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6 ALGORITHMS: HOW COMPANIES' DECISIONS ABOUT

7 DATA AND CONTENT IMPACT CONSUMERS

8 WEDNESDAY, NOVEMBER 29, 2017

9 House of Representatives

10 Subcommittee on Communications and

11 Technology

12 joint with the

13 Subcommittee on Digital Commerce and Consumer

14 Protection

15 Committee on Energy and Commerce

16 Washington, D.C.

17

18

19

20 The subcommittee met, pursuant to call, at 10:00 a.m., in

21 Room 2123 Rayburn House Office Building, Hon. Robert Latta

22 [chairman of the Subcommittee on Digital Commerce and Consumer

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23 Protection] presiding.

24 Present from the Subcommittee on Digital Commerce and  
25 Consumer Protection: Representatives Latta, Harper, Burgess,  
26 Lance, Guthrie, Kinzinger, Bilirakis, Bucshon, Mullin, Walters,  
27 Costello, Walden (ex officio), Schakowsky, Clarke, Dingell,  
28 Matsui, Welch, Green, and Pallone (ex officio).

29 Present from the Subcommittee on Communications and  
30 Technology: Representatives Blackburn, Lance, Shimkus, Latta,  
31 Guthrie, Olson, Kinzinger, Bilirakis, Johnson, Flores, Brooks,  
32 Collins, Cramer, Walters, Costello, Walden (ex officio), Doyle,  
33 Welch, Clarke, Loeb sack, Ruiz, Dingell, Eshoo, Engel, Matsui,  
34 McNerney, and Pallone (ex officio).

35 Staff present: Mike Bloomquist, Deputy Staff Director;  
36 Samantha Bopp, Staff Assistant; Kelly Collins, Staff Assistant;  
37 Robin Colwell, Chief Counsel, Communications and Technology; Sean  
38 Farrell, Professional Staff Member, Communications and  
39 Technology; Margaret Tucker Fogarty, Staff Assistant; Melissa  
40 Froelich, Chief Counsel, Digital Commerce and Consumer  
41 Protection; Adam Fromm, Director of Outreach and Coalitions; Gene  
42 Fullano, Detailee, Communications and Technology; Ali Fulling,  
43 Legislative Clerk, Oversight and Investigations, Digital  
44 Commerce and Consumer Protection; Theresa Gambo, Human

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45 Resources/Office Administrator; Elena Hernandez, Press  
46 Secretary; Paul Jackson, Professional Staff, Digital Commerce and  
47 Consumer Protection; Bijan Koochmaraie, Counsel, Digital Commerce  
48 and Consumer Protection; Tim Kurth, Senior Professional Staff,  
49 Communications and Technology; Lauren McCarty, Counsel,  
50 Communications and Technology; Katie McKeogh, Press Assistant;  
51 Alex Miller, Video Production Aide and Press Assistant; Mark  
52 Ratner, Policy Coordinator; Madeline Vey, Policy Coordinator,  
53 Digital Commerce and Consumer Protection; Evan Viau, Legislative  
54 Clerk, Communications and Technology; Hamlin Wade, Special  
55 Advisor, External Affairs; Everett Winnick, Director of  
56 Information Technology; Greg Zerzan, Counsel, Digital Commerce  
57 and Consumer Protection; Michelle Ash, Minority Chief Counsel,  
58 Digital Commerce and Consumer Protection; Jeff Carroll, Minority  
59 Staff Director; David Goldman, Minority Chief Counsel,  
60 Communications and Technology; Lisa Goldman, Minority Counsel;  
61 Lori Maarbjerg, Minority FCC Detailee; Dan Miller, Minority  
62 Policy Analyst; Caroline Paris-Behr, Minority Policy Analyst; and  
63 C.J. Young, Minority Press Secretary.

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64 Mr. Latta. Well, good morning. I would like to call our  
65 joint subcommittee meeting to order and the chair recognizes  
66 himself for 5 minutes for an opening statement.

67 And good morning again. I would like to welcome everyone  
68 back from Thanksgiving holiday to our joint subcommittee hearing.  
69 I would like to thank our witnesses for being here today. I would  
70 venture to guess many people were able to get a jumpstart on their  
71 holiday shopping and seeing some of the earlier reports showing  
72 that online shopping rose 17 percent from last year which makes  
73 our hearing this morning even more timely.

74 When Chairman Walden became chairman of the Energy and  
75 Commerce Committee we agreed that keeping our focus on the  
76 consumer was a priority for the committee. And everything that  
77 the Digital Commerce and Consumer Protection Subcommittee has  
78 done, whether it has been exploring new technologies through our  
79 Disrupter Series or the bipartisan work that went into the SELF  
80 DRIVE Act, our goal has always been to act in the best interest  
81 of the consumer, the American people.

82 Earlier this fall, the Equifax data breach compromised the  
83 personal information of over 145 million Americans. This  
84 troubling incident raised many questions about credit industry  
85 practices with respect to the collection of consumer information.

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86 Many Americans, some of whom never heard of Equifax, were confused  
87 as to how their sensitive personal information could have been  
88 compromised by a company they had never interacted with.

89 Just last week, Uber announced their systems were hacked,  
90 exposing data of over 57 million users. Rather than alert  
91 authorities and make the breach known to their users and drivers,  
92 Uber kept the hack secret for a year. Disregard of law and  
93 disregard of consumers' and drivers' trust all require close  
94 scrutiny. The Digital Commerce and Consumer Protection  
95 Subcommittee will continue our work to protect consumers and make  
96 sure those who disregard the law are held accountable.

97 As investigations continue, the importance of this hearing  
98 cannot be understated. Polls show Americans both feel that  
99 technology has had a positive effect on our society, but are also  
100 skeptical about how their information is used by major technology  
101 companies. As policymakers, it is our obligation to ask the tough  
102 questions and make sure consumers understand how their  
103 information is being used in our digitally-driven economy.

104 That is why we explore today how personal information about  
105 consumers is collected online and, importantly, how companies use  
106 that information to make decisions about the content consumers  
107 see. Right now, there are more than 224 million smart phone users

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108 in America and U.S. consumers spend about 5 hours a day on their  
109 mobile devices. As we continue to see the number of connected  
110 devices increase and our digital economy expand, Americans are  
111 only going to spend more and more time online browsing the web,  
112 shopping, or checking social media with more information about  
113 them being collected.

114 Although there are legitimate reasons and benefits of the  
115 collection and use of information online, we want to ensure that  
116 Americans understand how their information is being used.  
117 Specifically, how do companies use algorithms to make decisions  
118 and deliver content to consumers? What information goes into  
119 these complex algorithms and how do they control the information  
120 that comes out? How important are human decisions in creating  
121 the algorithms and interpreting the results? Are the results of  
122 the researches we conduct online objective or are companies  
123 controlling the information we get?

124 These are all fair, legitimate questions that we intend to  
125 explore. It is our job to make sure consumers have the  
126 information they need to make informed decisions, especially when  
127 it comes to the flow of their personal information online. With  
128 that said, it is also important to understand how effective  
129 privacy policy disclosures are. Although some scholars believe

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130 such disclosures empower the consumers, others contend they are  
131 only there for the lawyers and are impossible to read. For that  
132 reason, we must consider whether there are more effective ways  
133 to empower the consumer.

134 I would like to thank Chairman Blackburn for her commitment  
135 to these issues and I look forward to exploring these complex but  
136 important issues with all stakeholders. Again I want to thank  
137 our witnesses for being here today and at this time I would like  
138 to recognize the gentlelady from Illinois, the ranking member of  
139 the subcommittee, for 5 minutes.

140 Ms. Schakowsky. Thank you, Mr. Chairman. We like to think  
141 of the internet as an open marketplace and forum for the exchange  
142 of ideas. In reality, the information that consumers see is  
143 determined in part by tech companies. Today, algorithms  
144 determine what appears in web ads, search results, and your  
145 customized news feed. Some of the content you are presented may  
146 be based on personal information such as your gender, race, and  
147 location. It may also depend on how much companies have paid to  
148 get that content in front of you.

149 The internet and social media have changed how Americans  
150 consume news, information, and advertising. According to an  
151 August 2017 survey by the Pew Research Center, two-thirds of

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152 Americans get at least some of their news through social media.  
153 Consumers rely on a handful of popular platforms, making the  
154 algorithms of those platforms tremendously powerful.

155 On a sinister level, organizations and even nation-states  
156 can exploit algorithms to spread disinformation as we saw with  
157 Russian interference in the 2016 elections. In addition,  
158 platforms profit by selling ads targeted to specific groups based  
159 on their demographics and inferences made through their  
160 engagement with content on the platform. This may have some  
161 benefit, consumers see ads that they are actually interested in,  
162 but the line between tailoring advertising and facilitating  
163 discrimination can get murky. As we grapple with  
164 algorithms on the internet, the Federal Communications Commission  
165 is considering big changes that would allow corporations to  
166 further shape what content consumers access. On December 14th,  
167 the FCC will vote on whether to undo the Open Internet Order which  
168 protects net neutrality. If that proposal is adopted, internet  
169 service providers will be able to control consumers' access to  
170 content. They can make website load faster or slower depending  
171 on whether the content provider pays for the better speed, or an  
172 ISP can block content altogether.

173 Destroying that neutrality would change the internet as we

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174 know it, and how does a small business compete online if it now  
175 has to pay every ISP in the country for its website to load as  
176 fast as a big corporation competitors? What happens to the  
177 exchange of ideas when access to some content is restricted? This  
178 is a disturbing amount of power that the FCC might cede to  
179 for-profit broadband providers.

180 We already have examples of what broadband providers do when  
181 empowered to block content. Verizon blocked text messages from  
182 reproductive rights group NARAL calling them, quote,  
183 controversial, unquote. AT&T limited use of Face Time to  
184 incentivize its customers to purchase more expensive data plans.  
185 TELUS, another telecom company, blocked the website of a union  
186 with which it had a labor dispute. No wonder millions of internet  
187 users have filed comments in support of maintaining the Open  
188 Internet Order. Just since last Monday, my office has received  
189 about 500 calls from net neutrality supporters.

190 Americans are watching the FCC's next move. The FCC under  
191 Chairman Pai is also encouraging consolidation and media  
192 ownership. It has bent over backward to clear the way for  
193 Sinclair Broadcast Group's acquisition of Tribune Media.  
194 Congress established a 39 percent cap on the national audience  
195 one broadcaster can cover, but Chairman Pai moved to reinstate

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196 the outdated UHF discount so that Sinclair can potentially cover  
197 70 percent of the national audience. This media consolidation  
198 is a threat to local journalism, especially as Sinclair forces  
199 its stations to run nationally produced, quote, must-air,  
200 unquote, content.

201 Big corporations are being given more and more influence over  
202 the information that Americans receive from news feeds to  
203 websites, from smart phone to TVs. Congress and federal  
204 watchdogs like the FCC have a responsibility to push back on  
205 corporate power when it threatens fair competition and free  
206 expression. I look forward to our witnesses' insights on how we  
207 fulfill that responsibility and I yield back. Thank you.

208 Mr. Latta. Thank you. The gentlelady yields back and this  
209 time the chair recognizes the gentlelady from Tennessee, the  
210 chairman of the Communications and Technology Subcommittee, for  
211 5 minutes.

212 Mrs. Blackburn. Good morning and welcome to all of our  
213 witnesses. I want to thank my colleague Mr. Latta for working  
214 closely with me and our committee to put together this stellar  
215 panel so that we can talk about all things virtual.

216 Although we often refer to the world on the other side of  
217 the screen as the virtual world, we are seeing that when things

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218 go wrong the real-world impacts on our privacy, finances,  
219 knowledge base, and even freedom of expression are anything but  
220 virtual. They are very, very real. As so many of these issues  
221 overlap between our two subcommittees, I am pleased we are able  
222 to kick off our exploration of these issues as a team.

223 On a number of fronts we are seeing the pressure turned up  
224 on the tech companies that often serve as the new town squares  
225 for public discourse as governments and users are demanding that  
226 certain speech be shut down. Some of the responses have perhaps  
227 been a disappointment from the perspective of free speech.  
228 Companies that began as start-ups in Silicon Valley garages have  
229 fundamentally changed the way we communicate with one another  
230 about everything from the song we want to hear to what stock to  
231 buy to what is the best way to change our healthcare delivery  
232 system.

233 These multinational corporations now respond to pressures  
234 that do not necessarily align with American values, so we need  
235 to examine how and why content is being blocked, filtered, or  
236 prioritized. This may all sound faintly similar to another  
237 topic, net neutrality. Exercise caution here as it is important  
238 to note the FCC's current rules only apply to ISPs, not social  
239 media or search platforms.

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240           In some very concrete ways, the open internet is being  
241 threatened by certain content management practices. These 2 year  
242 old FCC rules have not and cannot address these threats, do it  
243 is disheartening to see Title II regulatory advocates happily  
244 conflating the two to divert attention from who is actually  
245 blocking content. The current FCC proposal to return internet  
246 regulation back to the bipartisan light touch norm also reminds  
247 us that we are simply shifting authority back to the FTC to handle  
248 privacy matters.

249           The previous head of the FCC swiped jurisdiction from the  
250 FTC, a 100-plus year old institution established by a Democratic  
251 President to act against trust. As discussed at our previous  
252 hearings on the limits of the FCC, its authority can only touch  
253 one part of the internet ecosystem and thus it ignores edge  
254 provider services that collect arguably more data than ISPs.

255           As you may have heard, in order for consumers to be able to  
256 protect their virtual you, I introduced a bill that would create  
257 a level and fair privacy playing field by bringing all entities  
258 that collect and sell personal data of individuals under the same  
259 unified rules. Given the witnesses' testimony today, let me also  
260 plug another bipartisan initiative we have addressed, data  
261 security. Given the implications and risk associated with

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262 transferring all of this data, it is imperative that we address  
263 data security. It is a timely issue.

264 I look forward to working with my friends across the aisle  
265 on this, data security and on privacy, the BROWSER Act, and all  
266 of these topics so that we can settle our differences right here  
267 with legislative authority in these hearing rooms rather than  
268 relinquishing that authority to regulators in power. I thank the  
269 chairman for his collaboration and work on this issue and I yield  
270 back the balance of my time.

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271 Mr. Latta. Thank you. The gentlelady yields back. And  
272 before I recognize our next member I just want to mention to our  
273 witnesses we have another subcommittee that is going on right now  
274 so you will have members coming in and out of subcommittee today.  
275 And at this time the chair recognizes the gentleman from  
276 Pennsylvania, the ranking member on C and T, for 5 minutes.

277 Mr. Doyle. Thank you, Mr. Chairman, for holding this joint  
278 hearing and thank you to the witnesses who have come before us  
279 today.

280 Machine learning and artificial intelligence are powerful  
281 tools that are reshaping our country and our economy. In places  
282 like my hometown of Pittsburgh, our leadership in artificial  
283 intelligence is leading to new technologies and new advances that  
284 have the potential for revolutionary changes. I hope this  
285 committee can continue to investigate and understand this  
286 important technology and the impacts that it will have.

287 That being said, troubling recent events such as the hack  
288 of Equifax continue to show light on the dark world of data brokers  
289 and data mining. Credit rating agencies play a central role in  
290 many Americans' lives whether you are buying a home, a car, or  
291 even a new phone. Your ability to demonstrate good credit in the  
292 eyes of these institutions is tantamount to being allowed to make

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293 a purchase or being told that you do not pass go. Americans have  
294 little recourse and our government provides little oversight of  
295 these institutions and their practices. They are increasingly  
296 using big data and machine learning to make judgments about  
297 individuals and their ability to access and use credit.

298 Data breaches at these companies pose grave threats to nearly  
299 every American and I think this warrants further investigation.  
300 However, today I am deeply concerned that this hearing is  
301 happening in the shadow of the FCC's efforts to end network  
302 neutrality and this Congress's own decision to use the  
303 Congressional Review Act on the FCC's broadband privacy rules.  
304 These policies are and were robust protections for consumers that  
305 are at the heart of our discussions here today.

306 In addition, Ms. Moy's testimony refers in numerous places  
307 to the CRA against rules requiring mandatory arbitration by  
308 financial institutions. The majority does not seem content to  
309 merely strip Americans of their legal and regulatory protections.  
310 They are going even further now and working to deny them their  
311 access to the courts as well. The majority seems willing only  
312 to give lip-service to these real consumer protections that they  
313 have already cast aside.

314 The FCC's current efforts to repeal the Open Internet Order

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315 and end network neutrality are a perfect case in point. The need  
316 for net neutrality was borne out of a long history of anti-consumer  
317 and anti-competitive behavior that limited consumers' access to  
318 content and information, new technologies, and competitive  
319 choices. ISPs have blocked consumer access to services that  
320 compete with their own services, new services, and transformative  
321 services more times than I can count. The FCC's privacy rules  
322 themselves were a reaction to bad behavior by the ISPs.

323 For years, ISPs have taken actions to track user behavior  
324 online using deep packet inspection, undeletable supercookies,  
325 and even force consumers to pay them on top of the sky-high fees  
326 they already charge to retain their privacy. Consumers were  
327 protected from these abusive practices until Congress and  
328 President Trump recklessly acted to nullify these rules.

329 I cannot reiterate to my colleagues enough that when you own  
330 the pipe to the home you own access to the consumer as ISPs have  
331 demonstrated so many times. Repealing these rules will have  
332 grave consequences on consumers and the vibrance of the online  
333 ecosystem. I continue to urge Chairman Pai to end his quixotic  
334 misadventure, and with that being said I will yield the remainder  
335 of my time to Mr. McNerney.

336 Mr. McNerney. I thank the ranking member. While I am glad

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337 we are holding today's hearing about protecting online consumers,  
338 I am disappointed that the Republicans on this committee and at  
339 the Federal Communications Commission are doing just the  
340 opposite. Earlier this year, Republicans passed the privacy CRA  
341 eliminating broadband privacy protections for consumers'  
342 personal information.

343 In response, I introduced the MY DATA Act. This legislation  
344 would give the Federal Trade Commission rulemaking and  
345 enforcement authority so that consumers can have strong privacy  
346 and data security protections across the internet. Not a single  
347 Republican agreed to cosponsor this bill. In addition, this  
348 December, the FCC is expected to adopt Chairman Pai's proposal  
349 to dismantle net neutrality. Thousands of constituents  
350 have reached out to my office this year to express concerns about  
351 eliminating broadband privacy and net neutrality protections. I  
352 urge my Republican colleagues to take actions to actually protect  
353 consumers instead of talking about protecting consumers while  
354 exposing consumers to online mischief. I yield back.

