate the relevant market determination. Likewise, with narrower markets (say, the market for online advertising relating to books), it is not clear that Google has market power at all, as consumers navigate directly to online book sellers, often by clicking on direct links from other websites and bypassing Google entirely.

Thus, Google competes not only with other general search engines (and possibly all other forms of advertising), but also with so-called vertical search

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[80] Id at ____.
[81] U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (1992, revised 1997), *available at* http://www.ftc.gov./bc/docs/horizmer.htm.
[82] ID at ___.
[83] ID at ___.

engines. These are search engines and e-commerce websites with search functionality that specialize in specific content: Amazon in books, music and other consumer goods, Kayak in travel services, eBay in consumer auctions, WebMD in medical information and products, SourceTool in business-to-business supplies, and many others. To the extent that Internet users bypass Google and begin their searches at one of these specialized sites (as is increasingly the case), the value to these heavily-trafficked websites from advertising on Google decreases.[84] At the same time, these sites and other aggregators like them offer valuable advertising outlets for other websites and for manufacturers.

And this competition is significant for its high quality. Click through rates are higher in instances in which the eyeballs are actively searching for something to buy—just as search advertising targets consumers who express some interest in a particular search term, the effect is magnified if the searcher can be identified as an immediate consumer. Thus online retailers like CDnow that can establish their own brands and their own navigation channels (as CDnow's Affiliate program does extremely well)[85] can draw searchers (and thus advertisers) away from Google. The fact that a consumer goes directly to a retail site with a search itself conveys important and valuable information to advertisers that is not otherwise available from most undifferentiated Google searches—it almost certainly increases the chance that the searcher is searching in order to buy a CD rather than learn something about the singer. Because this "ready-to-buy" traffic is the most valuable, there is a possibility of a separating equilibrium, with most high-value traffic bypassing search engines for direct retail sites, and with Google and other search engines serving primarily non-targeted, lower-value traffic. Amazon has even developed its own search engine, specialized for consumer searches.[86] The implication is that even relatively small-scale competition may present a potentially catastrophic threat to Google's search business.

Google faces competition from a number of sources and in a number of nuanced ways. Absent reliable empirical evidence, it is difficult to identify Google's antitrust-relevant market, but there is reason to doubt the traditional

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[84] For example, in the 30 days ending on February 23, 2010, less than 10% of visits to eBay.com originated from a search engine. *See* http://www.alexa.com/siteinfo/ebay.com (last visited February 23, 2010).

[85] *See, generally*, Donna L. Hoffman & Thomas P. Novak, *How to Acquire Customers on the Web*, May-June HARV. BUS. REV. 305 (2000).

[86] See www.A9.com.

"online search advertising" market, which ignores a number of important dynamics within that proposed market definition. Ultimately, any market definition should be established with econometric data and pertinent theories of supplier and consumer behavior. Absent this, any market power determinations that depend on intuition and market share calculations are suspect, and likely to exacerbate already costly Type I error problems.

Most troublingly, however, reliable evidence of these (and other) complicated market dynamics may *never* be available, and as with the models of anticompetitive conduct criticized in Part II above, courts may end up forced to make market definition determinations based on incomplete evidence and unsupported theories that fail accurately to capture the complicated economics of consumer, advertiser and supplier conduct. Efforts to gloss over these complications by relying on documentary proxies for economic relevance are another significant source of error in antitrust case law.[87]

The importance of quality scores

The heart of the dominant theory of Section 2 liability against Google relates to Google's use of quality scoring in influencing the outcome of its AdWords auctions. The quality score—introduced by Google and now used by all general search engines--is an important business innovation employing advanced algorithmic technology to maximize the relevance of search results and thus the value of the search engine to users, the likelihood of revenue-producing impressions to advertisers, and revenue to Google. "Google's introduction of click-through weighting [quality scores] in 2002 is regarded as an important competitive advantage and Yahoo!'s introduction of click-through weights into its ranking algorithm in early 2007 ("Panama") was highly publicized as a critical improvement."[88]

The basic idea behind the quality score is to predict in advance the likelihood that a particular advertisement will generate a clickthrough by a user searching for a particular keyword—and then ensure that the more-relevant advertisements (those with higher clickthrough rates) receive higher placements in the paid search results (from which advertisers can expect more

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[87] *See* Geoffrey A. Manne and E. Marcellus Williamson, *Hot Docs vs. Cold Economics: The Use and Abuse of Business Document in Antitrust Enforcement and Adjudication*, 47 ARIZ. L. REV. 609 (2005).

[88] Susan Athey & Glenn Ellison, *Position Auctions with Consumer Search* (May 2008), Working Paper, *available at* www.kuznets.fas.harvard.edu/~athey/position.pdf at p. 3.

clickthrough and Google thus more revenue). Advertisers with lower quality scores are obligated to pay more per click to win higher search result positions than advertisers with better quality scores because top placement of less-relevant ads leads to lower revenue for the search engine and degrades the overall quality of the search engine's relevance.

The basic intuition is this: A search engine wants to sell each ad impression—each placement in its paid search results—to the advertiser who is willing to pay the most for it, so it cares about cost per *impression*. The advertiser cares about cost per *click* (or cost per conversion, for which cost per click is a weak but more-readily-measurable proxy) which is what the advertiser must pay. The two are related by the following simple equation:

cost per impression = cost per click x clicks per impression

"Clicks per impression" is the clickthrough rate (the rate at which users actually click on results they see on a search results page), which is the dominant component of the quality score.[89] Google's quality score system—and that of all other general search engines including Yahoo! and Microsoft's Bing—thus essentially allows it to sell impressions while advertisers buy clicks, permitting each simultaneously to maximize the relevant metric. At the same time, because advertisers pay for clicks instead of impressions, they have an incentive to increase their bids to obtain better placement, knowing that they won't have to pay for these "excessive" impressions. The quality score allows a search engine to limit impressions, enabling it to weed out these low-relevance ads—something that would otherwise be impossible through an un-adjusted auction process. The same analyses apply to display ads placed on other web pages, as well, and thus quality scores are also used on the AdSense platform.

Allegations of anticompetitive conduct surrounding the quality score turn less on the *fact* of its existence (all major search engines use quality scores to improve the relevance of search results) than on its *opacity*. By design, the specific determinants of quality scores are kept hidden in order to prevent users from gaming the system (such as online Viagra sellers buying their way to

[89] "In Google's (and more recently in others') ad auctions, the winning bidders are not the firms with the highest per-click bids: advertisers are ranked on the basis of the product of the their bid and a factor that is something like an estimated clickthrough rate. The rough motivation for this is straightforward: weighting bids by their click-through rates is akin to ranking them on their contributions to search-engine revenues (as opposed to per-click revenues which is a less natural objective)." *Id*. at 26.

the first position for common (but unrelated) keywords by feigning relevance). As one vice president from Google has noted:

> We are, to be honest, quite secretive about what we do. There are two reasons for it: competition and abuse. Competition is pretty straightforward. No company wants to share its secret recipes with its competitors. As for abuse, if we make our ranking formulas too accessible, we make it easier for people to game the system. Security by obscurity is never the strongest measure, and we do not rely on it exclusively, but it does prevent a lot of abuse.[90]

It is also likely the case that, in addition to improving the quality of its search engine, Google's use of quality scores (and its control of the terms of its auctions) generates higher revenues. As noted above, advertisers have an incentive, absent a device like the quality score, to over-bid for impressions, resulting in some less-relevant ads gaining better placements and thus yielding fewer revenue-generating clicks from the more-relevant ads, pushed further down the search results page. For example, both Intel and AMD would like to appear first in paid search results for the keyword "Intel." On average, users would find Intel's advertisement to be more relevant. In the absence of quality scores, however, AMD could outbid Intel and receive the first position, in part because, although it hopes to capture some clickthroughs by users looking for Intel, it also knows that it can afford to bid a higher amount per click because it will still receive fewer clicks than Intel would. Intel, on the other hand, will bid a relatively small amount for the first position, not because it does not value it, but because it knows that it will receive a large number of clickthroughs at what may be a very high aggregate price. But this dynamic, potentially leading to AMD in the first paid search result position, is sub-optimal not only for Intel but also for Google's users and for Google's shareholders. Users will find a non-relevant search result in the top position and will thus devalue the search engine. And Google will receive smaller revenue because of the relative irrelevance of the top results and the correspondingly smaller number of clicks (even at a slightly higher price).

Without a mechanism qualitatively to match search terms with advertisers, users and advertisers forego quality and Google foregoes profits.

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[90] *See generally* Introduction to Google Search Quality, http://googleblog.blogspot.com/2008/05/introduction-to-google-search-quality.html (last visited Dec. 31, 2009).

As we will discuss in the next Part, the relevant question is not whether Google maximizes revenue with these devices, even if through an exercise of market power; rather, the relevant question is whether these or other actions constitute impermissible exclusionary conduct. At a minimum, there are clearly pro-competitive justifications for the use (and secrecy) of quality scores including both ensuring product quality and maximizing revenue. Furthermore, the full effect of these sorts of business innovations is probably unknown, even to Google. Any challenge to the use of quality scores as an anticompetitive device should turn on a set of specific factual allegations and a demonstration of a cognizable anticompetitive effect.

The core of the quality score issue is, in fact, a solution to a network effect problem. Although unfortunately absent from most discussions of network effects, and particularly discussions of network "externalities" as an antitrust problem, networks depend on both quantitative *and qualitative* characteristics. We discuss the network effect issues in Google's business more fully below, but it is important to note that the quality score helps to convert *quantity* into *quality*. Having more searchers is not necessarily valuable to advertisers *per se*, but having more searchers find an advertiser specifically when the searcher is most likely to buy something is worth a considerable amount. To the extent that the quality score allows Google better to match qualitative aspects of advertisers and end users, it increases the value of the system to all participants in a way that mere increases in scale do not.

