In Search of a Competition Doctrine for Information Technology Markets: Recent Antitrust Developments in the Online Sector

Jeffrey A. Eisenach and Ilene Knable Gotts†

Recent antitrust developments in the online sector – sometimes described as the "Internet Ecosystem" – demonstrate that the search for a coherent and reliable doctrine for evaluating competition issues in high-tech markets remains incomplete. While acknowledging that traditional approaches are often inapposite for assessing the competitive dynamics of high-tech markets, enforcers continue to struggle to devise a coherent alternative framework. We review some recent cases that illustrate the challenges of enforcing competition law in information technology markets.

I. INTRODUCTION

Information technology ("IT") markets have been raising difficult issues for competition authorities for over a century. Indeed, December 2013 marked the 100th anniversary of AT&T's controversial "Kingsbury Commitment"[1] in which AT&T agreed to interconnect its long-lines networks with local telephone companies in return for a legal monopoly over long distance service—a deal that ultimately led to decades of litigation and perhaps the most famous consent decree in antitrust history, the 1982 "Modified Final Judgment."[2] Competition authorities have struggled to devise solutions to real or theoretical antitrust concerns in virtually every major IT market, from mainframe computers (IBM)

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† Forthcoming in *Communications and Competition Law: Key Issues in the Telecoms, Media and Technology Sectors* (Alphen aan den Rijn, The Netherlands: Kluwer Law International/International Bar Association series). Jeffrey A. Eisenach is a Senior Vice President at NERA Economic Consulting. Ilene Knable Gotts is a partner at Wachtell, Lipton, Rosen & Katz in New York. The views expressed in this paper are the authors' and should not be attributed to their firms, clients or other institutions with which they are affiliated.

[1] http://vcxc.org/documents/KC1.pdf.

[2] United States v. AT&T, 552 F. Supp. 131 (D.D.C. 1982), *aff'd sub nom.* Maryland v. United States, 460 U.S. 1001 (1983).

to operating systems (Microsoft), from "enterprise management software" (Oracle-PeopleSoft) to search engines (Google).

IT markets pose a variety of analytical challenges. They are characterized by both supply- and demand-side economies of scale and scope, typically implying high market share and/or high levels of concentration (*e.g.*, HHI). Although such dynamics could result in market power to the extent that the assets are "essential" to compete, traditional concentration measures are meaningless for determining such potentialities given their limited and static nature. Indeed, rapid innovation and the potential for disruptive entry imply such market power may be ephemeral, even illusory. Strong complementarities (*e.g.*, between smart phones and networks, or operating systems and microchips) place interoperability and interconnection issues at center stage. Particular business practices (*e.g.*, a decision to standardize around one technology but deny interoperability to others) may be efficiency-enhancing and competition-inhibiting at the same time. Consolidation may harm competition in a static sense, yet generate real but sometimes difficult-to-assess benefits for innovation, or demand-side externalities from network effects. Products tend to be highly differentiated (*e.g.*, smartphones with different operating systems and features), leading to prices above marginal cost, and, in many cases, prices and terms are set through bilateral bargaining over actual or anticipated quasi-rents.

Our goal in this article is certainly not to resolve these issues, but rather to describe them in a way that illuminates the analytical challenges, provide some recent examples of antitrust reviews involving IT markets, and offer some thoughts on how these issues are likely to present themselves in the future. We also note that while economists continue to make progress towards a better understanding of the competitive dynamics of IT markets, much of that understanding is not yet fully or consistently reflected in practice. We are not suggesting, however, that IT markets get a "free pass" and not be subject to antitrust law principles, or even worse, that there is a need for regulation to supplant free market behavior. To the contrary: antitrust law enforcement is usually the correct place for addressing both IT market behavior and transactions.

The remainder of this paper is organized as follows. Section II presents a taxonomy of the economic characteristics that distinguish IT markets from more traditional markets, grouping them into three categories—*dynamism*; *modularity*; and *demand-side effects*—and provides some examples of the implications of these characteristics for competition analysis. Section III discusses several recent situations in which competition authorities have wrestled with such issues in practice. Section IV offers some thoughts on how these issues are likely to present themselves in the immediate future. Section V presents a brief conclusion.

II. THE IT CHALLENGE TO TRADITIONAL ANTITRUST DOCTRINE

Effective antitrust policy is premised on the ability to recognize monopoly power; assess its effects on prices and quality; identify the anticompetitive conduct it sometimes enables (*e.g.*, by raising rivals' costs); and, ultimately, determine its effects on consumer welfare—which, half a century after the Chicago revolution, continues to be acknowledged as the central objective of antitrust. Towards these ends, academics and practitioners have developed various analytical tools, empirical proxies, and rules of thumb (*e.g.*, high market shares and/or high concentration ratios create a presumption of monopoly power

or high likelihood of collusion) that together constitute traditional antitrust doctrine.[3] IT markets have characteristics that limit the usefulness of these traditional approaches, often in ways that are not yet well understood. We begin by describing the characteristics that distinguish IT markets from more traditional ones, and then discuss some of the challenges these characteristics pose for traditional antitrust doctrine.

A. The IT Trifecta: Dynamism, Modularity, Demand-Side Effects

IT markets exhibit at least three meaningful distinguishing characteristics: *dynamism*, *modularity*, and *demand-side effects.*[4]

Dynamism refers to the significance of innovation as a measure of market performance: In dynamic markets, the ability of a firm to offer new and improved products plays at least as significant a role in its success (*i.e.*, its profitability) as the ability to produce and sell existing products at lower prices.[5]

In such markets, firms incur significant sunk cost investments to create new products, causing average costs to exceed marginal costs over the relevant range of output, but resulting in product differentiation (innovation being simply product differentiation over time) that allows sellers to recoup their investments by earning high margins (relative to marginal cost). Under current doctrine, high margins are easily mistaken for traditional monopoly power, but assuming low entry barriers, they are not only consistent with, but necessary for, maximization of consumer welfare: They not only allow firms to recoup sunk cost investments, but also provide the incentive to take the risks inherent in innovation.

The assumption of low entry barriers is not a trivial one, and other characteristics of IT markets—*e.g.*, demand-side network effects—may call it into question. But it is nevertheless true that the sort of market power that is so commonplace in IT markets frequently contains the seeds of its own destruction, as today's hot product can easily become tomorrow's obsolete clunker (*see, e.g.*, "Apple Newton" and "Palm Pilot").

A second characteristic that distinguishes IT markets is modularity, or what is sometimes referred to as "platform competition." From an economic perspective, modularity is associated with strong complementarities in production or consumption: Operating systems are strong complements with personal computers; online music stores are strong complements with smart phones; smart phones are strong complements with communications networks, etc. Modularity also creates demand for compatibility or "interconnection." Firms that produce complementary products (*e.g.*, Microsoft and Nokia; Google and Samsung) may team up to create platforms (sets of compatible

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[3] By "traditional antitrust doctrine," we mean "modern doctrine as applied to traditional markets."

[4] For a more extensive discussion of these phenomena and their implications for competition analysis, *see* JEFFREY A. EISENACH, BROADBAND COMPETITION IN THE INTERNET ECOSYSTEM (American Enterprise Institute, 2012); *see also* OZ SHY, THE ECONOMICS OF NETWORK INDUSTRIES (Cambridge University Press, 2001).

[5] WILLIAM J. BAUMOL, THE FREE MARKET INNOVATION MACHINE: ANALYZING THE GROWTH MIRACLE OF CAPITALISM (Princeton University Press, 2002), at 4 ("Innovation has replaced price as the name of the game in a number of important industries. The computer industry is only the most obvious example, whose new and improved models appear constantly, each manufacturer battling to stay ahead of its rivals."); *see also* JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY (1942).

complements); in other cases (*e.g.*, Apple, Blackberry) firms choose to achieve compatibility through vertical integration.

