

*Before the*

**Federal Trade Commission**

**Hearings on Competition and Consumer Protection in the 21st Century  
Project Number P181201**

**Comments on Topic 9: The Consumer Welfare Implications Associated  
with the Use of Algorithmic Decision Tools, Artificial Intelligence,  
and Predictive Analytics**

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The Electronic Frontier Foundation is the leading nonprofit organization defending civil liberties in the digital world. Founded in 1990, EFF champions user privacy, free expression, and innovation through impact litigation, policy analysis, grassroots activism, and technology development. We work to ensure that rights and freedoms are enhanced and protected as our use of technology grows. EFF represents over 40,000 dues-paying members, including consumers, hobbyists, artists, computer programmers, entrepreneurs, students, teachers, and researchers.

Increasing market concentration and structural barriers to competition for Internet-related businesses threaten the values of free expression, privacy, and the innovation that has made the Internet a powerful force in daily life. It is imperative that policymakers and industry address competition issues actively and thoughtfully, avoiding remedies that will themselves harm the rights and freedoms of Internet users.

Artificial intelligence, predictive analytics, machine learning, and algorithmic decision tools are central to today's networked businesses, and increasingly important to criminal justice and other areas. From informing courts about bail determinations to setting commercial credit scores, these tools can help ascertain patterns across large data sets.

They can also, however, insinuate imaginary correlations, suggest misleading conclusions, and technologically launder longstanding discrimination and bias. Below, we address a number of concerns that the Commission should consider in its analysis of the implications of artificial intelligence for consumer welfare.

Values that should be considered in the evaluation of any business model employing AI include privacy, transparency, and the harms of path dependency, underinclusive data sets, sampling bias, and omitted variable bias, which harm the accuracy and reliability of AI applications.

### **A. Consumer Advertising and Marketing**

The application of AI to consumer advertising has already demonstrated profound risks. The algorithms that curate newsfeeds visible to social media users, for instance, have spread misinformation—and even foreign government propaganda—at a prolific scale.<sup>1</sup> Publicly available evidence suggests that algorithms designed to maximize corporate advertising revenue have emerged as an attack vector for foreign powers seeking to influence U.S. elections.

Conversely, algorithms driving social media content moderation have falsely flagged and taken down posts by public figures including a European head of state, silencing his criticism of U.S. foreign policy using an iconic war image published long ago.<sup>2</sup> Platforms—notably Facebook—have not only amplified misinformation and propaganda, but done so while also simultaneously silencing legitimate discourse, dissent, art, and journalism.

Algorithmic tools applied in the marketing context could easily—and already do—privilege some kinds of content while obscuring others. Which creative expressions and consumer preferences are poised to be overlooked by algorithms that detect and amplify popularity? Will the spectrum of consumer choice expand, or instead narrow?

### **B. Pricing and output Decisions**

As applied to influencing firms' decisions about output, pricing, and resource allocation, AI presents the risk of suggesting recommendations based on inaccurate projections due to at least three intersecting and compounding problems. One is secrecy driven by proprietary concerns that impede the process of independent testing and replication on which the scientific method rests.<sup>3</sup> Another is sampling bias that can skew the data sets on which algorithms are trained.<sup>4</sup> A third is omitted variable bias masking correlations that may remain invisible to an analysis predicated on false assumptions.

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<sup>1</sup> See Emily Bell, “Does a free press mean more regulation for Facebook?,” CNN (Nov. 17, 2017), <https://www.cnn.com/2017/11/17/opinions/facebook-news-feed-algorithm-emily-bell-opinion/index.html>.

<sup>2</sup> See Zoe Kleinman, “Fury over Facebook ‘Napalm girl’ censorship,” BBC News (Sep. 9, 2016), <https://www.bbc.com/news/technology-37318031>.

<sup>3</sup> See, e.g., In the Matter of Universal Tennis, FTC complaint by the Electronic Privacy Information Center (May 17, 2017), <https://epic.org/algorithmic-transparency/EPIC-FTC-UTR-Complaint.pdf> (describing as a deceptive trade practice “a secret, proprietary algorithm, used to assign personally identifiable numeric scores to tennis players....”).