Network effects

Many claim that Google's search engine and search advertising represent a multi-sided platform that benefits from the presence of network effects, but nearly all such claims take these effects for granted or assert them without empirical backing and derive legal conclusions from their existence without analysis.[91] There may indeed be relevant network effects in Google's

[91] *See, e.g.*, James Grimmelmann, *How to Fix the Google Book Search Settlement*, 12 NO. 10 J. INTERNET L. 1, 14 (2009) ("Thus, Google's first-past-the-post status here could easily turn into a durable monopoly. That might be the inevitable result anyway; this is a market with substantial economies of scale and positive network effects.") (no citations); Viva R. Moffat, *Regulating Search*, 22 HARV. J. L. & TECH 475, 489 (2009) (Additionally, while Google may not be a monopoly, it certainly has a great deal of market power and network effects also exist in the search world. These factors, together with the arguably substantial barriers to entry in the search engine market, permit the analogy to common carriers.) (citing a New York Times article referring to "network advantages"); Oren Bracha & Frank Pasquale, *Federal Search Commission?*

business, but, as with all novel and innovative businesses, the facile conclusions are often the wrong ones, and much more and better empirical analysis should be brought to bear before competitive assessments are made.[92]

Network effects occur when the value of a good or service increases because of an increase in the number of people who use it (to a first order of approximation, a phone is more valuable the more people you can use it to call). In the context of a multi-sided operation such as Google's search engine and search advertising platform, indirect network effects might arise when an increased user base for one side of the platform increases the value of the platform to the users on the other side, and this, in turn, increases the value of

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Access, Fairness and Accountability in the Law of Search, 93 CORNELL L. REV. 1149, 1181 (2008) ("Network Effects in Improving Search Responsiveness. The more searches an engine gets, the better able it is to sharpen and perfect its algorithm. The result is that each additional user decreases the cost of a better quality service for all subsequent users. Thus, incumbents with large numbers of users enjoy substantial advantages over smaller entrants.") (reference to DAVID A. VISE AND MARK MALSEED, THE GOOGLE STORY (2005)); Kevin Werbach, *Only Connect*, 22 BERKLEY TECH. L. J. 1233, 1292 (2007) ("Nonetheless, it is possible for applications to become exclusive platforms with anti-competitive effects similar to those of exclusive physical broadband networks. Google's dominant search engine and MySpace's massive social networking site might be candidates for such scrutiny at some point in the future. Because these are network-centric applications, whatever ability they have to distort competition and innovation arises from their ability to capture network effects.") (no citations); William D. Rahm, *Watching Over the Web: A Substantive Quality Regime for Broadband Applications*, 24 YALE J. REG. 1, 17 (2007) ("Broadband technology exhibits two network effects . . . Companies like Google, Vonage and Amazon will develop more services when they are confident that there are more users whom they can reach.") (no citations); Peter S. Menell, *Knowledge Accessibility and Preservation Policy for the Digital Age*, 44 HOUS. L. REV. 1013, 1052 (2007) (listing "concentration (due to network effects)" on a table describing competitive effects in Google Book Search) (no citations); J. Gregory Sidak, *A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet*, 2 J. COMP. L. & ECON. 349, 454 (2006) ("Network effects make the market for Internet portals highly concentrated. Entry is difficult because a critical mass of users has chosen a particular portal (Yahoo or Google) to begin their Internet experience. A critical mass of advertisers has followed.") (no citations); Kristine Laudadio Devine, *Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?*, 10 N.C. J. L. & TECH. 59 (2008) (describing Google's network effects by analogy and conjecture, although going into far more detail than any of the other articles cited).

[92] "[Multi-sided platforms] have business models that are not yet well understood and engage in highly complex business strategies; unusual practices are suspect practices in our experience." David S. Evans & Michael D. Noel, *The Analysis of Mergers that Involve Multi-Sided Platform Businesses*, 4 J. COMP. L. & ECON. 663, _____ (2008).

the platform to the first group.

As noted above, network effects are generally beneficial, although there is some dispute over whether and under what conditions they might also raise potential exclusionary concerns.[93] As mentioned, one source of indirect network effects is the increased incentive to produce complementary goods arising from a larger set of potential consumers on the other side of a platform (more video games are produced for a particular video game console the more users it has). But, so the argument would run, this could have an exclusionary effect in the game console market if no competitor were sufficiently large to attract a similar level of investment in games to lure away the incumbent's users.

But, in fact, such an outcome is unlikely in the case of indirect effects. Because transactions over complementary products fully internalize the benefits of consuming these goods, these indirect network effects do not present an exclusionary concern.[94] In Google's case, this means that, while additional end users may increase the value of Google's (or any other search engine's) platform to its advertisers, this increase in value is internalized by the platform and advertisers are charged accordingly—and thus competitors . It is also noteworthy that the typical "feedback effects" seen in many multi-sided platforms are attenuated or absent in Google's business because the effect is generally unidirectional: advertisers want more end users, but end users care little or nothing about the number of advertisers.

It is also worth noting here, as in all analysis of network effects, that the standard assumption that quantity alone determines the strength of the effect is likely mistaken.[95] Rather, to the extent that advertisers care about end users, they care about many of their characteristics and an increase in the number of users of a search engine, for example, looking only for information and never to purchase goods may be of little value to advertisers, even if the absolute number of users increases.

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[93] *See infra* notes ___ to ___ an accompanying text. [CITE to notes and text surrounding this note: "*Compare* Stan J. Liebowitz & Stephen E. Margolis, *Network Externality: An Uncommon Tragedy*, 8 J. ECON. PERSP. 133 (1994) *with* Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON L. REV. 673 (1999)"].

[94] *See* Daniel F. Spulber, Unlocking Technology, 4 J. COMP. L. & ECON. 915 (2008); *see also* Liebowitz & Margolis, *supra* note ___.

[95] *See, e.g.*, *id*.

Thus, because online search advertisers target customers and sales (rather than, or, at least, drastically more than, mere exposure to viewers) they care about the size of the end user network only to the extent that this size correlates with increased sales. To a first approximation, of course, increased usage should lead to increased clickthroughs, and increased clickthroughs should lead to more sales. But because advertisers pay per click, if the number of clicks *without* purchase increases with increased usage sufficiently faster than the number of clicks *with* purchase, the increase in search engine usage may be a cost rather than a benefit. Thus, the ability of the search engine to deliver not only scale but also quality—based on the characteristics of its users and its ability to match users with advertisers[96]--determines the amount advertisers are willing to pay. For this reason, the value of a search engine may *not* increase as the number of users grows, and, to the extent that it does, this is a direct function of the quality score. The basic point is that assessing network or scale effects is extremely difficult in search engine advertising, and scale may not even correlate with increased value over some ranges of size.

The problem for those who would point to indirect network effects as a barrier to entry for Google's competitors is that advertisers pay only when a user clicks through its paid search result to the advertiser's landing page.[97] The consequence of this is that the full value of Google's advertising platform is internalized by the system, with advertisers paying a price that reflects the full value of their use of Google's platform—there are no externalities, and, as mentioned, network size may not be relevant to advertisers. If having more users makes a click more likely to lead to a conversion, advertisers will pay more per click, internalizing the effect. If having more users makes a click more likely in the first place, advertisers also pay more because they pay for each click. In either case, the effect is fully internalized.

Any claim that Google possesses market power protected by an indirect network effect barrier to entry must grapple with the problem that these effects are internalized and of uncertain sign and thus that they function, competitively speaking, no differently than any other measure of quality (and corresponding

[96] *See* notes ___ to ___ and accompanying text, *supra*, discussing the role of quality scores in increasing relevance.

[97] There is conceivably some benefit to an advertiser, particularly in terms of brand recognition, from simply appearing on the Google search results page, even if an ad is not clicked. We assume the value of this recognition is negligible, but a full assessment of the economics of Google's business would likely require some assessment of this dynamic.

price). A competitor can compete by offering lower "quality" at a lower price if necessary, and because no benefits are left external in Google's business, it is not necessary to compensate advertisers (or end users) for lost external benefits from switching to a competitor. A competitor with smaller scale but better quality can also compete, even at higher prices; scale is not inherently a barrier to competition in search engine advertising.

A variant of the indirect network effect argument has been propounded most notably in the TradeComet complaint.[98] First, as above, TradeComet's claim is that the value of any search advertising platform increases as the popularity of its search engine grows (although, as we have seen, this is not necessarily true). Second, users prefer search engines that offer the newest and most functional free features. Such features can be developed, it is argued, only with considerable surplus advertising revenue. It is alleged that these characteristics make it difficult for nascent rivals to gain the search traffic necessary to become viable alternatives to Google.[99]

But this is not an argument that turns on network effects at all; rather, it is simply an argument about financing and the availability of capital to invest in product improvements. It is an argument that there may be supply-side economies of scale, but this is hardly a unique or uniquely-interesting conclusion, nor one with particularly interesting antitrust implications. And while Google (perhaps) generates the funds for its continued product development through its successful business, the same business model need not be adopted by competitors. In fact, Microsoft, one of Google's primary competitors, has a market capitalization substantially larger than Google's and higher profits generated by other businesses to invest in search engine functionality improvements; it hardly matters if this investment comes from

[98] TradeComet.Com LLC v. Google, Inc., No. 1:2009cv01400 (S.D.N.Y. Feb. 17, 2009).

[99] The claim is analogized to a claim that received traction in the Microsoft litigation. *See Microsoft,* 253 F.3d at 54-55 (finding monopoly power as a result of a "'chicken-and-egg' situation [that] ensures [software] applications will continue to be written for the already dominant Windows, which in turn ensure that consumers will continue to prefer it over other operating systems"). But the comparison is inapposite. In Microsoft, the incentives of platform users external to the platform itself were being driven by the feedback effect between sides of the network. Here the argument has the platform itself (Google) driving the incentives through investment. In the present case the "network effect" is endogenous and under Google's (or a competitor's) control; in the Microsoft case the effect was exogenous and therefore difficult for competitors to disrupt.

advertising revenue, the sale of operating systems, or outside capital sources.[100]

Another variant of the argument suggests that more users of a search engine, performing more searches, enables the search engine to perform better, especially in returning results for relatively rare search terms. While many label this an indirect network effect,[101] it is not—and the difference is important to understanding the competitive dynamics of Google's market.

The claim that product quality can increase due to learning about user behavior is a supply-side economy of scale arising from the phenomenon of "learning by doing." Even the claim that Google can learn *increasingly* better than others because of its size is also not a network effect, but rather (presumably) a claim that there are, in fact, *increasing returns to scale* on the supply side—meaning that as the size of the network increases, the average cost of product quality improvements due to increased learning falls. We are unaware of evidence demonstrating whether this is true or not, but it is plausible, at least over some range of users.[102]

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[100] *See also* Kristine Laudadio Devine, *Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?*, 10 N.C. J. L. & TECH. 59 (2008)). This article makes the same claim. To us this is not a network effect at all but merely a description of a two-sided market, where revenue is obtained from only one side of the market. That these profits may be reinvested to attract more customers seems incidental to any network effect claim and merely descriptive of a particular business model. It is akin to saying that a one-sided market exhibits network effects if selling more products leads to higher revenue which is then used to innovate in ways that sells more products. Plainly this is neither a network effect nor a barrier to entry.

[101] *See, for example*, Dave Heiner, "Competition Authorities and Search," Blog Post at Microsoft on The Issues (February 26, 2010), *available at*, http://microsoftontheissues.com/cs/blogs/mscorp/archive/2010/02/26/competition-authorities-and-search.aspx ("Google's business is helped along by significant network effects . . . . Search engine algorithms "learn" by observing how users interact with search results. Google's algorithms learn less common search terms better than others because many more people are conducting searches on these terms on Google."); Gary Reback, "Why the Technology Sector Should Care about Google," Blog Post at TechCrunch (February 16, 2010), *available at*, http://techcrunch.com/2010/02/16/gary-reback-why-the-technology-sector-should-care-about-google-books/ ("These markets are difficult to enter because of powerful network effects and scale characteristics.").

[102] Although it is important to note that, even if true, at some point there are likely increasing costs and there are certainly decreasing returns to extracting relevant information out of ever more and more search data.

Of note, the notion of a durable comparative advantage arising from "learning by doing" depends critically on the complexity of the process required to extract value from increased usage. Obviously, if the process were simple, imitation would be sufficient to minimize any relative returns to scale from a learning effect. But where learning is complex (and difficult to transfer), persistent comparative advantage may be possible. But if this dynamic is present, it has an important implication: Scale alone is insufficient and unlikely to confer advantage; rather, it is firm-specific knowledge—knowledge of what to *do* with more information—that confers advantage. It is difficult to escape the implication in Google's case that Google owes its success to innovation rather than the happenstance that it has come to perform a large share of online searches. This is particularly likely considering Google's ability to leap-frog Yahoo!, the original industry leader by a wide margin, in its formative stages. In this sense it is not some magic market share number that permits success but rather the innovative analysis of available data—and plenty of small, high quality companies with tiny market shares have enough data and sufficient ability to analyze them that they can and do make competitive product improvements.