Competition in such markets takes place both within platforms (*e.g.*, between HTC and Samsung for leadership on the Android platform) and among them (*e.g.*, between Android and iOS). Disputes over interconnection terms—in which firms seek to create and exercise bargaining power and so maximize their shares of the economic profits created by a successful platform—are commonplace.

Finally, IT markets are also characterized by significant demand-side effects, including economies of both scale and scope. Demand-side economies of scale, also known as network effects, imply that a product is more valuable to consumers as the number of users increases: The prototypical, if now somewhat dated, example is the fax machine. Demand-side economies of scope, by contrast, imply that a product's value increases with the diversity (as opposed to simply the number) of users: The value of a newspaper to both advertisers and users depends on the presence of the other *type* of consumer (though for some consumers, the presence of advertisers may detract from the value rather than add to it).

The relationship between competition and consumer welfare in markets with demand-side effects is more complicated than in more traditional markets in several ways. For example, it is well established that a monopolist in a two-sided market has strong incentives to set efficient relative prices (*i.e.*, to engage in efficient price discrimination).[6] In markets with strong network effects, the efficiency benefits of monopoly may exceed the costs in terms of foregone competition.[7]

B. Implications for Enforcement

These characteristics of IT markets have important implications for competition policy and antitrust enforcement, challenging accepted rules of thumb, complicating application of time-tested techniques, and forcing regulators to take account of factors that do not play a significant role in more traditional markets.

Perhaps most obviously, the dynamic nature of IT markets—the fact that they are characterized by rapid technological change—forces competition authorities to pay greater heed to forecasts of future events than is often the case in more traditional markets, even up to the point of forecasting the impact of mergers and potentially anticompetitive conduct on the development of markets for products that do not yet exist. No combination of economists, lawyers and technologists has thus far demonstrated much competence in performing this task,[8] and for good reason. As Professor Hovenkamp points out:

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[6] *See, e.g.*, Julian Wright, *One-Sided Logic in Two-Sided Markets*, 3(1) REVIEW OF NETWORK ECONOMICS 44 (2004).

[7] *See* Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 THE JOURNAL OF ECONOMIC PERSPECTIVES 93 (Spring 1994).

[8] *See generally* Ilene Knable Gotts and Richard T. Rapp, *Antitrust Treatment of Mergers Involving Future Goods*, ANTITRUST 178 (2004). Inaccurate predictions of future events can prove embarrassing. The Federal Trade Commission ("FTC"), for example, justified the imposition of conditions in the 2000 AOL-Time Warner merger on the basis of its finding that AOL, as the "leading provider of narrowband internet access," was "likely to become the leading provider of broadband internet access as well." *See* U.S. Federal Trade Commission, In the Matter of America Online, Inc. and Time Warner Inc., Docket

> [I]nnovation often produces very sudden and quite unpredictable results. It can completely kill an industry in a few years, as electronic calculators did to slide rules in the 1960s. In the process, it can bring an entirely new industry into existence in an equally short time. It can produce results far different than researchers expected, such as the blockbuster drug Viagra, which was the culmination of a research project seeking a treatment for angina, not for erectile dysfunction. Innovation can produce sudden and dramatic shifts in prices or output and almost instantly expand the range of consumer choices. As a result, predicting and managing competitive processes in highly innovative industries is much more difficult than in markets where technology is very largely constant and most movements affect only the output and price of a set of unchanging products.[9]

It is well understood that dynamism implies that existing monopoly power may be ephemeral,[10] but its implications for antitrust regulation are in fact far more complex and multifaceted than that simple thesis suggests. For example, a merger might be defended on the grounds that the combination is necessary to advance development of a new product—but only if regulators can be persuaded the new product will be successful (and so enhance consumer welfare).

A second implication of dynamism is its inextricable relationship with the economics of innovation—the cycle of investment, product differentiation, and pricing power (the return on risk and entrepreneurship) that incentivizes innovation in the first place. Dynamic industries display strong economies of scale, tend to have high levels of concentration at any point in time, and are characterized by high profit margins. The implications are profound, calling into question the predictive power of the two most commonly used proxies for

No. C-2989 (Complaint) (Dec. 14, 2000) at 3. As it turned out, AOL never became a significant, let alone leading, broadband Internet Service Provider ("ISP"). Similarly, in the AT&T-MediaOne transaction, the Antitrust Division of the U.S. Department of Justice ("DOJ"), expressed concern with the indirect ownership interests that AT&T would have had in both Excite@Home and RoadRunner, two broadband Internet companies, and required AT&T to divest its RoadRunner interest. *See* Press Release, U.S. Dep't of Justice, Justice Department Requires AT&T to Divest MediaOne's Interest in RoadRunner Broadband Internet Access Service (May 25, 2000), *available at* http://www.justice.gov/atr/public/press_releases/2000/4829.pdf. At the time of the acquisition, Excite@Home and RoadRunner together served the vast majority of subscribers who received broadband Internet service over cable facilities. The DOJ was concerned that AT&T would be able, post-closing, to facilitate collusion and coordination between Excite@Home and RoadRunner in ways that would result in a substantial lessening of competition in the market for aggregation, promotion, and distribution of residential broadband content. Instead, in 2001, Excite@Home declared bankruptcy.

[9] *See* Herbert Hovenkamp, *Antitrust and the Movement of Technology*, 19 GEO. MASON L. REV. 1119, 1120-1121 (2012).

[10] *See, e.g.*, Douglas H. Ginsburg and Joshua D. Wright, *Dynamic Analysis and the Limits of Antitrust Institutions*, 78 ANTITRUST LAW JOURNAL 1, 22 (2012).

actionable market power, market concentration[11] and profit margins.[12] Moreover, the costs associated with Type II error (imposition of remedies on the basis of falsely identified monopoly power) are especially high, as such remedies—often in the form of "sharing" requirements or barriers to consolidation—not only deprive existing firms of the returns on innovation, but signal to future entrepreneurs that the payoff for successful innovation is subject to regulatory truncation.[13]

Since the Fifth Century BC, medical doctors have sworn to a Hipprocratic Oath that recognizes before all else, that they are "to do no harm." It would be admirable if antitrust enforcers could adopt the same approach—and recognize that enforcement should seek to do more good than harm and that harm will result if they unnecessarily deter innovation or synergies by stopping or conditioning a transaction or conduct that, left alone, would not have been anticompetitive. FTC Commissioner Maureen Ohlhausen has consistently in her public pronouncements advocated for "regulatory humility." As recently described in a speech before the Free State Foundation:

> It is exceedingly difficult to predict the path of technology and its effects on society. The massive benefits of the Internet in large part have been a result of entrepreneurs' freedom to experiment with different business models. The best of these experiments have survived and thrived, even in the face of initial unfamiliarity and unease about the impact on consumers and competitors . . . Early skepticism does not predict potential consumer harm. Conversely, as the failures of

[11] Dissenting Statement of Commissioner Joshua D. Wright, In re Fidelity Nat'l Financial, Inc. (F.T.C. File No. 131-0159 (Dec. 23, 2013), *available at* http://www.ftc.gov/sites/default/files/documents/public_statements/dissenting-statement-commissioner-joshua-d.wright-matter-fidelity-national-financial-inc.lender-processing-services-inc.december-2013/131224fidelitywrightstatement.pdf; American Bar Association, Section of Antitrust Law, MARKET POWER HANDBOOK: COMPETITION LAW AND ECONOMIC FOUNDATIONS (2d ed.) (2012); Ilene Knable Gotts, *Market Definitions in the Merger Context: Hard Work Pays Off in the Long Run*, FORDHAM COMPETITION LAW INSTITUTE, ANNUAL PROCEEDINGS, INTERNATIONAL ANTITRUST LAW & POLICY, Ch. 16 (B.E. Hawk ed., 2013).