355 Mr. Latta. Thank you very much. The gentleman yields back.  
356 And at this time, the chair now recognizes the gentleman from  
357 Oregon, the chairman of the full committee, for 5 minutes.

358 The Chairman. Thank you, Mr. Latta, and good morning,

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359 everyone. Thanks for being here, especially thanks to our  
360 witnesses.

361 And today we begin a critical discussion about the evolution  
362 of consumers' online environment. We will dive into many of the  
363 important questions surrounding the future of data access and  
364 content management in a marketplace driven by algorithms. Just  
365 in the past decade, the internet economy has grown, thrived, and  
366 evolved, as you all know, substantially. It is amazing what is  
367 happening there.

368 The smart phones we carry with us everywhere, the tablets  
369 we log on to, the smart home devices in our kitchens, all represent  
370 a transformational shift in how Americans gather information,  
371 receive their news and content, and how they connect with friends  
372 and with family. These services are convenient, efficient, and  
373 provide valuable and tangible benefits to American consumers.

374 The companies behind the services have created thousands and  
375 thousands of jobs and brought the U.S. into the forefront of  
376 technology and innovation. In exchange for using certain  
377 websites or platforms, consumers are willing to share personal  
378 details about themselves -- names, locations, interests, and  
379 more. The context of the relationship drives that exchange.

380 Now depending on the service, tech companies and online

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381 platforms make their money because they know who you are, where  
382 you are, what you like, what photos and videos you take and watch,  
383 and what news you read. The depth and power of data will be  
384 supercharged with the proliferation of connected and embedded  
385 devices in the Internet of Things. Billions of IoT devices will  
386 surely be deployed linking machines to other machines and  
387 transmitting massive amounts of data and information to connect  
388 Americans to even more services, conveniences, and benefits from  
389 all around the globe.

390 So what is behind these services and activities? Algorithms  
391 and data. Algorithms are a sequence of instructions to solve a  
392 problem or complete a task. These instructions help devices and  
393 apps predict user preferences as well as provide the content and  
394 advertising you see in your social media feed. Data serve as  
395 inputs or signals to those algorithms. Well-intentioned  
396 algorithms can lead to unanticipated consequences. For example,  
397 algorithmic bots are being profusely designed to steal or to cheat  
398 in online gambling and ticket sales.

399 Humans remain a critical part of the creation and monitoring  
400 of these systems. In recent months, reports of data breaches and  
401 algorithms gone awry have demonstrated the potentially negative  
402 influences of digital technology on Americans' lives. This

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403 committee has done extensive work on issues surrounding consumer  
404 protection and data breaches. We brought in the former CEO of  
405 Equifax for a hearing and we continue to push for answers on behalf  
406 of American consumers. At the same time, there have been some  
407 high profile instances of major social media platforms blocking  
408 content for questionable reasons using opaque processes. As a  
409 result of all of this, consumers are concerned about whether they  
410 can trust online firms with the integrity of news and information  
411 they disseminate, the welfare of its users, and on a much larger  
412 scale the preservation of our own democratic institutions. All  
413 these are part of the big public discussion going on right now.

414 As we all know net neutrality is the issue of the moment,  
415 but regardless of where you stand on that policy the recent attacks  
416 on Chairman Pai and particularly his children are completely  
417 unacceptable and have no place in this debate. Period. I  
418 condemn it in the strongest terms and I call on the entire tech  
419 community and my colleagues on both sides of the aisle to condemn  
420 it as well.

421 In light of the current controversy surrounding net  
422 neutrality rules for ISPs, it is important to examine how content  
423 is actually being blocked or promoted or throttled every day on  
424 the internet and not by the ISPs. Net neutrality rules do not

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425 address the threats to the open internet that we will discuss  
426 today.

427           Now the goal for today's hearing is to help provide all  
428 Americans with a better understanding of how their data flows  
429 online, how online platforms and online media sources determine  
430 what they see or don't see, and the extent of and methods by which  
431 their information is collected and used by online firms.  
432 Americans should be able to feel confident that their well-being,  
433 freedom of expression, and access to the content of their choice  
434 are not being wholly sacrificed for profit.

435           Americans should have vibrant, competitive markets both  
436 offline and online where consumers know their rights and options  
437 and have the freedom to choose what is best for their  
438 circumstances. It is undeniable the internet has created  
439 millions of new jobs, tremendous opportunities, access in ways  
440 unimaginable just a few years ago, but it has also created these  
441 new risks and challenges.

442           So in the name of convenience is there a potential for online  
443 firms to undermine America's privacy and security in a way that  
444 they don't expect or know about? Are the current policies  
445 regarding the collection and use of personal data working? Are  
446 consumers harmed by this hyperpersonalization? And finally, are

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447 firms' content management practices constraining America's  
448 ability to speak and to listen freely on an open internet?

449 Consumers should remain as safe from unfair, deceptive, and  
450 malicious practices by online firms and their algorithms on the  
451 internet as they do in the real world. And we are here today to  
452 dig into these tough questions and we appreciate your advice and  
453 counsel from our witnesses today. And with that Mr. Chair I yield  
454 back.

455 Mr. Latta. Thank you very much. The gentleman yields back  
456 and at this time the chair recognizes the gentleman from New  
457 Jersey, the ranking member of the full committee, for 5 minutes.

458 Mr. Pallone. Thank you, Mr. Chairman. The internet is home  
459 to some of the most important conversations taking place today.  
460 As internet companies find ways for Americans to communicate our  
461 democracy should be stronger than ever, but as you all know  
462 something else is going on. Our national dialogue is being  
463 curated by companies policing content and the number of websites  
464 handling this traffic has consolidated to just a few key players.

465 The aim of internet platforms is monetizing web traffic, not  
466 public policy. Algorithms created for the purpose of increasing  
467 ad clicks is what ends up shaping what we see online and too often  
468 this content is not an accurate reflection of the real world.

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469 Structural flaws built into the algorithms used to sort online  
470 content may result in racial and other bias in our news feeds.

471 As diverse voices are squeezed out, bias increases even  
472 further and this is simply not acceptable and I look forward to  
473 hearing more today about what we can do about it. Unfortunately,  
474 forces are at work here in Washington that make this problem worse.  
475 At every turn we see efforts to give more power to gatekeepers  
476 either by eviscerating net neutrality and privacy or by picking  
477 favorite voices for preferred regulatory treatment.

478 Even now as we hold a hearing to talk about mitigating bias  
479 on the internet, FCC Chairman Pai is planning to introduce more  
480 bias into the system. The net neutrality rules that he plans to  
481 destroy are the protections that ensure that we the people can  
482 decide for ourselves what we do and say online and Chairman Pai's  
483 plan will fundamentally change the free and open internet as we  
484 know it. Independent voices, those outside the mainstream may  
485 be most at risk simply because they don't have an affiliation with  
486 the companies that run the internet.

487 Unfortunately, broadband companies have more than just  
488 financial reasons to obstruct access to independent content, it  
489 can also be political. Under Chairman Pai's plan, nothing stops  
490 those in power from pushing broadband companies to sensor

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491 dissenting voices or unpopular opinions or to promote views that  
492 they support. We are seeing more and more often how this  
493 Administration is using its political might to pressure even large  
494 companies.

495         And this is not a partisan point or even a political one.  
496 Jeopardizing the national dialogue should concern all of us. The  
497 dialogue that happens online is critical for our democracy.  
498 Chairman Pai's move comes after this Congress acted earlier this  
499 year to wipe out privacy and data security online. Under  
500 President Obama the FCC adopted fair rules to protect the little  
501 guy. Ask before collecting information, don't share it without  
502 consent, and take reasonable measures to safeguard it. But that  
503 was too much for congressional Republicans who voted to take away  
504 these protections and hand over consumers' data to big business.

505         Sadly, there is still more to come. Over this past year,  
506 the FCC has taken every step possible to ensure that Sinclair  
507 broadcasting, already the largest owner of broadcast stations in  
508 the country becomes even bigger. And these steps by the FCC fly  
509 in the face of laws Congress put in place to protect local voices.  
510 We understand that diverse perspectives are critical for our  
511 communities and strengthen our democracy. Instead, the FCC is  
512 doing everything it can to allow one company to control what people

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513 hear no matter where they are in the country and that is simply  
514 not what we intended.

515 So I look forward to discussing ways to eliminate bias in  
516 our communication systems. We need to figure out how to wrest  
517 power over information from corporations and return it back to  
518 the people. And I yield the remainder of my time to the  
519 gentlewoman from New York, Ms. Clarke.

520 Ms. Clarke. I thank you, Mr. Ranking Member Pallone, for  
521 yielding me time. Today's hearing is of great importance to me  
522 for various reasons both as a congresswoman and as a consumer.  
523 You see, technology continues to touch all areas of our lives and  
524 its reach will continue to grow in the coming days, weeks, months,  
525 and years.

526 With greater reach comes greater responsibility. Companies  
527 must ensure that the algorithms used for their services and  
528 products are free from all biases including racial, ethnic,  
529 gender, sexual orientation biases. That includes making sure  
530 there is a diverse employee base behind the scenes ensuring these  
531 algorithms accurately represent American consumers.

532 As a member of the Congressional Black Caucus I would like  
533 to highlight the great work of the CBC Diversity Task Force and  
534 the CBC TECH 2020 initiative, two entities that have been doing

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535 a substantive deep-dive analysis into the progress of the American  
536 tech sector in accomplishing meaningful diversity and inclusion  
537 in the technology space. Additionally, I would like  
538 unanimous consent to submit for the record a letter my colleagues,  
539 Representatives Butterfield, Cleaver, and Kelly, and myself, sent  
540 to Facebook regarding their site's use of ethnic affinity search  
541 criteria which allow users to violate the Fair Housing Act. This  
542 is just an example of abuse within the algorithm space that really  
543 needs to be monitored and addressed and I hope that we will get  
544 some recommendations from you here today.

545 It is my understanding that this is being addressed in the  
546 short term through Facebook. I just want to go on the record that  
547 this is a concern to my colleagues and I. These issues are vitally  
548 important and I look forward to today's testimony. Mr. Chairman,  
549 I yield back.

550 Mr. Latta. And without objection, the letter is accepted  
551 for the record.

552 [The information follows:]

553

554 \*\*\*\*\*COMMITTEE INSERT 1\*\*\*\*\*

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555 Mr. Latta. And the gentlelady yields back. This concludes  
556 the member opening statements. The chair reminds members that  
557 pursuant to the committee rules, all members' opening statements  
558 will be made part of the record. Additionally, I ask unanimous  
559 consent that Energy and Commerce members not on the Subcommittee  
560 on Digital Commerce and Consumer Protection or the Subcommittee  
561 on Communications and Technology be permitted to participate in  
562 today's hearing. Without objection, so ordered.

563 Again I want to thank our witnesses for being with us today  
564 and because it is very important for us to hear from you and being  
565 to testify before the subcommittee. Today's witnesses will have  
566 the opportunity to give 5-minute opening statements followed by  
567 a round of questions from our members. Our witness panel  
568 for today's hearing will include Dr. Omri Ben-Shahar, the Leo and  
569 Eileen Herzel Professor of Law at the University Chicago of Law;  
570 Ms. Kate Klonick, the Resident Fellow for the Information Society  
571 Project at Yale Law School; Ms. Laura Moy, the Deputy Director  
572 of the Georgetown Law Center on Privacy and Technology; Dr.  
573 Catherine Tucker, the Sloane Distinguished Professor of  
574 Management and Science and Professor of Marketing at the MIT  
575 Sloane School of Management; Mr. Frank Pasquale, the Professor  
576 of Law at the University of Maryland, Francis King Carey School

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577 of Law; and Dr. Michael Kearns, the Professor and National Center  
578 Chair of the Department of Computer and Information Science at  
579 the University of Pennsylvania.

580           Again I want to thank all of our witnesses for being with  
581 us today, and again you each have 5 minutes. If you will, just  
582 pull that mike up close and turn on the button. We look forward  
583 to hearing your testimony.

584           And Doctor, we will start with you this morning. Thank you.

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585 STATEMENTS OF OMRI BEN-SHAHAR, LEO AND EILEEN HERZEL PROFESSOR  
586 OF LAW, UNIVERSITY OF CHICAGO LAW SCHOOL; KATE KLONICK, RESIDENT  
587 FELLOW, INFORMATION SOCIETY PROJECT, YALE LAW SCHOOL; LAURA MOY,  
588 DEPUTY DIRECTOR, GEORGETOWN LAW CENTER ON PRIVACY AND TECHNOLOGY;  
589 CATHERINE TUCKER, SLOANE DISTINGUISHED PROFESSOR OF MANAGEMENT  
590 SCIENCE AND PROFESSOR OF MARKETING, MIT SLOANE SCHOOL OF  
591 MANAGEMENT; FRANK PASQUALE, PROFESSOR OF LAW, UNIVERSITY OF  
592 MARYLAND; AND, MICHAEL KEARNS, PROFESSOR AND NATIONAL CENTER  
593 CHAIR, DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE, UNIVERSITY  
594 OF PENNSYLVANIA

595

596 STATEMENT OF OMRI BEN-SHAHAR

597 Mr. Ben-Shahar. Thank you, Chairman Latta. Thank you,  
598 Chairman Blackburn, for inviting me, Ranking Members Schakowsky  
599 and Doyle and members of the subcommittee, I cherish the  
600 opportunity to participate in the conversation. I am a law  
601 professor at the University of Chicago and I specialize in  
602 consumer law and consumer protection. You will hear today a lot  
603 about the dangers of big data enterprise, how websites know our  
604 locations, how smart alarms know and predict our vacations, how  
605 employers and insurers know our medications, and even Fitbit  
606 records our dedication.

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607           We of course all know the data-driven economy delivers  
608 enormous convenience and benefits too by offering personalized  
609 experience to consumers, but concerns about discrimination,  
610 manipulation, data security, and market power and the potential  
611 harms they might cause ought to be taken seriously. Still, it  
612 is important throughout this inquiry that the basic question, what  
613 is the consumer injury, be answered before we begin thinking about  
614 what the solution ought to be.

615           You will probably hear today other speakers call for more  
616 transparency on how data is used and secured so as to give  
617 consumers more control over their data and allow them to make more  
618 informed decisions. Chairman Walden invited such noble  
619 proposals of transparency, writing eloquently in an op-ed, quote,  
620 it is our job to shine the light on these practices for consumers  
621 and ensure transparency in the marketplace so that they can make  
622 informed choices.

623           I would like to spend my remaining 4 minutes or so to try  
624 to talk to you out of this transparency instinct. It is not that  
625 I don't like transparency or informed decision, it is just that  
626 this technique has never worked in any area and it is decisively  
627 unlikely to yield any benefit here. I co-authored a book titled  
628 "More Than You Wanted To Know" in which I looked at the effect

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629 of transparency laws. These are the numerous laws that require  
630 companies to give consumers full disclosures to help consumers  
631 make informed choices. Mandated disclosure is probably the  
632 most common and for sure the least successful regulatory technique  
633 in American law. Disclosure requirements, we sometimes call them  
634 sunshine laws, have been used for decades as the primary tool for  
635 consumer protection to protect borrowers, investors, medical  
636 patients, internet users, insurance buyers, home buyers, in every  
637 area of the law, and the record confirmed by mountains of empirical  
638 evidence is abysmal -- transparency doesn't make a difference.

639 Transparency requires that companies give consumers  
640 disclosures, but consumers are not cooperating. They are not  
641 reading or using the disclosures. How could they? The texts are  
642 too long and cluttered. Here is a picture of a typical artifact  
643 of transparency, Apple's terms and conditions that include their  
644 privacy policy, which I printed out and assembled into a 30-foot  
645 scroll, 8-point font, mind you, and hung from the top of the atrium  
646 at the University of Chicago Law School.

647 Shoving this monstrosity in front of consumers is that what  
648 consumer protection ought to do? If consumers tried to read the  
649 disclosures they would of course not understand them and would  
650 not be able to put them to profitable use. To use complex

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651 information one needs experience and expertise which people  
652 simply do not have. Transparency is defeated not because it is  
653 a bad idea but because it is so overused.

654           When you close a mortgage you receive at least 50 different  
655 disclosures so that you, quote, know before you owe. When you  
656 walk into a clinic or buy a product or enter a website or download  
657 an app or eat at a restaurant or check your bank balance you receive  
658 disclosures all in the name of transparency. Consumers have long  
659 become numb and indifferent.

660           Any transparency effort in the area of data protection would  
661 meet the same consumer apathy. Do you really want to be the  
662 authors of an irrelevant policy? Can transparency be done more  
663 effectively? If disclosures are defeated by complexity can  
664 simplicity save them? Simplification seems like an obvious  
665 solution. If disclosures are too long, shorten them; if too  
666 technical, use plain language; if poorly presented improve the  
667 formatting. Unfortunately, simplification strategies have been  
668 tried for as long as disclosures have failed.

669           In my research I tested whether people who are sharing deeply  
670 private information with websites that engage in nasty data  
671 practices can be prompted to act more prudently by well-designed  
672 privacy warnings. I discovered that no matter how simple,

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673 conspicuous, and alarming the warning the consumers receive their  
674 behavior is entirely unchanged. Consumers don't pay attention  
675 to any of the transparency tools lavished upon them.

676 To conclude, if members of Congress believe that collection  
677 of consumers' data poses risks that require regulatory  
678 intervention, I advise that they look for solutions that are  
679 outside the popular but unsuccessful repertoire of mandated  
680 disclosure and transparency. Thank you.

681 [The prepared statement of Mr. Ben-Shahar follows:]

682

683 \*\*\*\*\*INSERT 2\*\*\*\*\*

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684           Mr. Latta. Thank you very much for your testimony this  
685 morning.

686           And, Ms. Klonick, you are recognized for 5 minutes.

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687 STATEMENT OF KATE KLONICK

688

689 Ms. Klonick. Thank you. Chairman Blackburn and Latta,  
690 Ranking Members Doyle and Schakowsky, and members of the  
691 subcommittees thank you for having me here to discuss this  
692 important topic.