The casual invocation of network effects in search advertising is seemingly refuted by the more specific realities of the search advertising market. On the end user side, end users are insensitive to the number of other users in the network and thus there are no direct network effects on that side of the platform. Except to the limited extent that the quality of a search algorithm may be affected by the number of users over a relevant range of users, end users receive no incidental benefit from others' use of the same search engine. At the same time, it is difficult for an incumbent to trade on a comparative cost advantage, if it has any, to stave off competition given that the price charged to end users is already zero. While it is true that this zero price also makes it difficult for entrants to attract end users with a *lower* price,[103] there is nothing special about this

[103] And of course "difficult" does not mean "impossible." Entrants could pay for new users, and they do so in a variety of creative ways. Microsoft, for example, introduced its "cashback" program on its Live Search search engine (now its Bing search engine), offering end users who searched for and purchased products using Microsoft's search platform a discount on the purchased product. *See* Bing Cashback Program page at Wikipedia, *available at* http://en.wikipedia.org/wiki/Bing_Shopping#Cashback_program (last visited Oct. 10, 2009). *See generally* Daniel F. Spulber, *Consumer Coordination in the Small and in the Large: Implications for Antitrust in Markets with Network Effects*, 4 J. COMP. L. & ECON. 1 (2008).

competition that distinguishes it from competition in a perfectly competitive, non-networked industry where incumbents are charging a price equal to marginal cost and entrants forced to suffer initial losses, compete on non-price dimensions, or improve production efficiency. Indeed, this compulsion towards increased quantity, reduced prices (where possible), or increased quality as an irreducible by-product of competition is the very purpose of antitrust law.

It is unlikely, as well, that end users find a larger number of advertisers to be a feature of the system, and a new entrant might actually be more attractive initially for having fewer advertisers and ads. The one exception to this would be where the quality of the search product—the search algorithm—is affected by the number of end users and/or the number of advertisers as described above. From our position outside the industry it appears to us that algorithmic results are only weakly affected by the number of end users or searches.[104] It is clear that search algorithms require a minimum scale in order to establish their effectiveness, but this minimum scale may be easily reached (and arguably has been reached by all of the major search engine competitors and even some small upstart companies). Above minimum scale there is limited advantage to having more end users and more searches even if there are increasing returns to scale (because even though the average cost of product improvements may thus decline over some range, the benefit of these improvements to users is likely extremely small and rapidly decreasing).

As a result, viable competition is available at fairly small scale, and competing search engines should be able to produce organic search results as effectively as a large-scale incumbent, subject only to the limitations of their search algorithm's design and execution.[105] Moreover, Google established its

[104] Cite recent Wired article re Google's product improvement process and use of small tests.

[105] This fact makes especially troubling the unfounded and undocumented claims found in Bracha and Pasquale's "Federal Search Commission" paper, *supra*. In explaining why they think "robust and dynamic competition is unlikely," and why the search engine market is subject to "high barriers to entry," the authors report that "[s]earch algorithms may be analogous to the high-cost infrastructure required for entry into the utility or railroad markets." At the same time the authors claim that "[t]he more searches an engine gets, the better able it is to sharpen and perfect its algorithm." Bracha & Pasquale, *Federal Search Commission*, 93 CORNELL L. REV. at 1180-82. The last point is not true, or at least not true beyond a minimum scale. And consequently, the claim that an algorithm is, in essence, a "natural monopoly" or essential facility (thus requiring regulatory and/or antitrust intervention to pry open access to competitors) is equally fallacious. While Google's specific algorithm is not accessible by competitors, it

industry-leading position on the basis of a tiny fraction of the volume even the smallest search engines see today. And tellingly, because of overall search engine usage growth rates, the number of searches on Yahoo! today is about the same as the number on Google just a few years ago.

The issue is a bit more complicated from the perspective of potential advertisers. Again, there is no *direct* network effect, and, in fact, the presence of more advertisers is a strong cost to other advertisers; rather than a "network" effect there is a "congestion" effect.[106] This congestion cost is in fact magnified by the imposition of Google's quality scoring into the auction/placement process, as every advertiser's placement is dependent on the quality of other advertisers bidding in each auction.[107] As we have discussed, there may or may not be indirect network effects on the advertiser's side of the search engine platform; there is certainly a congestion effect, however, resulting from the simple competitive dynamic of many buyers competing for a scarce resource.

In the end, the uncertainty surrounding the economic consequences of Google's business and its business practices should compel extreme caution viewed within an error-cost framework. The risks arising from misapplication of economic theory and a woefully poor understanding of the consequences of Google's innovative products and business practices, coupled with the dramatic costs of such errors, should counsel against antitrust intervention without some significant direct economic data to contradict a plausible, procompetitive analysis.

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is not the case that another viable algorithm is inaccessible, nor the data sufficient to manage it. And, of course, in addition to Google's major competitors, there are dozens of other search engines competing with Google's specific algorithm. *See* "List of search engines" at Wikipedia, http://en.wikipedia.org/wiki/List_of_search_engines (last visited Dec. 14, 2009).

[106] Evidence demonstrates that "thicker" auctions result in higher prices, irrespective of the characteristics of additional bidders—a presumably undesirable consequence (to the bidders) of a broader network. *See, e.g.,* Paul Klemperer, *What Really Matters in Auction Design*, 16 J. ECON. PERSP. 169 (2002). *See also* Farrell & Klemperer, *Coordination and Lock-in: Competition with Switching Costs and Network Effects* in THE HANDBOOK OF INDUSTRIAL ORGANIZATION, VOL. 3. (Armstrong and Porter, eds.) 2018 (2007) ("Second, there may be no intra-group network effects; there may even be intra-group congestion. Thus, given the number of photographers, a developer prefers fewer other developers for competitive reasons, just as with merchants accepting credit cards.")

[107] Susan Athey & Glenn Ellison, *Position Auctions with Consumer Search* (May 2008), Working Paper, *available at* www.kuznets.fas.harvard.edu/~athey/position.pdf.

4. THE MONOPOLIZATION CASE AGAINST GOOGLE

In large measure, this case is drawn from the most fully-developed real case against Google, the TradeComet complaint; we will also further discuss other aspects of a hypothetical case against Google.[108] In this section we discuss the legal and economic theories underlying the actual and hypothetical cases, highlighting the pitfalls of antitrust enforcement against Google, but more generally, the analytical weaknesses of an enforcement approach that eschews error-cost principles in its decision-making processes. As a prefatory matter, this task requires knowledge of the applicable monopolization standards. We begin with some preliminary discussion of these standards before turning to our antitrust analysis of Google's specific business conduct.

First Principles of Monopolization Enforcement

We must begin with Section 2 of the Sherman Act, which makes it unlawful for any person to "monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations . . . ."[109] The language of the statute itself is notoriously ill-equipped to help resolve actual cases.[110] Nonetheless, it is well established that the offense of monopolization requires demonstration of both "(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident."[111] Courts and antitrust scholars have struggled with assigning administrable content to the language of Section 2,[112] spurring a scholarly debate over

[108] TradeComet.com LLC v. Google, Inc., No. 09-CIV-1400 (S.D.N.Y. filed Feb. 17, 2009).
[109] 15 U.S.C. § 2 (2000).
[110] ROBERT H. BORK, THE ANTITRUST PARADOX 57 (1978) ("The bare language of the Sherman Act conveys little . . . ."); Frank H. Easterbrook, *Vertical Arrangements and the Rule of Reason*, 53 ANTITRUST L.J. 135, 136 (1984) ("The language of the Sherman Act governs no real cases."); Thomas E. Kauper, *Section Two of the Sherman Act: The Search for Standards*, 93 GEO. L.J. 1623, 1623 (2005) ("Section Two of the Sherman Act has been a source of puzzlement to lawyers, judges and scholars, a puzzlement derived in large part from the statute's extraordinary brevity."); Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253 (2003).
[111] Grinnell.
[112] U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT (2008), *available at* http://www.usdoj.gov/atr/public/reports/236681.pdf (internal citations omitted).

whether it is possible and desirable to construct a "unified" monopolization test to apply to all varieties of business conduct falling within the scope of the statute.[113]

To summarize our discussion in Part II above, the key challenge facing any proposed analytical framework for evaluating monopolization claims, then, is distinguishing pro-competitive from anti-competitive conduct. That much of what is *potentially* actionable conduct under the antitrust laws frequently *actually* benefits consumers, and that generalist judges will be called upon to identify the anticompetitive conduct with imperfect information, leads to the inevitability of antitrust errors. As Judge Easterbrook has noted, the optimal antitrust rules minimize the costs of these errors by establishing and allocating appropriate burdens of proof.[114] Given the tendency in antitrust to condemn business practices that are not well understood, or for which an efficiency explanation cannot be proffered that fits into the pre-established categories established by previous cases, it is key that any "burden-shifting" approach to monopolization retains the requirement that plaintiffs demonstrate that actual consumer harm has occurred.[115] Despite the vigorous debate over the appropriate legal standards to apply in specific Section 2 cases, most commentators agree that the sensible starting place for discussion of modern monopolization analysis is the D.C. Circuit's analysis in *Microsoft*.

In the monopolization context, the D.C. Circuit's *Microsoft* opinion sets forth the leading burden-shifting approach for distinguishing exclusionary from competitive acts.[116] The plaintiff's initial burden is described as follows: "to be condemned as exclusionary, a monopolist's act must have an 'anticompetitive effect.' That is, it must harm the competitive *process* and thereby harm consumers . . . [And] the plaintiff, on whom the burden of proof of course rests, must demonstrate that the monopolist's conduct indeed has the requisite anticompetitive effect."[117] Next, "[I]f a plaintiff successfully establishes a prima facie case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a [nonpretextual] 'procompetitive justification' for its conduct."[118] Finally, "[I]f the monopolist's procompetitive justification stands

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[113] *See, e.g.*, ___, supra note ___.
[114] *See* Easterbrook, *supra* note 19, at __.
[115] See Benjamin Klein, *Exclusive Dealing as Competition on the Merits*, GMU LR
[116] United States v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001) (en banc) (per curiam).
[117] Id. at 59.
[118] Id.

unrebutted, then the plaintiff must demonstrate that the anticompetitive harm of the conduct outweighs the procompetitive benefit."[119]

The key economic function of the plaintiff's burden to demonstrate actual competitive harm at the onset of litigation is, consistent with the error-cost approach described above, to minimize the social costs of antitrust enforcement, and, in particular, the costs associated with false positives. The D.C. Circuit noted the difficulty of this task:

> Whether any particular act of a monopolist is exclusionary, rather than merely a form of vigorous competition, can be difficult to discern: the means of illicit exclusion, like the means of legitimate competition, are myriad. The challenge for an antitrust court lies in stating a general rule for distinguishing between exclusionary acts, which reduce social welfare, and competitive acts, which increase it.[120]

With this challenge in mind, courts have long struggled to develop administrable tests that would, at a minimum, identify implausible claims. These screens, such as the "monopoly power" requirement, filter out non-meritorious claims where complained-of conduct is incapable of harming the competitive process and a finding of liability would be especially likely to chill pro-competitive business practices. Similarly, the requirement that plaintiffs satisfy their prima facie burden with evidence of anticompetitive effect serves the purposes of reducing the administrative costs of litigating non-meritorious claims and minimizing the social costs of errors.

The merits of any specific application of the approach described above, of course, lie in the details of its execution. For example, to the extent that evidence of mere harm to individual competitors is sufficient to satisfy the plaintiff's prima facie burden of harm to competition, the social value of the requirement will be diminished and consumers will suffer. This problem is further exacerbated by the tendency in antitrust cases to condemn business activities for which there is no immediate and intuitive efficiency explanation. For these cases, minimizing antitrust error depends critically on ensuring that

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[119] Id.