[12] *See* Kenneth G. Elzinga and David E. Mills, "*The Lerner Index of Monopoly Power: Origins and Uses*," AMERICAN ECONOMIC REVIEW: PAPERS & PROCEEDINGS 101, 3 (2011); American Bar Association, *supra* note 11.

[13] *See* Franklin W. Fisher, *Diagnosing Monopoly*, in INDUSTRIAL ORGANIZATION, ECONOMICS AND THE LAW: COLLECTED PAPERS OF FRANKLIN M. FISHER (MIT Press, 1991) 3-32. *See also* Novell, Inc. v. Microsoft Corp., 731 F.3d 1064, 1073 (10th Cir. 2013) ("If the law were to make a habit of forcing monopolists to help competitors by keeping prices high, sharing their property, or declining to expand their own operations, courts would paradoxically risk encouraging collusion between rivals and dampened price competition—themselves paradigmatic antitrust wrongs, injuries to help one another would also risk reducing the incentive both sides have to innovate, invest, and expand—again results inconsistent with the goals of antitrust. The monopolist might be deterred from investing, innovating, or expanding (or even entering a market in the first place) with the knowledge anything it creates it could be forced to share; the smaller company might be deterred, too, knowing it could just demand the right to piggyback on its larger rival.").

> thousands of dotcoms show, early enthusiasm does not predict consumer benefit.
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> Because it is so difficult to predict the future of technology, government officials, like myself, must approach new technologies and new business models with a significant dose of regulatory humility. . . . We must identify benefits and any likely harm. If harms do arise, we must ask if existing laws and regulations are sufficient to address them, rather than assuming that new rules are required.
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> And we must remain conscious of our limits . . . Even worse, data-driven decisions can seem right while being wrong. Political polling expert Nate Silver notes that "[o]ne of the pervasive risks that we face in the information age . . . is that even if the amount of knowledge in the world is increasing, the gap between what we know and what we think we know may be widening." Regulatory humility can help narrow that gap.[14]

It is important for the U.S. economy that the appropriate balance is achieved.

The presence of strong complements in production—modularity—poses a related but distinct set of challenges, forcing regulators to judge the competitive and consumer welfare implications of interoperable (or interconnected) technologies relative to proprietary or "closed garden" approaches. Refusals to interconnect or to facilitate interoperability (*e.g.*, Microsoft's refusals to reveal APIs to Netscape or, to take an even earlier example, AT&T's attempts to prohibit attachment of foreign devices such as the "Hush-A-Phone" to its network) may evidence an intent to foreclose competition and raise rivals' costs or, alternatively, a welfare-maximizing choice by the platform operator to optimize system functionality[15] (as Comcast argued in its defense of its throttling of *BitTorrent* in the first litigated net neutrality case).[16] Where achieving interoperability involves incurring sunk costs (as in the case of standard essential patents ("SEPs")), the potential arises for opportunistic behavior, though courts have been reluctant to conclude such behavior violates the antitrust laws.[17]

Lastly, demand-side effects present a multitude of challenges. Most obviously, markets in which demand-side economies of scale (*i.e.*, "network effects") are significant are subject to "tipping" and may create barriers to entry. Conversely, the very same network effects responsible for these results create real benefits for consumers, who *really are* better off when, for instance, everyone can learn to use the same (QWERTY) keyboard.[18] Multisided markets (demand-side economies of scope) pose their own special concerns, forcing

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[14] Remarks of Maureen K. Ohlhausen, Commissioner, U.S. Federal Trade Commission, *The Procrustean Problem with Prescriptive Regulation, Sixth Annual Telecom Policy Conference, Free State Foundation* (Washington, D.C. Mar. 18, 2014), *available at* http://www.ftc.gov/system/files/documents/public_statements/291361/140318fsf.pdf.

[15] *See generally* Kevin Boudreau, *Open Platform Strategies and Innovation: Granting Access vs. Devolving Control*, 56 MANAGEMENT SCIENCE 1849 (Oct. 2010).

[16] *See* Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010).

[17] *See, e.g.*, Susan Decker, *Rambus Antitrust Case on Royalties Dropped by FTC*, BLOOMBERG (May 14, 2009), *available at* http://www.bloomberg.com/apps/news?pid=newsarchive&refer=home&sid=at5P6AmiOMsQ; *see also* http://www.ftc.gov/enforcement/cases-proceedings/011-0017/rambus-inc-matter.

[18] *See, e.g.*, Katz & Shapiro, *supra* note 7.

regulators to consider the effects of mergers, for example, on both downstream "consumers" and upstream "suppliers."[19] Economists have only recently begun to develop the tools necessary to assess such effects. Thus, as Ballon and Van Heesvelde conclude:

> [C]urrently no clear, general principle exists about how to regulate platforms, and regulators have no operational frameworks that can easily accommodate the particular characteristics of platform markets—such as the existence of externalities across different sides of the platform, and the complex effects of multi-homing of service providers and/or end users.[20]

The depth of the IT challenge to traditional antitrust doctrine is evidenced by the fact that even the Holy Grail of antitrust enforcement—stable or lower prices—can no longer be taken for granted. In IT markets, price effects in one market have to be weighed against (possibly countervailing) effects in others, as well as against changes in quality, not only contemporaneously but over time: A price increase which leads to higher returns to suppliers may lead to static losses (from lower consumption), but higher rates of innovation and ultimately higher consumer welfare.

III. FROM THEORY TO PRACTICE: RECENT ENFORCEMENT REVIEW INVOLVING IT (AND RELATED) MARKETS

The challenges to traditional antitrust doctrine described above are on vivid display almost daily as competition authorities struggle to identify actionable conduct and assess the competitive effects of proposed transactions throughout the IT sector. In this section, we discuss several recent cases, including transactions involving content providers, database software, hardware, devices and networks, as well as cases involving potential competition and future markets. The cases discussed highlight the issues agencies face across a diverse, complex and rapidly changing set of markets in identifying market power and fashioning appropriate remedies.

A. Transactions Involving Content Providers

In recent years, both the FTC and the DOJ have reviewed acquisitions involving firms that compete in providing data or content to others. These transactions often held the potential of increasing the rate of innovation, enhancing modularity, and providing demand-side scale and scope efficiencies. Such effects could drive down costs, particularly in nascent sectors. On the other hand, these developments could increase entry barriers or eliminate competition through foreclosure, thereby raising rivals' costs. The agencies' response has

[19] *See, e.g.*, David S. Evans & Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses*, in OXFORD HANDBOOK ON INTERNATIONAL ANTITRUST ECONOMICS at 19-21, Roger Blair & Daniel Sokol, eds. (forthcoming), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2185373 (warning against "basing judgments about market power on analysis of only a single side of a multi-sided platform").

[20] Pieter Ballon & Eric Van Heesvelde, *ICT Platforms and Regulatory Concerns in Europe*, 35 TELECOMMUNICATIONS POLICY, 702, 707 (2011).

often been to impose some form of licensing or open access requirements designed to create a "level playing field" for competitors.

(1) Horizontal Theories

A number of recent transactions have involved the combination of firms with databases, in which the agency required that competition be maintained by providing to a third party the rights to one of the databases.

