

COMPETITION LAW: KEEPING PACE IN A DIGITAL AGE
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Keynote Remarks of Commissioner Terrell McSweeney

Good afternoon, everyone. Thank you, Spencer, for the introduction. And thank you to the Institute for Consumer Antitrust Studies for sponsoring this colloquium, now in its 16th year.

Just this morning, President Obama signed an executive order directing executive departments and agencies to take steps to promote competition within their areas of responsibility.¹ That order was accompanied by an issue brief put out by the Council of Economic Advisers, which notes indicators suggesting that competition may be decreasing in many sectors.² Academics have searched for the causes of this shift – and the paper points out that more research is needed to understand these trends. But one thing is clear: antitrust enforcers must continue to use all of the tools in their toolbox to protect competition and consumers.

Before I go any further, I will note that the views I am expressing are my own and do not necessarily reflect the views of the Commission or of my colleagues. With that disclaimer out of the way, I'll turn to my topic today – the role of competition enforcers in the digital age. Some say that so-called “new-economy competition” is different from competition in old-economy markets. That antitrust law and competition enforcers cannot keep pace with changes in high-tech markets.³ They suggest that antitrust enforcers should *not* intervene in dynamic markets given the risk that even well-intentioned enforcement may do more harm than good.⁴ Others view competition law as a vehicle to address emerging issues related to privacy and data security. Either approach would create new rules of the road for competition law.

¹ See Exec. Order No. 13725 (April 15, 2016), <https://www.whitehouse.gov/the-press-office/2016/04/15/executive-order-steps-increase-competition-and-better-inform-consumers>.

² Council of Economic Advisers, Issue Brief: Benefits of Competition and Indicators of Market Power, April 15, 2016, https://www.whitehouse.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf.

³ See, e.g., Ronald A. Cass, *Antitrust for High-Tech and Low: Regulation, Innovation, and Risk*, 9 J.L. Econ. & Pol'y 169 (2012-2013), http://heinonline.org/HOL/Page?handle=hein.journals/jecoplcy9&g_sent=1&collection=journals&id=177; Thomas A. Piraino, Jr., *A Proposed Antitrust Approach to High Technology Competition*, 44 Wm. & Mary L. Rev. 65 (2002), <http://scholarship.law.wm.edu/wmlr/vol44/iss1/3>.

⁴ For a description of these arguments, see Howard A. Shelanski, *Information, Innovation, and Competition Policy for the Internet*, 161 U. Pa. L. Rev. 1663, 1671 (2013); Ilene K. Gotts, Scott Sher & Michelle Lee, *Antitrust Merger Analysis in High-Technology Markets*, 4 Eur. Competition J. 463, 464 (2008), <https://www.wsgl.com/PDFSearch/sher1208.pdf>.

Here's what I believe: Antitrust enforcers play a vital role in protecting competition and innovation in the high-tech, digital economy – and must continue to do so. The President's announcement today underscores the important role that competition plays in innovation. It is true that competition in certain digital and high-tech markets may operate differently than in certain traditional markets. For example, pricing may play less of a role in many high-tech markets where products and services are frequently offered to consumers for “free.” Economies of scale in consumption – commonly referred to as network effects – may play a greater role in certain digital markets. The effects of scale may make certain digital markets more susceptible to consolidation of market power. At the same time, entry may be easier in many digital markets compared to traditional markets that require substantial upfront investment in physical plant and equipment.

These market factors are important. But our antitrust tools are flexible. So long as we are careful to apply them with sensitivity to the competitive dynamics of digital and high-tech markets, we do not need a different set of rules to address these factors. And we absolutely should not turn a blind eye towards anticompetitive behavior in high-tech markets simply because we cannot predict the future with certainty.

Today, I will talk about a few issues related to competition enforcement in digital and high-tech markets. First, I will comment on the use of innovation in market analysis and describe how innovation considerations often play an important role in merger review, even in cases where the agencies do not specifically define an “innovation” or “R&D” market. Second, I will speak about two emerging issues related to big data – when we should treat data as a relevant market and the appropriate role of privacy and data protection considerations in competition law. Lastly, I will touch briefly on some of the potential antitrust frontiers in the digital world.

