Computer & Communications Industry Association
Tech Advocacy Since 1972

August 18, 2018

United States Federal Trade Commission
Office of the Secretary
600 Pennsylvania Avenue NW, Suite CC-5510
Washington, DC 20580

Re: *Competition and Consumer Protection in the 21st Century Hearings, Project Number P181201*

Issue 9: The consumer welfare implications associated with the use of algorithmic decision tools, artificial intelligence (AI), and predictive analytics

I. Introduction

These comments are submitted in response to the U.S. Federal Trade Commission (FTC)'s announcement regarding hearings on competition and consumer protection in the 21st Century.[1] The Computer & Communications Industry Association (CCIA)[2] commends the FTC for seeking a better understanding of the legal and policy challenges that arise with the digitalization of the global economy and CCIA welcomes the opportunity to provide its views on the variety of competition issues raised.

In order for tech-related innovation to drive the U.S. economy, both competition policy and sound antitrust enforcement must play a crucial role in ensuring that competition exists across markets. With respect to algorithmic and AI-enabled decision-making tools it is important to highlight, at the outset, that these technologies will lead to significant benefits for consumers and businesses. As policymakers aim to ensure that the benefits of AI inure to the widest group of consumers, and mitigate any potential privacy risks or unfair biases associated with this technological innovation, the net effects of any policy choice must be considered.

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[1] Press Release, FTC Announces Hearing on Competition and Consumer Protections in the 21st Century (June 20, 2018), https://www.ftc.gov/news-events/press-releases/2018/06/ftc-announces-hearings-competition-consumer-protection-21st.

[2] CCIA represents large, medium and small companies in the high technology products and services sectors, including computer hardware and software, electronic commerce, telecommunications and Internet products and services. Our members employ more than 750,000 workers and generate annual revenues in excess of $540 billion. A list of CCIA members is available at https://www.ccianet.org/members.

II. Welfare effects and privacy implications of the application of algorithmic and AI technologies to consumer advertising and marketing campaigns

Algorithmic, AI, and predictive analytics allow businesses to make more intuitive, data-driven decisions, from better matching products and services to consumers, to creating opportunities in education, finance, healthcare, and employment[3] for low-income and underserved communities.[4]

In particular, these technologies can improve outcomes in the consumer advertising and marketing space, providing consumers with information more relevant to their interests and needs, and increasing the likelihood of a completed transaction. AI is already enabling businesses to place more relevant ads, reduce fraud, and optimize real-time bidding processes.[5] The potential applications of AI extend beyond consumer advertising and marking, including: improved image recognition; automatic video captioning; expedited content moderation; enhanced medical diagnosis; spam and malware detection and filtering; and better detection of patterns in satellite imagery to improve agriculture and transit.

As with all data-intensive technologies, it is important to ensure that in algorithmic decision-making, consumer data is collected responsibility and adequately secured. Algorithms and predictive tools should be accountable, so that they do not exacerbate bias or produce discriminatory outcomes, or limit competition.

A. Privacy Risks

With respect to privacy and data protection, algorithmic and AI-enabled decision-making systems pose similar risks to other data-intensive technologies. Several academics, building on the work of Daniel Solove, have identified the privacy risks in the algorithmic space, including: exclusion in information processing, a lack of data subject disclosure and control in processing,

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[3] *See e.g.*, Rebecca Greenfield & Riley Griffin, *Artificial Intelligence Is Coming for Hiring, and It Might Not Be That Bad*, BLOOMBERG (Aug. 8, 2018), https://www.bloomberg.com/news/articles/2018-08-08/artificial-intelligence-is-coming-for-hiring-and-it-might-not-be-that-bad; Elizabeth Woyke, *AI Can Now Tell Your Boss What Skills You Lack—And How You Can Get Them*, MIT TECHNOLOGY REVIEW (Aug. 7, 2018), https://www.technologyreview.com/s/611790/coursera-ai-skills/.

[4] FTC, Big Data: A Tool for Inclusion or Exclusion (2016), *available at* https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf.

[5] *How Digital Advertising Can Benefit From the Growth of AI*, IAS INSIDER, https://insider.integralads.com/digital-advertising-can-benefit-growth-ai/ (last visited July 20, 2018).

and reputational distortion.[6] Some automated decision-making systems may also pose the risk of inadvertent disclosure of an individual's personal information or protected status.[7]

These privacy risks can generally be mitigated through traditional privacy- and security- by-design methods of product and service development. Businesses should ensure that privacy risks are considered in the collection and use of data. This means that data used for automated decision-making processes, namely those powered by machine learning algorithms, is: (1) lawfully collected and used; (2) securely stored; and (3) representative of the population that these decisions will be applied to. Businesses should: (1) detect and mitigate biases in their systems before rolling out their products; (2) invest in and apply—whenever possible—sound measures to de-identify the data used to train algorithmic model; and (3) provide users with control over and meaningful transparency about algorithmic decision-making processes.