Most recently, on March 24, 2014, the FTC conditioned its approval of CoreLogic, Inc.'s acquisition of DataQuick Information Systems, Inc.[21] The FTC's complaint alleges that CoreLogic and DataQuick are two of three providers of national accessor and recorder bulk data, and that their combination would have increased the risk of both coordinated and unilateral effects. CoreLogic, which offers a variety of products tailored to lending, investment, and real estate industries, collects and maintains data and is the largest provider of data in the United States. DataQuick offered licenses for such data and had a unique license with CoreLogic that allowed it to relicense data in bulk. The data at issue include current and historical public record data in a standardized bulk format for the vast majority of real estate properties in the U.S. Customers use these data as inputs into proprietary programs and systems for internal analyses. The database includes over a decade of information.

It appears likely that the transaction parties argued that combining operations would lower costs of maintaining the database and broaden the userset. To the extent there was competition between the merging firms, that competition would be eliminated. Moreover, the FTC alleged that new competitors were not likely to emerge in this market because of the high cost of obtaining the necessary data (especially historical information). Accordingly, the FTC's remedy aims to replace DataQuick as a competitive force. The consent requires CoreLogic to license to Renwood RealtyTrac ("RealtyTrac") historical data and to deliver going-forward data for up to seven years as well as to provide RealtyTrac access to several ancillary data sets that DataQuick provides to its customers. The consent also provides RealtyTrac with access to information regarding customers and data management, requires CoreLogic to provide it with access to technical support for 18 months, and requires CoreLogic to provide certain DataQuick customers with the opportunity to terminate their contracts early and switch to RealtyTrac without penalty. RealtyTrac currently operates an online marketplace of foreclosure real property listings and provides national foreclosure data services to real estate consumers, investors, and professionals, and with this license, will be a new entrant into the business.

In 2012, the FTC similarly conditioned its approval of CoStar's acquisition of LoopNet on the sale of LoopNet's ownership interest in Xceligent to DMG Information, Inc. and other behavioral relief. CoStar, LoopNet, and Xceligent offered listing databases and information services used by brokers, investors, appraisers, developers, and others in the commercial real estate industry. CoStar actively tracks and aggregates commercial real estate listings and property-specific information nationwide and provides subscription-based access to its

[21] Press Release, Fed. Trade Comm'n, FTC Puts Conditions on CoreLogic, Inc.'s Proposed Acquisition of DataQuick Information Systems (Mar. 24, 2014), *available at* http://www.ftc.gov/news-evehttp://www.ftc.gov/news-events/press-releases/2014/03/ftc-puts-conditions-corelogic-incs-proposed-acquisition-dataquick.

comprehensive database. LoopNet operated the most heavily trafficked commercial real estate listings database in the United States and offered some commercial real estate information services. Xceligent also actively tracked and aggregated commercial real estate listings and property-specific information and maintained a detailed and comprehensive database.

The FTC's complaint alleges that the proposed acquisition would reduce competition in the markets for these listing databases and information services, and that CoStar and LoopNet are the only two providers with nationwide coverage. The complaint also alleges that Xceligent is the "most similar competitor for information services" to CoStar, and, therefore, the combination would eliminate the direct and substantial competition between the two companies, due to LoopNet's ownership stake in Xceligent.[22] The consent requires that the combined Co-Star-LoopNet take certain steps to ensure that Xceligent is able to compete and expand aggressively in the U.S. market for commercial real estate listings databases and information services. Specifically, the consent "imposes certain conduct requirements to assure the continued viability of Xceligent as a competitor to the merged firm and to reduce barriers to competitive entry and expansion. These additional provisions will facilitate Xceligent's geographic expansion and prevent foreclosure of [the parties'] established customer base."[23] The consent requires, among other things, CoStar and LoopNet to continue to offer their customers core products on a stand-alone basis for three years.[24] A related provision prohibits the parties from limiting use of the REApplications product, a software tool for managing market research in connection with customers' purchase, lease, or license of CRE database services from competitors. Also, in 2013, the FTC required Fidelity to sell a copy of LPS's title plants (databases used to determine title status of real property) in six Oregon counties.[25]

(2) Vertical Theories

Some of the most interesting transactions involving content providers were not horizontal, but "vertical" in nature. The DOJ's Guide for Merger Remedies indicates that vertical mergers "can create changed incentives and enhance the ability of the merged firm to impair the competitive process. In such situations, a remedy that counteracts these changed incentives or eliminates the merged firm's

[22] *Analysis of Agreement Containing Consent Order to Aid Public Comment, CoStar Grp, Inc., Lonestar Acquisition Sub, Inc., and LoopNet, Inc.*, File No. 111-0172 (F.T.C. May 2, 2012), *available at* http://www.ftc.gov/sites/default/files/documents/cases/2012/04/120426costaranal.pdf.

[23] *Id.*

[24] The "anti-bundling" provisions are aimed to protect Xceligent for a limited period while it expands the breadth and geographic scope of its services.

[25] Press Release, Fed. Trade Comm'n, FTC Puts Conditions on Fidelity National Financial's Acquisition of Lender Processing Services (Dec. 24, 2013), *available at* http://www.ftc.gov/news-press-releases/2013/12/ftc-put-conditions-fidelity-national-financials-acquisition. This matter is also noteworthy in the debate that Commissioner Wright started where he challenged in his dissent the presumption that a decrease in the number of competitors from four to three, or even three to two, will necessarily harm competition even in highly concentrated markets where entry is unlikely.

ability to act on them may be appropriate."[26] The Guide recognizes that "there is a panoply of conduct remedies that may be effective in preserving competition. No matter what type of conduct remedy is considered, however, a remedy is not effective if it cannot be enforced. . . The most common forms of conduct relief are firewall, non-discrimination, mandatory licensing, transparency, and anti-retaliation provisions, as well as prohibitions on certain contracting practices."[27]

In 2009, Comcast proposed acquiring NBC Universal ("NBCU"). Comcast argued that the transaction would bolster its role as a creator and distributor of content, by offering "multiplatform anytime, anywhere" media. Thus, the transaction offered potential gains in terms of dynamism, modularity, and demand-side scale and scope. Although the transaction had certain horizontal aspects since it included NBCU's cable networks and Comcast already had some content, the DOJ's focus was vertical in nature: the merger as proposed would allegedly have enabled Comcast to harm competition by either withholding or raising the price of NBCU content for firms that competed with Comcast's cable operations. In addition to traditional competitors, such as cable overbuilders, satellite services, and telephone companies, the DOJ noted the emerging online competition from online video distributors ("OVDs").

The DOJ indicates that the settlement ensures that the transaction will not chill the nascent competition posed by online competitors that have the potential to reshape the marketplace by offering innovative online services. Under the terms of the consent, the joint venture agreed to license its programming to OVDs on similar, or better, terms than (1) those that have obtained under distribution agreements with one of NBCU's peers[28] or (2) NBCU offers to traditional video programming distributors. The consent also prohibits Comcast from imposing upon content owners contractual terms that unduly limit a content owner's ability to negotiate freely creative arrangements with Comcast competitors. The settlement prohibits the joint venture from retaliating against (1) any broadcast network, affiliate, cable programmer, production studio or content provider for licensing content to Comcast competitors or (2) any firm that raised concerns with the DOJ or the FCC about the transaction. The consent also requires NBCU to adhere to the FCC's Open Internet provisions regardless of whether they are overturned.[29]

B. Transactions Involving Database Software

As with cases involving data bases, the agencies' views of acquisitions involving database software often seem to turn on predictions regarding the

[26] U.S. Dep't of Justice, Antitrust Div., Antitrust Division Policy Guide to Merger Remedies (June 2011), *available at* www.justice.gov/atr/public/guidelines/272350.pdf.
[27] *Id.*
[28] United States v. Comcast Corp., No. 1:11-CV-00106-RJL (proposed judgment, D.D.C. June 29, 2011) Definition V, *available at* http://www.justice.gov/atr/cases/f272600/272610.pdf. Peers include broadcast competitors ABC, CBS, and Fox, cable programmers News Corp., Time Warner, Viacom, and The Walt Disney Co., and video production studios News Corp., Sony, Time Warner, Viacom, and Walt Disney.
[29] *Id.* Specifically, Comcast cannot unreasonably discriminate in the transmission of OVD's lawful network traffic to a Comcast broadcast customer and is required to give other firms' content equal treatment under any of its broadcast offerings that involve caps, tiers, metering for consumption or other usage-based pricing.

competitiveness and conduct of alternative providers and the changes in the incentives of the merged firm following the transaction.