[120] United States v. Microsoft Corp., 253 F.3d 34, 58 (D.C. Cir. 2001) (en banc) (per curiam)

the evidence plaintiffs are required to proffer is a relatively strong signal of harm to competition.

While *Microsoft* sets forth the modern burden-shifting framework for monopolization claims, there are other important sources of Section 2 jurisprudence. In its recent decisions, the Supreme Court has articulated a number of first principles that have guided their own decisions and will inform our monopolization analysis. Indeed, the Supreme Court's consensus on Section 2 first principles has been remarkably strong. Despite heated rhetoric about the ideological nature of modern antitrust perhaps best captured in the events surrounding the withdraw of the Section 2 Report, the Supreme Court's antitrust jurisprudence has exhibited an impressive degree of consensus.[121] Brannon and Ginsburg, for example, find that from 1997 to 2006, 85 percent of all antitrust decisions were decided by a supermajority margin (and each in favor of the defendant, although this is fairly predictable given the pro-plaintiff nature of 1960s antitrust jurisprudence).[122] Indeed, the Supreme Court's consensus within antitrust jurisprudence is strongest when one analyzes Section 2 specifically and in isolation. Consider that since *NYNEX Corp. v. Discon*, *Inc.*, all four of the Supreme Court's decisions addressing claims under Section 2 and setting forth the relevant principles have been decided unanimously.[123] We list and briefly discuss these principles below.

Mere possession of monopoly power is not an antitrust offense. The Supreme Court's decision in *Trinko* represents the most powerful articulation of this principle of modern antitrust. The unanimous Court noted that the prospects of monopoly profits are what "attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth."[124]

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[121] Leah Brannon & Douglas H. Ginsburg, *Antitrust Decisions of the U.S. Supreme Court, 1967-2007*, 3 COMP. POL'Y INT'L 3 (2007).

[122] Id. at Table 4. When one considers the Supreme Court decisions during the Bush administration, for example, the aggregate vote count is 86-9 with seven of eleven opinions generating unanimous agreement.

[123] *See* Linkline, No. 07-512, 2009 U.S. Lexis 1635 [NEED UPDATED CITE]; Weyerhaeuser Co. v. Ross- Simmons Hardwood Lumber Co., 127 S. Ct. 1069 (2007); *Trinko*, 540 U.S. 398; NYNEX Corp. v. Discon, Inc., 525 U.S. 128 (1998). For an analysis of the Roberts Court antitrust decisions, see Joshua D. Wright, *The Roberts Court and the Chicago School of Antitrust: The 2006 Term and Beyond*, 3 COMP. POL'Y INT'L 24 (2007) (arguing that Chicago School economic principles successfully characterize the Roberts Court antitrust jurisprudence).

[124] Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 (2004).

Antitrust commentators have also increasingly recognized that a signature feature of U.S. monopolization policy is its understanding of the tradeoffs between innovation and dynamic efficiency gains and the static welfare losses associated with monopoly power.[125] Sherman Act monopolization jurisprudence, therefore, has clearly endorsed antitrust rules that protect the competitive process but do not punish success, do not require firms to pull their competitive punches, or demand firms "roll over" once they have lawfully achieved monopoly power. Instead, the antitrust laws condemn only specific acts that result in the improper acquisition of or maintenance of monopoly power and harm the competitive process.

The mere exercise of lawful monopoly power in the form of higher prices is not an antitrust violation. A corollary of the previous principle, the Supreme Court has repeatedly recognized that a monopolist is entitled under the Sherman Act to reap the rewards of its innovation. The successful monopolist firm is entitled to charge whatever price the market will bear. A contrary finding, limiting the returns to successfully competing in the marketplace, is logically inconsistent with a competition policy regime designed to foster innovation and economic growth.[126]

Courts must be concerned with the social costs of antitrust errors, and the error-cost framework is a desirable approach to developing standards which incorporate these concerns. We have already spent considerable time discussing the difficulty of distinguishing anticompetitive from pro-competitive business conduct, and the inevitability of errors resulting from a system requiring generalist judges to make such determinations based upon necessarily incomplete and imperfect information. The fundamental and vexing realities of Section 2 enforcement are that (1) it is both exceedingly difficult to reliably identify anticompetitive conduct, and (2) that errors are likely to harm the intended beneficiaries of the antitrust laws. This task is easier said than done.[127] The Supreme Court has consistently and repeated

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[125] See David S. Evans and Keith N. Hylton, *The Lawful Acquisition and Exercise of Monopoly Power and its Implications for the Objectives of Antitrust*, 4 COMP. POL'Y INT'L 203 (2008).

[126] See Trinko, Nynex, Linkline …

[127] See Frank H. Easterbrook, *When Is It Worthwhile to Use Courts to Search for Exclusionary Conduct?*, 2003 COLUM. BUS. L. REV. 345, 345 ("Aggressive, competitive conduct by any firm, even one with market power, is beneficial to consumers. Courts should prize and encourage it. Aggressive, exclusionary conduct is deleterious to consumers, and courts should condemn it. The big problem lies in this: competitive and exclusionary conduct look alike.").

expressed its concern with antitrust errors, especially false positives, on the grounds that false positives are likely to be more frequent and costlier than false negatives.[128] It response to these concerns, the error cost approach has become a mainstream and well-accepted approach to evaluate antitrust standards and policy decisions.[129] The Supreme Court has adopted an error-cost approach in at least the following decisions: *NYNEX Corp. v. Discon, Inc*.,[130] *State Oil v. Khan*,[131] *Brooke Group v. Williamson*,[132] *Leegin*,[133] *Weyerhaeuser*,[134] *Trinko*,[135] *Credit Suisse*,[136] and *Linkline*.[137] Justice Scalia's articulation of the Court's concerns in *Trinko* is instructive:

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[128] *See* Bus. Elecs. Corp. v. Sharp Elecs. Corp., 485 U.S. 717, 728 (1988); *Trinko*, 540 U.S. at 414 ("The cost of false positives counsels against an undue expansion of § 2 liability."); Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993); *id.* at 458 (stating that "this Court and other courts have been careful to avoid constructions of § 2 which might chill competition, rather than foster it"); Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594 (1986) (stating that mistaken inferences in predatory-pricing cases "are especially costly because they chill the very conduct the antitrust laws are designed to protect"); Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 767–68 (1984) (noting that scrutiny of single firms under the Sherman Act is appropriate only when they pose a danger of monopolization, an approach that "reduces the risk that the antitrust laws will dampen the competitive zeal of a single aggressive [competitor]"); ADD LINKLINE; NYNEX VS DISCON.

[129] See, e.g., POSNER at ___ ("[a]lmost everyone professionally involved in antitrust today" agrees that "the design of antitrust rules should take into account the costs and benefits of individual assessment of challenged practices"). For a general discussion of an error cost approach to antitrust, see Manne and Wright, supra note __, at __. For specific applications of the error-cost approach to various antitrust topics, see, for example, Evans & Padilla (2005); C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001); Luke Froeb et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005).

[130] 525 U.S. 128, 133 (1998) ("[C]ertain kinds of agreements will so often prove so harmful to competition and so rarely prove justified that the antitrust laws do not require proof that an agreement of that kind is, in fact, anticompetitive in the particular circumstances.");

[131] State Oil Co. v. Khan, 522 U.S. 3, 10 (1997) (Certain "types of restraints . . . have such predictable and pernicious anticompetitive effects, and such limited potential for procompetitive benefit, that they are deemed unlawful *per se*.").

[132] CITE

[133] CITE

[134] CITE

[135] CITE

[136] CITE

> Against the slight benefits of antitrust intervention here, we must weigh a realistic assessment of its costs . . . . Mistaken inferences and the resulting false condemnations "are especially costly because they chill the very conduct the antitrust laws are designed to protect." The cost of false positives counsels against an undue expansion of § 2 liability.[138]

With the general monopolization landscape and first principles in hand to provide the lens for any specific application of Section 2 law, we turn to a more detailed discussion of the two elements of a potential monopolization case (monopoly power and exclusionary conduct) and their application to Google.

Monopoly Power

Monopoly power is the first element of the monopolization offense and refers to the "power to control prices of exclude competition."[139] As an antitrust concept, monopoly power must be distinguished from the type of economic market power that refers merely to the ability to have some discretion over one's own price without losing all sales. While "market power" in this sense is ubiquitous in the modern economy, monopoly power of the type required to establish a Section 2 violation implies the power to either control market prices or output and must be "durable" rather than transitory.

Applied to a potential monopolization case against Google, a monopoly power inquiry raises several issues. The first is that it should be obvious that market definition inquiry plays a central role in disciplining any monopoly power analysis. Thus, it is important to carefully consider the potentially relevant markets in which anticompetitive conduct forming the basis of a Section 2 violation might have occurred. The second is that, as with any modern market definition analysis involving web-based products and services, one must consider whether network effects are relevant to the monopoly power analysis, and, if so, to what extent.

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[137] CITE

[138] Trinko, at 414 (quoting Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594 (1986)).

[139] United States v. E. I. du Pont de Nemours & Co. (*Cellophane*), 351 U.S. 377, 391 (1956).

Market Definition and Monopoly Power

It is worth discussing as a preliminary matter the serious market definition problem in Google's case—for not surprisingly, different market definitions translate to very different conceptions about the level of monopoly power existing in Google's markets, and have differing implications for Section 2's monopolization analysis.

As we have discussed in the previous section, Google's market is far more complicated than is commonly assumed. Google sells advertising, first and foremost, and it gives away several other products, including search results. If the relevant advertising market includes all advertising across media, Google has a miniscule market share and essentially no market power. If the relevant advertising market includes only online advertising, Google still has a relatively small share of the market. Only when different types of online advertising (such as search ads versus contextual display ads versus behavioral display ads) are separated into different markets does Google's market share grow substantially in paid search advertising.

Some care is required in even limiting our attention to the paid search advertising market. Most casual discussions of Google's market share reference its share of the *search* market. While the size of Google's search market is relevant to assessing its significance in the search advertising market, the two are not the same. Thus, claims that "Google has 70% of the US search market" may be true, but are not clearly relevant to the question of whether Google has monopoly power in the search advertising market, where this figure is merely a measure of the number of searches performed on the major general search engines by end users in the United States. Other measures assess the share of impressions and clicks on search ads that were served up by Google. This is also relevant but incomplete, as it does not address the share of advertisers or advertiser dollars this represents. None of this is to say that Google doesn't have a large share of the search advertising market, if such a market exists at all—but its specific share and its market power are more complex to calculate than typically presented.[140]

[140] For a discussion of the substantial complexities in determining relevant markets and market share in two-sided markets, see David S. Evans & Michael D. Noel, *Defining Markets that Involve Multi-Sided Platform Businesses: An Empirical Framework with an Application to Google's Purchase of DoubleClick* (2007), *available at* http://ssrn.com/abstract=1027933.

In its review of the Google/DoubleClick merger, the FTC found that search advertising and display advertising were in different relevant product markets; it also found that online advertising and advertising in other media were in distinct markets. While we have some concerns with this parsing of the product markets, we have not undertaken the necessary study to hold our views more than weakly and the question falls somewhat outside the scope of our primary focus on the "exclusionary conduct" element of a monopolization case against Google. But what is concerning is that the FTC did not appear to undertake a particularly careful analysis of the market definition problem peculiar to two-sided markets.