B. Consumer Welfare and Fairness

The increased use of algorithms and AI-enabled tools for decision-making in business, social, and political contexts has raised concerns that algorithms or their decisions might exhibit or exacerbate human bias or discrimination. The complexity of algorithmic and machine learning-based decision-making tools suggests that in some cases it may be difficult for designers or external reviewers to determine the procedural basis for their outputs, even when those decisions or predictions tend to be more reliable and accurate than their human-derived counterparts. Further, the speed and scale at which such systems may make decisions means that they could amplify potential disparate impacts. Researchers have identified three scenarios where bias might be reflected in a decision-making system or its outputs: (1) training on implicitly biased or statistically distorted datasets; (2) potentially biased algorithm or model design; and (3) masking of intentional discrimination through the complexity of decision-making systems.[8]

Reducing the risk of bias in complex algorithmic decision-making systems requires a multi-pronged approach. Appropriate hiring practices to build diverse and cross-disciplinary teams with technical and social science expertise, combined with robust methodologies in identifying and correcting potential sources or proxies for bias in datasets or model design, can help mitigate bias before it can enter a system. Algorithmic accountability, or the idea that the potential for consumer harms can be "assessed, controlled, and redressed"[9] in an algorithmic system, is a

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[6] Joshua A. Kroll, Joana Huey, Solon Barocas, *et al*., *Accountable Algorithms*, 165 U. PA. L. REV. 633 (2017), *available at* https://scholarship.law.upenn.edu/penn_law_review/vol165/iss3/3/.

[7] *Id*.

[8] *Id*.

[9] World Wide Web Foundation, Algorithmic Accountability (July 2017), *available at* http://webfoundation.org/docs/2017/07/Algorithms_Report_WF.pdf at 16.

principle that can aid businesses in ensuring systems operate in accordance with their designed intentions and can identify and address actual harmful outcomes.[10] Operators should work to define the substantive algorithmic harms that might result from a particular system based on its likely inputs and overall design. Verifying that algorithms produce results consistent with their operators' intentions, rather than those defined harms, can be accomplished through a variety of means. For instance, system architects can implement technical parameters for consistent and procedurally regular system design, provide confidence measures associated with outputs, and conduct disparate impact assessments of results to identify and rectify potential harms before and during system use.

III. Welfare implications associated with use of algorithmic decisions tools, AI, and predictive analysis technologies in the determination of a firm's pricing and output decisions

Firms' use of algorithms to set prices should be generally seen as an efficient way to increase market competition to the benefit of consumers. It is regular practice for firms to monitor competitors' prices and adapt accordingly in order to compete. Therefore, the use of price algorithms injects dynamism in the markets as it allows firms to adapt price setting rules more rapidly. There is no special characteristic of firms' usage of price algorithms to compete that elicits changes to the current competition framework. Nothing about the use of algorithms confers immunity from antitrust law. As illustrated, price algorithms are mostly pro-competitive. In the limited instances where firms could use algorithms to the detriment of consumer welfare, these actions can be addressed using current antitrust enforcement tools.

A. Algorithms and Price Discrimination

Price discrimination and dynamic pricing, or the capacity to change and adapt prices in view of evolving estimates of the supply and demand relationship for a particular product, is pro-competitive. Pricing algorithms allow firms to engage in price discrimination and dynamic pricing in a more efficient manner to respond more quickly to changes in the market, increasing price competition. Additionally, the use of algorithms can help firms to allocate resources more efficiently. Allocative efficiencies bring generally positive outcomes that benefit consumer welfare. Finally, firms can use competitors' pricing as an input to optimize their own pricing algorithm and offer more competitive prices to customers, again increasing market competition to the benefit of consumers.

[10] Joshua New & Daniel Castro, *How Policymakers Can Foster Algorithmic Accountability*, Center for Data Innovation (2018), *available at* http://www2.datainnovation.org/2018-algorithmic-accountability.pdf.

B. Algorithms and Collusion

While the use of algorithms based on competitors' data is generally considered pro-competitive, concerns have been voiced that the increased price transparency online can enable tacit collusion and/or help firms to engage in illegal agreements.

Firms may use algorithms to monitor agreed-upon prices, engage in explicit collusion, or to implement pre-existing explicit collusion. Current U.S. antitrust laws address these agreements, and the use of such algorithms would form evidence of an illegal agreement among competitors. Agreement by competitors to coordinate their own pricing algorithms is no different than human-created cartels, and thus redressable where appropriate under the current antitrust regime. The more science-fiction variation of collusion, in which autonomous pricing algorithms engage in explicit collusion with each other, remains beyond any real world scenario. Regulating collusive agreements formed without human interaction is implausible, and collusive agreements formed through human agency are fully prohibited by existing law.