The 2009 Oracle/Sun transaction illustrates these themes. Oracle acquired Sun Microsystems, Inc. for two primary reasons: (1) to gain control over Java; and (2) to integrate vertically its stack of offerings to compete with firms such as IBM and EMC/VMware.[30] Oracle makes databases and other software for large corporations. Sun Microsystems, Inc., made computer servers and owned the widely used Java platform, which is one of the key software building blocks used in Internet programs, and MySQL, an open source database program, that critics of the transaction said could someday evolve into a competitor of Oracle and/or Microsoft. Nevertheless, as proposed, the transaction held the potential of jump-starting innovation among rivals IBM and EMC, increasing modularity, and expanding demand-side efficiencies of scale and scope.

The DOJ issued a second request, but ultimately closed the investigation on the basis that, according to the DOJ, (1) there were many (perhaps eight or more) open and proprietary database competitors so customers would continue to have choices, and (2) there is a large community of developers and users of Sun's open source database with significant expertise in maintaining and improving the software and who could support a derivative version of it.[31] Thus, the transaction would neither affect the viability of alternative providers nor change Oracle/Sun's incentives to engage in anticompetitive conduct.

The FTC reached the opposite conclusion in a 2013 consent in which it required that Solera, which had acquired Actual Systems (and two related companies) on May 29, 2012, sell one of the U.S. and Canadian yard management systems ("YMS") and provide a 10-year license to a key database to ASA Holdings, a company started by former employees of Actual Systems. At the time of the 2012 acquisition, both Solera and Actual Systems developed and sold YMS used by automotive recycling yards. Presumably, the combination would produce cost savings. According to the FTC, however, the market for YMS software was already highly concentrated at that time and the elimination of the competition between the two companies had reduced innovation for software and caused higher prices for automotive recycling industry customers. In the relevant geographic market of the United States and Canada, Solera and Actual Systems were allegedly two of only three providers of YMS. In this case, the FTC's prediction was that alternative providers would not emerge, and that (absent relief) incentives for anticompetitive conduct would be increased.

The potential for such vertical theories to lead to complex conduct remedies is illustrated by the DOJ's 2011 examination of Google's acquisition of ITA Software, which it saw primarily as a vertical merger.

ITA had developed the leading independent airfare pricing and shopping system "QPX." QPX collects and organizes airline flight schedules, pricing and seat availability for travel services companies. It is used by online travel agents

[30] *See* John Furrier and Dave Vellante's Analysis: *Is Oracle Better Off After Sun Acquisition*?, FORBES (July 9, 2013), *available at* http://www.forbes.com/sites/siliconangle/2013/07/09/analysis-is-oracle-better-off-after-sun-acquisition/.

[31] Press Release, U.S. Dep't of Justice, *Department of Justice Antitrust Division Issues Statement on the European Commission's Decision Regarding the Proposed Transaction Between Oracle and Sun* (Nov. 9, 2009), *available at* http://www.justice.gov/atr/public/press_releases/2009/251782.htm.

(*e.g.*, Orbitz) and other flight search services.[32] Google, the largest Internet search provider, planned to launch an Internet travel site to offer comparative flight search services. Google indicated at the time that it was "buying ITA Software to create a new, easier way for users to find better flight information online. By combining ITA Software's expertise with Google's technology, [Google would] . . . be able to bring new flight search tools for users that [would] . . . make it easier for them to search for flights, compare flight options and prices, and get them quickly to sites where they can buy their tickets."[33] Moreover, according to Google, the combination would permit it to make more significant innovations and bigger breakthroughs than possible if Google had simply licensed ITA Software's data service.[34] Thus, Google presented the transaction as one that fostered dynamism and demand-side benefits.

The DOJ did not conclude that Google would use its positioning in general search to gain unfair advantage in travel search. Rather, the DOJ alleged that, after acquiring ITA, Google could deny QPX to other flight search companies or disadvantage their access to it, to gain an advantage for Google's new flight search services. These foreclosure concerns arose because the DOJ believed that the remaining options to QPX were not suitable alternatives.

To address these concerns the DOJ required Google/ITA (1) to continue to license QPX to other flight search companies on fair, reasonable and nondiscriminatory ("FRAND") licensing terms; (2) to make available to other flight search services any QPX upgrades it makes available to other customers; and (3) not to enter into agreements with airlines that would "inappropriately" restrict the airlines' right to share seat and booking class information with Google's competitors. In addition, Google committed to continue to fund for two years research and development of QPX at least at similar levels to what ITA had invested in recent years and to develop and offer to travel websites ITA's next generation "Instasearch" product. The consent provides for mandatory arbitration under certain specified circumstances and establishes internal firewalls to prevent unauthorized use of competitively sensitive information and data gathered from ITA's customers. The consent also prevents Google's tying of the system to other products. The duration of the consent is five years (shorter than the typical 10 years found in most consent decrees).

Google's acquisition of ITA also exemplifies the difficulties in analyzing high-technology transactions and in fashioning remedies. Google's acquisition held the potential of benefiting consumers by, among other things, resulting in better ways to access ITA's data and improving overall travel-related searches. For example, Google might facilitate expansion of ITA's search offerings beyond travel to include hotels. To the extent that Google made fare offerings more transparent, consumers could benefit. Given that Google did not plan to sell tickets, but would instead simply direct consumers to airline or online travel sites to make a purchase, Google's entry could also benefit consumers by increasing competition to meta-search companies.

As mentioned above, the DOJ thought that Google, which apparently had planned to enter into the flight search service, would use its control over what the

[32] United States v. Google Inc. and ITA Software, Inc., No. 1:11-cv-00688-RLW (proposed judgment, D.D.C. Oct. 5, 2011).

[33] Google, *Facts about Google's acquisition of ITA Software*, *available at* http://www.google.com/press/ita/faq.html.

[34] *Id*.

DOJ identified as a "critical input" to disadvantage its competitors post-merger. Implicitly recognizing the potential consumer benefits from Google's acquisition of ITA, the DOJ focused on behavioral conditions that would ensure that the change of ownership of ITA's business would not result in a change in the access terms to QPX and its improvements or ITA's internal decisions regarding R&D. The behavioral conditions imposed, however, are highly complex and interventionist in nature. Given the speed at which high technology marketplaces evolve as well as the potential that such restrictions could actually hinder competition if left in place too long, it is not surprising to see the DOJ limit the consent duration to five years, rather than the 10-year terms typically seen in consents.

C. Transactions Involving Hardware, Platforms, or Networks

As with other IT markets, acquisitions involving hardware, platforms or networks are often scrutinized to determine whether or not they will create or enhance entry barriers by becoming a bottleneck for rivals to compete. These transactions often involve nascent or quickly evolving marketplaces, with agency decisions premised on imprecise facts regarding the actions and ability of third parties to develop competing products or platforms.