This casual approach to analysis – leading to a conflation of market presence and market power – frequently mars discussions of Google's position in any "market." It is at least a sensible starting point, although not complete, to assess market definition (and competitive effects) on the side of a platform's market where it charges prices above marginal cost (where it is customary in two-sided platforms for the platform to attract users to one side with below-cost or zero-cost pricing and to earn revenue on the other side of the market), particularly as in Google's case where it charges a zero price to end users of its search platform.[141] But an assessment of a platform's ability to raise prices on one side of its platform without consideration of what happens to the other side (and its feedback effect on the first side) is incomplete.[142] Again, this is not to say that a narrow "online search advertising" market definition is inappropriate to assess Google's market power, but the determination is complex and error prone—and essential to all analysis that follows.

The more important question is how to ultimately determine the market within which Google's activities should be assessed. The risk is that a market determination made on the basis of "common sense" and corporate documents—particularly those that equate channels of distribution with "markets,"[143] may dramatically overstate Google's power to affect advertising prices. But at the end of the day, advertising is aimed at lowering search costs[144]—of buyers for sellers, of sellers for buyers, and of buyers for prices. Whether this is done by bolstering brand recognition for purposes of facilitating or encouraging future purchases, or whether it is done by providing

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[141] *See generally* David S. Evans, *Two-Sided Market Definition* in MARKET DEFINITION IN ANTITRUST: THEORY AND CASE STUDIES, ABA SECTION OF ANTITRUST LAW (2009).
[142] *Id*. at 10, fn 21.
[143] *See* Manne & Williamson, *supra* note 112.
[144] Stigler, *The Economics of Information, supra* note ___.

a ready outlet for a consumer looking to make an immediate purchase, it is hard to see these as ultimately distinct functions. Yet the latter option has been made immensely more available and effective through online search advertising, and takes on a distinctive cast.

In reality, all forms of advertising—and related endeavors like store placement and design—are about bringing buyers and sellers together by minimizing some of the transaction costs that otherwise keep them apart. Given a consistent function for different channels of distribution, the burden is on those propounding a distinct economic relevance for each channel of distribution to demonstrate the proposed distinction with economic evidence. In the absence of such direct evidence, the monopoly power determination often turns on inferences drawn from market shares. Such inferences are not uncommon in antitrust analysis,[145] and Google's claimed market shares are certainly not out of line with the shares that have given rise to these presumptions.

The Question of Network Effects

The role of network effects in the "new economy" generally raises a host of questions for antitrust enforcement, especially in establishing the durable monopoly power required to prove a Section 2 violation. We now turn to considering the role of network effects in Google's product markets as well as whether and how any network externalities implicate an antitrust intervention against Google.

Consider first the case of a network with so-called "direct" network effects. In such a case, a user's participation in the system confers a so-called network benefit on other users, un-captured by the price the user pays to access the system. In contrast, "indirect" network effects are fully internalized by the system, as the price the user pays simply reflects the increased value of the platform from having more users on the other side of the two-sided platform.

The consequence of participation in a network with "direct" network effects rather than indirect is dramatic in terms of the ability of firms to

[145] *See, e.g.,* Eastman Kodak v. Image Technical Servs., Inc., 504 U.S. 451, 481 (1992) (80 percent is predominant); *Grinnell*, 384 U.S. at 571 (87 percent); American Tobacco Co. v. U.S., 328 U.S. 781 (1946) (over 66 percent); E.I. du Pont de Nemours & Co., 351 U.S. at 379 (75 percent); U.S. v. Dentsply, 399 F.3d 181, 188 (3rd Cir. 2005) (75 to 80 percent).

compete with Google. In the indirect case, a competing ad platform with a somewhat smaller network of end-users (searchers) would, if the value of the advertisement is dependent on the size of the network of end-users, simply receive a lower price for its product. The difference in quality attributable to the end user network size would be reflected in the price, and advertisers would have the same marginal incentive to advertise on either platform. The only complication is dependent on the fixed costs of advertising, where the initial costs of accessing multiple systems could be large enough to preclude current Google advertisers from switching to a competing platform.[146]

But the arguments involving network effects in Google's case don't turn on these fixed startup costs; rather, the arguments are that competitors are unable to obtain necessary minimum scale to offer quality competitive with Google's. That is, the interventionists argue that network effects create an insurmountable barrier to entry for would-be competitors. However, the fact that the relevant network effects are internalized should negate this concern, and at any rate, as a factual matter, all of Google's main competitors already have significant scale.[147]

Microsoft[148] turned in important part on network effects, and the court's approach to network effects in that case is of primary importance. Microsoft's importance does not really derive from whether the DOJ or the D.C. Circuit was ultimately correct in predicting that Microsoft's business practices would result in anticompetitive effect. Whether the agencies and courts were correct or not, *Microsoft* offers the opportunity to evaluate the approach of the DOJ in developing a theory based on a particular view of the economics of network effects, and evaluate the courts in assessing those theories with a nascent economic literature in a high-stakes case involving innovation,

It is important to note that our current best understanding of network

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[146] *See* Evans, *supra* note ___, at __.

[147] Consider a comparison to car manufacturers. Mercedes-Benz offers a better, but correspondingly more-expensive product that Honda. Yet because of differences in demand elasticity among purchasers, both Honda and Mercedes are able to compete vigorously in the broader car market. In the search case, the differences between the companies do not stem from the intended end product (although product differentiation does exist, of course, and has proved a source of the impetus for entry) but rather the size of the network. The fact that these network externalities are internalized means that almost any network can enter and expect to grow because from the start it can offer prices commensurate with its network size.

[148] U.S. v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001).

effects views them appropriately as beneficial, although there is dispute in the literature over the extent to which their presence also raises exclusionary concerns.[149] Although there is often a great deal of carelessness in defining terms, particularly in the tenuous translation from economic theory to judicial opinions, there is a crucial distinction between indirect and direct network effects.[150] Liebowitz and Margolis highlight the dramatically different implications of the two effects, and in particular demonstrate that transactions involving complementary products (indirect network effects) fully internalize the benefits of consuming complementary goods.[151] Thus, despite frequent claims to the contrary, indirect network effects are not a source of market failure leading to technology lock-in (and thus, potentially, exclusionary effects).[152]

Microsoft was built in important part on indirect network effects, however. The most important claim—that the substantial number of developers writing applications to run on Windows systems was an "applications barrier to entry"—was an argument that indirect network effects insulated Microsoft from competition and conferred the monopoly power required for the court to find against it, despite the claimed persistent threat of entry.[153] There is indeed economic theory purporting to support the possibility of this type of anticompetitive effect. However, the court's approach to addressing whether this possibility warranted antitrust liability is problematic, requiring as the court did only an incomplete theoretical justification and no empirical support of the plaintiffs' claims. For the court, the mere allegation of an applications barrier to entry appears to become a sufficient condition for conclusions about an anticompetitive effect: It is enough to conclude that such a barrier exists, and that "the applications barrier to entry *discourages* many from writing for these less popular platforms."[154] In fact, this conclusion may be correct. What is troubling, however, is that the court's approach is not sufficiently empirical, especially in light of the conflicting, underlying

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[149] *Compare* Stan J. Liebowitz & Stephen E. Margolis, *Network Externality: An Uncommon Tragedy*, 8 J. ECON. PERSP. 133 (1994) *with* Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON L. REV. 673 (1999).

[150] *Id*.; Michael L. Katz and Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93 (1994).

[151] Liebowitz & Margolis, *supra* note ___, at __.

[152] *See* Daniel F. Spulber, *Unlocking Technology*, 4 J. COMP. L. & ECON. 915 (2008).

[153] U.S. v. Microsoft Corp., 253 F.3d 34, 55 (D.C. Cir. 2001).

[154] *Id*. (emphasis added). Note that the court does not even assess the extent that mere "discouragement" operates as an effective entry barrier. The district court, we note, however, was not quite so circumspect.

theoretical literature. The court doesn't really require proof that the conclusion is correct. And moreover, nor does the court even effectively canvass the underlying economic theoretical literature to support its conclusion, nowhere even mentioning, for example, Liebowitz and Margolis' definitive work on the (contrary) implications of indirect network effects.[155]

Direct evidence would seem to offer a corrective, and, in fact, Microsoft argued that the issue should be decided on the basis of direct evidence. The court, however, dismissed Microsoft's direct evidence on monopoly power and essentially relied on the structural argument derived from its casual economic analysis of the applications barrier. Unfortunately, as Liebowitz and Margolis wrote during the heat of the *Microsoft* case, "Since the empirical support for this theory [network effects] is so weak, it appears at best to be premature and at worst simply wrong to use this theory as the basis for antitrust decisions."[156] Essentially the court was asked to act as the ultimate peer reviewer of an internecine economic debate—a task for which it was singularly unsuited. The *Microsoft* case represents the realization of the risk that novel economic theories applied in innovative markets present ample opportunity for agencies and courts to take questionable approaches to antitrust enforcement.

Several commentators have suggested that Google's search product and its search advertising product exhibit traditional network effects and implicitly or explicitly leap to the implication that increased antitrust concern is warranted. This is no surprise. As we have discussed, product innovations coupled with claimed network effects are likely to attract academic and regulatory attention, draw antitrust scrutiny, and increase the probability of liability. But several important weaknesses emerge in these claims and demonstrate considerable limitations in our understanding of the dynamics of Google's business, suggesting that a more empirically-minded and cautious approach to intervention is desirable.

Remarkably, the network effect claim as applied to Google is generally executed by naked assertion. Not a single one of the articles leveling the claim explains the source of the network effects using details of Google's actual market, products and business practices, nor does any of them explain the nature of the antitrust concern.[157] This does not, of course, mean that the

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[155] Liebowitz & Margolis, *supra* note ___, at __.

[156] Stan J. Liebowitz & Stephen E. Margolis, *Network Effects*, THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW (1998)

[157] See note ___ *supra* listing recent articles claiming network effects in Google's

assertion is necessarily wrong factually. It is surely the case, however, that erroneous enforcement is *more* likely if action is taken on the basis of unsubstantiated claims that might prove to be false. To be sure, errors can be corrected by the courts. But to do so, courts must adopt approaches to antitrust enforcement that are conductive to error correction. In particular, courts must steadfastly protect the safeguards set forth by the Supreme Court which require plaintiffs to present rigorous evidence of competitive harm as a precondition for liability. Nevertheless, as we have discussed, even when courts correct erroneous enforcement (or private litigation decisions), this only renders the probability of erroneous outcomes reduced—an effect that is not insignificant, but that nevertheless leaves significant error cost risk.[158]

For the purposes of antitrust analysis, it is absolutely critical to distinguish the question of the existence of network effects from the issue of whether and what implications their existence has for the merits of antitrust intervention**.** At the same time, to the extent that the existence of network effects does make a difference in terms of an antitrust case, it must be because the network effect operates as a barrier to entry, thereby diminishing the likelihood that users will transfer to competing platforms. Because users of search engines are insensitive to the number of other users, this effect should not strongly hold. Nor do indirect network effects seem to exert a barrier to entry here.[159]

The upshot is that there is considerable difficulty in assessing the competitive implications of innovative products and reflexive appeals to the existence of network effects as justifying intervention are likely to lead to erroneous decisions by enforcers and judges. Moreover, the approach adopted in *Microsoft* to analyze the competitive implications of network effects, if applied in Google's case, is disconcertingly likely to over-emphasize the theoretical arguments that would support a claim of problematic network effects even in the absence of clear empirical evidence to support those claims.

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business.

[158] *See* supra notes _ to _ and accompanying text.