I. Considering Harms To Innovation In Merger Review

While we all agree that innovation is important, the circumstances that best promote innovation can be difficult to pin down. Economists have drawn no firm conclusions about the existence of a general relationship between market structure and innovation.⁵ Yet in individual merger cases, innovation effects can be predicted with some degree of confidence. In these cases, antitrust enforcers should and do incorporate innovation effects into our analysis. For this

⁵ Economists have disagreed about the conditions that best foster innovation for over half a century. Joseph Schumpeter claimed that an innovator required some market power, whereas Kenneth Arrow argued that competition best promotes competition. See JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY, VIII (3d ed. 1950); Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609 (1962), as cited in David McGowan, *Innovation, Uncertainty, and Stability in Antitrust Law*, 16 Berkeley Tech. L.J. 729, 732 (2001).

reason, the revised 2010 Horizontal Merger Guidelines include a section that specifically addresses innovation effects.⁶

In a traditional commodity market – cement, for example – we generally can analyze the competitive effects of a merger by looking at price and quantity. If a particular merger is likely to raise prices or reduce quantity, we can be reasonably confident that that merger is anticompetitive. But for many digital markets, a traditional price-based approach to competition analysis may be ineffective. This is particularly true in what are known as two-sided markets, where one side may subsidize the prices users pay on the other side.

Indeed, in the digital context, there are a myriad of examples of products and services offered to customers for “free” – such as Internet search engines; social networks like Facebook and Twitter; booking engines such as OpenTable and Expedia; and even software such as Adobe PDF. Competition can be vigorous even where products or services are offered for free. Often that competition takes the form of innovation to provide customers with quality improvements or new products. The issue is whether to look just at price effects on the paying side of these platforms, or whether to consider harms – such as to quality and innovation – on the free side.⁷ The Guidelines’ section on innovation makes clear that we look at both sides in the merger enforcement context.

This is precisely what the FTC did in its review of *Zillow-Trulia*, which the Commission voted unanimously to close last year. On the paying side of the platform, staff investigated whether a merged Zillow-Trulia would be able to profitably raise advertising prices to real estate agents. But staff also examined whether the merger would reduce the combined entity’s incentives to innovate by developing new features attractive to consumers, ultimately concluding that it would not.⁸

The FTC routinely challenges mergers that would harm competition in the research and development of new drugs and treatments. In some situations, we may look specifically at an “innovation market” or “R&D market.” But innovation is often a key factor in conventional antitrust analysis. When a firm is planning to enter or expand its presence in a particular market,

⁶ See U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, 2010 HORIZONTAL MERGER GUIDELINES § 6.4.

⁷ While two-sided markets may be more common in high-tech markets, they are hardly new. Newspapers and television programs are longstanding examples of two-sided markets. Antitrust has dealt with these issues in the past. Though they may be more common in the digital economy, this is not a radical enough event to abandon our current antitrust tools.

⁸ See Statement of Commissioners Ohlhausen, Wright, and McSweeney Concerning Zillow, Inc. / Trulia, Inc., File No. 141-0214 (Feb. 19, 2015), https://www.ftc.gov/system/files/documents/public_statements/625671/150219zillowmko-jdw-tmstmt.pdf.

there is often some meaningful innovation at the heart of that firm’s business plan. Three recent examples from FTC enforcement proceedings illustrate this point.⁹

The first is the Commission’s challenge in late 2014 to Verisk Analytics’ proposed acquisition of EagleView Technology. That case focused on the market for rooftop aerial measurement products, commonly known as “roof reports.”¹⁰ EagleView was the leading U.S. provider of these roof reports. Verisk was the leading provider of downstream software platforms, but had recently made a foray into the market for roof reports themselves. There was strong qualitative evidence that Verisk was uniquely well positioned to compete against EagleView in providing roof reports. One of the things the FTC examined was the likely future competition between the merging parties to offer customers ever more innovative products.¹¹ In particular, Verisk had invested in capturing higher-resolution aerial images than those used by EagleView, which promised even more accurate measurement tools for customers.¹² So while the FTC did not define an “innovation” market, innovation nonetheless played a crucial role in staff’s analysis and in the decision to challenge the merger.