In 2010, the FTC closed its investigation of Google's acquisition of AdMob, a mobile advertising network.[35] AdMob had been one of the first mobile advertising networks to focus on the iPhone when the Apple App Store opened in June 2009. At the time that Google announced its proposed acquisition of AdMob, Google had a beta advertising network for mobile applications that also operated on some iPhone apps. The parties indicated that the transaction would (1) accelerate the pace of innovation and engaging ad units across platforms, (2) build more powerful relevance and optimization capabilities, and more powerful technology and tools to monetize mobile traffic, and (3) leverage Google's sales team, infrastructure and relationships to increase the effectiveness of display advertising.[36] In other words, to use our paradigm, the transaction would foster dynamism, modularity and demand-side benefits.

The FTC's closing statement indicated that the decision not to challenge the transaction "was a difficult one because the parties currently are the two leading mobile advertising networks . . . [and] each of the merging parties viewed the other as its primary competitor. . . ." The FTC decided not to challenge the transaction because Apple announced in April 2010 that it had acquired Quattro Wireless and had transformed Quattro into a new mobile advertising platform called "iAd" that would be released in June 2010. The FTC concluded that Apple had both the ability and the incentive to ensure that advertising networks would not raise prices or reduce the percentage of advertising revenue that they share with app developers.[37]

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[35] Press Release, Fed. Trade Comm'n, FTC Closes Its Investigation of Google AdMob Deal (May 21, 2010), *available at* http://www.ftc.gov/news-events/press-releases/2010/05/ftc-closes-its-investigation-google-admob-deal.

[36] *See generally* Google Official Blog *We've officially acquired AdMob!*, *available at* http://googleblog.blogspot.com/2010/os/weve-offically-acquired-admob.html.

[37] Perhaps ironically, in April 2014, Apple faced accusations of denying access to its iAd service to an online radio competitor, Bloom.fm, for anticompetitive purposes. *See* Stuart Dredge, *Apple bans music app Bloom.fm from running ads on its iAd network*, THE GUARDIAN (Apr. 11, 2014), *available at*

Also, on December 2, 2011, the DOJ issued a statement indicating that it was closing its investigation of Google's proposed acquisition of Admeld Inc. ("Admeld"), an online display advertising service provider.[38] In a blog post on the day of announcement, Google indicated that "[b]y combining Admeld's services, expertise, and technology with Google's offerings, [it was] . . . investing in what [it hoped would] be an improved era of flexible ad management tools for major publishers.[39] In addition, Google promised to continue to support other ad networks, demand-side platforms, exchanges and adservers. The DOJ statement indicates that the DOJ focused on the potential effect of the transactions on competition in the digital advertising industry. Both companies provide services and technology to web publishers that facilitate the sale of those publishers' display advertising space. Admeld operated a supply-side platform that helps publishers optimize the yield from their display advertising. The investigation found that web publishers often rely on multiple display advertising platforms and can move business among them in response to changes in price or the quality of ad placements. As a result, the risk that the market will tip to a single dominant platform is lessened. In addition, there had been recent entrants. The DOJ also evaluated whether the acquisition would enable Google to extend its market power in the Internet search industry to online display advertising through anticompetitive means, and concluded the acquisition is not likely to substantially lessen competition in the sale of display advertising.

On the other hand, the DOJ also successfully challenged Bazaarvoice, Inc.'s ("Bazaarvoice") July 2012 acquisition of PowerReviews, Inc. ("PowerReviews").[40] In that case, the DOJ alleged as the relevant market "rating and review platforms ("R&R platforms") used to collect and display consumer-generated product ratings and reviewing online."[41] The DOJ asserted that Bazaarvoice was the leading commercial supplier of R&R platforms and PowerReviews was its closest competitor by a wide margin; further, it argued, although some retailers used in-house R&R platforms, for many retailers such in-house solutions are not a substitute and therefore do not provide a meaningful constraint on the company's pricing.

The DOJ alleged that PowerReviews had been positioned as the low-price alternative to Bazaarvoice and that the fierce competition between the two companies had led to innovation and new platform features. The complaint quotes several internal company "hot" documents indicating the transaction eliminated Bazaarvoice's "only competitor" who had "suppressed prices." In addition, internal documents, among other things, stated that the combination

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http://www.theguardian.com/technology/2014/apr/11/apple-bloom-fm-music-app-iads. It is unclear whether competitive authorities plan to investigate.

[38] Press Release, U.S. Dep't of Justice, Statement of the Department of Justice's Antitrust Division on its Decision to Close its Investigation of Google Inc.'s Acquisition of Admeld Inc. (Dec. 2, 2011), *available at* http://www.justice.gov/atr/public/press_releases/2011/277935.htm.

[39] Google Official Blog, *Helping publishers get the most from display advertising with Admeld* (June 13, 2011), *available at* http://googleblog.blogspot.com/2011/06/helping-publishers-get-most-from.html.

[40] United States v. Bazaarvoice, Inc., No. C-13-0133JSC (opinion, N.D. Cal. Jan. 1, 2014).

[41] *Id*. at ¶ 1.

would "avoid margin erosion," "eliminate feature driven one-upmanship and tactical competition," and "create significant barrier to entry."[42]

The key allegation of the complaint is that "PowerReviews was routinely the only significant threat that Bazaarvoice faced for U.S.-based sales opportunities." The complaint is also unusual in its failure to allege any ongoing competitive harm, such as higher prices, poorer service, or less innovation—claims typically made in cases challenging a consummated merger. Rather, the complaint simply states that as "a result of the transaction, Bazaarvoice will be able to profitably impose price increases on retailers and manufacturers based in the United States."

In its defense, Bazaarvoice asserted that the alleged product market was too narrow given that ratings and reviews are one of many tools that brands and retailers use to engage with customers. PowerReviews, it argued, was a small company and generally unprofitable, and was acquired by Bazaarvoice because its operations provided a base for Bazaarvoice's expansion. According to Bazaarvoice, since the acquisition, there had been substantial competitor repositioning and entry and intense competition on price and innovation. For example, immediately after the merger, Reevoo, a U.K.-based competitor, opened a U.S. office and won customers from Bazaarvoice. In addition, the company argued that the complaint was based on dated, superseded and excerpted documents and predictions that bear no resemblance to marketplace realities and that the DOJ had ignored what the totality of the ordinary course documents and economic evidence show. The merger parties argued that there had been no harm to customers.

The bench trial occurred from September 23, 2013 to October 15, 2013. The DOJ's opening statements and briefs heavily relied on Bazaarvoice's internal documents and contended that the reason there was no evidence of higher prices post-merger was the existence of the ongoing DOJ investigation and challenge. Bazaarvoice argued there had been no harm to customers and that most customers were not worried about the merger; the reason that rival reviews and ratings software companies had not grown is because the market changed following the transaction, with Google and Amazon offering their own ratings systems and other software companies facilitating retailers and brands to undertake such systems in-house.

On January 8, 2014, the court ruled for the DOJ, finding that Bazaarvoice was unable to rebut the government's prima facie case. According to the court, "the purchase of PowerReview's provides 'breathing space' for Bazaarvoice in R&R while it prepares to compete in the broader market. . . . It is unlikely that PowerReviews will be replaced by the existing R&R competitors in the next two years, the time frame in which the Court evaluates the likely effects of the merger."