<sup>4</sup> See Washington Post Editorial Board, *Facial recognition poses serious risks. Congress should do something about it.*, Washington Post (July 18, 2018), <https://www.washingtonpost.com/opinions/facial-recognition-poses-serious-risks-congress-should-do-something-about-it/2018/07/18/c4c8973c-89c1-11e8-a345->

In many commercial sectors, the modus operandi with respect to data management has become to “collect everything,” and to later seek opportunities to monetize data. This paradigm, however, invites path dependency.

AI does not reveal abstract truths, but instead offers powerful tools to test hypotheses whose construction inevitably influences the output.<sup>5</sup> Hypotheses may be constructed that—even despite being false—data could potentially confirm. For instance, historical data might suggest that communities of color can economically sustain only dining establishments that emphasize high-calorie foods with low nutritional value, either because it omits consideration of other potentially explaining factors (e.g., income level, or the limited availability of alternative choices), or because it extrapolates projections from a set of historical data influenced by discriminatory zoning, or by lenders redlining neighborhoods.

Similar biases emerge in other contexts with implications for resource allocation. Facial recognition algorithms, for instance, are notoriously unreliable when applied to the faces of racial minorities. That bias can lead to higher rates of misidentification and potential risks of police violence. It can also restrict access to credit markets for minority-owned businesses, or inflate the interest rates at which some consumers must repay loans.<sup>6</sup>

An algorithm used by an actuary might suggest charging residents of some neighborhoods higher health insurance rates based on disproportionate rates of disease ultimately explicable through factors ignored by the algorithm, such as the discriminatory siting of toxic facilities, or inadequate availability of primary care.

Because so many algorithms used in commercial settings remain secret, it is often impossible to meaningfully test for bias. Safeguarding consumer rights requires transparency into both an algorithm’s code and the data used to train it.

### **C. Innovation and Opportunities in Future Markets**

AI and its many potential applications could invite innovation and foster new enterprises. On the other hand, the same sampling bias and secrecy that prevent AI tools from being replicated and tested like scientific experiments can skew their operation in practice and entrench firms wielding market power while preventing the emergence of new competition.

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[a1bf7847b375\\_story.html?utm\\_term=.f6cde78ace2e](#) (“Because the technology is less effective at identifying people of color and women, watchdogs also worry it could disproportionately implicate members of these demographics in crimes they did not commit.”).

<sup>5</sup> See Gary Marcus, *Steamrolled by Big Data*. The New Yorker (March 29, 2013).

<sup>6</sup> See Drew Harwell, *Microsoft calls for regulation of facial recognition, saying it’s too risky to leave to tech industry alone*, Washington Post (July 13, 2018), available at [https://www.washingtonpost.com/technology/2018/07/13/microsoft-calls-regulation-facial-recognition-saying-its-too-risky-leave-tech-industry-alone/?utm\\_term=.ffd78a4b569a](https://www.washingtonpost.com/technology/2018/07/13/microsoft-calls-regulation-facial-recognition-saying-its-too-risky-leave-tech-industry-alone/?utm_term=.ffd78a4b569a) (quoting company President Brad Smith as saying that “A world with vigorous regulation of products that are useful but potentially troubling is better than a world devoid of legal standards.”).

Developing AI requires substantial resources, as well as access to large data sets to which major companies often enjoy extraordinary access. The continued adoption of AI will increase the predictive abilities of firms with access to data, creating a barrier to entry and potentially expanding the digital divide.

When employed by users (e.g. through predictive search functionality in search engines), AI tools tend to narrow the choices presented, by aiming to predict a user's preferences based on their past behavior and the behavior of others like them. In the context of consumer marketing, this propensity could potentially undermine competition and inhibit innovation by creating swarm effects favoring established firms in any given market. AI—especially when harnessed by major corporate marketing budgets—could thus increase barriers to entry in any number of industries by entrenching dominant actors and limiting the visibility of new products to purchasers.

Requirements for transparency into code and data sets used in significant AI systems would enhance the public interest. Transparency would help prevent exacerbated discrimination that would inevitably grow worse and more deeply entrenched if the sector remains entirely unregulated. Such requirements would support the scientific method by enabling replicability and thereby gain greater reliability. And they would enable products to be subjected to fair competition in the marketplace, enabling the invisible hand rather than acting as invisible strings manipulating entire populations like a marionette.