693 Every day millions of people around the world post videos,  
694 pictures, and text to online speech platforms, but not everything  
695 that is posted remains there. Sites like Facebook, Twitter, and  
696 YouTube actively curate the content that is posted by their users  
697 through a mix of algorithmic and human processes broadly termed  
698 content moderation. Until recently, how and why these platforms  
699 made these decisions on users' speech was largely opaque.

700 Over the last 2 years, I have interviewed dozens of former  
701 and current executives at these platforms as well as content  
702 moderation workers at these companies working abroad in an effort  
703 to better understand how and why these platforms regulate content.  
704 A summary of that research and my conclusions are the subject of  
705 my paper, "The New Governors: the People, Rules, and Processes  
706 Governing Online Speech," forthcoming in the Harvard Law Review.  
707 My testimony today draws from that expertise and knowledge that  
708 I gained in researching and writing that article.

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709           As a threshold matter, when I refer to content moderation  
710 I am referring specifically and exclusively to the experience of  
711 the user in posting speech to a platform and what happens to that  
712 posted content in terms of removal or non-removal. I am not  
713 speaking to the algorithm that configures the prioritization,  
714 promotion, order, or frequency of how content later appears in  
715 users' news feeds or Twitter feeds.

716           And in that context content moderation happens at many  
717 levels. It can happen before content is actually published on  
718 the site and when a user uploads a photo a message appears: Upload  
719 completed; the video in your post is being processed. We will  
720 send you a note when it is ready for review. And the moderation  
721 process that happens in this moment between upload and publication  
722 largely runs through an algorithm screening that checks for  
723 matches in pixel fingerprints between illegal or banned content  
724 and the uploaded content. Examples of this include photo DNA for  
725 child pornography and content ID for copyrighted information.

726           Only a very small amount of material is removed through these  
727 types of processes and most is published and once published it  
728 can be removed in two ways. The first is by platforms proactively  
729 using their own moderators, but because of the absolutely enormous  
730 amount of posts this is not a feasible method for all but a very

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731 select area of moderation such as extremist and terrorist content.

732 The second way content is removed after publication is also  
733 how the vast majority of content is removed, through being flagged  
734 as violating community standards by other users on the site.

735 After a piece of content is flagged it will stay up, but a crop  
736 screen grab of the content is placed in a database queue where  
737 it is eventually reviewed by trained human decision makers. They  
738 will look at the offending content and see if it actually violates  
739 the terms of service. With that background I would like to use

740 my brief time to clarify four major misconceptions about content  
741 moderation. First, that contrary to this hearing's title, the  
742 vast majority of content moderation of user content is done by  
743 trained human decision makers and who review content only after  
744 it has been flagged by other users and not by algorithms or AI  
745 or photo recognition.

746 Second, while users who use sites like Facebook are given  
747 a public set of community standards guiding what kinds of content  
748 is posted by the site, a separate and much more detailed and much  
749 more regularly updated set of internal rules is used by human  
750 moderators in making their decisions. These internal rules at  
751 these companies are not currently known to the public.

752 Third, the Facebook and most platforms use one global set

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753 of rules with exceptions to comply with the laws of a given  
754 jurisdiction to curate content. This means, for example, the  
755 definitions of inappropriate sexual activity are the same for  
756 users in Canada as they are for users in India as they are for  
757 users in France.

758 Finally, it is critical to note that the ability for these  
759 platforms to create this intricate system of governance to  
760 regulate content stems from incentives put in place by  
761 Communications Decency Act Section 230 which granted platforms  
762 immunity from intermediary liability in an effort to encourage  
763 sites to remove offensive content while also protecting against  
764 collateral censorship of users' speech. In many ways these  
765 platforms' self-regulation have very well met the goals of Section  
766 230, but as access to online speech platforms has increasingly  
767 become an essential public right new concerns about regulating  
768 platforms are being raised. While these and other concerns are  
769 undoubtedly present, changes to Section 230 or new regulations  
770 that might affect it should be considered with extreme caution  
771 and with a full appreciation of the potential damage that could  
772 be caused to consumer rights and to free speech. Thank you.

773 [The prepared statement of Ms. Klonick follows:]

774

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775

\*\*\*\*\*INSERT 3\*\*\*\*\*

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776

Mr. Latta. And again thank you for your testimony.

777

Ms. Moy, you are recognized for 5 minutes.

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41

778 STATEMENT OF LAURA MOY

779

780 Ms. Moy. Thank you. Good morning, Chairman Blackburn and  
781 Latta, Ranking Members Doyle and Schakowsky, and distinguished  
782 members of the subcommittees.

783 Consumers are frustrated. Ninety-one percent of adults  
784 feel that consumers have lost control of their personal  
785 information and nearly 70 percent think the law should do a better  
786 job of protecting their information. The law can do better and  
787 it should do better. Consumers are in greatest need of greater  
788 control when they do not have a choice about whether to share the  
789 information in the first place. This is one reason that we have  
790 specific privacy laws that protect things like the information  
791 students share with educational institutions or the information  
792 patients share with doctors. In these contexts and others  
793 it is not permissible for companies to simply do what they wish  
794 with consumer information as long as they are transparent about  
795 it, something we see all too often online; rather, strong privacy  
796 protections apply by default. We need similar protection by  
797 default in other situations where information sharing is  
798 unavoidable as well. For example, when consumer information is  
799 shared with a credit agency like Equifax or when consumer

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800 information is shared with the provider of an essential  
801 communication service like a broadband provider. We may also  
802 need protection by default for other types of online actors such  
803 as content platforms as they become bigger and more powerful and  
804 consumers increasingly find it unavoidable to share their  
805 information with those actors as well. This is certainly a  
806 conversation worth having.

807 But whatever specific information sharing problem or  
808 problems Congress decides to address it should keep a few things  
809 in mind. First, Congress should not eliminate existing  
810 protections for consumers' information. This really should go  
811 without saying but, unfortunately, in an incredibly unpopular  
812 move earlier this year, Congress voted to eliminate strong federal  
813 privacy rules that would have applied to broadband access  
814 providers.

815 Similarly, Congress has occasionally considered legislative  
816 proposals on data security and breach notification that would  
817 eliminate stronger state laws, but consumers want more protection  
818 for their information not less. If Congress wishes to improve  
819 on the privacy and data security status quo it should start by  
820 preserving the protections we already have. And just to touch  
821 for a second on net neutrality, the same applies in that context

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822 as well. Today's hearing is surfacing some concerns about  
823 the power platforms have to editorialize the things internet users  
824 read and say, but at the same time the FCC is considering wholesale  
825 elimination of rules that prevent broadband providers from doing  
826 that. Just imagine how much worse things could get if we start  
827 allowing broadband providers to muck with content. Again,  
828 consumers in this area need more protection not less.

829 Second, prospective rulemaking authority is an incredibly  
830 important consumer protection tool. After the fact enforcement  
831 can be helpful, but an enforcement-only regime does not always  
832 create clarity and because it comes only after a problem has  
833 occurred it does not necessarily protect consumers from the  
834 problem in the first place. Granting rulemaking authority to  
835 an expert agency also fosters much needed regulatory flexibility.  
836 We do not always know what the next privacy or data security threat  
837 will be, but unfortunately we all know that there will be one.  
838 An agency with rulemaking authority can respond to shifting  
839 threats more quickly than Congress.

840 Third, consumer protections are only as good as their  
841 enforcement so any protections Congress creates on privacy or data  
842 security must be accompanied by strong enforcement authority.  
843 Right now, the FTC does substantial work on privacy and data

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844 security, but with few exceptions it does not have the ability  
845 to seek civil penalties for privacy and data security violations.  
846 In fact, FTC staff and commissioners have appeared before Congress  
847 requesting civil penalty authority to buttress their ability to  
848 enforce. Agencies that are tasked with protecting consumers'  
849 private information cannot do it without the proper tools. Civil  
850 penalty authority is needed.

851 Fourth, Congress should avoid the temptation to address  
852 complex challenges with a one-size-fits-all approach. There are  
853 different types of actors on the internet with different roles  
854 to play, different relationships with and commitments to  
855 consumers, different competition environments, and different  
856 abilities to solve problems. If we adopt a uniform regulatory  
857 approach to the entire internet we are going to be left with the  
858 lowest common denominator, something like transparency with  
859 enforcement that just prohibits deceptive practices. That is not  
860 good enough. Consumers are asking for more.

861 I appreciate your commitment to this issue. I thank you and  
862 I look forward to your questions.

863 [The prepared statement of Ms. Moy follows:]

864

865 \*\*\*\*\*INSERT 4\*\*\*\*\*

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45

866 Mr. Latta. And again thank you for your testimony this  
867 morning.

868 And Dr. Tucker, you are recognized for 5 minutes.

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46

869 STATEMENT OF CATHERINE TUCKER

870

871 Ms. Tucker. So first of all I would just like to say what  
872 a huge honor it is to be invited here today. Thank you very much  
873 for the invitation. What I want to do in my 5 minutes is first  
874 of all talk about some research I did into an apparent algorithmic  
875 bias and then talk about three implications for policy.

876 Now this particular research topic what we did was we ran  
877 a field test on Facebook where we placed an ad which advertised  
878 job opportunities in science and technology. And we placed that  
879 ad, we also replicated it on Google and Twitter, and we found that  
880 the advertising algorithm ended up showing this ad for job  
881 opportunities in science to 40 percent more men than women. And  
882 on the face of it this seems really quite concerning because  
883 obviously this is an area where we would like parity of gender  
884 opportunity.

885 Now I say on the face of it, it sounds concerning, because  
886 our research didn't stop there, which is usually how research  
887 stops, but instead we actually delved into the reasons why this  
888 apparent discrimination had happened. And we ruled out the usual  
889 leading explanations which is either that humans are biased,  
890 absorb cultural prejudice, or the idea that somehow women have

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891 self-inflicted not seeing the ad on themselves by not reacting  
892 to it. Instead, if women ever saw the ad they loved it. They  
893 clicked on it.

894           Instead, what actually was going on is all in terms of  
895 understanding how the algorithm works, which is that an  
896 advertising algorithm basically runs an auction in real time where  
897 advertisers bid for eyeballs and there were some advertisers out  
898 there that liked to show ads just to women and as a result they  
899 pay more to show the ad to women. And because we had set up our  
900 ad to be gender-neutral, the algorithm thought it was doing us  
901 a favor by trying to minimize our costs and not show our ad to  
902 those expensive female eyeballs, but instead prioritize those  
903 cheaper male ones.

904           Now that takes us, you know, to show that actually economic  
905 forces actually shape a lot, you know, how we see algorithms work.  
906 And I want to just highlight three implications of policy. The  
907 first implication is that about algorithmic transparency. Now  
908 algorithmic transparency just sounds wonderful, right? Who  
909 could ever argue with transparency?

910           But in this case, let's supposing we could ever decode the  
911 pages and pages of algorithms which underlie this ad auction, all  
912 we would find is an innocent algorithm trying to save advertisers

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913 money. It wouldn't give us really any insight into the potential  
914 for bias and I think that is another argument to build on what  
915 we have heard earlier, why transparency though just so beautifully  
916 sounding is probably not a solution here.

917 The second thing I want to emphasize is it may be tempting  
918 and we sort of, you know, we have heard a little bit of this idea  
919 that maybe the problem is not the algorithms, it is the data that  
920 feeds them. And I do want to caution the committee surrounding  
921 just simply restricting data flows in this economy. I have done  
922 some research. I have testified it into the past about the really  
923 quite hideous effects that attempts to regulate privacy in online  
924 advertising have had on the health and strength of the technology  
925 industry in Europe.

926 We show that they had a 66 percent drop in efficiency after  
927 passing regulation and you just have to sort of fast forward 10  
928 years, look at the strength of the American tech industry relative  
929 to Europe to see where that has led. I have also done some  
930 research in the U.S. We should emphasize that just restricting  
931 data in the health arena has actually led to some really quite  
932 negative consequences such as hospitals failing to adopt  
933 potentially lifesaving neonatal technology saving babies.

934 Now the last -- so that is why I am worried about restricting

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935 data as a solution. The last thing I just want to say is look,  
936 in some sense you could write a headline saying MIT professor finds  
937 ad algorithm doesn't show job ads, you know, to women, but imagine  
938 if I had found that for toothpaste. Would we be that worried?  
939 No, we might think, well, maybe men should see toothpaste ads,  
940 not that worried about it. So I do want to emphasize again the  
941 idea that it really matters, the outcome really matters. Thank  
942 you.

943 [The prepared statement of Ms. Tucker follows:]

944

945 \*\*\*\*\*INSERT 5\*\*\*\*\*

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946

Mr. Latta. Thank you very much for your testimony.

947

And Dr. Pasquale, you are recognized for 5 minutes.

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948 STATEMENT OF FRANK PASQUALE

949

950 Mr. Pasquale. Thank you, Chairman Walden, Blackburn, and  
951 Latta -- oh, sorry. Thank you very much, Chairman Walden,  
952 Blackburn and Latta and to Ranking Member Schakowsky and Doyle.  
953 It is a great honor to be here today.

954 My testimony is based on my book, "The Black Box Society,"  
955 in which I distilled about 10 years of research into the role of  
956 data and algorithms and argued for the importance of transparency  
957 and I am happy to do that today. I want to argue that the use  
958 of data and algorithms by large corporations will be at the core  
959 of civil rights, consumer protection, and competition policy for  
960 the 21st century. And I will go over each of those and then talk  
961 about how this committee can play a role in advancing all three  
962 of those goals.

963 First, with respect to civil rights, I was very glad to hear  
964 from Congresswoman Clarke about the letter to Facebook with  
965 respect to discriminatory ad profiling. That was discovered last  
966 year by ProPublica. There were promises it would be addressed.  
967 It was not addressed. And I think that shows some of the failures  
968 of self-regulation in the area. Also in my testimony I talk  
969 about racial disparities with respect to ad delivery and

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970 disparities with respect to disability status or a health  
971 condition. For example, a credit card company deciding to raise  
972 the interest rate on someone once they know that the person went  
973 for marriage counseling. I think that is a very troubling sort  
974 of thing and we should be able to look into that to get transparency  
975 about whether it is happening and to stop it.

976           Secondly, with respect to consumer protection, Ariel Ezrachi  
977 and Maurice Stucke are great antitrust law scholars and they say  
978 that given the information, asymmetry between large corporations  
979 and consumers, consumers now really exist in a Truman Show. It  
980 is like a Truman Show online. They know so much about us, we often  
981 know so little about their practices, and they show how consumers  
982 can be manipulated by data that they don't know about.

983           So, you know, we may hear a lot about good personalization  
984 online, you see things that you want, et cetera, but there is  
985 always a dark side to that. There are things, for example, like  
986 vulnerability-based marketing where the marketing could be based  
987 on picking out people who are at particularly insecure times in  
988 their life or particularly insecure times of day for individuals.  
989 And I think this sort of vulnerability-based marketing, predatory  
990 loan targeting, all those things are troubling, and not just for  
991 traditionally protected groups but also for people, say, in rural

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992 areas that might be subject to price discrimination that I discuss  
993 in my testimony.

994 I would also say that with respect to competition, the  
995 combination of the power of data in terms of enabling very large  
996 digital platforms to decide what consumers see, when they see it,  
997 what types of things that they are offered and not offered that  
998 that leads to what I call a self-reinforcing data advantage. What  
999 I mean by that is to say that if you are a large platform you tend  
1000 to have more data. When you have more data you are able to target  
1001 your things better to consumers. When you are better able to  
1002 target to consumers more consumers come on board.

1003 It is a virtuous cycle in a way, but on the other hand it  
1004 does risk getting out of hand and creating the types of asymmetries  
1005 that are really you can't overcome as a competitor. And we have  
1006 seen that for example with respect to European action against  
1007 Google in their antitrust judgment against Google where they  
1008 talked about Google potentially privileging its own services over  
1009 rivals in search results in ways that were opaque to consumers.

1010 And I think that we have got to look at those sorts of dynamics  
1011 and start to address them. It will be hard though. And by the  
1012 way I would say that one reason maybe why the U.S. tech scene is  
1013 doing better than the European one, you know, we have to look at

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1014 these sort of competitive dynamics as well, not just regulation.  
1015 I would also talk about the black box effect here. I would say  
1016 that it is very hard for us to know exactly what is going on and  
1017 we may have only seen the tip of the iceberg here. We may have  
1018 only scratched the surface.

1019 Now I have painted a very bleak picture and algorithms in  
1020 this testimony, but there is good news on the horizon. Over the  
1021 past decade, a number of visionaries have developed a movement  
1022 for accountability by users of algorithms. It took a combination  
1023 of computational, legal, and social scientific skills to unearth  
1024 each of the examples that I have discussed: troubling collection,  
1025 bad or biased analysis, or discriminatory use of data. And I hope  
1026 we talk about all three of those things today.

1027 Empiricists may be frustrated by the black box nature of  
1028 algorithmic decision making, but they can work with legal scholars  
1029 and activists if we have freedom of information laws and if we  
1030 enable people to understand better how data is being collected,  
1031 how it is being used, how it can lead to discrimination.  
1032 Journalists also have been teaming up with computer programmers  
1033 and social scientists to expose new privacy violating  
1034 technologies of data collection analysis and use and they have  
1035 pushed regulators to crack down on the worst offenders.

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1036 I would conclude today by saying that U.S. lawmakers can  
1037 really help by requiring the openness of algorithms used in many  
1038 governmental contexts and moving on to empower people to have  
1039 knowledge of what is going on and how their online lives are being  
1040 ordered. With that thank you very much.

1041 [The prepared statement of Mr. Pasquale follows:]

1042

1043 \*\*\*\*\*INSERT 6\*\*\*\*\*

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1044

Mr. Latta. Thank you for your testimony this morning.

1045

And Dr. Kearns, you are recognized for 5 minutes.

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1046 STATEMENT OF MICHAEL KEARNS

1047

1048 Mr. Kearns. Thank you. Chairman Blackburn and Latta,  
1049 Ranking Members Doyle and Schakowsky, and other distinguished  
1050 members of the subcommittees, thank you for the opportunity to  
1051 testify at this important hearing. My name is Michael Kearns and  
1052 I am a computer and information science professor at the  
1053 University of Pennsylvania. I am an active researcher in the  
1054 field of machine learning and I have consulted extensively on the  
1055 use of machine learning in the technology and finance industries.