Specifically, the court rejected the fact that none of the 104 customers whose depositions were taken complained that the merger had hurt them, indicating that it would be a mistake to rely on customer testimony about effects for several reasons: (1) Bazaarvoice's business conduct was likely tempered by the government's immediate investigation; (2) the customers were not privy to the evidence, including the economic experts' opinions; (3) many customers had paid little or no attention to the merger and had different levels of knowledge, sophistication and experience; and (4) with the pricing policies utilized, it is

[42] *Id*. at ¶¶ 4, 5, 9.

difficult for customers to discern what is actually happening in the market. In addition, the Court indicated that "the potential for witness bias was greater in this case than most. . . . Third-party customers had to testify about their market strategy in front of a vendor that would be negotiating with within a short time."

Although Judge Orrick notes that "intent is not an element of a Section 7 violation," a significant portion of the decision discusses the strong documentary evidence that establishes PowerReview as Bazaarvoice's fiercest (and perhaps only significant) competitor. The court further indicates that Bazaarvoice's defenses against the government's arguments were often "undermined by the pre-acquisition statements of its and PowerReview's executives. Indeed, the court finds that "anticompetitive rationales infused virtually every pre-acquisition document describing the benefits of purchasing PowerReviews."[43] Another, long-term purpose of the transaction, however, was to grow the business beyond basic R&R. While acknowledging this objective as well, the court indicates that "Bazaarvoice's efforts at trial to walk away from its central rationale leading up to the merger—that acquiring PowerReviews would significantly diminish price competition for R&R platforms—was, at best, unconvincing."[44]

The economic testimony appears to have also played a role in the court's decision to define the market narrowly—and to reject the inclusion in the market firms that defendants argued could enter rapidly. According to the court, the analysis of DOJ's expert (Dr. Carl Shapiro) confirmed what the Judge believed was apparent from the non-expert testimony: "other social commerce tools, including social networking sites, Q&As, and forums, either serve a different purpose than R&R or are insufficient substitutes such that customers would not switch from R&R to a social commerce tool in the face of a SSNIP."[45]

The court expressly addresses whether its conclusions regarding the merger's anticompetitive effects should be impacted by the fact that it involves dynamic high technology market. While noting that it is debatable whether the antitrust laws are well suited for dynamic markets or if they potentially undermine innovation or are needed because market power is transitory when technology changes too fast for companies to become entrenched, the court indicates that "it is not the court's role to weigh in on this debate" but instead "the court's mission is to assess the alleged antitrust violations presented, irrespective of the dynamism of the market at issue."[46] The court concludes that 'while Bazaarvoice indisputably operates in a dynamic and evolving field, it did not present evidence that the evolving nature of the market itself precludes the merger's likely anticompetitive effects."[47]

Finally, although most of the focus of Verizon's 2011 agreements with SpectrumCo and Cox to purchase broadband wireless spectrum was on the impact on competition in the wireless broadband sector, these agreements also raised some interesting issues with respect to their potential to impact the development of a proprietary set-top box.[48] As proposed, the deal included the

[43] *Id.* at ¶ 35.
[44] *Id.* at ¶ 89.
[45] *Id*. at ¶ 147.
[46] *Id.* at ¶ 141.
[47] *Id.* at ¶ 141.
[48] Press Release, Verizon, Inc., Comcast, Time Warner Cable, and Bright House Networks Sell Advanced Wireless Spectrum to Verizon Wireless for $3.6 Billion (Dec. 2, 2011), *available at* http://www.comcast.com/About/PressRelease/PressRelease

creation of a new joint venture (referred to as the "Joint Operating Entity" or the "JOE") in which the parties would collaborate to develop innovative technology and intellectual property that would integrate wired video, voice, and high-speed Internet with wireless technologies. In other words, the agreement would potentially result in increased dynamism, modularity, and demand-side benefits.

As originally proposed, however, the JOE would function as the exclusive vehicle for R&D for these companies within the JV's exclusive field for a potentially unlimited duration. The exclusive sales partnerships and research and development collaborations among these rivals, particularly with no end date, could blunt the long-term incentives of the parties to compete against each other, and others, as the industry evolves. Implicit in the concern is that such long-term exclusivity was unnecessary to achieve the potential benefits.

Therefore, the DOJ consent announced on August 16, 2012,[49] among other things, required that the JOE Agreement be amended to allow Time Warner Cable and Bright House Networks to develop independently any technology that they have presented to the JOE for potential development but that the joint venture declines or ceases to pursue. The DOJ consent is somewhat unusual in that it contains certain restrictions that, unless the DOJ later modifies the consent, become effective on December 2, 2016 (five years after the commercial agreements were entered into) that: require the parties to withdraw from JOE by that date, and require the JOE to (a) license the exiting party with an immediate, irrevocable, perpetual, royalty-free fully paid-up non-exclusive license with immediate rights to sublicense, exploit, and commercialize any IP then owned by the JOE and (b) permit the cable companies to license JOE-developed technology to other wireless carriers if they choose to do so upon leaving the JOE.

D. Transactions Involving Potential Competition and Future Markets

As discussed above, the "regulatory humility" advocated by Commissioner Ohlhausen should be the governing principle when dealing with less certain terrain. The trend, however, has been in the reverse. In *Google/AdMob*, the Commission expressly dismissed the proposition that it should be careful not to intervene when the market is nascent, every current competitor is a recent entrant, entry barriers are unclear, and there are little historical data. Instead, in that merger the Commission indicated that it "must subject mergers in nascent markets to the same level of antitrust scrutiny as mergers in other markets." Similarly, the judge in *Bazaarvoice* discusses (and even debates) whether applying the antitrust laws might *impede* competition in a dynamic market, but ultimately concludes that the defendant did not establish that the evolving nature of the market itself precludes the merger's likely anticompetitive effects. In *Verizon/SpectrumCo*, the DOJ includes a "springing" provision that becomes effective only five years after the transactions closed and seeks to create competition in the future in innovation of wireless devices.

Detail.ashx?PRID=1134&SCRedirect=true. SpectrumCo, a joint venture originally consisting of Comcast, Time Warner, Cox (which later withdrew), Bright House Networks, and Sprint (which later withdrew), was the successful bidder for 137 wireless spectrum licenses in the AWS auction that concluded in September 2006.

[49] Press Release, U.S. Dep't of Justice, Justice Department Requires Changes to Verizon-Cable Company Transactions to Protect Consumers, Allows Procompetitive Spectrum Acquisitions to Go Forward (Aug. 16, 2012), *available at* http://www.justice.gov/atr/public/press_releases/2012/286098.htm.

In *Nielsen/Arbitron*, the FTC goes even further, however, seeking to protect a *future* market for audience measurement services.[50] Nielsen had announced plans to acquire Arbitron on December 17, 2013. The two companies were the leading media ratings businesses, although their operations prior to combining—Nielsen in TV and Arbitron in radio—do not overlap. Both were developing, however, syndicated cross-platform audience measurement services, which would measure the audience for a program through traditional platforms (TV or terrestrial radio) and the Internet, satellite, or other means. According to the FTC, the elimination of future competition between Nielsen and Arbitron would likely cause advertisers, ad agencies, and programmers to pay more for national cross-platform audience measurement services. As a result, FTC Chairman Edith Ramirez and Commissioner Julie Brill voted to condition the transaction's approval on Nielsen's obligation to (1) continue its cross-platform project with ESPN Inc. and Comscore Inc. and (2) license Arbitron's portable people meter and related data, as well as software and technology being used in the ESPN project, to an FTC-approved third party for up to eight years.[51] Commissioner Wright dissented from the decision on the basis that there was insufficient evidence to believe the merger will substantially lessen competition in the future market for the audience measurement services.[52] Commissioner Wright argues that the intervention is premised on "a novel theory—that is, that the merger will substantially lessen competition in a market that does not today exist."[53] Commissioner Wright would impose a higher standard of evidence regarding likely competitive effects in a matter involving future markets.