There have been discussions concerning how algorithms can facilitate tacit collusion, *i.e.*, "conscious parallelism," that may result in a lessening of price competition. In the United States, tacit collusion remains legal under the current antitrust framework. As clearly expressed in U.S. case law, and recognized by U.S. antitrust agencies themselves, "[w]ithout proof of collusion or evidence that the knowing parallel adoption of pricing formulas narrowed the range of prices over time, parallel pricing conduct may be outside the reach of the antitrust laws."[11]

Tacit collusion *facilitated* by algorithms would still require certain market and economic conditions to exist (such as market transparency, deterrent mechanisms, absence of competitors' or customers' reaction, or a punishing mechanism for colluders). Given the difficulty to encounter market conditions that would allow tacit collusion to exist, and that the alternative would be to regulate prices, the antitrust approach to tacit collusion should remain intact, even if firms expand their use of pricing algorithms.

Finally, price algorithms may also be used by firms in a pro-competitive manner by engaging in aggressive competition. Firms could use pricing algorithms to undercut rivals, and/or to engage in disruptive pricing strategies, that would lead to market changes that will ultimately benefit consumers.

[11] Algorithms and Collusion - Note by the United States, Submission to OECD Competition Committee, May 26, 2017, *available at* https://one.oecd.org/document/DAF/COMP/WD(2017)41/en/pdf.

IV. Impact of restrictions on the use of computer and machine learning and data analytics on innovation and consumer rights and opportunities in existing and future markets, and in the development of new business models

Restrictions on the use of computer and machine learning and data analytics would have a net adverse impact on innovation and consumer rights and opportunities. Regulating nascent markets, particularly without a sound evidence base of proven consumer harm, will stifle innovation and distort markets.[12] For example, the EU's recently imposed General Data Protection Regulation (GDPR) has multiple restrictions on data processing and use of data that pose a threat to innovation in AI and machine learning.[13]

V. Conclusion

As technology continues to drive our economy and transform our markets, privacy and competition policies will remain key to ensure consumers benefit from these advancements. The current competition framework has proved to be sufficiently robust and flexible to adapt to new challenges, and privacy standards will ensure consumers remain protected from novel privacy threats.

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[12] Yale Information and Society Project, Governing Machine Learning: Exploring the Intersection Between Machine Learning, Law, and Regulation (2017), *available at* https://law.yale.edu/system/files/area/center/isp/documents/governing_machine_learning_-_final.pdf ("There was, however, a general awareness on the part of participants that creating new regulatory burdens without sufficient thought, or at too early a time in the development of ML, could negatively impact the potential benefits of the technology. Creating a framework for how to think about these issues was therefore deemed critical.").

[13] Nick Wallace & Daniel Castro, *The Impact of the EU's New Data Protection Regulation on AI*, Center for Data Innovation (Mar. 27, 2018), *available at* http://www2.datainnovation.org/2018-impact-gdpr-ai.pdf.

Annex:

Per the FTC's request for empirical research regarding the topics at issue in the hearing announcement, CCIA offers the following additional resources.

- Joshua Kroll, *Accountable Algorithms*, Media Policy Project Blog (2016), http://blogs.lse.ac.uk/mediapolicyproject/2016/02/10/accountable-algorithms-a-provocation/.
- Joshua Kroll, Joana Huey, Solon Barocas, et al., *Accountable Algorithms*, 165 U. PA. L. REV. 633 (2017), *available at* https://scholarship.law.upenn.edu/penn_law_review/vol165/iss3/3/.
- Joshua New & Daniel Castro, *How Policymakers Can Foster Algorithmic Accountability*, Center for Data Innovation (2018), *available at* http://www2.datainnovation.org/2018-algorithmic-accountability.pdf.
- Anupam Chander, *The Racist Algorithm?*, 115 MICH. L. REV. 1023, *available at* https://repository.law.umich.edu/cgi/viewcontent.cgi?article=1657&context=mlr.
- Moritz Hardt et al., *Equalilty of Opportunity in Supervised Learning*, *available at* http://papers.nips.cc/paper/6374-equality-of-opportunity-in-supervised-learning.pdf.
- Ryan Calo, *Artificial Intelligence Policy: A Primer and Roadmap*, 51 U.C.D. L. REV. 399 (2017), *available at* https://heinonline.org/HOL/LandingPage?handle=hein.journals/davlr51&div=18&id=&page=.
- Anja Lambrecht and Catherine Tucket, *Algorithmic Bias? A Study Of Data-based Discrimination In The Serving Of Ads in Social Media* (2016), *available at* https://www.ftc.gov/system/files/documents/public_events/966823/lambrechttucker_algorithmicbias_final.pdf.