1056 The fields of machine learning and artificial intelligence  
1057 now play a central role in virtually every sector in which large  
1058 data sets are present. The number of instances in which the use  
1059 of machine learning has provided tangible societal benefits, such  
1060 as in medical diagnosis, is large and growing. Machine learning  
1061 also increasingly plays a central role in the data collection and  
1062 use practices of consumer-facing technology companies.

1063 Today I want to discuss data intimacy which is the notion  
1064 that machine learning enables companies to routinely draw  
1065 predictions and inferences about users that go far deeper than  
1066 the apparent face value of the data collected as part of online  
1067 activities. It is not simply a question of whether

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1068 consumer-facing tech companies are collecting large volumes of  
1069 data, such companies are collecting information that provides or  
1070 allows inferences regarding intimate details about our personal  
1071 lives.

1072 Search engine queries permit inferences about our physical,  
1073 financial, and psychological conditions. Social media users  
1074 routinely reveal intimate opinions, beliefs, or affiliations.  
1075 For example, a recent study showed that using machine learning,  
1076 anonymous social relationship data permitted accurate  
1077 identification of romantic partners for over 55 percent of users.  
1078 Another study concluded that Facebook's algorithms and models are  
1079 capable of identifying social relationships of which its users  
1080 are themselves unaware. And religious and political beliefs can  
1081 be accurately predicted from apparently unrelated social search  
1082 and shopping activity.

1083 Consumer-facing tech companies in the United States have  
1084 amassed an almost unimaginable set of data about consumers which  
1085 enables machine learning and artificial intelligence to make  
1086 predictions and inferences about consumer behavior and  
1087 preferences. These large and diverse data sets are the  
1088 foundation for effective algorithms and models, and companies  
1089 compete vigorously to amass or acquire these data sets. For

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1090 example, search engines provide vast amounts of data about  
1091 consumers' interests in the manner in which they conduct searches.  
1092 Similarly, mobile operating system data provides a treasure trove  
1093 of information regarding virtually everything a consumer does on  
1094 a mobile device as well as their physical location.

1095 In addition to knowing with whom a consumer affiliates  
1096 directly, social media platforms are able to accumulate  
1097 information about who a consumer follows or what he or she likes.  
1098 However, while the quantity of data is critical to develop  
1099 accurate algorithms and models, the quality and intimacy of such  
1100 data is equally or more important in discerning consumer  
1101 preferences and behaviors. Increasingly, machine learning based  
1102 algorithms are utilized not only to determine consumer purchasing  
1103 habits, but also to infer a consumer's emotions, moods, and mental  
1104 states.

1105 While machine learning is employed most commonly and  
1106 pervasively to target advertising as we have seen in the media  
1107 recently, algorithms can also be utilized to generate or incite  
1108 certain emotional responses. From a privacy perspective,  
1109 perhaps the most important overarching conclusion is that the  
1110 intimacy of consumer data cannot be measured by metrics that fail  
1111 to account for the nature, diversity, and content of the data and,

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1112 most importantly, its potential uses for modeling and inferences.

1113           It is both common and possible that the highest volume data  
1114 sources can reveal little about the consumers who generate that  
1115 traffic, whereas more specialized data can directly and  
1116 indirectly reveal the most private and personal details about  
1117 consumers. In fact, the widespread application of machine  
1118 learning to specialized consumer data sources is deliberately  
1119 designed to extract personal and actionable insights about both  
1120 individual users and collective behavior. It would thus be  
1121 wrong to formulate privacy policy based only on the amount or  
1122 apparent source of data. One must evaluate the sensitivity of  
1123 the data as well as anticipate how private or intimate the  
1124 inferences and predictions that could be made from the data might  
1125 be. This challenge argues for a privacy framework that  
1126 comprehensively covers the diverse range of data being used  
1127 commercially and applies consistent technology-neutral privacy  
1128 requirements.

1129           Thank you again for the opportunity to testify before you.  
1130 Machine learning and AI present significant challenges for  
1131 policymakers because of the rapidly evolving nature of the  
1132 technology as well as its pervasive use among consumer-facing tech  
1133 companies in predicting consumer preferences and drawing

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61

1134 inferences about their lives. While policymakers should be  
1135 mindful that machine learning and AI also produce many of the  
1136 sizeable benefits inherent in consumers' online experiences, such  
1137 technology enables companies also to both model and shape user  
1138 behavior. Thank you.

1139 [The prepared statement of Mr. Kearns follows:]

1140

1141 \*\*\*\*\*INSERT 7\*\*\*\*\*

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1142 Mr. Latta. Thank you very much for your testimony. We  
1143 really appreciate it. And this ends that portion of our hearing  
1144 this morning. We will now be going to the questions from the  
1145 members and I will begin the questioning and recognize myself for  
1146 5 minutes. And again I apologize for my 4 weeks of allergies and  
1147 I hope I get better in the next 4 weeks.

1148 Professor Kearns, if I could start with you. Algorithms are  
1149 used to produce the results that we see on the internet such as  
1150 when we do a search or see an advertisement. As policymakers,  
1151 what are the key benefits and risks for consumers associated with  
1152 these algorithms that we should be focused on as legislators?

1153 Mr. Kearns. Well, I think the benefits are, you know, pretty  
1154 obvious to anyone who is a regular user of modern internet  
1155 technology. The personalization in social media sites, in search  
1156 engines, and in many other aspects and apps that we use, we all  
1157 enjoy the benefits of that. I think to me, I think the greatest  
1158 risks are the kinds of things I talked about which is, you know,  
1159 there is sort of a distinction about facts about you and things  
1160 that can be inferred about you from those facts.

1161 And so it is one thing to, for instance, ask about disclosure  
1162 or discuss what is actually, literally, in the data that is being  
1163 collected, but that is kind of where the game is being played as

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1164 far as I am concerned. The use of machine learning allows one  
1165 to make many inferences that are statistically quite accurate  
1166 about consumers that aren't written down anywhere in the data  
1167 about that consumer.

1168 So, you know, to give a personal example, the fact that I  
1169 am an academic and, you know, use a Mac and drive a Subaru probably  
1170 lets you guess my political affiliation quite accurately already,  
1171 and if you knew a bunch of other facts about my online behavior  
1172 you could probably infer a great deal more. And there are many,  
1173 many studies these days that sort of establish that fact and this  
1174 is a valuable thing to technology companies to be able to do that,  
1175 to do this kind of, I think in one of the other testimonies here,  
1176 this kind of microsegmentation.

1177 And I think this is the kind of thing that is hard for people  
1178 to understand and it is even hard for the scientists at these  
1179 companies to understand the sort of power of this, this sort of  
1180 predictive power that they have. You know, when these models are  
1181 built they don't really know a priori and maybe even afterwards  
1182 exactly what properties of consumers or inferences they are making  
1183 about them that aren't, you know, they go well beyond the latent  
1184 data itself.

1185 Mr. Latta. Thank you.

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1186 Dr. Tucker, your research shows the tension between how much  
1187 we say we value privacy and in reality how much data we are willing  
1188 to share online to connect with friends or get personalized  
1189 recommendations and coupons. What accounts for that disconnect  
1190 and how important is the context in what consumers are willing  
1191 to share online?

1192 Ms. Tucker. Well, I am really thrilled to be able to talk  
1193 a little bit about this because I didn't get to mention it in my  
1194 testimony. And this is a so-called privacy paradox that so many  
1195 people say they care about privacy but then act in ways which  
1196 doesn't sort of live up to that.

1197 And one thing, we did a little study at MIT where we showed  
1198 that undergraduates were willing to show really very personal data  
1199 in exchange for a slice of cheese pizza. And that was even the  
1200 ones -- and what was slightly disconcerting about it was even the  
1201 people who said that they really cared about privacy they usually  
1202 behave in accordance with those norms, but the moment they saw  
1203 the cheese pizza was the moment they are willing to share the most  
1204 personal information.

1205 Now I wish I could tell you that I found any group of consumers  
1206 out there who were not or any group of undergraduates who were  
1207 not willing to share data for cheese pizza, but I didn't. So as

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1208 of yet answering your question is hard just because we do see this  
1209 inconsistency between the way that consumers say they talk about  
1210 their privacy and actually act out there in the online world.

1211 Mr. Latta. Thank you.

1212 Professor Ben-Shahar, your research indicates that  
1213 consumers often view privacy policies as confusing and often  
1214 ignore them, especially from your photograph. At the same time,  
1215 mandated disclosure has been embraced in many laws and by many  
1216 regulators. How should we balance the desire for transparency  
1217 with the results of your research?

1218 Mr. Ben-Shahar. I think we should recognize that our desire  
1219 for transparency while well-intentioned and makes sense -- very  
1220 alluring; consistent with all American ideologies; all these  
1221 transparency laws and mandated disclosure laws pass without  
1222 opposition in this chambers or in any state chambers; this is the  
1223 one unifying American law. I think we should also recognize that  
1224 there is a good reason probably why it is so easy to enact these  
1225 laws, there is nothing to them.

1226 And therefore I think that it is important to set them, cast  
1227 them aside and then that would enable us to actually get into the  
1228 -- I think in my book I give the example of medicine in the 19th  
1229 century. Almost every disease was addressed by blood-letting.

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1230 It took the ability or, you know, from the medical profession to  
1231 recognize that this is, you know, that panaceas don't work. You  
1232 cannot use that to start figuring out solutions for each  
1233 individual problem.

1234 And today you are talking, you know, I am invited to talk  
1235 to you about data policy. I was invited by the FTC and before  
1236 other agencies to talk about consumer lending, other contexts in  
1237 which transparency and disclosure is the key regulatory technique  
1238 and I keep suggesting to them that it is in your area. You have  
1239 to first ask yourself what the problem is.

1240 I think it is striking to hear what Dr. Tucker and others  
1241 are finding, that there is -- that statements about the magnitude  
1242 of the problems are not matched by the behavior and economic  
1243 reality. Data privacy is a nice kind of buzzword and data  
1244 security we are really worried about, we can brandish the number  
1245 of people that were hurt by the different, were implicated by the  
1246 different breaches that occurred, security breaches.

1247 But what is the evidence about actual consumer harm? Most  
1248 of the lawsuits that followed, you know, the lawsuits that have  
1249 followed the Target breach and the Equifax breach were by  
1250 merchants, credit card companies, banks, they are suffering a lot  
1251 of the -- there because our laws largely protect consumers from

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1252 these incidents. So think I do not want to suggest that there  
1253 is no harm in these areas, but it is critically important to  
1254 understand its magnitude before we begin to think about solutions.

1255 Mr. Latta. Thank you very much. And since I ran over I will  
1256 recognize the gentlelady from Illinois, the ranking member of the  
1257 subcommittee, and also give you a little more time on your  
1258 questions.

1259 Ms. Schakowsky. Thank you. You know, it is hard to decide  
1260 who to really focus on because we only have 5 minutes. You know,  
1261 when it comes to transparency not only don't I take the time to  
1262 read it, but in order to get to my goal if I don't hit Accept,  
1263 I Agree, then I can't finish the transaction. So most of the time,  
1264 for both reasons, I just accept and move on.

1265 So -- but I do want to talk about enforcement and therefore  
1266 I want to ask Ms. Moy some questions. In Chairman Blackburn's  
1267 opening statement she talked about shifting privacy from the FCC,  
1268 the Federal Communications Commission, to the Federal Trade  
1269 Commission, so I think it is important to understand how the FCC  
1270 and FTC differ, you alluded to that. But so, Ms. Moy, can you  
1271 briefly describe the FTC's authority, if any, to issue  
1272 regulations?

1273 Ms. Moy. The FCC or -- I am sorry, the FTC really doesn't

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1274 have authority to issue regulations. It can issue rules under  
1275 -- it can issue Mag-Moss rules, but it is extremely difficult to  
1276 do that and as a practical matter nearly impossible. It can issue  
1277 rules under the Children's Online Privacy Protection Act and has  
1278 done that rather effectively, and the Safeguards Rule under GLBA.

1279 But when it comes to general privacy and data security  
1280 obligations, the FTC is unable to issue regulations.

1281 Ms. Schakowsky. So the FTC can't use the typical notice and  
1282 comment rulemaking process to issue regulations about what  
1283 personal information platforms can collect from users or how those  
1284 platforms can use that personal information to determine what  
1285 content it shows to users, correct?

1286 Ms. Moy. That is right.

1287 Ms. Schakowsky. So which means the Commission is limited  
1288 to bringing enforcement actions after unfair, deceptive practices  
1289 have been committed and often after consumers have been harmed  
1290 already, right?

1291 Ms. Moy. Yes.

1292 Ms. Schakowsky. So let's talk about the FTC enforcement  
1293 tools. In your written testimony you wrote that, quote, the FTC  
1294 generally can only take enforcement action against entities that  
1295 use consumer information in ways that violate their own

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1296 consumer-facing commitments. Can you describe what do you mean  
1297 exactly by consumer-facing commitments and are you referring to  
1298 policies like the terms of services and privacy policies?

1299 Ms. Moy. That is right. The bulk of the FTC's privacy and  
1300 data security authority comes from Section 5 of the Federal Trade  
1301 Commission Act which authorizes it to prohibit unfair and  
1302 deceptive trade practices. As a practical matter, the FTC almost  
1303 never enforces unless it determines that there is deception that  
1304 has occurred, and it evaluates a possible deception based on  
1305 something that a company has said perhaps in a privacy policy and  
1306 then trying to figure out whether or not it has violated that.

1307 Ms. Schakowsky. Even when a platform does violate its own  
1308 policies the FTC's remedies are limited. As you noted in your  
1309 written testimony, the FTC cannot impose a fine against that  
1310 platform. What are the remedies available to the FTC?

1311 Ms. Moy. Exactly. Yes, you know, and as I mention in my  
1312 comments, I think the authority of an agency is only as good as  
1313 its enforcement is. And when it comes to the FTC, although it  
1314 can bring actions for deception when as it relates to privacy and  
1315 data security, with few exceptions it cannot levy civil penalties  
1316 against companies that violate privacy and data security  
1317 commitments. And as a result there is very little in way of teeth

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1318 when it comes to the FTC's authority.

1319 Ms. Schakowsky. So I know that both Acting Chairman  
1320 Ohlhausen and Commissioner McSweeney support giving the FTC civil  
1321 penalties authority and I believe you do too as well; is that  
1322 right?

1323 Ms. Moy. That is right.

1324 Ms. Schakowsky. And do you think it would be, it would  
1325 benefit consumers if the FTC had authority then to issue  
1326 regulations under the normal notice and comment process?

1327 Ms. Moy. I do. I think that the fact that the vast majority  
1328 of consumers are asking for greater consumer privacy protection  
1329 and for the law to be stronger in this area suggests that we would  
1330 benefit greatly from greater authority for the FTC or another  
1331 agency.

1332 Ms. Schakowsky. Well, so are there other things that  
1333 Congress can do? I mean you alluded maybe to other agencies to  
1334 help strengthen the FTC's ability or some other agency to protect  
1335 consumers.

1336 Ms. Moy. Well, in addition, as of right now the Federal  
1337 Trade Commission can't actually regulate the actions of common  
1338 carriers and that is a major problem that particularly with a  
1339 recent case or a case that is currently pending in the Ninth

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1340 Circuit it is unclear whether the FTC has any authority at all  
1341 to enforce the privacy and data security obligations and  
1342 activities of companies that have any common carrier practice at  
1343 all. So internet service providers that offer -- whether  
1344 broadband is classified under Title II or not the FTC may well  
1345 not be able to.

1346 Ms. Schakowsky. So in the short term what should we be  
1347 considering?

1348 Ms. Moy. In the short term I think that we do need strong  
1349 protection, privacy by defaults, ideally, for entities where  
1350 consumers have no choice but to share information. And I also  
1351 think that we need to preserve existing protections. We need to  
1352 preserve existing protections at state law as well as existing  
1353 protections under regulations like net neutrality.

1354 Ms. Schakowsky. Thank you. I yield back.

1355 Mr. Latta. Thank you. The gentlelady yields back.

1356 The chair now recognizes the chairman of the Communications  
1357 and Technology Subcommittee for 5 minutes.

1358 Mrs. Blackburn. Thank you, Mr. Chairman, and thank you all  
1359 for your testimony. It is so enlightening and we appreciate it.

1360 And Dr. Kearns, I am going to come to you first. Thanks for  
1361 the work you are doing on privacy and around those elements and

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1362 we have had a lot of focus on privacy here. And earlier this year  
1363 I had introduced the BROWSER Act and basically it has two guiding  
1364 principles, things that many of us think are very important. One  
1365 is that we have to find a better balance on privacy moving toward  
1366 giving the consumer more information and more control over, as  
1367 I term it, their virtual you, their information that is being  
1368 collected and used and sometimes distributed; and then, secondly,  
1369 that consumers have the very same privacy expectations across the  
1370 entire ecosystem. They are not distinguishing between the ISPs  
1371 and the edge providers, so when we are setting the ground rules  
1372 on privacy they should reflect that.

1373 So I would like to hear what your thoughts are on those two  
1374 points. And when we are talking about online privacy do you think  
1375 that people make that distinction? When we are talking about  
1376 appropriate balance, where is that appropriate balance within  
1377 opt-in where the consumer owns that information or either opt-out?  
1378 So I would love for you to talk about that for a minute.

1379 Mr. Kearns. Yes. These are good questions, hard  
1380 questions. First of all, to preface I don't have specific policy  
1381 recommendations on these issues. But as a scientist, when I think  
1382 about the landscape for consumer privacy the first thing I think  
1383 about is kind of how actionable the data being collected is and

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1384 sort of at what level of abstraction it is. And furthermore there  
1385 is a phrase I like to use which is data triangulation, which refers  
1386 to the incredible power you can get from having multiple sources  
1387 of data about the same individual.

1388 So to me, you know, when I think about privacy, the things  
1389 I worry most about are cases in which there are parties that are  
1390 collecting sort of very private, intimate data on the one hand  
1391 and also many different sources of it. So to give an example,  
1392 you know, by seeing what you buy I can know a lot about you. By  
1393 seeing, you know, what you search for I can know much more about  
1394 you. By knowing not only those things but where you are that gives  
1395 me a great deal of more information. And if you, for instance,  
1396 let me also maintain your calendar for you then I also know where  
1397 you will be in the future.

