Written Statement of

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Committee on the Judiciary United States House of Representatives

For a hearing on

"Filtering Practices of Social Media Platforms" April 26, 2018 10:00 AM Chairman Goodlatte, Ranking Member Nadler, and Distinguished Members of the Committee:

Thank you for inviting me to testify today on topics of vital importance to anyone with any sort of online presence—namely, all of us. My name is Ari Waldman, and I'm a law professor at New York Law School. I hold a JD from Harvard Law School and a PhD in sociology from Columbia University. For the past 8 years, I have studied how technology mediates our daily lives. I study things like when and why we share personal information on social media platforms, how technology design manipulates our online behavior, how we can make online spaces safe for everyone, and the legal and regulatory environment in which data collectors, like Facebook, operate.

Let me note that although I research and write in this area, I stand on the shoulders of far smarter and more accomplished colleagues, many of whose work I will cite and rely on here.

My goal today is to help this Committee understand Facebook's editorial role, the dangerous implications of a world without content moderation, and the serious privacy implications of allowing Facebook and other social media companies to exist in a regulatory void.

I. Facebook

Facebook is the largest and most popular online social network we have. As of April 3, the platform has over 2.13 billion monthly active users. On average, 1.4 billion people log on to Facebook daily. There are 1.74 billion mobile active users. Five new profiles are created every second. Three hundred million photos are uploaded each day. Every 60 seconds, 510,000 comments are posted, 293,000 statuses are updated, and 136,000 photos are uploaded. Facebook is the first thing half of 18-24 year olds check when they wake up. It's the last thing many of them look at before they go to sleep.²

To sign up for an account we have to provide our names, email addresses or mobile numbers,³ dates of birth, and genders. After that, we are asked to allow Facebook to mine our email contacts so we can see which of our friends are already members and which we can invite to join.⁴ These contacts will constitute the core of our network, aptly called "friends." Then we can get started filling out our profiles by uploading a picture and a "cover" photo that sits at the top of our profile page. If we can't think of anything to post, Facebook is there with a helpful nudge: "Select a photo to appear at the top of your profile. It could be from a recent trip or something you're proud of." Facebook is designed to make image management easy.

¹ The views expressed in this testimony are my own and do not necessarily reflect the views of any of these institutions.

² Zephoria Digital Marketing, The Top 20 Valuable Facebook Statistics—Updated April 2018, https://zephoria.com/top-15-valuable-facebook-statistics/ (last visited April 21, 2018).

³ If you do not provide your mobile number upon registration, Facebook will frequently remind you to provide it to "make your account more secure." See Help Center: Why Am I Being Asked to Add My Phone Number to My Account?, Facebook, https://www.facebook.com/help/1137953062904148 (last visited June 22, 2016).

⁴ Step 1: Find Your Friends, Facebook, https://www.facebook.com/gettingstarted/?step=contact_importer (last visited October 21, 2016).

Adding a profile photo, Facebook reminds us, is the best way for other people to know who we are. Facebook's design lets us easily drop in employment, education, and professional information, as well as location data (past and present), contact information, a personal website URL, what gender of person we're interested in meeting, the languages we speak, our political and religious views, our relationship status, family members, and even how to pronounce our names. Life events—birth, graduation, marriage, braces removed, or that memorable trip to Florence—come next. We can add sports teams that we support, music that we enjoy, movies and television shows that we watch, books that we have read, and athletes, celebrities, and even restaurants that we like.

Once our profile is ready and we are active on the platform, data sharing only increases. We can upload photos of ourselves and others and "tag" them, or identify them with a link to their profile. Sometimes, users have to consent before someone else can tag them, but even if they decline, their unlinked name still appears on the photo or in its caption. We can send direct "Messages" to others or "Poke" someone to flirt. We can play any of the multitude of apps and games on the Facebook platform. We can post comments to a friend's "timeline" or tag them in posts on our own. We can also tag a location for those posts, so the Facebook universe knows where we are. And unless we restrict certain posts from appearing in our timelines, most of those posts will appear in a "News Feed," or the running list of stories, interactions, and contributions that we see when we log in. We can then comment on these posts, share them with our own network, share them on another network, like Twitter, and "react" to the post with one of six reactions: Love, Laugh, Wow, Sad, Angry, and, of course, Like.