The second example is the FTC’s challenge last year to the merger between Steris and Synergy, the second and third-largest sterilization companies in the world. Synergy did not operate in the United States, but company documents showed that it was working to introduce an innovative x-ray sterilization technology into the United States to compete against Steris. While other forms of sterilization exist in the United States, none of the existing market participants offered x-ray sterilization on a commercially significant scale. The Commission alleged that the

⁹ Competition enforcers also play an important role in promoting innovation by advocating for disruptive entrants. The FTC has a long history of advocating for competition at the state and local level. For example, in the last few years the FTC has submitted comments to multiple cities and taxicab authorities urging that regulations be limited to legitimate safety and consumer protection issues, and not impede competition from new ride-hailing platforms (such as those offered by Uber and Lyft). FTC officials also recently criticized as “bad policy” state laws designed to protect the automobile dealership model from competition from Tesla’s direct-to-consumer sales strategy. See Andy Gavil, Debbie Feinstein, and Marty Gaynor, *Who Decides How Consumers Should Shop?*, Apr. 24, 2014, <http://www.ftc.gov/news-events/blogs/competition-matters/2014/04/who-decides-how-consumers-should-shop>.

¹⁰ Roof reports calculate roof dimensions from aerial images. These reports are used primarily for insurance purposes.

¹¹ Complaint, *In the Matter of Verisk Analytics, Inc., and EagleView Technology Corp.*, Dkt. No. 9363 ¶ 40 (Dec. 16, 2014), <http://www.ftc.gov/system/files/documents/cases/141216veriskcmpt.pdf>.

¹² After the FTC filed for an injunction, the parties promptly abandoned the deal. Developments since that time have demonstrated the wisdom of the Commission’s action. Verisk announced last year that it was accelerating its collection of high-resolution aerial images. In its press release, Verisk characterized its initiative as merely “the most recent step [in the company’s] ongoing efforts” in the area, and cited Verisk’s “long-term commitment to the highest-quality imagery and data.” Verisk Press Release, *Verisk Insurance Solutions Announces Expansion of Imagery Database*, Aug. 4, 2015, <http://www.verisk.com/press-releases-verisk/2015/august-2015/verisk-insurance-solutions-announces-expansion-of-imagery-database.html>.

merger would harm future competition by terminating Synergy’s entry plans and would deprive customers of a promising new sterilization technology.¹³

Unfortunately, last September the district court judge denied the FTC’s request for injunctive relief. The judge disagreed with the FTC that Synergy would have entered the United States with x-ray sterilization services within a reasonable amount of time to compete against Steris. The Commission subsequently dismissed the administrative action. While I disagreed with the district court judge’s ruling, this matter nevertheless provides a concrete example of the Commission’s willingness to take innovation and quality competition seriously by considering the potentially disruptive effects of new technologies.

The third example is the Commission’s 2013 consent in the *Nielsen/Arbitron* matter. In that case, which was before my time at the Commission, the FTC required a divestiture of competitive assets because the merging parties were the best-positioned firms to develop a cross-platform audience measurement product increasingly sought by media companies and advertisers – even though that product had “yet to be developed and marketed.”¹⁴

The Department of Justice (DOJ) also looks closely at innovation in its merger analysis. Two years ago, the DOJ prevailed in its challenge of Bazaarvoice’s consummated acquisition of PowerReviews – a case that involved online product review and ratings platforms.¹⁵ In that case, DOJ alleged that the two companies had previously engaged in “feature driven one-upmanship,” and that the transaction “significantly reduced incentives to . . . invest in innovation.”¹⁶ The court in *Bazaarvoice* acknowledged that the social commerce industry was “at an early stage of development, rapidly evolving, fragmented, and subject to potential disruption by technological innovations” and that “the future composition of the industry as a whole is unpredictable.”¹⁷ Judge Orrick held, however, 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.”¹⁸

Even in dynamic markets, changes in market structure may be episodic and infrequent. Facebook’s displacement of Myspace is often cited as an example of the tenuous position of

¹³ Complaint, In the Matter of Steris Corp. and Synergy Health PLC, Dkt. No. 9365 ¶¶ 68-70 (May 29, 2015), <https://www.ftc.gov/system/files/documents/cases/150529sterissynergypart3cmpt.pdf>.

¹⁴ Statement of the Fed. Trade Comm’n, In the Matter of Nielsen Holdings N.V. and Arbitron Inc., File No. 131-0058, at 1 (Sept. 20, 2013), <http://www.ftc.gov/system/files/documents/cases/140228nielsenholdingstatement.pdf>.