1398 And I think that the, you know, greatest privacy concerns  
1399 I have are at that level, at the level where people are very  
1400 directly expressing, you know, things that might be quite private,  
1401 things that they wouldn't express in public forums, or that they  
1402 are expressing in a public forum like a social networking service  
1403 but are completely unaware how strong the correlations are between  
1404 their own behaviors and their friends' behaviors and their other  
1405 online behavior. And so I think in terms of helping consumers

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1406 understand the privacy landscape it is important not to ignore  
1407 any source of data. I am not claiming that, you know, that ISPs,  
1408 for instance, aren't also collecting very large amounts of data,  
1409 but to me, you know, I personally am much more concerned about  
1410 the data I kind of willingly give away using a search engine, and  
1411 then also, you know, letting, you know, my operating system track  
1412 my location online or the presence of beacons in retail stores  
1413 that kind of correlate my online and my offline behavior.

1414 Mrs. Blackburn. Great.

1415 Ms. Klonick, I want to come to you on economic incentives  
1416 and the economic incentives that the platforms have to use  
1417 algorithms to curate selective content. And I think Dr. Kearns  
1418 used the term microsegmentation as they are looking at that for  
1419 users, you know, based on this online activity. Would you agree  
1420 that the platforms are being paid to prioritize certain content  
1421 over other content? And touch on the free speech implications  
1422 there.

1423 Ms. Klonick. Yes. Inasmuch as advertised content is paid  
1424 content over their user content, I think that these, you can  
1425 absolutely prioritize certain types of content. I am not  
1426 familiar with the algorithmic processes that would prioritize one  
1427 user's content over the content of another and that they are being

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1428 paid to do so right now, but the free speech implications of the  
1429 vast power of these platforms to self-regulate is they are  
1430 twofold.

1431 One, it has a lot of implications for the user's speech rights  
1432 in how these private platforms can unilaterally control at what  
1433 goes up and what stays or goes down on their sites. But also these  
1434 platforms have free speech rights, arguably, free speech rights,  
1435 themselves. So their right to create the community at Facebook  
1436 or at Twitter, for example, is arguably their own First Amendment  
1437 right.

1438 Mrs. Blackburn. Dr. Tucker, on the economic incentives do  
1439 you think that some of these platforms should be willing to pay  
1440 consumers or users more than a free slice of cheese pizza?

1441 Mr. Latta. If you turn your mike on.

1442 Ms. Tucker. Wonderful question. Now this is a very  
1443 interesting question. So the slice of cheese pizza example was  
1444 really about the consistency between what people say about their  
1445 privacy and then how they act.

1446 Now in terms of paying for data there have been many  
1447 experiments, some of them launched from Cambridge, Massachusetts,  
1448 where various startups have helped devise, have tried to actually  
1449 set up markets for data. And the reason that is so attractive

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1450 is from an economics point of view one way of thinking about  
1451 privacy is, really, there is a lack of clarity about property  
1452 rights. So a market for data is an attractive notion.

1453 Now in all of the instances, though I have been really excited  
1454 at the beginning because of the idea of actually setting up a  
1455 market for data and paying consumers, all of these platforms have  
1456 failed for the simple fact that the kind of consumers they attract  
1457 who want to exchange their data in these markets tend to be, how  
1458 can I say it, the less commercially exciting consumers. And we  
1459 have had this problem of actually just setting it up, making these  
1460 markets work just because we haven't been able to get the right  
1461 set of consumers.

1462 So I think it is a wonderful idea. I hope one day we will  
1463 get it to work. We haven't yet.

1464 Mrs. Blackburn. Yield back.

1465 Mr. Latta. Thank you very much. The chair recognizes the  
1466 gentleman from Pennsylvania, the ranking member on C and T, and  
1467 I also yield you the long time too.

1468 Mr. Doyle. Well, Mr. Chairman, this terrible precedent that  
1469 you have started by allowing everybody to go 2 minutes over, I  
1470 am going to try to get us back on track and just use my 5 minutes.

1471 You know, when you think about all this technology -- social

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1472 media, the internet, artificial intelligence -- you know, the most  
1473 wonderful, horrible invention in the world and as consumers we  
1474 tend to look at the bright side of all this technology without  
1475 understanding the dark side. If anybody thinks they have  
1476 privacy, the only way you have privacy today is, I call it, to  
1477 go Flintstone, to have the old flip phone, to not be on Facebook  
1478 or Twitter or any of these social media sites.

1479 But, you know, the reality is for most Americans over 80  
1480 percent of the land mass of country, most Americans have only one  
1481 ISP provider. They don't even have choice when it comes to that.  
1482 And so they go on their ISP, and it is the only one they have,  
1483 and they tell you how they are going to use your data and it is  
1484 about 20 pages long of a bunch of legal jargon that most attorneys  
1485 probably couldn't understand. And if you don't click I Agree that  
1486 is it, you don't have access to any of this.

1487 So you don't even need a cheese pizza to get people to give  
1488 up their information. They want to go online to do whatever it  
1489 is they want to do online and the only way they can get there,  
1490 especially if they only have one ISP, is to do that. Now search  
1491 engines you have some choice and you can read different, you know,  
1492 policies on search engines of how they use your data and it varies  
1493 online, whether you are on Google or whether you are on DuckDuckGo

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1494 or these various sites at least you have some choice. With your  
1495 ISP most Americans don't have choice. They have one place to go.

1496 And it is kind of ironic that we are here today to discuss  
1497 concerns about algorithms used by these social media companies  
1498 to curate content on the internet, but as we speak, over at the  
1499 FCC the chairman is getting ready to allow broadband providers  
1500 to block and edit speech on the internet at their discretion  
1501 relying on public commitment from these providers that they are  
1502 going to behave.

1503 And given the Ninth Circuit case casting doubt on whether  
1504 the FTC may even police these broadband companies, it is sort of  
1505 creating a situation where broadband companies are just free to  
1506 reign over consumers with impunity and the FTC for all intents  
1507 and purposes is a toothless tiger. We talk about shifting all  
1508 this watchdog function over to the FCC --

1509 Ms. Schakowsky. FTC.

1510 Mr. Doyle. -- and they don't really have the ability to  
1511 do anything on behalf of consumers. Right now, if this law passes  
1512 on net neutrality next month, basically there is no law of the  
1513 land, we are just trusting people to behave. They are saying they  
1514 are going to behave and we are going to take them at their word  
1515 that they are going to behave.

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1516 Professor Moy, I wonder if you can give us some examples of  
1517 how broadband providers behaved prior to the enactment of strong  
1518 bright line rules that were put in place by the FCC in 2015?

1519 Ms. Moy. Thank you, Representative. That is a great  
1520 question. Right, because before we had rules we did see broadband  
1521 providers, internet service providers, blocking things like Voice  
1522 over IP, blocking tethering applications, so they could extract  
1523 more from consumers in monthly fees, blocking peer-to-peer  
1524 sharing applications. AT&T threatened, I think, to block Face  
1525 Time unless consumers agreed to pay more for the ability to use  
1526 that.

1527 So, you know, we certainly have seen examples in the past  
1528 of ISPs using their power as gatekeepers to prevent consumers from  
1529 using services that may well want to -- Mr. Doyle. So  
1530 tell me what recourse would consumers have if the FCC chairman  
1531 gets his way and removes these protections?

1532 Ms. Moy. It is hard to see how they would have any recourse  
1533 at all. I mean the FCC plans to rely on the consumer-facing  
1534 commitments again of ISPs, but it is unclear whether ISPs would  
1535 actually be required to commit to not prioritizing content, not  
1536 blocking content. And even if they did make those commitments  
1537 and then violated them, the FTC, you know, you mentioned the Ninth

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1538 Circuit case, may not be able to enforce against them. You know,  
1539 their enforcement authority against ISPs is going to be  
1540 questionable at best or nonexistent at worse. And even if they  
1541 could enforce, again they don't have civil penalty authority.

1542 Mr. Doyle. Thank you.

1543 Mr. Chairman, in the spirit of staying within 5 minutes, I  
1544 have 5 seconds left and I will yield them back to you.

1545 Mr. Latta. Thank you very much. The gentleman yields back.  
1546 And at this time the chair recognizes the gentleman of the full  
1547 committee for 5 minutes. I am sorry.

1548 The Chairman. Is that right?

1549 Mr. Latta. The Chairman, the Chairman of the full  
1550 committee.

1551 The Chairman. Do we have another vote there or what are we  
1552 on, okay. Thank you. Okay, thank you all, I appreciate it. And  
1553 thanks for our witnesses. My apologies for having to come and  
1554 go a bit today, but we do appreciate your written testimony and  
1555 the answers to our committees' questions.

1556 I guess, Dr. Moy, the question I have because we are concerned  
1557 about misbehavior by ISPs, I am also concerned about misbehavior  
1558 by others in the ecosystem of the internet. And it strikes me  
1559 that on these information platforms we have seen foreign actors

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1560 try to affect our elections with paid advertisement that is  
1561 targeted.

1562 We know that there is, in effect, paid prioritization on some  
1563 of these platforms, right, because you buy advertising, and it  
1564 strikes me that at least Google, it is an amazing American company,  
1565 it does incredible work but has about 77 percent market share of  
1566 search and I have had consumers complain to me about what they  
1567 believe to be the use of algorithms that have disproportionately  
1568 affected them.

1569 So what -- and maybe this can go to everybody on the panel,  
1570 but so if, who governs the edge providers when there are questions  
1571 about use of private data or -- nothing is private anymore, but  
1572 your data and how that gets -- and I don't mean this in a negative  
1573 way, but manipulated use through the algorithms which we are all  
1574 trying to get a better handle on, so who governs their activities  
1575 and what enforcement protocols are in place for those?

1576 And I will start with you, Ms. Moy.

1577 Ms. Moy. Great. Thank you so much for the question. So  
1578 yes, right now those practices are, in theory, governed or  
1579 regulated by the Federal Trade Commission, enforced by the Federal  
1580 Trade Commission, again under this idea that they can enforce  
1581 consumer-facing commitments. But, you know, I think you raise

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1582 a really good point which is that the growing power of these  
1583 platforms to editorialize on content is potentially problematic  
1584 and we should explore possible solutions to that. But in  
1585 the meantime, the last thing that we should be doing is eliminating  
1586 protections that consumers have against paid prioritization at  
1587 the network level where there is very little transparency.

1588 The Chairman. Right. But in terms of other enforcement in  
1589 the overall ecosystem, if I have a complaint against a search  
1590 engine or I have a complaint against my social media, I go to the  
1591 -- my only recourse is the Federal Trade Commission which you have  
1592 said doesn't have the kind of enforcement authority you would like  
1593 to see it have, correct?

1594 Ms. Moy. Right, right. Yes, indeed. And, you know, and  
1595 staff and commissioners --

1596 The Chairman. Do you think there should be greater  
1597 authority for enforcement over the edge providers or similar to  
1598 what you would see over the ISPs?

1599 Ms. Moy. I would certainly support adding protections for  
1600 consumers across the board. I think that there are concerning  
1601 practices by both types of actors. I would caution this committee  
1602 against exploring a one-size-fits-all solution to --

1603 The Chairman. Why?

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1604 Ms. Moy. Because I think that, you know, again the types  
1605 of information that various actors have access to is different.  
1606 The commitments and relationships with consumers that they have  
1607 is different. For example, consumers are paying dearly for  
1608 monthly access to the internet with a broadband provider, whereas  
1609 they often are getting certain other services for free or --

1610 The Chairman. Right. No, it is an exchange of value. Yes.

1611 Ms. Moy. There are certainly differences between different  
1612 types of actors as well the availability or lack thereof of sharing  
1613 information with a particular provider or particular type of  
1614 actor.

1615 The Chairman. So let me ask you a question, because we have  
1616 also heard before this committee that there is a very high rate  
1617 of encrypted data that passes through the ISP pipes, if you will  
1618 allow me to use that term, and that that is encrypted. They don't  
1619 know what those data are. It is encrypted, it goes through. It  
1620 is well over 50 percent perhaps so they don't see it, but the other  
1621 platforms do see the data and can use it and do use it in that  
1622 exchange as we know. I am not saying these are bad things.

1623 And I think we have heard -- I believe it is Dr. Tucker. I  
1624 am going to get them to make those nameplates bigger for us old  
1625 people that have vision issues. But the point is that they can,

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1626 they see it differently. Can you address that, the differences  
1627 you have seen in Europe versus here maybe on how our technology  
1628 has expanded dramatically and innovation here because we haven't  
1629 cranked down as much, right, on privacy?

1630 Ms. Tucker. Okay. So in the past and this was about 2011  
1631 I did research on how some of the early European data privacy  
1632 regulation really stymied the ability of Europe's ability to  
1633 create additional ecosystem like we have now. And since then  
1634 there has actually been follow-up research which has shown that  
1635 it wasn't just at the beginning but it has kept on going and we  
1636 have seen an awful lot of lack of entrepreneurship in Europe too.

1637 And so we have seen the failure at the beginning and then  
1638 the follow-on failure of entrepreneurship, and I think to me that  
1639 is what has really distinguished what we have seen in the U.S.  
1640 tech sector.

1641 The Chairman. So we have had, am I accurate to say we have  
1642 had more of a light touch regulatory approach to the internet up  
1643 through 2015 from Europe?

1644 Ms. Tucker. I think it is certainly true that we have had  
1645 a sector-specific touch, right. That we have focused on areas  
1646 we might care about such as health, private financial data,  
1647 children, rather than going for a broad brush approach.

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1648           The Chairman. All right. I have exceeded my time. Thank  
1649 you all again for your testimony, it is very helpful in our  
1650 discussions and I yield back.

1651           Mr. Latta. Thank you very much. The Chairman yields back  
1652 his time. And at this time the gentlelady from California, Ms.  
1653 Matsui, is recognized for 5 minutes.

1654           Ms. Matsui. Thank you very much, Mr. Chairman. I want to  
1655 thank the witnesses for being here with us today.

1656           I have a question, I think, for Ms. Moy right now. In 2015,  
1657 the Office of Management and Budget issued a memorandum requiring  
1658 all publicly accessible federal websites to only provide service  
1659 through an HTTPS connection by the end of 2016, which was last  
1660 year. HTTPS protocol ensures that a consumer's connection is  
1661 encrypted from their devices all the way to the federal  
1662 government's systems. Regular HTTP connections sent in plain  
1663 text can be intercepted and exploited by anybody or anything  
1664 between the user and the website including somebody using public  
1665 WiFi. A study released earlier this month revealed that only  
1666 around 70 percent of federal websites employed HTTPS protocol.

1667           Ms. Moy, how important are the security standards like HTTPS  
1668 to protect the confidentiality of internet-delivered data on both  
1669 federal and commercial websites?

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1670 Ms. Moy. HTTPS is very important. HTTPS would encrypt in  
1671 transit the information that is transmitted via websites. So,  
1672 for example, if you fill out a web form, for example, perhaps in  
1673 an application for a service that you might find on a government  
1674 website and that form contains or asks questions about information  
1675 that is highly private, such as information about financial status  
1676 or personally identifying characteristics like Social Security  
1677 Number, then if the site is not employing HTTPS technology one  
1678 could mount an attack on the transmission and potentially read  
1679 the information that was transmitted.

1680 Ms. Matsui. So how would you know whether it employs the  
1681 HTTPS on the federal website?

1682 Ms. Moy. So this is the type of thing where in a browser  
1683 bar, you know, you will see up at the top the little, now we have  
1684 that little icon, the little green lock that indicates trust for  
1685 HTTPS protocol.

1686 Ms. Matsui. Okay, something what we never look for anyway.  
1687 Okay, thank you.

1688 I want to talk about embedded networks. Across almost every  
1689 industry we are seeing a trend towards embedding communications  
1690 functions into their structures. Applied data science such as  
1691 a massive internet of medical things, rely on faster, more

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1692 efficient, and more robust communications with innovative  
1693 enabling technologies such as blockchain. Blockchain can  
1694 facilitate the exchange of massive amounts of data, but as a  
1695 decentralized ledger technology it can make online transactions  
1696 faster and cheaper while maintaining and protecting data  
1697 integrity.

1698           Anyone on the panel, how can new digital technologies and  
1699 applications help consumers improve data security? Anyone want  
1700 to start on that one?

1701           Ms. Tucker. Well, I have written a little bit on blockchain  
1702 so I am just so excited that you mentioned it and I am glad that  
1703 you mentioned it without mentioning bitcoin which is always a  
1704 distraction.

1705           Ms. Matsui. It is a distraction.

1706           Ms. Tucker. And certainly we have got an initiative at MIT  
1707 which gives enormous optimism for the kind of process that you  
1708 are describing where, really, what we call verification costs for  
1709 making these kind of transactions easier.

1710           Do I have any caveats? My only caveats are that when we have  
1711 studied it and if we are thinking about blockchain as being a  
1712 recipe for protecting privacy, that in some sense it can sometimes  
1713 embolden people to be somewhat more careless about their data

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1714 surrounding the edge providers who are all who are trying to serve  
1715 the blockchain. And so, for example, we have seen that the mere  
1716 mention of blockchain encourages people to share really quite  
1717 personal information such as telephone numbers and so on without  
1718 any guarantees of protection.

1719 Ms. Matsui. So they feel like it is much more safe because  
1720 of the blockchain. They just figure that what they have heard  
1721 about it that this is a safe way to go?

1722 Ms. Tucker. Yes. That is right. So I sort of have the  
1723 analogy that it is a bit like once you have your seatbelt on perhaps  
1724 you drive a bit too fast, that kind of an analogy. And so I think  
1725 it is definitely a step forward, but we have to realize that of  
1726 course it is going to interact with other providers and the most  
1727 will be privacy concerns there.

1728 Ms. Matsui. Thank you.

1729 Did you want to make a comment?

1730 Mr. Pasquale. I would just say very briefly that I testified  
1731 in September before the Senate Banking Committee and I mentioned  
1732 in part of my testimony futurist financial technologies such as  
1733 blockchain. And I think that it is just very important to  
1734 distinguish between the private permission blockchain and the  
1735 public permissionless. I have a lot more confidence in the sort

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1736 of private permission because it involves what I call  
1737 complementary automation technology complementing individuals  
1738 rather than replacing them.

1739 So I think that it is, just in terms where I have hope it  
1740 is more in that latter category of private permission blockchain.