II. Content Moderation and Privacy

A recent article in the magazine Wired made an important observation: "To communicate anything," the authors wrote, "Facebook can't communicate everything." This has always been

⁵ How Tagging Works, Facebook https://www.facebook.com/about/ tagging (last visited June 22, 2016).

⁶ See Jackie Cohen, 5 Rules of Facebook Flirting, Social Times (Apr. 14, 2009, 11:11 AM), http://www.adweek.com/socialtimes/facebook-flirting/ 308415 ("A girlfriend recently asked me to explain the concept of 'poking' on Facebook. I told her that it meant that someone is flirting with her, of course. I mean, isn't it obvious? Back in second grade, the boys would chase us around the room, grab, hit and poke us until we giggled so hard we had 'accidents.' Or was that just me?").

⁷ FarmVille Page, Facebook, https://www.facebook.com/FarmVille/ (last visited June 22, 2016). But see Saqib Khan, How to Block Annoying Game Requests from Your Facebook Friends, ValueWalk (Mar. 4, 2013, 3:17 PM), http://www.valuewalk.com/2014/03/block-game-requests-on-facebook/.

⁸ How Do I Post to My Timeline, Facebook, https://www.facebook.com/ help/1462219934017791 (last visited June 22, 2016).

⁹ According to some sources, there are seventeen billion location-tagged posts per day on Facebook. Kevin Ho, 41 Up-to-Date Facebook Facts and Stats, Wishpond (2015), http://blog.wishpond.com/post/115675435109/ 40-up-to-date-facebook-facts-and-stats

¹⁰ How News Feed Works, Facebook, https://www.facebook.com/help/ 327131014036297/ [https://perma.cc/GFR9-AX3B] (last visited June 22, 2016).

¹¹ Sammi Krug, Reactions Now Available Globally, Facebook (Feb. 24, 2016), http://newsroom.fb.com/news/2016/02/reactions-now-available-globally/.

¹² Emma Grey Ellis & Louise Matsakis, *Diamond and Silk Expose Facebook's Burden of Moderation*, WIRED (Apr. 14, 2018), https://www.wired.com/story/diamond-and-silk-expose-facebooks-burden-of-moderation/.

true of media platforms. Neither Salon nor the National Review can publish everything. Consider another analogy: Imagine if this hearing were conducted without rules or norms of appropriateness, where every member could scream into a microphone whenever she or her wanted and for however long she or her wanted, and every member of this panel could jump on this table, scream into our microphones at the same time and to whatever end. No one would learn anything, no one would get a point across. It would just be spectacle, and really bad, cacophonous, headache-inducing spectacle at that. Content moderation rules play similar roles. And they do not implicate the First Amendment in the traditional sense: We all may have a First Amendment right, subject to some limitations, to say what we want free of government intervention or censorship. But we don't have a First Amendment right to Facebook's amplification of our words.

My colleague Kate Klonick, soon to be an assistant professor of law at St. John's University School of Law, published an article in the Harvard Law Review recently in which she described how and why platforms like Facebook moderate content.¹³

First, the how. Content moderation is a complex ecosystem of technology and people. Moderation sometimes happens before content is published, in that time between you uploading a video and its publication. This is an automatic procress, using a data-trained algorithm that screens out things like child pornography, copyrighted material, or graphic violence.¹⁴

After publication, moderators either proactively remove content that violates platform rules, as with extremist or terrorist speech, or react when other users flag content as inappropriate. What happens then is a bit of a mystery because Facebook wants it that way. We don't know much about the precise guidelines Facebook uses to train its content moderators on how and when to remove flagged content. But we do know that Facebook employs a large layered team of people to do this work. Outsourced talent is supervised by more experienced content moderators, many of whom work outside the US or at call centers. The top level moderation happens back at headquarters, by lawyers directly responsible for content moderation policies and training. As Professor Klonick shows, these moderators work very much like a judge would: they are trained to exercise judgment based on rules set out by the platforms. And because these rules were created and promulgated by lawyers steeped in the American legal tradition, they reflect the free speech norms many of us learned in law school. ¹⁵