[159] In fact, as Leibowitz and Margolis have demonstrated, the general economic consequences of indirect and direct network effects are substantially different, and indirect network effects are not a source of inefficient technology lock-in—and thus do not pose a barrier to entry. *See, e.g.,* Leibowitz and Margolis, *Network Effects* in HANDBOOK OF TELECOMMUNICATIONS ECONOMICS, VOL. 1 (M.E. Cave, et al., eds.) (2002). *See also* Daniel F. Spulber, *Unlocking Technology: Antitrust and Innovation*, J. COMP. L. & ECON., Advance Access published on May 8, 2008. doi:10.1093/joclec/nhn016.

In Google's case, where network effects at least superficially appear to be prevalent and its business model appears to mimic those of other network industries, a clearer understanding of the particulars of Google's business suggests that those presumptions are premature and misdirected. And, of course, further understanding might lead to different conclusions than the preliminary ones we've described here. The immediate point is that the likelihood of error in the face of Google's immensely complicated product and business innovations seems unacceptably high, particularly coupled with the dynamic consequences of deterring innovations exactly like Google's that have proven to be enormously welfare-enhancing.

Has Google Engaged in Exclusionary Conduct?

There are five primary categories of Section 2 claims raised against Google. For example, the TradeComet complaint alleging that Google maintains monopoly power in the search advertising market raises a number of arguments about Google's alleged exclusionary conduct. TradeComet alleges that:

1. Google has entered into exclusive syndication agreements with certain high-traffic online publishers, foreclosing access to these important sources of search revenue by competitors.[160]
2. Google has manipulated its landing page quality score to exclude competitors from gaining traffic through Google advertising.[161]
3. Google has restricted advertiser's access to important data created while using AdWords.[162] Advertisers often embark on complex campaigns that involve bidding on hundreds of thousands of keywords. By restricting access to AdWords data, Google has made it difficult for advertisers to evaluate the performance of their advertising campaigns and decide whether to switch to or add a competitor's search advertising service.
4. Google has deployed default mechanisms that make it difficult for users to select a search engine other than Google.[163] When individuals use Google's toolbar feature they automatically have Google set as the default search tool. If a user tries to set an

[160] Cite complaint.
[161] Cite complaint.
[162] Complaint at ¶ 74, TradeComet.com LLC v. Google, Inc., No. 09-CIV-1400 (S.D.N.Y. filed Feb. 17, 2009).
[163] Id. at ¶ 75.

alternative search engine the default, Google's toolbar software automatically and without the user's permission reverts to Google.

5. Google has manipulated its organic search algorithm to benefit Google's own products and disfavor competitors.[164]

These five categories of allegations largely revolve around claims relating to two business decisions: first, Google has entered into exclusive syndication agreements with high-traffic websites to impede competitors' ability to gain the critical search exposure necessary to operate a viable search advertising platform. Second, Google has implemented a quality metric as part of its keyword auction that effectively terminates its voluntary profitable dealings with competitors. We consider each in turn, highlighting issues critical to analyzing the merits of a potential monopolization case against Google.

Exclusive Syndication Agreements and Other Foreclosure-Based Arguments

The TradeComet complaint alleges that Google has entered into exclusive agreements "with many of the most highly trafficked websites on the Internet, guaranteeing that any search generated at those non-search websites is directed to Google's search advertising platform rather than to rival platforms."[165] For example, Google entered into an agreement with America Online ("AOL") which dedicated its search business to Google's technology. Others have similarly argued that Google's exclusive arrangements with AOL which placed a small box that said "Search Powered by Google" on every web page in exchange for payments were a critical moment in Google's history.[166]

The antitrust claims related to Google's exclusive syndication agreements are relatively straightforward.[167] The claim is that Google's agreements contractually foreclose competing search engines from the opportunity to compete for the distribution necessary to achieve minimum efficient scale. In the less technical language adopted in the TradeComet complaint, it is alleged that the agreements are responsible for "locking up" the

[164] Id. at ¶ 76.
[165] Id. at ¶ 68.
[166] DAVID VISE & MARK MALSEED, THE GOOGLE STORY 204-209 (2005).
[167] For purposes of this paper, we use the term "exclusive agreements" to encompass both agreements that require full as well as partial exclusivity.

business of significant Internet publishers such that the result is "foreclosure of a substantial percentage of the search syndication market."[168]

Thus, the anticompetitive theory of harm is that Google has locked up a sufficient share of the Internet search business with exclusive arrangements such that rival search operators cannot achieve minimum efficient scale, and does so by predatory "overbuying" such that the payments do not necessarily cover Google's advertising revenues.[169] While antitrust has long recognized the competitive necessity of exclusive arrangements, it is also possible that such agreements can raise barriers to entry and violate Section 2 of the Sherman Act under certain conditions. Those conditions are not likely to hold here, however, and Google's exclusive syndication agreements are not likely cause for antitrust concern.

One reason exclusive dealing arrangements have long been understood by antitrust enforcers and courts to result in the type of competitive harm required for an antitrust violation is that exclusive dealing contracts so frequently arise from the competitive process for product distribution. Consider Google's syndication arrangement with AOL. While the TradeComet complaint presents the temptation to view Google's success in obtaining that contract as a symptom of the lack of competition, it is actually the opposite. As Vise and Malsteed note, Google's success was an example of besting Yahoo in a fierce competition for AOL's business.[170] This "competition for the contract," in antitrust parlance, exposes the fallacy that observing a winner on the top of hill by himself after a race implies the lack of competition. This form of upfront, *ex ante* competition has long been recognized as a dimension of competition that generates substantial benefits for consumers (in this case, AOL's extra revenues are passed on in the form of lower prices, investments in the quality of its products, and other benefits) that antitrust must protect.[171] Indeed, antitrust courts have recognized this form of competition as "a vital form of rivalry . . . which the antitrust laws encourage rather than suppress."[172]

The competitive process for product distribution, or access to

[168] Id. at ¶ 70.
[169] Id.
[170] VICE AND MALSEED, at 204-209.
[171] See, e.g., Paddock Publ'ns, Inc. v. Chicago Tribune Co., 103 F.3d 42, 45 (7th Cir. 1996) ("Competition-for-the-contract is a form of competition that antitrust laws protect rather than proscribe, and it is common.").
[172] Menasha Corp. v. News Am. Mktg. In-Store, Inc., 354 F.3d 661, 663 (7th Cir. 2004).

promotion and distribution, can be especially vigorous. This is especially true in high-tech and web-based markets where competition for consumer attention is an important element of the competitive process. Both because of the high stakes nature of competition for the contract and the business that the contract brings with it, and because of the intuitive appeal of the fallacy that the winner of an exclusive contract must face little competition, antitrust analysis of competition for distribution is an unsettled and sometimes incoherent area of the law.[173] Google's exclusive syndication agreements with firms that can shift their customer bases to (or from) Google's search technology are properly viewed as a form of competition for distribution, similar to the slotting allowances that manufacturers pay to retailers for premium grocery store shelf space which increases product sales. In markets where the success of the firm depends on AOL and similarly situated firms facilitating access to consumers, one can expect vigorous competition for distribution to ensue.

Moreover, as a factual matter, Google's "exclusive" syndication agreements are often for limited duration, typically apply to only one form of advertising, and often allow the syndication partner to sell ads directly. Thus, the agreements are typically "partial" exclusives that allow the syndication partner to have greater choice and to retain greater product variety than would obtain under a full exclusive. Each of these factors reduces the degree or extent of exclusivity. Such limitations are not surprising contractual compromises given the competitive nature of the competition among search engines.

Merely labeling Google's syndication agreements as "competition for distribution" does not mean that the agreements are immune from antitrust scrutiny. When accompanied with exclusivity provisions, there are conditions under which agreements can exclude equally efficient rivals, raise barriers to entry, and generate consumer harm. It does, however, imply that like other forms of competition, one should hesitate before condemning an outcome that is generated by the competitive process as an antitrust violation. Before turning to whether the conditions necessary for Google's agreements to harm consumers are likely to be met here, it is worth noting three important and often overlooked benefits of competition for distribution involving exclusivity.

The first competitive benefit is that competition for distribution generates promotional payments to distributors, which are, in turn, passed on

[173] See generally, Joshua D. Wright, *Antitrust Law and Competition for Distribution*, 23 Y. J. REG. 169 (2006); Benjamin Klein, *Exclusive Dealing as Competition for Distribution on the Merits*, 12 GEO. MASON L. REV. 119 (2003).

to consumers through quality improvements or price reductions in the distributors' markets. While the competitive benefits are not as intuitively obvious as payments which take the form of a price reduction, competitive payments from firms like Google to AOL can improve consumer welfare as they are passed on to consumers.

Second, when exclusivity provisions are observed in contracts resulting from competition for distribution, they often have important efficiency effects. For example, exclusive dealing can facilitate investment and the supply of efficient promotion and distribution by minimizing free-riding both in the presence and absence of manufacturer supplied investments.[174] This is one reason why we observe exclusive dealing contracts in industries where firms do not have market power.

Third, when firms like AOL offer partially or fully exclusive contracts up for bidding to Google and its rivals, the result can be to intensify competition for distribution.[175] The economic logic is relatively straightforward. Klein and Murphy demonstrate that by offering upstream firms access to the distributor's loyal customer base, the distributor (in this case AOL) is able to commit a substantial fraction of its customers' purchases to the "favored" supplier and thereby dramatically increase each supplier's perceived elasticity of demand by making rival products highly substitutable.[176] This effect is important because it provides a pro-competitive rationale for why both Google and firms like AOL might desire exclusive syndication agreements: they make both firms better off and consumers benefit as greater payments are passed on. The key policy implications for the antitrust treatment of competition for distribution is that it is a normal part of the competitive process and that any antitrust scrutiny should be focused on ensuring that rivals have open access to offer competing bids.

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[174] Benjamin Klein and Andres V. Lerner, *The Expanded Economics of Free-Riding: How Exclusive Dealing Prevents Free-Riding and Creates Undivided Loyalty*, 72 ANTITRUST L.J. 473 (2007).

[175] Benjamin Klein and Kevin M. Murphy, *Exclusive Dealing Intensifies Competition for Distribution*, 75 ANTITRUST L.J. __ (2008). This explanation is related to, and provides the economic basis for, the argument that exclusives "instigated" by customers should enjoy a presumption of legality. *See* Richard M. Steuer, *Customer Instigated Exclusive Dealing*, 68 ANTITRUST L.J. 239 (2000).

[176] *Id*.

Exclusive syndication agreements, like most exclusive dealing contracts resulting from the competitive process for distribution, are likely to provide at least some efficiency benefits and to harm some individual competitors. The question remains whether those agreements might also produce harm to competition in the form of anticompetitive effects and thereby violate Section 2. We now turn to that question.

The modern "rule of reason" analysis evaluating exclusive dealing contracts focuses on a number of factors, including the defendant's market power, the degree of market foreclosure, entry conditions within the market, the duration of the contracts at issue, whether exclusivity has the potential to raise rivals' costs, the presence of actual or likely anticompetitive effects, and business justifications for the questioned action. Areeda and Hovenkamp articulate the prima facie case for exclusive dealing claims as follows:

> In order to succeed in its claim of unlawful exclusive dealing a plaintiff must show the requisite agreement to deal exclusively and make a sufficient showing of power to warrant the inference that the challenged agreement threatens reduced output and higher prices in a properly defined market . . . . Then it must also show foreclosure coverage sufficient to warrant an inference of injury of competition . . . depending on the existence of other factors that give significance to a given foreclosure percentage, such as contract duration, presence or absence of high entry barriers, or the existence of alternative sources or resale.[177]

Modern antitrust analysis of exclusive agreements in cases involving competition for distribution therefore requires: (1) a demonstration of the defendant's market power, (2) substantial foreclosure, (3) contracts of sufficient duration to prohibit meaningful competitive bidding by rivals, and an (4) analysis of actual or likely competitive effects arising from the defendant's conduct. We will focus our discussion on elements (2) and (3) here since we have already discussed monopoly power and the requirement faced by all plaintiffs bringing monopolization claims to demonstrate that the conduct at issue either has generated or will very likely generate higher prices, reduced output, or less innovation.