1741 Ms. Matsui. Okay, thank you. And I see my time is expired.  
1742 I yield back.

1743 Mrs. Blackburn. [Presiding.] The gentlelady yields back.  
1744 Ms. Matsui, I just mentioned to counsel that we may want to secure  
1745 his Senate testimony and submit that into the record in  
1746 coordination with your question.

1747 Ms. Matsui. Thank you very much.

1748 Mrs. Blackburn. Agreement? So ordered.

1749 Mr. Shimkus, 5 minutes.

1750 Mr. Shimkus. Thank you, Madam Chairman. It is great to be  
1751 here. I got to listen to your opening statements. I found them  
1752 all very interesting. And then I had to run upstairs to do energy  
1753 markets and interconnectivity and then I came back down here, so  
1754 I may have missed a few issues.

1755 I just want to put on the record on this whole net neutrality  
1756 debate it is just, for a lot of us it is what is the enshrined  
1757 law by the legislative process versus what a regulator decides

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1758 what to do. And what we are seeing now with the passing of the  
1759 Obama administration, and the Trump administration, is I kind of  
1760 explain to my constituents it is a pendulum. We are going to do  
1761 it this way, now we are going to do it this way, now we are going  
1762 to do it this way, and to stop the pendulum you have to pass a  
1763 law. You have to enshrine that into a statute and I would  
1764 encourage my colleagues to come together to do that.

1765 I also want to incentivize build-out. I like more pipes  
1766 versus less pipes and I don't want the government deciding how  
1767 one pipe should be structured. I would rather have so many pipes  
1768 that everybody gets what they want when they want it at the speed  
1769 that want it and if you are a market-based conservative you have  
1770 got to send a price signal.

1771 And then the other issue on that is this whole, part of this  
1772 was kind of paid prioritization or we are talking about so small  
1773 of lag of time that I can't even use the proper terminology. But  
1774 would I rather have lifesaving telemedicine go fast versus a Three  
1775 Stooges video? The answer is yes, I would. So I just want to  
1776 put that in the guise of some of the debates based upon what the  
1777 FCC is considering. And then I want to segue real quick to this  
1778 whole -- this is a fascinating panel because you all have done,  
1779 brought pretty much a different focus and sometimes there is

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1780 similarities on privacy, on algorithms, on data.

1781           So I want to use this example. Over the Thanksgiving break  
1782 I visited Washington University, a major medical facility in St.  
1783 Louis, and so I briefly drew my little DNA strand, right, here.  
1784 And so the question with data is in the healthcare arena we want  
1785 to go to drive to personalized data, I mean personalized medicine,  
1786 and personalized medicine means we understand the DNA sequence  
1787 and we can pull that out. So then a cancer patient, we don't have  
1788 to try 15 different types of cures, we can direct it.

1789           Now that creates a lot of issues public policy-wise. One  
1790 issue is the data collection. The other one is data sharing. The  
1791 other issue is privacy. And when you are doing medical research,  
1792 I mean you are really trying to share that data, that DNA sequence  
1793 of this one case across different major schools of medicine across  
1794 the country and probably across the globe.

1795           So that goes to a lot of our individual comments I kind of  
1796 want this to happen. I really believe in personalized medicine.  
1797 I think it is going to be a huge savings and I think it helps treat  
1798 the patient quicker and return them to a very, you know, return  
1799 life. And we have these hurdles that we are all discussing here.

1800           Anyone want to weigh in on -- there is, let me -- Mr. Pasquale,  
1801 and then I will go to Dr. Tucker. I got about a minute, 2 minutes

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1802 left.

1803 Mr. Pasquale. I will be very quick to say that I completely  
1804 agree with you and I think that, you know, we have talked to --  
1805 I run a health law podcast with Nick Terry called "The Week in  
1806 Health Law" and we talked to several people who are law and policy  
1807 experts in this type of area, sensitive health data, and we get  
1808 a lot of good advice on, you know, how can we develop best practices  
1809 in order to enable data liquidity, data flow between institutions.

1810 But I would also say, you know, based on some of the great  
1811 work done by Sharona Hoffman in her article "Big Bad Data" that  
1812 sometimes if we don't have good data practices so we know where  
1813 data comes from and where it is going to that may impede the  
1814 scientific validity of some of the findings. So I think we have  
1815 heard a lot about privacy impeding innovation, but there are ways  
1816 in which good data practices, good record keeping can actually  
1817 help promote innovation as well and promote scientific validity.

1818 Mr. Shimkus. Thank you.

1819 Dr. Tucker?

1820 Ms. Tucker. So I have a study coming out, it is forthcoming  
1821 at Management and Science where we actually look at different  
1822 types of regulation and how they promote or don't promote the kind  
1823 of personalized medicine you are talking about. And what we found

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1824 there was that basically just focusing on consent was really quite  
1825 harmful to patients being willing to adopt this kind of or sort  
1826 of give this kind of unique data in a cancer treatment setting.

1827 What did seem to work though was actually giving control to  
1828 patients and there were some states that actually experimented  
1829 with creating ownership or property rights over genetic data and  
1830 we have actually seen quite a bit of efficacy in terms of promoting  
1831 personalized cancer treatments in those states.

1832 Mr. Shimkus. Anyone else want to weigh in? I really  
1833 enjoyed -- again I am having a hard time too with Mr. Ben-Shahar  
1834 on the statements of, I mean how many of us get financial booklets  
1835 after the fiscal year and how many people throw it away, I bet  
1836 you 99.99 percent of all people who get those booklets on what  
1837 you should know. And I think it is a protection. It is really  
1838 a protection for those people who are controlling our data. Okay,  
1839 we have done it. We have given you the information, now it is  
1840 your fault if you don't follow it.

1841 So it is a great hearing. I appreciate everybody being  
1842 involved. And I yield back my time.

1843 Mrs. Blackburn. The gentleman yields back and, Mr. Green,  
1844 5 minutes.

1845 Mr. Green. Thank you, Madam Chairman. And I want to thank

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1846 our two chairs and two ranking members for the hearing today and  
1847 as well as our witnesses.

1848 It is pointed out that personalized content that we all see  
1849 on various online platforms is curated by both humans and  
1850 algorithmic technology. However, the potential for harm from  
1851 algorithms can be particularly difficult for Congress to address  
1852 and thus we should be focusing on it.

1853 Professor Kearns, in your testimony you point out that  
1854 machine learning-based algorithms can be used to determine a  
1855 consumer's emotions at any given point in time. How do you  
1856 monetize that?

1857 Mr. Kearns. Well, the short answer is I don't know. But  
1858 certainly if I can shape people's moods and it seems plausible  
1859 people might be more willing to shop if they are in a good mood  
1860 rather than a bad mood that might be one way that I could monetize  
1861 it. I think more generally though, you know, knowing detailed,  
1862 fine-grained information about people's mental and emotional  
1863 states, you know, in addition to, for instance, knowing about  
1864 medical facts about them and their fitness level and their  
1865 financial health, et cetera, I mean it has, you know, clear sources  
1866 of monetization.

1867 And some of my colleagues on the panel have mentioned some

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1868 of the negative ones already such as targeting groups that are  
1869 particularly vulnerable at a particular time. There is a great  
1870 deal of documentation, for instance, on, you know, kind of  
1871 predatory loan practices online, you know, in the arena of  
1872 for-profit education, for example.

1873 Mr. Green. Okay, thank you.

1874 Professor Pasquale, if a person often does online searches  
1875 for phrases that might signify challenging financial  
1876 circumstances such as financial counseling, how might that change  
1877 the ads and the search results that they see online?

1878 Mr. Pasquale. Oh that is a terrific question. And one of  
1879 the big worries that a lot of advocates have is that we can route  
1880 people into different opportunities. So, for example, if you  
1881 have exactly the type of searches that you are mentioning someone  
1882 might be routed towards payday loans, others might be routed away  
1883 from them. Now to Google's great credit, I think, 1 or 2 years  
1884 ago, working actually with Georgetown, they did invoke, involve  
1885 -- they started some self-regulation where they said we are not  
1886 going to have certain ads on that are over 36 percent APR. And  
1887 I think that is very important, but I also worry that, you know,  
1888 kind of competition concerns might arise if, for example, Google  
1889 owned its own finance company that had a business model that would

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1890 be advantaged by that particular rule.

1891 So I think we have to balance, you know, we have to both  
1892 encourage tech giants to try to self-regulate to avoid the type  
1893 of tracking that you are invoking, but we also have to have outside  
1894 authorities to be able to watch that self-regulation as well.

1895 Mr. Green. Or just so the consumer knows that, you know,  
1896 that is being done and you might not be getting some other offers,  
1897 that somebody else is making that decision on what they are  
1898 presenting to you.

1899 Another question I have, you mentioned in your testimony that  
1900 in 2016 after Facebook was found to enabling discriminatory  
1901 housing ads it promised to change the system to address that issue  
1902 but has not done so. Could you talk about efforts that Facebook  
1903 and who might require Facebook to fix this problem and why they  
1904 may not be successful?

1905 Mr. Pasquale. Yes. I think that the issues here are it is  
1906 a complex ad ecosystem and so there is lots of different moving  
1907 parts in the ads, but I think that when we -- what is disappointing  
1908 is that there was this expose in ProPublica, there was a lot of  
1909 attention to it. There were pledges to do better, but we just  
1910 saw in the past week or so that the same people that exposed the  
1911 original problem that they are saying it hasn't been solved.

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1912           So I think that is again another example where we have to  
1913 empower either state or federal regulators to actually have some  
1914 teeth and to impose some of the penalties that would actually lead  
1915 to a positive response.

1916           Mr. Green. As I found out in this job, everybody needs the  
1917 boss and has to answer to someone. So we don't have an agency  
1918 that can do that right now with Facebook if they agree to do  
1919 something and does not do it?

1920           Mr. Pasquale. I think that there are, there is  
1921 possibilities with respect to say the deceptiveness or unfairness  
1922 authority at FTC. I would also have to research with respect to  
1923 the Department of Housing and Urban Development and its own  
1924 enforcement practices, but that is not something that I have  
1925 personally looked into so I would have to look into that. Yes.  
1926 And I could send that later on to the committee, yes.

1927           Mr. Green. Professor Kearns, you advocate for a policy  
1928 approach to the extraction of consumer data that is  
1929 technologically neutral and accounts for the sensitivity of the  
1930 data collected. My question, can you elaborate on what you think  
1931 that policy might look like?

1932           Mr. Kearns. Yes. I mean, first of all, maybe let me take  
1933 the opportunity to say one thing that I think has been running

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1934 through my head but I haven't been able to get out yet, which is  
1935 especially on issues of discriminatory behavior by algorithms I  
1936 do think that there are scientific things that can be done to  
1937 address this and there is a, you know, not small and growing  
1938 community of AI and machine learning researchers who are trying  
1939 to design algorithms explicitly that meet the various fairness  
1940 promises and guarantees.

1941           And it is still very early days, but this sort of idea of  
1942 endogenizing some kind of social norm like fairness or privacy  
1943 inside of an algorithm I think is extremely important, because  
1944 while regulatory and watchdog agencies will always be very  
1945 important, you know, the way a computer scientist would put it  
1946 is they don't scale, right. So if instances of malfeasance or  
1947 privacy or fairness violations have to be caught by human  
1948 organizations looking at, you know, specific instances or  
1949 behaviors they just won't keep up, right, because the tech  
1950 companies are doing this at massive scale in an automated way.

1951           In terms of what can be done, you know, I think it is possible  
1952 to audit algorithms for various kinds of behaviors without  
1953 compromising the proprietary nature of the models or algorithms  
1954 used. And a rough analogy I would offer are kind of the stress  
1955 tests that banks have been subjected to on Wall Street where, you

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1956 know, you have to demonstrate certain properties of behavior of  
1957 your algorithm but you are not, you know, releasing the source  
1958 code for it.

1959 And I, you know, without having super-specific suggestions  
1960 in that regard, I think that that is a promising general direction  
1961 for policy and one that can balance between, you know, a company's  
1962 legitimate right to preserve their intellectual property and  
1963 consumer and societal concerns about the behavior of those  
1964 algorithms.

1965 Mr. Green. Thank you.

1966 Mr. Chairman, I know I am over time. I appreciate your  
1967 courtesies.

1968 Mr. Lance. [Presiding.] Thank you very much, Mr. Green,  
1969 and I recognize myself.

1970 Ms. Klonick, in your testimony you mentioned choice as a key  
1971 part of regulators' decisions not to pursue Title II-like  
1972 regulations for online platforms. Title II-style regulations  
1973 may be inappropriate for edge providers or for others in the  
1974 internet ecosystem as well. However, some have argued there are  
1975 fewer choices among online platforms because each website or  
1976 application serves a specific audience with a specific service.  
1977 Would you please comment on that? Thank you.

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1978 Ms. Klonick. Yes. I agree with that statement generally  
1979 that specific platforms speak to a specific audience. But there  
1980 is an enormous and incredibly important distinction to be made  
1981 here and that is that there is a huge difference between companies  
1982 that have kind of natural monopolies like ISPs and then content  
1983 platforms like Facebook and Twitter.

1984 And the former kind of a piece of the pipe, or to put it in  
1985 terms of speech, they are kind of the printing press and you don't  
1986 want the printing press rearranging letters or blocking out  
1987 sentences. You want it to be content-neutral to a certain extent  
1988 and but you do want the paper or the writers or the editors who  
1989 use that printing press to be able to make decisions based on the  
1990 content and that is something why what we are talking about today  
1991 is so important.

1992 Mr. Lance. Thank you. If there are fewer choices among  
1993 these platforms how does that change the evaluation of the  
1994 platform's ability to moderate content? Does it make it more or  
1995 less troublesome in your judgment?

1996 Ms. Klonick. Yes. I think that as Representative Doyle  
1997 said earlier that one of the issues here is that there is a lack  
1998 of choice between certain types of providers, but on these  
1999 platforms right now there is just a plethora of choice. I mean

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2000 Twitter might have a monopoly over 280 characters of text and  
2001 Facebook might have a monopoly over a kind of like a relatively  
2002 safe, family-safe community, but there are plenty of other  
2003 presences that are currently online. Of course if that changes  
2004 in the future and the taxonomy of what these different platforms  
2005 are able to provide and what users use them for and how they end  
2006 up having a monopolization or not over broader areas, then I think  
2007 that that is something that can be revisited.

2008 Mr. Lance. Thank you very much.

2009 Professor Ben-Shahar, as many of the online platforms we are  
2010 discussing today offer their services free of charge as consumers,  
2011 how do we as lawmakers evaluate the appropriate balance between  
2012 personal privacy against convenience?

2013 Mr. Ben-Shahar. Thank you very much for the question. I  
2014 was hoping to be able to say a few words about that. I think we  
2015 should be very careful not to change this grand bargain, people  
2016 paying for excellent services that they like very much not with  
2017 money but with their data. And it would be a, I think, disaster  
2018 of consumer protection if we changed that, if people -- if you  
2019 ask consumers in the aftermath of some reform that removed that  
2020 bargain and made them pay for things like Google, Facebook, and  
2021 other things with money, if they feel that they were helped I think

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2022 they would say in unison, no, don't do this.

2023 In that sense I think the bargain and the underlying bargain  
2024 is an excellent bargain. Now there are worries that of course  
2025 arise and I think this is the ultimate, the foundational problem  
2026 of data policy. It is not privacy or security, it is competition.  
2027 It is the fact that there are very few companies that dominate  
2028 the central forum in which these exchanges occur -- Google,  
2029 Amazon, Facebook, and maybe a few more small players.

2030 I am not so worried about the ISPs. They, notwithstanding  
2031 the fact that on broadband there is some local monopolies, there  
2032 is great competition from mobile, but these big three, or big four  
2033 if you throw in Apple, big five if you throw in Microsoft, have  
2034 a lot of power and the FTC has failed, for example, last year,  
2035 to intervene in something that the Europeans thought, I think  
2036 rightly, as raising antitrust concerns.

2037 So to conclude, I think that the concern for consumers is,  
2038 will arise from lack of competition and concentration not from  
2039 privacy and security.

2040 Mr. Lance. Thank you very much and I yield back 42 seconds  
2041 and I recognize Mr. McNerney of California.

2042 Mr. McNerney. Well, I thank the chairman and I thank the  
2043 witnesses. Sorry, I missed some of your testimony a little

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2044 earlier. Professor Moy, what do you think the benefits of the  
2045 current FCC rules for consumers and small businesses are regarding  
2046 net neutrality?

2047 Ms. Moy. Great, yes. So I mean that is a great question.  
2048 I appreciate that question. The current rules enable small  
2049 businesses to reach consumers. That is the short answer to the  
2050 question. You know, if we didn't have rules that prevented ISPs  
2051 from paid prioritization and blocking, then it would be much more  
2052 difficult, potentially, for small businesses to reach consumers.

2053 Mr. McNerney. So you would agree -- or I don't want to put  
2054 an answer in your mouth -- would you agree that that would be harder  
2055 for small businesses to innovate if the FCC chairman's proposal  
2056 is adopted?

2057 Ms. Moy. Yes. You know, and it might even be very difficult  
2058 for a business to know whether or not it is being throttled if  
2059 it is being throttled. The draft order has transparency  
2060 provisions in it, but it is unclear whether the transparency  
2061 provisions would be consumer-facing or in fact if some companies  
2062 could fulfill those by just turning over information about their  
2063 practices directly to the FCC.

2064 Mr. McNerney. Well, that sort of leads, already answered  
2065 my next question. But the new rules or the new regime would

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2066 require or ask businesses if they feel like they have been subject  
2067 to anti-competitive practice to go to the FCC to resolve their  
2068 problems. How quickly do you think the FCC could response to  
2069 those sorts of requests?

2070 Ms. Moy. I mean if it could respond at all, I mean, well,  
2071 I think the question is whether it could respond at all, right.  
2072 So there are many practices that might seem anti-competitive but  
2073 not raise to the level of an antitrust violation. So, for  
2074 example, if an ISP were throttling a service that an innovator  
2075 is introducing into the market but that doesn't compete directly  
2076 with the ISP service of a phone or internet provision, then that  
2077 practice might look anti-competitive but might not be considered  
2078 an antitrust violation.