IV. LOOKING AHEAD: SOME ISSUES FOR THE FUTURE

As the cases discussed above demonstrate, IT markets are generating an abundant volume of thorny issues, and there is no reason to expect a slowdown anytime soon. Much of what lies ahead for regulators is by nature as unpredictable as innovation itself. Two sets of issues seem certain to play important roles: net neutrality and "big data."

A. Net Neutrality: When (if Ever) is Ex Ante *Regulation Appropriate?*

The concept of net neutrality means different things to different people, but from a competition-law perspective the central question is the extent to which refusals to interconnect (or imposition of "discriminatory" interconnection fees) by firms with market power are sufficiently likely to be harmful that they should be *per se* illegal. Specifically, advocates of net neutrality regulation argue that broadband ISPs have incentives to refuse interconnection with (or discriminate against) "edge" providers of content and applications. They argue further that

[50] Press Release, Fed. Trade Comm'n, FTC Puts Conditions on Nielsen's Proposed $1.26 Billion Acquisition of Arbitron (Sept. 20, 2013), *available at* http://www.ftc.gov/opa/2013/09/nielsen.shtm.

[51] *See* Statement of the Fed. Trade Comm'n, *In the Matter of Nielsen Holdings N.V. and Arbitron Inc.*, FTC File No. 131-0058 (Sept. 20, 2013), *available at* http://www.ftc.gov/os/caselist/1310058/130920nielsenarbitroncommstmt.pdf.

[52] *See* Dissenting Statement of Commissioner Joshua D. Wright, *In the Matter of Nielsen Holdings N.V. and Arbitron Inc.*, FTC File No. 131-0058 (Sept. 20, 2013), *available at* http://www.ftc.gov/os/caselist/1310058/130920nielsenarbitron-jdwstmt.pdf.

[53] *Id*. at 1.

traditional antitrust standards—which would in general proscribe only conduct that results in the foreclosure of equally efficient competitors—are inapposite in the context of the Internet Ecosystem, since traditional antitrust standards fail to account for the beneficial effects of "openness" (*i.e.*, free interconnection) on innovation by edge providers.[54]

The FCC's 2010 Open Internet Order embraced this expansive view of the need for net neutrality regulation, and on that basis imposed an open access mandate on ISPs, prohibiting them from refusing interconnection with edge providers ("blocking") or charging them for delivering traffic ("discriminating").[55] Four years later, in January 2014, the D.C. Circuit Court of Appeals overturned the Order on jurisdictional grounds, while at the same time embracing the Commission's underlying economic rationale and describing an alternative legal theory, under Section 706 of the Communications Act, upon which the Commission might formulate a new set of rules.[56] The Commission is currently drafting a Notice of Proposed Rulemaking under which it is expected to propose reinstituting the rules (in some as-yet undetermined form). In the meantime, in April 2014, the European Parliament voted to adopt strict net neutrality rules, which essentially ban all payments from content and application providers to broadband ISPs, though at the time this is written final adoption of the rules depends on a second vote likely to occur later in the year.[57]

It is impossible to predict how continuing efforts to impose such rules will play out politically and in the courts. What is certain, however, is that the debate will continue over whether certain platforms—in this case broadband ISPs—have both sufficient market power and sufficiently perverse incentives to justify *ex ante* bans on a broad class of two-sided business models. The political forces favoring such regulation—driven by a combination of misplaced concerns over censorship by ISPs and self-interested efforts by edge providers to avoid bearing the full costs of their services—are powerful, but and it is our sense that the debate will continue to evidence a lack of both theoretical and empirical support for such sweeping ex ante interventions, leading in the end towards adoption of a case-by-case enforcement regime for all platform providers markets, including broadband ISPs.[58]

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[54] *See, e.g.*, Robin S. Lee & Tim Wu, *Subsidizing Creativity through Network Design: Zero Pricing and Net Neutrality*, 23 J. ECON. PERSPECTIVES, 61–76 (2009).

[55] *In re Preserving the Open Internet*, 25 F.C.C.R. 17905 (2010).

[56] *See* Verizon v. FCC, 740 F.3d 623 (2014).

[57] *See, e.g.*, Mark Scott and James Kanter, *E.U. Lawmakers Approve Tough 'Net Neutrality' Rules*, NEW YORK TIMES (Apr. 3, 2014), *available at* http://www.nytimes.com/2014/04/04/business/international/eu-lawmakers-approve-tough-net-neutrality-rules.html?_r=0.

[58] *See generally* Jonathan Sallet, *The Internet Ecosystem and Legal Regimes: Economic Regulation Supporting Innovation Dynamism* (Nov. 11, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1957715. For a discussion of how such a regime might operate in relation to the antitrust laws, *see* Comcast Cable Communications LLC v. Fed. Communications Comm'n, 71 F.3d 982 (D.C. Cir. 2013), *cert. denied*, 134 S. Ct. 1287 (2014).

B. Big Data and the Internet of Things

The FTC held a workshop in November 2013 on the "Internet of Things."[59] As described by Commissioner Ohlhausen, the one-way conversations at the outset of the Internet where websites provided information to users evolved into the rise of social media, where users responded to websites and created conversations to themselves, to now, the Internet of Things, where our phones, appliances, cars and other items are able to carry on conversations without human intervention, and just inform humans as necessary.[60] The Internet of Things is one of the factors (perhaps the most significant factor) driving the related phenomena commonly referred to as "big data": the capacity to collect, synthesize and analyze previously incomprehensible amounts of data. *Science Daily* reported in 2013 that ninety percent of the world's data has been generated over the past two years.[61]

While much of the focus on "big data" has involved its implications for data security, privacy, and other consumer protection issues, it is also true that access to database information is becoming increasingly important from a competition perspective. Indeed, the central theme of cases like Bazaarvoice, Nielson/Arbitron and the Google "search neutrality" investigations is the capacity for market leaders to capitalize on economies of scale and scope in the collection and analysis of "big data."

For reasons that should be apparent, we will not try to predict the precise course technology will follow in coming years, let alone the exact implications for competition policy. It seems self-evident, however, that the capacity to collect and assess ever larger amounts of data will continue to expand both technologically and in terms of economic significance; further, that the fundamental economic characteristics of information markets will continue to lead to concerns about market power and anticompetitive conduct in such markets; and, finally, that competition authorities will continue to wrestle with the challenge of determining when intervention is appropriate, and in what form.

VI. CONCLUSIONS

Policing competition in information technology markets presents profound challenges. The defining characteristics of such markets lead naturally to high market shares, apparent barriers to entry, and potential market power. On the other hand, their dynamic nature and the potential for high returns for successful innovation challenge the longevity of even the most entrenched monopolists.

The cases discussed above highlight the tensions regulators will continue to face in the years ahead, as well as the challenges facing academics and practitioners in terms of developing more useful frameworks and analytical tools. In particular, regulators need better approaches for assessing the extent to which market power in IT markets is likely to be sustainable as opposed to transitory, for balancing efficiency benefits of both consolidation and conduct against the

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[59] *See* http://www.ftc.gov/news-events/events-calendar/2013/11/internet-things-privacy-security-connected-world.

[60] *See* Ohlhausen speech, *supra* note 14.

[61] *Big Data for Better or Worse: 90% of World's Data Generated over Last Two Years*, SCIENCE DAILY (May 22, 2013), *available at* http://www.sciencedaily.com/releases/2013/05/130522085217.htm.

competitive costs, and for assessing the efficiency tradeoffs, over time, of various forms of remedies.