¹⁵ See *U.S. v. Bazaarvoice*, 2014 U.S. Dist. LEXIS 3284 (N.D. Cal. 2014).

¹⁶ Complaint, *U.S. v. Bazaarvoice, Inc.*, C-13-0133 ¶¶ 8, 62 (N.D. Cal. Jan. 10, 2013), <https://www.justice.gov/atr/case-document/file/488911/download>.

¹⁷ *Id.* at *34.

¹⁸ *Id.* at *261.

seemingly dominant firms in digital markets. Over time, Facebook’s market position has remained stable and arguably strengthened. Google has been the leading U.S. search engine for twelve years running and has accounted for over 60 percent of searches since 2008.¹⁹ I am not suggesting that the continued success of either company is problematic in and of itself. My point is merely that industry structure may prove as durable in digital and high-tech fields as in “old economy” markets. It would be a mistake to view the mere *possibility* of disruptive entry as a reason to refrain from appropriate antitrust enforcement in digital and high-tech markets.

II. Big Data, Privacy & Antitrust

Let me now turn to the lifeblood of high tech markets – data. First, can “big data” constitute a relevant market and can “big data” be a barrier to entry? The short answer to both these questions is: yes. The longer answer is, quite appropriately, that it depends on the facts. Antitrust agencies take a case-by-case approach to looking at markets and potential barriers to entry. I am not aware of evidence today that warrants treating “big data” as a special case – either by inferring that it conveys market power or operates as a barrier to entry on the one hand, or by categorically exempting it from antitrust scrutiny on the other. In the big data world, there’s a lot of data that anyone can obtain for a fairly nominal cost. But there is also a lot of valuable data that *is* proprietary and could operate as a barrier to entry. It may be that an incumbent has significant advantages over new entrants when a firm has a database that would be difficult, costly, or time consuming for a new firm to match or replicate.

The FTC has treated data as a relevant market and found it to be a barrier to entry in recent cases based on the specific facts and circumstances related to competition in those markets. In *Dun & Bradstreet-Quality Education Data* (2010), the FTC determined that data, itself, was the relevant product. The FTC found that the parties “were the only significant U.S. suppliers of [K-12] educational marketing data.”²⁰ Other sources of marketing data were not close substitutes “because of their more limited coverage, reduced functionality, and less frequent updating.”²¹

¹⁹ Data from comScore. For a graph of historical U.S. search engine market shares, *see* Dan Frommer, *Google’s growth since its IPO is simply amazing*, QUARTZ (Aug. 19, 2014), <http://qz.com/252004/googles-growth-since-its-ipo-is-simply-amazing/>.

²⁰ Analysis of Agreement Containing Consent Order to Aid Public Comment, In the Matter of The Dun & Bradstreet Corporation, Dkt. No. 9342, at 1 (Sept. 10, 2010), <https://www.ftc.gov/sites/default/files/documents/cases/2010/09/100910dunbradstreetanal.pdf>.

²¹ *Id.* The FTC found two “significant barriers to entry” related to data provision: (1) the “[t]ime and cost to develop a database with market coverage and accuracy comparable to MDR or QED’s pre-merger databases; and (2) the need to obtain a reputation for data quality. *Id.* The consent agreement required Dun & Bradstreet to divest an

In *Nielsen-Arbitron* (2013), the FTC determined that the proprietary data of Nielsen and Arbitron was a key input to offering downstream cross-platform audience measurement services. The parties had “the most accurate and preferred sources of individual-level demographic data for [television and radio] audience measurement purposes.”²² In other words, it would be difficult for other firms to replicate the data generated internally by Nielsen or Arbitron. The FTC found access to television audience data with individual-level demographic information to be a significant barrier to entry.²³ The consent required divestiture of assets related to Arbitron’s cross-platform audience measurement business, including data from Arbitron’s representative panel.