2079 Also if, you know, if a company were to try to bring an action  
2080 in court, you know, I think there is this idea that companies might  
2081 be able to bring antitrust actions in court, but antitrust actions  
2082 in court take many years and may cost potentially millions of  
2083 dollars to mount against a major incumbent. And that can be, you  
2084 know, that is a barrier that really creates impossibility for a  
2085 small business or --

2086 Mr. McNerney. Sure. And what sort of penalties could the  
2087 FTC impose and would they be effective?



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2088 Ms. Moy. Right. I mean so again the FTC's primary  
2089 authority when it comes to enforcing something like net  
2090 neutrality, if it could enforce net neutrality again, you know,  
2091 and I think for all of the reasons that we have discussed  
2092 repeatedly, including the FTC's lack of authority over common  
2093 carriers, it is questionable whether they have the authority at  
2094 all, but most of their authority would come from the ability to  
2095 prohibit unfair and deceptive trade practices and there is no  
2096 civil penalty authority in that area.

2097 Mr. McNerney. So under Chairman Pai's plan, broadband  
2098 providers are not required to disclose the practices at the point  
2099 of sale or on their website but they can give those practices to  
2100 the FTC and the FCC and they would in turn put them on their  
2101 website. Is that sort of disclosure viable?

2102 Ms. Moy. So, you know, I mean I think I would say again,  
2103 you know, I think as an initial matter it is worth remembering  
2104 that the disclosures alone are not necessarily, are not going to  
2105 be sufficient particularly when it comes to when you are in a  
2106 situation where a consumer only has access to one broadband  
2107 provider.

2108 But when there is a choice that is available to the consumer  
2109 and they might rely on disclosures to make a choice between two

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2110 different providers or between multiple providers that  
2111 information really does need to be consumer-facing. I was, in  
2112 fact, on the task force at the Consumer Advisory Committee, the  
2113 FCC's Consumer Advisory Committee that designed the so-called  
2114 broadband nutrition label that Chairman Pai is planning to do away  
2115 with, you know, and we did think that in a situation where a  
2116 consumer might be considering adopting one of two different  
2117 services or one of two different service plans it would be  
2118 extremely important for them to have easy-to-read information  
2119 about the actual performance of that service package.

2120 Mr. McNerney. I had a couple of questions for Professor  
2121 Kearns. With regard to machine learning there is going to be  
2122 benefits in all sorts of areas, but are there areas where machine  
2123 learning techniques should not be used?

2124 Mr. Kearns. Well, yes, I think so. And there is, you know,  
2125 a large and growing community of AI and machine learning  
2126 researchers who are trying to debate those sorts of issues. You  
2127 know, one logical extreme, there is the notion that any decision  
2128 that really, you know, should lie with a human just because of  
2129 moral agency shouldn't be made by an algorithm.

2130 So one example that is commonly offered is in automated  
2131 warfare that even if we could design algorithms or learn models

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2132 that, you know, made more accurate decisions about whether to fire  
2133 on an enemy that perhaps we shouldn't do that because the decision  
2134 to do that should always lie with a human who has the moral  
2135 responsibility for that decision.

2136 So I think, you know, that is an extreme that I think I would  
2137 agree with. The harder cases I think are cases in which, you know,  
2138 machine learning is demonstrably effective yet making difficult  
2139 moral decisions like in criminal sentencing and to, you know, one  
2140 could arguably ask about things like, you know, college admissions  
2141 or loan decisions and the like.

2142 And so, you know, my view right now is that we are at the  
2143 very beginning of a very difficult debate about the extent to which  
2144 decisions that have been made historically by humans and by the  
2145 way, you know, historically also exhibited biased privacy  
2146 decisions, et cetera, when they were being made by humans and  
2147 turning over them to machines where the tradeoffs are going to  
2148 be different but there will be tradeoffs, right.

2149 And there is always this tension in machine learning between  
2150 accuracy which is, you know, right now essentially what is almost  
2151 always optimized for and other things like privacy and accuracy  
2152 like -- I mean privacy or fairness, right.

2153 Mr. McNerney. Well, I have really gone over my time.

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2154 Mr. Kearns. Okay, yes.

2155 Mr. McNerney. So I am going to have to interrupt you and  
2156 yield back. Thank you.

2157 Mr. Lance. Thank you very much. The chair recognizes Mr.  
2158 Johnson.

2159 Mr. Johnson. Thank you, Mr. Chairman.

2160 Mr. Pasquale, when we talk about how companies interact with  
2161 consumers and handle consumer data we often talk about  
2162 transparency, that is, being transparent with business practices.  
2163 In some industries there are actually transparency rules that  
2164 require companies to disclose certain information. For example,  
2165 ISPs have to disclose a slew of information about their business  
2166 and network practices. Are there any rules that require  
2167 companies that use algorithms to be transparent about how they  
2168 work?

2169 Mr. Pasquale. So it is a very narrow range of requirements.  
2170 So, for example, if you look at the online lending space there  
2171 has been some caution about certain forms of automated  
2172 underwriting using what is called fringe or alternative data, data  
2173 beyond, you know, what is usually used by FICO or other entities  
2174 like that because under FCRA it can be a requirement of explanation  
2175 under the Fair Credit Reporting Act with respect to some of these,

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2176 like giving the reason codes for why an automated decision was  
2177 made.

2178 But in general it is a zone of great opacity. We just don't  
2179 know. That is why I titled my book "The Black Box Society" because  
2180 there are so many rules there, so little sense of what is going  
2181 on there. Yes.

2182 Mr. Johnson. Okay, all right.

2183 Mr. Kearns, Professor Swire from Georgia Tech, my alma mater  
2184 by the way, it is where I learned about networking, concluded that  
2185 applications such as search engines and social networking  
2186 services collect data providing greater consumer insight than  
2187 ISPs. Do you agree with that conclusion?

2188 Mr. Kearns. Yes, I do.

2189 Mr. Johnson. Okay, care to expand?

2190 Mr. Kearns. Well, in addition to the aforementioned  
2191 encryption that, you know, occurs with the vast majority of data  
2192 that ISPs carry, you know, there is the additional fact that I  
2193 don't think it has been mentioned yet that it is at the packet  
2194 level. So, you know, and the way internet routing, packet routing  
2195 works is that longer messages, whether they are actual text  
2196 messages or they are a web search or they are an audio call, are  
2197 divided into these tiny little fixed-size packets which then

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2198 travel possibly different paths through the network.

2199           So, you know, just going back to a comment I made earlier,  
2200 this sort of actionability of data at that level, if, you know,  
2201 if half or more of it is encrypted and it is also traveling in  
2202 these little bite-sized pieces and you are carrying a phenomenal  
2203 amount of that data over your network, if you ask me whether if  
2204 I am trying to figure out who somebody is and what to sell them  
2205 and what their mental and psychological condition is, I would much  
2206 rather have search engine data or Facebook data than packets at  
2207 the network level.

2208           So this is basically what I mean by, I think, you know, it  
2209 is, from a privacy perspective it is less concerning to me that  
2210 the data that is being collected by the edge services.

2211           Mr. Johnson. Okay, all right. Continuing with you, Mr.  
2212 Kearns, then, my understanding is that approximately 80 percent  
2213 of internet traffic is encrypted. You just talked about  
2214 encryption a little bit. That limits what ISPs see regarding  
2215 consumers' online activities. In contrast, by their very nature,  
2216 don't edge providers largely have to interact with consumers'  
2217 unencrypted data?

2218           Mr. Kearns. By definition, yes.

2219           Mr. Johnson. Yes. Well, doesn't that give edge providers

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2220 much greater insight into consumers' preferences, habits,  
2221 choices, beliefs, that kind of stuff?

2222 Mr. Kearns. Yes, it does. I mean I think the right way to  
2223 think about it, let's say, back in the old days of telephony is,  
2224 you know, would you rather see, you know, would you rather see  
2225 the raw analog signal and try to figure out what the conversation  
2226 is from that or would you rather have that analog signal rendered  
2227 through a speaker so that you could actually listen to the  
2228 conversation, right? And this is an imperfect metaphor, but I  
2229 think it is a good one.

2230 You know, another thing I might offer is if I am just trying  
2231 to describe an image to you would you rather I go pixel by pixel  
2232 through the image and tell you the color value of it, or would  
2233 you rather me describe it to you and say, well, it is an outdoor  
2234 image? There is trees. There is a lake. There is a family  
2235 picnicking. And so, you know, by definition, what the end  
2236 services are getting and what users want to give to those end users  
2237 are these, this much higher level data that is easy for humans  
2238 to understand and model.

2239 Mr. Johnson. They want to see it all put back together  
2240 again.

2241 Mr. Kearns. Yes, exactly. And you are just kind of not

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2242 easily getting that at the network level because of the encryption  
2243 and because of the fragmentary nature of packet routing.

2244 Mr. Johnson. Right, right. Okay.

2245 Well, Mr. Chairman, I yield back a full 10 seconds.

2246 Mr. Lance. Thank you, Mr. Johnson. The chair recognizes  
2247 Ms. Eshoo.

2248 Ms. Eshoo. Thank you, Mr. Chairman, and thank you to the  
2249 witnesses. I read all your testimony last night, listened to all  
2250 of you today and I want to make some comments about this hearing.  
2251 The title of it is very interesting and it is an area that needs  
2252 to be examined.

2253 The word privacy has come up many times, certainly net  
2254 neutrality and references to it have come up. Strong enforcement  
2255 has come up. But when you look at the backdrop and the broader  
2256 stage on which this hearing sits, look what is happening in our  
2257 country. In a flash, like lightning, privacy was ripped away,  
2258 the privacy protections were ripped away from the internet.

2259 So all of the happy talk of some of my colleagues on this  
2260 committee about privacy and the sanctity of it that was forgotten  
2261 when that vote was taken and the American consumer, I think, has  
2262 really been hammered as a result of it. I think that, Professor  
2263 Moy, you made a very important point when you said that the last

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2264 thing we should do is to repeal, and that has happened.

2265           It was very interesting to hear the description of what has  
2266 taken place in Europe with what they have done with the internet  
2267 and what we have done and how the internet has flourished in our  
2268 country just on the eve of the chairman of the Federal  
2269 Communications Commission getting ready to rip away the  
2270 protections that are there that have made it open, free,  
2271 accessible. So I think there is some political cross-dressing  
2272 here today, with all due respect, not by the panelists, but I think  
2273 by some of the members.

2274           And the term a strong enforcement has been referred to, but  
2275 I don't think strong enforcement is something that you pick and  
2276 choose, because we are lawmakers and unless there is enforcement  
2277 then the law is not worth the paper that it is written on.

2278           I take heart from what Professor Kearns spoke of because in  
2279 this whole issue of algorithms -- and let's keep in mind these  
2280 social platforms are free. They are free. They are not like the  
2281 ISPs. In the ISPs there must be, I think, only three happy outfits  
2282 in the entire nation on the eve of what Chairman Pai is doing and  
2283 that is relative to net neutrality and that is Comcast, AT&T, and  
2284 Verizon. They are the happiest. I don't know anyone else that  
2285 is for what he is planning to do to the internet. But I do think

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2286 that the -- it is very interesting to me that you have raised the  
2287 issue of auditing algorithms.

2288 Now I think that truth has always required transparency. We  
2289 don't, I don't think, as a committee, really know how to get socks  
2290 on the octopus, so to speak, here because it is complicated. Free  
2291 speech is central to us, but we also know that there are bad actors  
2292 that have used the best of what we have invented to divide us and  
2293 something needs to be done about that. There is no question in  
2294 my mind, and the chairman of the full committee raised that as  
2295 well.

2296 So how close, Professor Kearns, do you think we are to this  
2297 what you raised, the auditing of algorithms?

2298 Mr. Kearns. So I think we are close. So in particular, you  
2299 know, many of the instances of discrimination, for instance, in  
2300 algorithmic behavior were actually discovered by groups of  
2301 researchers who are effectively doing their own auditing, you  
2302 know, doing kind of field experiments using services that have  
2303 algorithms underlying them, testing their behavior and  
2304 demonstrating, for instance, they have some particular type of  
2305 bias.

2306 There is good research being done on again internalizing  
2307 notions of fairness inside of algorithms. And just to be clear

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2308 here, I think most instances of discrimination in algorithmic  
2309 behavior are not the result of any evil by the researchers and  
2310 scientists at these companies. It is just that when you optimize  
2311 your model for predictive accuracy you shouldn't expect it to have  
2312 any other nice properties either, so you need to, you know, you  
2313 need to actually specifically put those properties in your code  
2314 if you want them to have it.

2315           You know, in the privacy arena there is a very strong notion  
2316 of, you know, kind of internal privacy of an algorithm known as  
2317 differential privacy that is kind of starting to finally get out  
2318 of the lab and be used, for instance, in the latest version of  
2319 Apple's iOS. So this stuff is happening and the tech companies  
2320 are participating in, you know, the dialogue and in developing  
2321 some of the science. It just needs to be kind of taken seriously  
2322 at scale by those companies.

2323           Ms. Eshoo. Well, I am encouraged by what you have just  
2324 described and I want to pursue it as well. If there is more  
2325 information that you can get to us on it, I certainly would welcome  
2326 it. And with that Mr. Chairman, I yield back.

2327           Mr. Lance. Thank you very much. The chair recognizes Dr.  
2328 Bucshon.

2329           Mr. Bucshon. Thank you, Mr. Chairman.

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2330 Professor Kearns, this is a little bit different line of  
2331 questioning but important. Is it feasible for your cell phone  
2332 or an app on your cell phone to listen in on your conversation  
2333 and collect data?

2334 Mr. Kearns. Yes.

2335 Mr. Bucshon. And are you aware that that is happening in  
2336 our country, in everywhere? I will give you an example of why  
2337 I think that this is happening and it is an issue that we really  
2338 haven't touched on today as part of data collection.

2339 Mr. Kearns. My default assumption is that unless I have  
2340 taken explicit pains to arrange otherwise that when I use an app  
2341 on my mobile phone it is recording at least the data of my  
2342 interaction with that app and possibly many other aspects of my  
2343 usage of the phone as well.

2344 Mr. Bucshon. How about when you are talking? Like right  
2345 now my phone is sitting here and there is a speaker and I am talking  
2346 and is that data, is what I am saying potentially being collected?

2347 Mr. Kearns. With or without the microphone on.

2348 Mr. Bucshon. Correct, with or without. Well, the question  
2349 is the definition of on, right, because that is being made by the  
2350 company that makes the phone. I mean it has been shown recently  
2351 and it has been on, I think, Wall Street or somebody reported that

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2352 you can turn off essentially everything on your phone and you are  
2353 still being tracked. So the speaker is important.

2354 Let me just say this, and this is the reason this came to  
2355 me is because my son who is 24, he lives in Chicago, he was standing  
2356 around with some, a couple, with a friend at work, a person at  
2357 work. Nobody was on the internet. He was talking about, and I  
2358 can't remember specifically what it was but it was about shoes  
2359 or something and the next day he had ads for that exact thing on  
2360 his feed. He didn't do a Google, he didn't do any search. I don't  
2361 want to single out a company, but he didn't do any search at all.  
2362 All he did was talk in the presence of his microphone on his phone.  
2363 Do we know if that is happening?

2364 Mr. Kearns. I am not a security expert, but I do know that  
2365 there are more instances these days of situations in which, you  
2366 know, the operating system on your mobile phone communicates with  
2367 beacons in retail stores and this is how one often experiences,  
2368 you know, why even though I didn't do a search on some product  
2369 at all but I happened to be in the store yesterday, the physical  
2370 retail store --

2371 Mr. Bucshon. Yes, they can do that.

2372 Mr. Kearns. -- am I not, you know, and this is because they  
2373 are now starting to install so-called beacons in these stores that

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2374 interact with the operating system on your phone and so then the  
2375 retailer knows that you were there.

2376 Mr. Bucshon. If you were in a shoe store they know you were  
2377 in a shoe store.

2378 Mr. Kearns. So, you know, my feeling about these things is  
2379 that the way technology is, is anything is possible, right. And  
2380 then the question is, is it widespread and who is doing it and  
2381 it is kind of for deliberately nefarious purposes or is it, you  
2382 know, just advertising, quote unquote?

2383 Mr. Bucshon. I mean it is important because I am a member  
2384 of Congress and I have confidential conversations all the time  
2385 with my phone and I am not on the internet. And so that is a  
2386 question. I had mentioned this to my staff by the way when I went  
2387 back to the office and they go, oh yeah, that has happened to me.  
2388 I mean all the young people are like, oh yeah, that happened to  
2389 me before.

2390 So I just thought that was something that we need to, really,  
2391 also as far as collecting data and then analyzing like you have  
2392 described, I mean I think what we really need to think about, not  
2393 only when you are actively on your phone but whether or not through  
2394 your -- and I am not a conspiracy theorist or anything, right --  
2395 through your actual speaker that you can be monitored.

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2396 Mr. Kearns. Yes. I mean and I think we are also voluntarily  
2397 heading this direction in the form of home devices like, you know,  
2398 Echos and, you know --

2399 Mr. Bucshon. Yes, right. That is obvious, right.

2400 Mr. Kearns. -- in which, you know, are kind of sitting  
2401 there all the time recording.

2402 Mr. Bucshon. Right.

2403 Professor Ben-Shahar, you stated that consumers ignore  
2404 privacy disclosures. How would you suggest we inform consumers  
2405 that they have given consent to their data being collected? How  
2406 can we do that?

2407 Mr. Ben-Shahar. I think consumers understand in general  
2408 what is going on and indeed a lot of the surveys suggest that they  
2409 know that a lot of their information is being collected. They  
2410 are not surprised when they find out that yet another practice  
2411 is prevalent, for example, that now these home butlers, the Google  
2412 Home or Alexa is listening to everything that is going on. I think  
2413 that consumers by now have figured out that this is going on and  
2414 so there is not much that we can tell them that they don't know.

2415 Now there are specific things that are going on that defy  
2416 consumers' expectation. And if the expectation is created in an  
2417 affirmative way by your smart phone or by Google or by other

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2418 service, for example, they give the consumer the impression that  
2419 they can turn on or turn off some kinds of surveillance or some  
2420 kinds of data collection and it turns out that they can't, that  
2421 even if they did what they were supposed to do and had the  
2422 reasonable understanding that they are not going to tracked in  
2423 a particular way, they still are, that is an FTC issue. That is  
2424 an issue of --

2425 Mr. Bucshon. Well, that has happened. It has just been  
2426 written in the papers recently that it has happened.

2427 Mr. Ben-Shahar. To the extent that that is happening that  
2428 should be, I think that there are tools in our law both in contract  
2429 law and in consumer protection statutory law to take care of these  
2430 kind of things. I don't know, you know, maybe other panelists  
2431 know better. I don't think these things happen too much for the  
2432 simple reason that it all costs nothing for the services to let  
2433 consumers know what is going on. Consumers don't care. They are  
2434 not going to bother, change the settings or re-change the settings  
2435 every time there is a new version of the software.