[177] AREEDA & HOVENKAMP, *supra* note __, ¶ 1821.

Substantial Foreclosure

It is typically necessary to show that a monopolist has foreclosed at least forty percent of the relevant market before antitrust liability can be found.[178] One commentator summarizes current antitrust law as "routinely sustain[ing] the legality of exclusive dealing arrangements with foreclosure percentages of forty percent or less."[179] Notwithstanding this traditional threshold, a smaller foreclosure percentage can suffice so long as it is shown that competitors have been kept from achieving the critical mass necessary to pose a threat to the monopolist.[180]

The economic logic of the foreclosure requirement is sound. The anticompetitive theories of exclusive dealing arrangements in the economics literature require substantial economies of scale.[181] This is because in order for a monopolist to succeed in increasing barriers to entry, he must cover enough distribution for a sufficient period of time that rivals do not have the opportunity to achieve minimum efficient scale. If rivals face constant returns to scale, a reduction in distribution opportunities does not deprive the rival of the opportunity to operate efficiently and competition cannot be harmed. The key policy implication of the requirement of substantial foreclosure is that so long as a sufficient number of distributor contracts become available for competitive bidding within a reasonable time period, exclusive contracts are unlikely to generate competitive harm.[182] Consistent with the economic requirement that an exclusive arrangement foreclose a substantial share of distribution, antitrust law has long required the plaintiffs demonstrate substantial foreclosure within a relevant market.

The D.C. Circuit's analysis of Microsoft's exclusive dealing arrangements with Internet Access Providers ("IAPs") and personal computer manufacturers provides a recent example of modern antitrust analysis of somewhat similar arrangements. There the district court concluded that Microsoft's *de facto*

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[178] *See* Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2 (1984).

[179] Jonathan M. Jacobson, *Exclusive Dealing, "Foreclosure," and Consumer Harm*, 70 ANTITRUST L.J. 311, 324 n.85 (2002).

[180] *See generally* Microsoft, 253 F.3d at 71 (finding less than 40 percent foreclosure sufficient for antitrust liability); *see also* Dennis W. Carlton, *A General Analysis of Exclusionary Conduct and Refusal to Deal-Why Aspen and Kodak Are Misguided*, 68 ANTITRUST L.J. 659 (2001).

[181] Abbott & Wright, *supra* note ___, at ___.

[182] *See generally*, Klein, *supra* note __ (GMULR).

exclusive distribution contracts did not violate Section 1 of the Sherman Act because they foreclosed less than forty percent of the market. Somewhat puzzlingly, the district court then found that the same arrangements violated Section 2 of the Sherman Act. The D.C. Circuit did not reverse the district court on its ruling with respect to Section 1, which the plaintiffs did not challenge, but it upheld the district court's determination that the contracts violated Section 2 of the Sherman Act.[183] While the agreements foreclosed less than forty percent of the market, the D.C. Circuit concluded that Microsoft violated the antitrust laws because the agreements "help[ed] keep usage of Navigator below the critical level necessary for Navigator or any other rival to pose a real threat to Microsoft's monopoly."[184] As such, the D.C. Circuit endorsed a distribution channel-specific form of foreclosure analysis that can be thought of as assigning different weights to more efficient distribution channels, such that the court can be thought of as concluding that Microsoft foreclosed over forty percent of "efficient" or "effective" distribution.[185] Thus, any antitrust analysis of Google's exclusive syndication arrangements will almost certainly require, as a necessary but not sufficient condition for liability, the plaintiff to demonstrate that the contracts foreclosure at least forty percent of available inputs, in this case search business, from rivals. This approach is a minimal safeguard to ensure that antitrust liability is not erroneously thrust upon agreements between firms that have no possibility of harming competition, and likely produce substantial benefits for consumers.

We have significant doubts that this burden can be met. As in *Microsoft*, these search agreements are alleged to preserve Google's monopoly position because they block search advertisers from obtaining the critical mass of search traffic that is necessary to carry out a viable search advertising platform that could provide some competitive discipline. The anticompetitive theory is that Google, in the same way that Microsoft blocked browsers such as Netscape from accessing an important distribution channel necessary to generate usage levels critical to compete with Microsoft in the operating system market, has blocked or will block competing search advertisers from gaining the requisite level of search traffic necessary to maintain a viable and competitive search advertising platform.

Without having the benefit of the data necessary to conduct a full scale foreclosure analysis, we note several critical points. The first is that the burden

[183] *Microsoft*, 253 F.3d at 68.
[184] *Id.* at 71.
[185] *See* Klein, *supra* note __, at 127.

lies with the potential plaintiff to demonstrate that the foreclosure levels, whether above or below conventional levels sufficient to survive summary judgment in an exclusive dealing case, are sufficient to deprive rivals of the chance to compete and achieve minimum efficient scale.[186] It is unclear what percentage of the relevant market for distribution Google's exclusive or partial exclusive syndication agreements cover. The percentage might well be quite small in light of the total number of Internet publishers. However, it is at least theoretically plausible that the percentage exceeds the forty percent threshold.

This raises the second point. The key competitive question is whether the agreements at issue collectively foreclose rivals from access to critical traffic for a long enough of time to actually produce anticompetitive effects. We are skeptical as to whether these agreements, even assuming significant foreclosure levels and ignoring the competitive benefits discussed above, are likely to produce anticompetitive effects that create the basis for a Section 2 violation. One reason for our skepticism is that the presumption that competitors need access to high-traffic websites to build scale is tenuous. In reality, minimum viable scale is likely to be quite small. Google's own history—growing from a tiny start-up competing with a Yahoo! behemoth—and that of Microsoft's Bing search engine demonstrate that an operation of competitive quality can be obtained with relatively small initial scale. At the same time, several start-up search engines—from Cuil to Wolfram Alpha to the perennial competitor, Ask.com—have entered the market, at least believing that they were able to obtain the necessary scale, even though none have been particularly successful. Similarly, some large competitors have failed to capitalize on their size to achieve marketplace success—Lycos and AltaVista, for example. Thus, we do not find it likely that syndication agreements that hypothetically foreclose over half of the potential market for distribution (a figure we find implausible) would be sufficient to deprive rivals of the opportunity to compete for sufficient distribution to achieve minimum efficient scale.

It is true that perhaps a court could, as the D.C. Circuit did in *Microsoft* in evaluating the Section 2 claim involving exclusive dealing arrangements, conduct a narrow, distribution channel-specific foreclosure analysis and come up with much larger foreclosure percentages. Again, we are not persuaded that such an approach would necessitate a different result. The key point is that foreclosure is a necessary but not sufficient condition for liability. While

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[186] *See* Jonathan M. Jacobson, *Exclusive Dealing, "Foreclosure," and Consumer Harm*, 70 ANTITRUST L.J. 311, 324 (2002).

failure to demonstrate substantial foreclosure implies that antitrust liability is inappropriate, a successful showing only implies that further analysis of competitive effects is wise. The critical question is whether the agreements prevent open and vigorous competition for distribution. The belief that foreclosure of a single channel of distribution is sufficient to maintain monopoly power is at least partially belied by the ability of these search competitors to employ creative tactics to gain market share. Product differentiation is an obvious strategy, and several search engines have employed novel technologies in an effort to distinguish themselves. Similarly, vertical search engines can gain market share by offering searches relevant to specialized products, and Amazon.com, for example, dominates searches for books. Finally, companies like Microsoft have attempted to gain access to end users by attempting their own exclusive arrangements—arrangements that, because of the internalization of indirect network effects are economically viable for their counterparties. Moreover, Microsoft, especially, has a substantial channel of distribution through its own operating system and other products.[187] We therefore tentatively conclude, without having access to data sufficient to conduct our own complete foreclosure analysis, that Google's exclusive syndication agreements are not likely to generate foreclosure sufficient to deprive rivals of the opportunity to compete for distribution.

Finally, a related reason for skepticism of claims that Google's syndication agreements create competitive harm is that exclusive agreements of short duration typically do not raise competitive concerns. The economic logic of anticompetitive foreclosure is that rivals are contractually prohibited from access to the competitive process for distribution. In other words, they are deprived the opportunity to compete for distribution sufficient to achieve efficient scale. When exclusive contracts are of short duration, Google's rivals have the opportunity, like Yahoo did, to compete for contracts with AOL and others. Indeed, conventional antitrust analysis of exclusive dealing arrangements dictates that agreements of less than one year and terminable at will are presumptively lawful,[188] and agreements longer than one year but still

[187] Although it should be noted that *Microsoft* itself probably makes some of the types of pro-competitive arrangements that Microsoft would enter into illegal—a testament to the error costs inherent in that case in light of the then-unforeseen competition between Google and Microsoft.

[188] A number of courts have held that exclusive contracts of one year or less are presumptively lawful. See, e.g., Roland Mach. Co. v. Dresser Indus., 749 F.2d 380, 392-95 (7th Cir. 1984); Concord Boar Corp. v. Brunswick Corp., 207 F.3d 1039, 1059 (8th Cir. 2000); Omega Envtl. Inc. v. Gilbarco, Inc., 127 F.3d 1157, 1163-64 (9th Cir. 1997); U.S.

of short duration are less likely to result in competitive harm. It is unclear whether the syndication agreements are sufficiently short in duration to be viewed as presumptively lawful under current exclusive dealing law, but as the vast majority of syndication agreements expire in less than three years and are staggered (rather than all coming up for renewal at the same time), rivals are continuously afforded ample opportunity to offer competitive terms.

Quality Scores

The more interesting and novel antitrust questions relate to the relatively-more-innovative practice—the use of quality scoring to adjust AdWords search auctions. Google is alleged to employ its quality score—which rivals complain it has kept secret—to preclude access by competitors to its top search results, and, in turn, increase the payments required of competitors for top placement.[189] In an effort to match the facts of *Aspen Skiing*,[190] moreover, the TradeComet complaint alleges that Google withdrew from a voluntary, profitable venture through manipulation of its quality scores.

The appropriate antitrust question raised by these complaints is whether Section 2 imposes upon Google, assuming that it is a monopolist, a duty to deal with its rivals. It has been long understood that the antitrust laws

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Healthcare, Inc. v. Healthsource, Inc., 986 F.2d 589, 596 (1st Cir. 1993); CDC Techs., Inc. IDEXX Labs, Inc., 186 F.3d 74 (2d Cir. 1999); Thompson Everett, Inc. v. Nat'l Cable Adver., 57 F.3d 1317, 1325 (4th Cir. 1995); Paddock Publications, Inc. v. Chicago Tribune Co., 103 F.3d 42, 47 (7th Cir. 1996) ("the FTC and the Supreme Court concluded that even exclusive dealing contracts are lawful if limited to one year's duration"). Similarly, some commentators have argued in favor of per se legality for such short-term contracts. See, e.g., Joshua D. Wright, *Antitrust Law and Competition for Distribution*, *supra note* __, at __. A handful of courts have support this proposition. *See, e.g.*, United States v. Dentsply Int'l, Inc., 2000-1 Trade Cas. (CCH) ¶ 73,247, at ¶¶ 91, 139-41 (D. Del. Mar. 30, 2001); Minnesota Mining & Mfg. Co. v. Appleton Papers, Inc., 35 F. Supp. 2d 1138, 1144 (D. Minn. 1999) ("3M has produced evidence that Appleton's sole-sourcing agreements often include incentives that have the practical effect of tying up the paper sheet inventory of a merchant over a period of several years."); United States v. Dairymen, Inc. 1983-2 Trade Cas. (CCH) ¶¶ 65,651 & 65,704 (W.D. Ky. 1983) (enjoining requirements contracts covering large percentage of the market though only 30 days to one year in duration), *aff'd per curiam*, 758 F.2d 654 (6th Cir. 1985).