The FTC treated data as an input in the market for electronic public records services for law enforcement customers in *Reed Elsevier-ChoicePoint* (2008). Reed Elsevier’s Lexis-Nexis and ChoicePoint were the largest suppliers of public records services, with a combined 80% market share. The FTC found that the parties’ combination of data and analytics were unique among electronic public records services. Law enforcement customers demanded “the most complete database of public records” and “sophisticated search algorithms . . . that identify and display non-obvious relationships between records.”²⁴ Other firms also possessed what could be described as the public records version of “big data.” But the quality of that data (in terms of breadth and depth), and the analytics offered in connection with that data were insufficient to enable those other firms to compete effectively for law enforcement customers.²⁵

On the flip side, the FTC decided to close its *Google-DoubleClick* investigation in 2007.²⁶ Staff examined whether the combination would enhance Google’s power in the ad intermediation market and concluded that it would not. The FTC found that “neither the data available to Google, nor the data available to DoubleClick, constitutes an essential input to a

updated an augmented K-12 database, together with Quality Education Data’s brand name and associated intellectual property, to a competitor in the K-12 data market. *Id.* at 2.

²² Analysis of Agreement Containing Consent Order to Aid Public Comment, In the Matter of Nielsen Holdings N.V. and Arbitron Inc., File No. 131-0058 (Sept. 20, 2013) at 2, <https://www.ftc.gov/sites/default/files/documents/cases/2013/09/130920nielsenarbitronanalysis.pdf>.

²³ *Id.* at 3.

²⁴ Analysis of Agreement Containing Consent Order to Aid Public Comment, In the Matter of Reed Elsevier and ChoicePoint, File No. 081-0133 (Sept. 16, 2008) at 2, <https://www.ftc.gov/sites/default/files/documents/cases/2008/09/080916reedelseviercpanal.pdf>.

²⁵ Entry/expansion within a two-year time horizon was unlikely because existing firms “would need to improve their software and underlying analytics substantially, increase the breadth and depth of their public records data, and overcome [reputational barriers].” *Id.* at 3. The consent required ChoicePoint to divest assets related to its relevant law-enforcement related electronic public records services to Thomson Reuters.

²⁶ Google was the dominant provider of “sponsored search advertising” – and, through its AdSense network, was also an ad intermediary. DoubleClick was a leading ad server – a company that manages the selection, delivery, and placement of advertisements for publishers and advertisers.

successful online advertising product.”²⁷ These examples highlight the fact that there is no one-size-fits-all approach to data holdings, and that appropriate antitrust analysis to this issue is a fact-specific enterprise.

As businesses come to rely increasingly on big data, privacy and data protection concerns have become frequent topics in discourse about competition policy. Some have suggested that competition law should focus more on privacy and data protection issues in analyzing platforms and other high-tech industries. Others, particularly in Europe, have suggested that competition law should be used as a tool to improve privacy and data protections for consumers.

In general, I see antitrust review and broader policy concerns regarding privacy and data protections as two separate issues. As I mentioned earlier, competition law in this country is a flexible tool. The U.S. antitrust agencies routinely analyze non-price considerations where there is evidence that those non-price considerations are important to competition. The FTC has yet to challenge a merger specifically based on the likelihood that it would lead to a diminution in privacy protections, but we have recognized the possibility that consumer privacy can be a non-price dimension of competition.

I mentioned the *Google/DoubleClick* investigation earlier. In that matter, the FTC considered whether the merger of Google and DoubleClick’s respective consumer information data sets could be exploited in a way that threatened consumers’ privacy as part of its competition analysis. While a majority of the Commission did not find any evidence to support this theory in that case, I will continue to encourage staff to be sure that the Commission understands dimensions of privacy and security competition when reviewing transactions.

Absent a clear nexus to competition, however, privacy and data protection concerns are best handled as consumer protection issues.²⁸ For example, in *Facebook-WhatsApp* (2014), staff from the FTC’s Bureau of Consumer Protection (BCP) focused on how the merger would affect the promises that WhatsApp had made to consumers about the limited nature of the data it collects, maintains, and shares with third parties – promises that exceeded those of Facebook at the time the merger was announced. BCP concluded it was appropriate to alert the companies

²⁷ Statement of the Fed. Trade Comm’n Concerning Google/DoubleClick (Dec. 20, 2007), File No. 071-0170 at 12, https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf.