2436 Mr. Bucshon. Thank you. I am out of time. I yield back.

2437 Mr. Lance. Thank you very much.

2438 The chair recognizes Congressman Flores.

2439 Mr. Flores. Thank you, Mr. Chairman. I appreciate all the

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2440 panelists for joining us for this important hearing today.

2441           The first question I ask, I mean one of the things that is  
2442 obvious is that data is pulled from everywhere whether it is data  
2443 services, your mobile phone, your Alexa, whatever, operating  
2444 systems, and social media platforms. So my question is this for  
2445 all of the panel. I am going to start with Professor Kearns and  
2446 then I am going to ask a couple of other questions and we will  
2447 come back to the panel if we have time about this issue.

2448           So the question is simply this. What are your thoughts as  
2449 to whether or not Congress or policymakers need to establish a  
2450 consistent legal and regulatory framework for how this data is  
2451 obtained and used?

2452           Mr. Kearns. Well, I will be brief so other people can talk  
2453 too. But I mean as per my earliest remarks as a scientist, so  
2454 I am not a policymaker, I am not a lawyer --

2455           Mr. Flores. Right.

2456           Mr. Kearns. -- but from a scientific perspective, to me  
2457 the most important thing is not sort of, you know, how much data  
2458 you have measured in petabytes. It is not kind of whether the  
2459 data came from this service or that service or this app or that  
2460 ISP. It is what are the actionable insights about consumers and  
2461 what are the facts about their lives that you can infer from that

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2462 data.

2463           And as a scientist I don't see an easy way to carve that up  
2464 into little subdomains and say like, oh well, you know, because  
2465 we just, the truth is we don't know, right. These companies  
2466 themselves are figuring out just now how powerful AI and machine  
2467 learning techniques applied to all kinds of data are.

2468           Mr. Flores. Right. Well, the challenge is, is that  
2469 policymakers and regulators typically move way behind the speed  
2470 of technological change. And so what I am trying to figure out  
2471 is how do we get in front of this or do we need to even worry about  
2472 it? And I will come back to the rest of the panel on this question  
2473 in just a minute, but I do have two other questions for Professor  
2474 Pasquale first.

2475           In your testimony you noted that bottlenecks can threaten  
2476 competition at any layer of the network not just the physical layer  
2477 provided by the ISPs. And so the question is this. Can you  
2478 elaborate on the potential bottlenecks other than the ISPs, beyond  
2479 the ISPs?

2480           Mr. Pasquale. Sure. So I did a 2008 article called  
2481 "Internet Nondiscrimination Principles" and what I tried to do  
2482 is to say that the same type of concerns that are motivating people  
2483 to advocate for net neutrality should also be looked at, at the

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2484 social layer, at the search engine, at the app store level. And  
2485 particular examples, there are two examples related to China that  
2486 I think are really interesting and I discuss in my book. One is  
2487 that someone developed an app called "In a Permanent Save State"  
2488 and it was a game that was also a critique of Apple and its use  
2489 of certain Chinese factories and labor. And the Apple app store  
2490 rejected it over and over again and they couldn't really  
2491 understand why that was happening.

2492 Similarly, there is a case called Langdon v. Google where  
2493 someone wanted to buy an ad titled "China is Evil," and there was,  
2494 I thought, a relatively arbitrary decision by Google to say no,  
2495 we are not going to sell you that ad. And so I think those are  
2496 very concrete examples of a much larger problem where I think that  
2497 we have to be much more imaginative as academics and as  
2498 policymakers in seeing the connections rather than seeing the  
2499 separations between these different entities.

2500 Mr. Flores. Well, that sort of goes to my next question  
2501 because we have talked a lot about how content is filtered online,  
2502 but we need to consider how content is filtered through other  
2503 platforms, even voice service devices. It has been reported that  
2504 voice service devices prioritize certain content and services and  
2505 they have even excluded certain products from their platforms.

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2506           So the first question is, are there anti-competitive  
2507 concerns associated with this type of prioritization?

2508           Mr. Pasquale. Congressman Flores, I have to confess I am  
2509 not familiar with that niche of the market so I will have to pass.

2510           Mr. Flores. Okay. That is fine. Let's move back to my  
2511 initial question if we can. I would like to get the comments from  
2512 the rest of the panel. Again the question was this. What are  
2513 your thoughts as to whether policymakers need to establish a  
2514 consistent legal and regulatory framework for how this data may  
2515 be obtained and used? Let's start with Ms. Tucker.

2516           Ms. Tucker. So I think it is very difficult -- and you  
2517 have just told us this -- to have a consistent framework  
2518 governing and technology. On the other hand, I think it is  
2519 possible to identify areas where we are particularly concerned  
2520 about privacy, be it health, be it kids, and make sure the policy  
2521 is focused on protecting those outcomes we really care about.

2522           Mr. Flores. Okay.

2523           Dr. Ben-Shahar?

2524           Mr. Ben-Shahar. My answer with all due respect is a  
2525 resounding no. I don't think that policymakers should tell  
2526 business what data to collect and how to use it.

2527           Mr. Flores. In the interest of time I appreciate the short

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2528 answer, okay.

2529 Mr. Ben-Shahar. And maybe just set red lines.

2530 Mr. Flores. Ms. Klonick, sorry.

2531 Ms. Klonick. Yes. I think that regulation, Section 230 and  
2532 any regulation that kind of curtails the ability of these  
2533 businesses and platforms to self-regulate is probably not in the  
2534 best interest of the public.

2535 Mr. Flores. Okay, thank you.

2536 And in the interest of time I will yield back the balance  
2537 of my time.

2538 Mr. Lance. Thank you very much. The chair recognizes  
2539 Congresswoman Walters of California.

2540 Mrs. Walters. Thank you. And thank you for holding this  
2541 hearing and thanks to the witnesses for being here.

2542 We can all agree that protecting consumers' information is  
2543 paramount and that consumers deserve a clear understanding of  
2544 their privacy expectations when using the internet. It is  
2545 important we have this discussion so we can better understand how  
2546 consumers benefit from current practice and examine ways to  
2547 protect against those misuse of consumer information.

2548 Professor Tucker, what is the best way to protect my  
2549 constituents' privacy to make them feel secure and confident in

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2550 the use of their data without impeding future innovation and  
2551 America's leadership in the technology sector?

2552 Ms. Tucker. So over the various sectors and various time  
2553 periods, my research has repeatedly shown that the best way of  
2554 introducing privacy protections is to give a sense of control back  
2555 to consumers. Now that is distinct from transparency. It is  
2556 distinct from disclosures. Instead, it is about restoring a  
2557 sense of control. And what is more, my research has actually  
2558 shown that that kind of policy is in from self-interest. And if  
2559 you try and do the kind of microsegmentation using really  
2560 personalized data, for example, preferences of someone over  
2561 shoes, then those kind of, using that kind of data for advertising  
2562 only works if there is a parallel sense of control among consumers.

2563 Mrs. Walters. Okay, thank you.

2564 Professor Ben-Shahar, what protections do existing legal  
2565 schemes provide for consumers to protect them from the theft or  
2566 loss of their data and are those legal schemes sufficient?

2567 Mr. Ben-Shahar. Well, I think that again I am not a data  
2568 security expert, but my understanding is that there are very few  
2569 protections that are granted to consumers. Many of the things  
2570 that were recommended that people do after, for example, the  
2571 Equifax breach were fairly limited. I mentioned before in my

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2572 testimony that I think that the reason there are so few remedies  
2573 and recourses is because largely there is no evidence for the fact  
2574 that consumers are suffering in a magnitude of harm that requires  
2575 greater a remedy in this context.

2576 Mrs. Walters. Okay. And then I have another question for  
2577 you. How does the use of algorithms to deliver content impact  
2578 consumers' experiences online and is there a benefit we see to  
2579 the practice of collecting data?

2580 Mr. Ben-Shahar. I think that benefit is enormous and it has  
2581 been, you know, measured in many different ways. But I will just  
2582 recommend to try one time to disconnect all the knowledge about  
2583 you from your smart phone and see what happens. When you open  
2584 Google Maps and want to go something and it no longer recognizes  
2585 after the first letter where it is that you wanted to go and the  
2586 inconvenience that you will say, ah, no, I wish the data service  
2587 was still on, the recognition was on.

2588 I think in many contexts personalization delivers  
2589 astronomical value that has not yet been tapped. In my own  
2590 research I am looking about at ways in which we can personalize  
2591 legal rules and other things, but the only reason that we think  
2592 about these new areas is because existing areas have proven to  
2593 be enormously beneficial -- education, insurance, medicine, and

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2594 the like.

2595 Mrs. Walters. Okay, thank you.

2596 And Professor Tucker, some digital platforms would say that  
2597 when third parties are permitted to use their platform that  
2598 platform gives consumers the tools to control their experience.  
2599 Are we putting too much of the onus on the consumer to review the  
2600 permissions the developer is requesting and forcing the consumer  
2601 to choose which information to share?

2602 Ms. Tucker. So I think this is a very good distinction to  
2603 make in that, let's be clear, whenever we have actually studied  
2604 search logs of how consumers behave when they are confronted by  
2605 control, rather than opting out and, you know, protecting their  
2606 privacy they tend to actually go in and try and improve the data,  
2607 because there is nothing more irritating -- I don't know if this  
2608 has happened to you that you are looking at a web service which  
2609 thinks you are a 25 year old man and you are like, why do you think  
2610 that? Consumers tend to try and improve the quality of data,  
2611 intriguingly. The one distinction I do want to make though  
2612 is that there are some categories of consumers where perhaps there  
2613 isn't that level of control exerted. For example, we have a study  
2614 right now which looks at apps which are targeted at toddlers. I  
2615 don't know if you have ever been to a restaurant where parents

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2616 are using these to quiet down their toddlers, but we saw that a  
2617 vast quantity of data being collected. And there I think it is  
2618 fair to assume that those toddlers are not really actually  
2619 exerting any control on whether their location is being tracked  
2620 or their use of the sort of My Little Pony app or whatever it is.

2621 Mrs. Walters. Thank you and I yield back the balance of my  
2622 time.

2623 Mr. Lance. Thank you very much. The chair recognizes  
2624 Congressman Costello.

2625 Mr. Costello. Thank you. I want to share some reflections  
2626 I have here and allow each of you to correct my understanding or  
2627 enhance it, whatever terminology you may wish to use. From my  
2628 perspective, browser history in some respects is a commodity but  
2629 it is very invisible and at this point there is no regulatory  
2630 framework for when and how it can be incorporated into an  
2631 algorithm.

2632 I take, and this is not a precise corollary, but if I made  
2633 a phone call to you and the content of our discussion was  
2634 transcribed and it was then sold or utilized for proprietary or  
2635 commercial gain, there are some similarities between that and how  
2636 an ISP is able to gather some of that content and then incorporate  
2637 that into an algorithm or into how advertising would make its way

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2638 into my internet searches, or if I go to a news website all of  
2639 a sudden up pops laundry detergent if I was Googling laundry  
2640 detergent.

2641           Someone made the comment about editorializing content or  
2642 raise concerns on the political side. It may have been Ms. Moy  
2643 in her written testimony. I read everyone's written testimony.  
2644 The trouble, the thing that I am grappling with on the concerns  
2645 related to what kind of political content shows up and how you  
2646 might be able to shape one's opinion of things is what is the  
2647 difference between that and picking up a newspaper in the morning?  
2648 And I don't really know how to distinguish between -- you can  
2649 distinguish between the two, but in some respects I don't know  
2650 that you should distinguish between the two.

2651           As it relates to the Federal Trade Commission, if we are  
2652 talking about particularly on political content, but even amongst  
2653 other things, how would the FTC go about adjudicating equal time  
2654 if we were to get into talking about political content and how  
2655 does it get, how do you determine, oh, well, you put too much  
2656 left-leaning or too much right-leaning content? I think that  
2657 that can get deeply problematic.

2658           And I believe, also, Ms. Moy mentioned something about adding  
2659 protections for consumers, if you could share with me what kind

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2660 of protections you might be speaking about.

2661 The gentleman, I believe it was Dr. Ben-Shahar, I agree with  
2662 your testimony. I don't think that these waivers or disclaimers  
2663 or -- it doesn't mean a hill of beans. I totally agree with you.  
2664 I am not sure, I think that is just more about indemnification  
2665 or protecting one's liability and that is fine. I mean I don't  
2666 think we should expect more from that. I don't know how you could  
2667 expect more from it.

2668 But the final thing I want to say for comment relates to Ms.  
2669 Tucker's testimony. And in the final two paragraphs you talk  
2670 about how different types of data can have different consequences  
2671 and that any regulation, rather than treating all the data the  
2672 same, needs to distinguish between what kinds of data may be  
2673 actively harmful to consumers and what data may not be.

2674 And it seems to me that we are really talking about values  
2675 here, right. We want algorithms to be able to be helpful to the  
2676 consumer and, candidly, in some respects helpful to those who are  
2677 going to use that data to make sure that you have information that  
2678 you may be more predisposed to wanting to see. We don't want that  
2679 data to be harmful.

2680 See, I am going on way too long. How do we create a clear  
2681 yet evaluative standard and entrust everyone to follow it with

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2682 enough tools for the FTC to embrace that kind of framework if we  
2683 were to do it? I have spoke way too long. Comments?

2684 Mr. Pasquale. I mean I just want to -- I have two quick  
2685 responses, one being that I do think that, you know, in terms of  
2686 thinking about what data is sensitive and what is not that can  
2687 be a strength of a privacy regime.

2688 But if we also look at the work on big data proxies, how like  
2689 Nicholas Terry has described how you can have, say, location could  
2690 be a proxy for race or the very data that you don't think is  
2691 terribly sensitive could be a proxy for other data that is  
2692 sensitive, that is where I would turn sort of Dr. Kearns' work  
2693 against Dr. Tucker's work in a way and sort of say that there is  
2694 a way in which, you know, it is because of these sort of inferences  
2695 you can make from somewhat insensitive data to sensitive that is  
2696 important.

2697 With respect to Google and the newspaper, the difference that  
2698 I would make is that I would say that what we are concerned often  
2699 with respect to unfair algorithmic influence on political  
2700 activity would be something that was a lot more subtle. So, for  
2701 example, imagine if Facebook decided it was only going to  
2702 encourage Democrats to vote. We do have studies that have shown  
2703 that that can lead to I think it is a 0.63 or a small increase

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2704 on the margin of the people whose feed is spiced with get out the  
2705 vote advertisements.

2706 So that is something I think we definitely have to look for  
2707 because when a newspaper says vote for X, I can see that. But  
2708 when Facebook, you know, suddenly spices the feed of the people  
2709 that say it likes, then we can't see that.

2710 Mr. Costello. Fair point.

2711 Ms. Moy. So yes and I will just add, you know, when it comes  
2712 to -- so a couple things. One, you know, when it comes to the  
2713 FTC's enforcement authority, at the risk of sounding like a broken  
2714 record the enforcement authority really is limited to deception,  
2715 unfair and deceptive practices and there is no civil penalty  
2716 authority.

2717 But, you know, on your question of paid political ads,  
2718 specifically, you know, I think that this is a really hard  
2719 challenge that I suspect we don't have a lot of really good answers  
2720 for yet on how to deal with. You know, one thing though is that  
2721 there is very little transparency about what ads are being paid  
2722 for and even when they contain political content. The FEC is  
2723 conducting a rulemaking right now to at least explore the  
2724 possibility of increasing transparency when it comes to labeling  
2725 of political content on platforms, but -- or online I should say.

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2726           You know, but I think also this is a question where it might  
2727 be extremely difficult to identify some political content, for  
2728 example, when it relates to issues as opposed to candidates,  
2729 without human eyeballs. And there is a tremendous amount of  
2730 content that gets posted online and not nearly enough human  
2731 eyeballs reviewing some of that content to determine whether and  
2732 to what extent it might have a political effect.

2733           Mr. Costello. I am just going to read this, something real  
2734 quick into the record. I know you are ready to get out of here,  
2735 Mr. Chairman. When someone states, quote, I could slow down --  
2736 well, we talked a lot about power that exists in the hands of those  
2737 that are not ISPs. For instance, just last weekend, Matthew  
2738 Prince, the CEO of Cloudflare, signaled he would look into taking  
2739 up a challenge to slow down the FCC chairman's internet speed at  
2740 his home. These apparently are not the least of the threats to  
2741 Chairman Pai's home life.           When someone states, quote, I  
2742 could do this in a different but equally effective way -- and I  
2743 would like to submit the entire string of tweets for the record  
2744 -- isn't it clear there is a great deal of power in those that  
2745 are not governed by the same rules in the internet ecosystem? And  
2746 how would your reaction be different if an ISP did this rather  
2747 than edge provider?

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2748           We don't have time, but if we could take any comments for  
2749 the record on that because we are dealing with this larger net  
2750 neutrality issue and I think some of the concerns are that it is  
2751 not just ISPs that we should be looking at. There are some others  
2752 that aren't governed that clearly have the power to do things that  
2753 we all have concerns about. I yield back.

2754           Mr. Lance. Thank you very much, Congressman Costello.

2755           Seeing there are no further members wishing to ask questions,  
2756 I thank all of our witnesses for being here today. Before we  
2757 conclude, I include the following documents to be submitted for  
2758 the record by unanimous consent: a paper from the 21st Century  
2759 Privacy Coalition; a letter from the Electronic Privacy  
2760 Information Center.

2761           [The information follows:]

2762

2763           \*\*\*\*\*INSERT 8\*\*\*\*\*

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2764 Mr. Lance. Pursuant to committee rules, I remind members  
2765 that they have 10 business days to submit additional questions  
2766 for the record and I ask that witnesses submit their response  
2767 within 10 business days upon receipt of the questions. Without  
2768 objection, the subcommittee is adjourned.

2769 [Whereupon, at 12:47 p.m., the subcommittee was adjourned.]