[189] Cite popular press accounts of Google quality scores.

[190] *Compare* TradeComet.com complaint, *supra* note __, at __ *with Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 601 (1985).

only rarely impose a duty to deal on business firms.[191] In *Trinko,* the Supreme Court reaffirmed that as "a general matter," the antitrust laws do not impose a duty to deal with rivals. However, the Supreme Court has also identified narrow conditions "at the boundary" of Section 2 law under which antitrust law will impose such a duty.

In *Aspen Skiing*, the Supreme Court held that a ski area operator violated the antitrust laws by refusing to continue a joint-ticket venture with a neighboring operator.[192] Under the agreement, the parties issued joint multi-day lift tickets that could be used at each of the areas ski facilities. In finding that there was sufficient evidence to find antitrust liability, the Court focused on the fact that the offending operator's was willing to terminate a voluntary and profitable business relationship.[193] The Court observed that the offending operator persisted in terminating the joint-ticket venture even after the competitor offered to pay full retail price for the tickets in order to continue the arrangement. Relying on these facts, the Court concluded that such conduct suggested that the offending ski operator was willing to forgo short-term profits for future monopoly prices. As a result, the court determined that the refusal to deal was anticompetitive conduct aimed at preserving a monopoly.

The Supreme Court's latest word on the duty to deal makes the case for limiting the duty to deal to an extremely narrow set of circumstances:

> Firms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers. Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price,

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[191] *See, e.g.*, United States v. Colgate & Co., 250 U.S. 300, 307 (1919) (the antitrust laws typically do not "restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal."). The right to refuse to deal with rivals is not absolute, however; *see also Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 601 (1985) ("[t]he high value . . . placed on the right to refuse to deal with other firms does not mean that the right is unqualified."), but it is close. *See generally* Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 (2004)..

[192] *Aspen Skiing*, 472 U.S. at 608.

[193] *Id*.

> quantity, and other terms of dealing—a role for which they are ill suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion. Thus, as a general matter, the Sherman Act "does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.[194]

The Court then warned that imposition of a duty to deal would threaten to "lessen the incentive for the monopolist, the rival, or both to invest in . . . economically beneficial facilities." "Refusal to deal" antitrust jurisprudence has been heavily criticized by commentators[195] and offers business firms little in the way of advance knowledge whether business decisions will violate the antitrust laws. Because imposition of a duty to deal with rivals threatens to decrease the incentive to innovate by creating new ways of producing goods at lower costs, satisfying consumer demand, or creating new markets altogether, courts and antitrust agencies have been reluctant to expand the duty to deal.

Despite this reluctance, the TradeComet complaint contends that Google's decision to implement a quality metric to effectively terminate prior dealings with competitors more closely resembles the circumstances presented in *Aspen Skiing* than those in *Trinko* and thus presents the rare circumstance in which imposition of a duty to deal under Section 2 is appropriate. The key allegation is that Google manipulates the quality score generated by its quality score methodology, allowing Google to adjust where among the sponsored links AdWords will place an advertisement and what amount must be bid in order to secure a top placement. According to TradeComet, this allows Google arbitrarily to charge advertisers higher prices for the same placement irrespective of the advertiser's keyword auction bids. The complaint contemplates that in extreme cases, Google could charge arbitrarily high prices sufficient to result in a *de facto* refusal to deal with rivals.[196] TradeComet alleges that Google employed this type of strategy once its vertical search engine rival, SourceTool, started to enjoy success in the search advertising

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[194] Trinko, 540 U.S. at 407-08.

[195] *See, e.g.*, Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 NOTRE DAME L. REV.. 972, 973 (1986); *see also, e.g.,* Ronald A. Cass & Keith N. Hylton, *Preserving Competition: Economic Analysis, Legal Standards and* Microsoft, 8 GEO. MASON L. REV. 1, 27 (1999) (stating that *Aspen Skiing* "has been roundly criticized").

[196] TradeComet.com complaint, *supra* note __, at __.

market.[197]

We do not believe that Google's use of its own quality scores justifies the extreme and rare step of creating an antitrust duty to deal. The remarkably thin reed upon which the TradeComet complaint justifies its claim is the alleged fact that Google and TradeComet had once entered into a voluntary and profitable deal. TradeComet alleges that changes to the terms of that deal, such as an increase in the price charged, imply the type of short-term sacrifice of profits at work in *Aspen Skiing*. We are not persuaded. The reasons for rejecting antitrust-based duties to deal cited by the Court in *Trinko* and leading commentators all militate in favor of rejecting such a claim.

First, even taken the alleged facts as true, there is simply no reason to believe that a course of conduct that was once profitable remains so indefinitely. The pernicious incentive effects of such a rule are intuitively obvious. Market conditions change. A rule that exposes innovative firms to Section 2 liability and treble damages for interrupting or terminating a course of dealing threatens to lessen the incentive to innovate and enter into agreements to commercialize innovation in the first instance—particularly because the innovator's incentives to enter into agreements that spotlight its innovation change over time with increased consumer awareness of the innovation. It is for this reason that several commentators at the recent Section 2 Hearings concluded that termination of a prior course of dealing should not be a significant factor in assessing whether the antitrust laws impose a duty to deal.[198]

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[197] We do not separately discuss this claim as an essential facility claim both because the Supreme Court has refused to endorse such a claim, see *Trinko*, and because there is near universal agreement from commentators that it should be abandoned. *See, e.g.*, 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW, ¶ 771c, at 173 (2d ed. 2002) (noting that "the essential facility doctrine is both harmful and unnecessary and should be abandoned"); Michael Boudin, *Antitrust Doctrine and the Sway of Metaphor*, 75 GEO. L.J. 395, 402 (1986) (noting "embarrassing weakness" of essential facilities doctrine); Abbott B. Lipsky, Jr. & J. Gregory Sidak, *Essential Facilities*, 51 STAN. L. REV. 1187, 1195 (1999) (stating that "mandatory access remedies, such as the essential facilities doctrine, do not fit comfortably within antitrust law"); Gregory J. Werden, *The Law and Economics of the Essential Facility Doctrine*, 32 ST. LOUIS U. L.J. 433, 480 (1987) (asserting that "courts should reject the doctrine").

[198] U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 42 fn. 63, 64 (2008), *available at* http://www.usdoj.gov/atr/public/reports/236681.pdf.

Second, again assuming for the sake of argument that Google is a monopolist and has forsaken short-term profits to refuse to deal with rivals, imposing a duty to deal is not likely to improve matters because of the difficulties of crafting and enforcing a remedy. As the Court noted in *Trinko*, "enforced sharing . . . requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited."[199] The Antitrust Modernization Commission recently reached a similar conclusion,[200] joining the growing consensus of commentators, such as Judge Posner, who have concluded that "it cannot be sound antitrust law that, when Congress refuses or omits to regulate some aspect of a natural monopolist's behavior, the antitrust court will step in and supply the missing regulatory regime."[201]

Third, and most importantly, even the most aggressive interpretations of *Aspen Skiing* and the most enthusiastic supporters of a limited antitrust duty to deal concede that refusal to deal is entirely appropriate if there is a competitive justification for the conduct at issue. In this case, the argument that Google's quality scores are without competitive merit is misleading and leads to perverse antitrust results. The most obvious competitive justification for Google's quality score metric is that it is an innovative and effective algorithm for predicting click-through rates and facilitating efficient pricing.[202] That the device is used by every general purpose search engine for the same purpose further suggests that its function is procompetitive. Complaints about the secrecy of the algorithm are a red herring from an antitrust perspective. No business firm, even a monopolist, has an antitrust duty to reveal to competitors (and especially its rivals) formulas that it uses to set prices. Further, there is an obvious pro-competitive justification for keeping the quality score metric secret: Google's success in matching keywords to ads will be compromised by disclosure of the algorithm since it would allow spammers and others greater opportunities to "game" the auction process.[203]

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[199] 540 U.S. 398, 408 (2004).

[200] ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATION 102 (2007), *available at* http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf ("[F]orced sharing requires courts to determine the price at which such sharing must take place, thereby transforming antitrust courts into price regulators, a role for which they are ill suited.")

[201] POSNER, *supra* note __, at 243-44.

[202] See Part 3, *supra.* See also Athey & Ellison, *supra* note ___.

[203] The complaint over Google's refusal to completely disclose its pricing algorithm is related to recent attempts to incorporate privacy issues into antitrust analysis. On the

But there is a more fundamental point: United States antitrust law not only does not condemn Google's ability to charge efficient prices for its services through the auction, it *encourages* it. Even if a potential antitrust plaintiff could demonstrate that the quality scoring metric (or some other auction rule, like reducing the number of slots available) results in higher prices because those prices more accurately reflect demand,[204] improving one's ability to extract monopoly rents simply does not violate Section 2 of the Sherman Act. This fundamental trade-off reflects precisely and deeply the concern with error cost avoidance that we have been discussing.

5. CONCLUSION

While our analysis has focused on the types of arguments we believe are most likely to be raised in Section 2 claims against Google, it is possible that there are others we do not consider here. However, for the reasons discussed above, our tentative conclusion is that there is little reason to believe that plaintiffs can or should prevail against Google in a monopolization claim based on the two types of conduct considered here: exclusive syndication agreements and use of the quality score metric to extract greater rents. At a minimum, as a

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one hand, it is uncontroversial that privacy can be a form of non-price competition and so can be within the domain of the antitrust laws in the same way that a cartel between rivals to refuse to compete over store hours or free parking would be illegal. Conventional antitrust analysis is sufficiently flexible to adapt to such concerns where appropriate. However, these arguments seem to have no application here. Modern merger analysis requires one to demonstrate how the merger changes the incentives of parties to compete on privacy. We have not seen any proponents of increased scrutiny of privacy concerns in merger analysis provide an explanation for why a merger would *change* incentives of firms to compete on privacy. Whatever the evidence supporting the relationship between market concentration and price underlying some of modern merger analysis, we are aware of no evidence that such a relationship exists between concentration of data and privacy competition. The analogous monopolization complaint would be that a dominant firm would engage in practices that harmed competition by reducing the privacy protections afforded consumers. The privacy complaints are not arguments that Google would engage in conduct that would reduce competition, but rather "status" arguments that a single firm in control of data is presumptively bad from an antitrust perspective. There is nothing in modern monopolization law to support such a claim.

[204] And as we discuss in Part 3, *supra*, we believe that a quality score adjustment does permit the search engine to capture more revenue by increasing the likelihood of revenue-generating clikthroughs by increasing search result relevance.

safeguard against the types of antitrust error that we've discussed here, any such enforcement action should not proceed without rigorous and concrete evidence of harm to consumers.

Indeed, it is our view that in light of the antitrust claims arising out of innovative contractual and pricing conduct, and the apparent lack of any concrete evidence of anticompetitive effects or harm to competition, an enforcement action against Google on these grounds creates substantial risk for a "false positive" which would chill innovation and competition currently providing immense benefits to consumers.