²⁸ Our agency has evolved into the premier privacy enforcer through our existing consumer protection authorities. Since we brought our first data privacy case over a decade ago, the FTC has brought more than 50 cases alleging violations of consumers’ privacy. Additionally, the FTC has used its convening power to hold workshops and issue reports on leading data issues, our recent report entitled “Big Data: A Tool for Inclusion or Exclusion?” examined how the uses of big data affected consumers – particularly vulnerable groups and protected classes. FED. TRADE COMM’N, BIG DATA: A TOOL FOR INCLUSION OR EXCLUSION (Jan. 2016), <https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf>. The report found, that while there are readily identifiable pitfalls in the use of big data which could result in discriminatory effects, there are existing legal protections to ensure we do not diminish hard won protections as Big Data usage becomes more prevalent.

about these privacy concerns and assure the public that the protections of applicable law, including Section 5 and a 2011 FTC order against Facebook, would apply to WhatsApp's data.²⁹ This was a consumer protection issue, and it was handled appropriately as such. On the competition side, our Bureau of Competition staff allowed the transaction to proceed with no conditions.

Similarly, concerns were raised last year regarding RadioShack's proposed sale of its database of customers as part of its ongoing bankruptcy proceedings. Several states objected to the proposed sale on the grounds that RadioShack had promised customers that it would not resell customer data to third parties.³⁰ Our BCP director, Jessica Rich, wrote a letter acknowledging the "special circumstances" involved in a bankruptcy proceeding and providing guidance on how RadioShack might transfer customer information in a manner consistent with the promises it had made to consumers.³¹

The European Data Protection Supervisor has recently suggested that consumers do not appreciate the actual costs associated with "free" products – and that "it may therefore be necessary to develop a concept of consumer harm, particularly through violation of rights to data protection, for competition enforcement in digital sectors of the economy."³²

If you break this language down, the concern seems to be that consumers are not as focused on privacy and data protection practices as they *should* be. I'm open to the possibility that consumers may systematically underestimate the effects of privacy or data protection practices – or that they may simply make the rational decision that it isn't worth the time to fully evaluate those costs. One interesting point in the European Data Protection Supervisor's report was that it would take an Internet user, on average, 244 hours per year to read the privacy policies associated with each website they viewed.³³ The FTC has advocated for greater transparency and choice for consumers with respect to privacy and data protection policies,

²⁹ Letter from Jessica Rich, Director, Bureau of Consumer Protection, Fed. Trade Comm'n, to Erin Egan, Chief Privacy Officer, Facebook, and to Anne Hoge, General Counsel, WhatsApp Inc. (April 10, 2014), https://www.ftc.gov/system/files/documents/public_statements/297701/140410facebookwhatappltr.pdf.

³⁰ See Megan Geuss, *FTC Proposes a Compromise so RadioShack Can Sell Consumer Data*, ARS TECHNICA, May 18, 2015, <http://arstechnica.com/tech-policy/2015/05/ftc-proposes-a-compromise-so-radioshack-can-sell-consumer-data/>.

³¹ Letter from Jessica Rich, Director, Bureau of Consumer Protection, Fed. Trade Comm'n, to Elise Frejka, Founding Member, Frejka PLLC (May 16, 2015), https://www.ftc.gov/system/files/documents/public_statements/643291/150518radioshackletter.pdf.

³² Preliminary Opinion of the European Data Protection Supervisor, *Privacy and Competitiveness in the Age of Big Data: The Interplay between Data Protection, Competition Law and Consumer Protection in the Digital Economy* ¶ 71 (Mar. 2014), https://secure.edps.europa.eu/EDPSWEB/webdav/shared/Documents/Consultation/Opinions/2014/14-03-26_competition_law_big_data_EN.pdf.

³³ *Id.* ¶ 77.

including recommending that Congress consider enacting general privacy legislation, data security and breach notification legislation, and data broker legislation.³⁴

At the same time, I believe that it is dangerous to engage in competition analysis based on what we think consumers *should* want or value, independent of market realities. To do so is to cross the line from antitrust enforcement to market regulation. However well intentioned, I do not believe that this is the appropriate role of antitrust law.

If market participants are competing on the basis of privacy or data policies to attract consumers, that would certainly be an element of our competition analysis. But if they *aren't*, and if there isn't evidence that those dimensions are particularly relevant to competition, then using competition law to address privacy or data issues is like trying to force a square peg into a round hole. To the extent that there is a problem, it should be solved through legislation, regulation, or consumer protection law enforcement – not using the antitrust laws to solve a policy issue they are ill-suited to address.

III. New Frontiers in a Digital World

Before closing, I'd like to briefly mention a potential frontier in antitrust analysis – the rise of high velocity computerized markets and the role of algorithms and machine learning in them.³⁵ Last year, DOJ brought a case for price fixing against two e-commerce sellers who agreed to align their algorithms to increase online prices for their goods – posters.³⁶ In that case humans reached an agreement to use technology to fix prices – but how should antitrust enforcers handle situations in which the human role is less clear? Traditionally, there are three challenges to maintaining a collusive scheme: (1) detecting cheating among participants, (2)

³⁴ See, e.g., FED. TRADE COMM'N, PROTECTING CONSUMER PRIVACY IN AN ERA OF RAPID CHANGE: RECOMMENDATIONS FOR BUSINESSES AND POLICYMAKERS (2012), <https://www.ftc.gov/sites/default/files/documents/reports/federal-trade-commission-report-protecting-consumer-privacy-era-rapid-change-recommendations/120326privacyreport.pdf>; DATA BROKERS: A CALL FOR TRANSPARENCY AND ACCOUNTABILITY (2014), <http://www.ftc.gov/system/files/documents/reports/data-brokers-call-transparency-accountability-report-federaltrade-commission-may-2014/140527databrokerreport.pdf>.

³⁵ I believe that the use of algorithms also raises significant consumer protection issues, most notably the potential for price discrimination based on suspect classifications – even in the absence of a specific intent to engage in that discrimination. Earlier this year, the FTC put out a report entitled “Big Data: A Tool for Inclusion or Exclusion.” The report highlights the broad benefits for consumers through the use of big data sets and algorithms, but it also notes the downsides that come if the data is flawed or if the algorithm makes poor decisions about consumers. Algorithms can only be as good as the information they receive. For example, if a credit-scoring program only offers prime credit deals to graduates of four-year colleges because of how the algorithm was designed, then it is likely that some very good consumers will never have the opportunity to use that product. There can also be cases where protected classes receive very different search results than others. In these cases, I think it is important that companies approach these issues with an open mind and bring in a level of understanding. Algorithms are an efficiency, but they should not negate human judgment or human wisdom.

³⁶ See Press Release, U.S. DEP'T OF JUSTICE, Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution (Apr. 6, 2015), <http://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace>.

responding to new market developments, and (3) avoiding detection by antitrust officials. Algorithms could be used in an attempt to overcome these challenges, such as by automating conspirators' responses to changing market developments, mitigating the need for ongoing coordination between the participants.

There is also a possibility that, as algorithms become more sophisticated, they may be more likely to engage in consciously parallel behavior. Professors Maurice Stucke and Ariel Ezrachi, who both participated in this morning's panels, co-authored a recent paper on artificial intelligence and the enforcement challenges that may be raised by collusion involving pricing algorithms.³⁷ Stucke and Ezrachi suggest that it may be difficult to challenge algorithms engaged in conscious parallelism under current laws absent awareness or anticompetitive intent by the humans using the technology. They urge policymakers to recognize the “dwindling relevance of traditional antitrust concepts of ‘agreement’ and ‘intent’” in the digital age.³⁸

An increase in the sophistication of pricing algorithms could also lead to narrower product market definitions in the future. Under the 2010 Horizontal Merger Guidelines, we specifically evaluate the possibility of price discrimination against targeted customers. Big data and algorithms enable sellers to more effectively target and price discriminate against specific customers. Thus, even though a company may not have been able to effectively target certain consumers for higher prices in the past, that in itself is no guarantee that it might not be able to do so in the future. Data is becoming more robust and algorithms are becoming more powerful. The Commission defined markets on the basis of price discrimination in its successful challenge to the Sysco/U.S. Foods merger – and I would not be surprised to see the concept of price discrimination markets take on increasing importance in U.S. antitrust agency challenges going forward.

Conclusion

As we advance further into the 21st century – complete with its brave new world of innovation, big data, and novel technology – we will face new challenges as competition enforcers. We must be mindful of these challenges, yet we must also continue to be aggressive in advancing our mission to protect consumers and to promote competition. Thank you. I am happy to take any questions.

³⁷ See Ariel Ezrachi & Maurice E. Stucke, *Artificial Intelligence & Collusion: When Computers Inhibit Competition* (U. Oxford Centre for Competition Law and Policy, Working Paper CCLP (L) 40, 2015), <https://www.law.ox.ac.uk/sites/files/oxlaw/cclpl40.pdf>.

³⁸ *Id.* at 37-38.