Now we can move on to why platforms do this. They are, as you know, under no legal obligation to do so. But they have normative and financial incentives. Every platform designs values into its code. Some social spaces are meant to be overtly uninhibited, like the darkest corners of 4Chan. But even 4Chan has some rules. Other social spaces promulgate rules that make them family friendly, or safe for kids. Facebook has corporate values, too. One of its central values, and one to which CEO Mark Zuckerberg referred frequently during his Senate testimony two weeks ago, is to bring friends together. As a result, and in response to the manipulation of the platform by

¹³ Kate Klonick, *The New Governors: The People, Rules, and Processes Governing Online Speech*, 131 HARV. L. REV. 1598 (2018).

¹⁴ Id. at 1636.

¹⁵ Id. at 1638-43.

fake news sources, Facebook redesigned its News Feed algorithm to privilege and prioritize posts from our friends rather than from media or business pages.

The result is that lots of content gets filtered out, but no more so from the right than from the left. When victims of racist, homophobic, and sexist tweets and comments post those comments to call out the aggressors, it is often the victims that are suspended or banned. Activists associates with the Black Lives Matter movement have reported just as many if not more take downs of images discussing racism and police brutality than any of the anecdotal evidence of suspensions or take downs on the right. Facebook has a long history of taking down photos of breastfeeding mothers. In 2014, the company suspended drag performers for using their drag names. An advertisement for a book featuring an LGBT vision of Jesus was rejected. The artist, Michael Stokes, who is best known for his portraits of soldiers wounded in combat, has seen his portraits of gay soldiers taken down and his account blocked. At a minimum, mistakes happen on the left just as much as they happen on the right.

Consider also what online social network platforms would look like without content moderation. Danielle Citron, a professor at the University of Maryland Francis King Carey School of Law, has showed how gendered cyberharassment proliferates when platforms like Twitter and 4Chan do nothing. They become havens of hate that function to silence women's (and others') voices. There is nothing the drafters of the First Amendment would hate more than that! In my own work, I have seen how queer-oriented geosocial dating apps that ignore content violations like racist and transphobic profiles become havens for nonconsensual pornography, commonly known as "revenge porn," and cause untold emotional damage to victims. As a result, marginalized populations are squeezed from both sides: too much or inartful content moderation takes down too many posts about queer or racial issues, leaving us silenced and invisible; too little moderation hands the platform over to violence, hate, and harassment that silences us anyway.

Why does this happen? Any content moderation that occurs algorithmically is subject to problems inherent in machine learning: biased data and an inability to understand context, for example. Data-trained algorithms that determine what we see on our News Feeds also can't tell the difference between two media articles of wildly different accuracy. They don't know off

¹⁶ Sarah Myers West, Nicolas Suzor, & Jillian C. York, *How Facebook Can Prove It Doesn't Discriminate Against Conservatives*, SLATE (Apr. 19, 2018), https://slate.com/technology/2018/04/how-facebook-can-prove-it-doesnt-discriminate-against-conservatives.html.

¹⁷ *Id*.

¹⁸ Lisa Belkin, *Censoring Breastfeeding on Facebook*, NEW YORK TIMES (Dec. 19, 2008), https://parenting.blogs.nytimes.com/2008/12/19/censoring-breastfeeding-on-facebook/.

¹⁹ Vauhini Vara, *Who's Real Enough for Facebook*, NEW YORKER (Oct. 2, 2014), https://www.newyorker.com/business/currency/whos-real-enough-facebook.

²⁰ Bil Browning, *Facebook Apologizes for Banning Gay Photographer Michael Stokes Over Photos of Wounded Soldiers*, THE ADVOCATE (Sept. 24, 2015), https://www.advocate.com/arts-entertainment/2015/9/18/facebook-targets-gay-photographer-again-concerning-photos-wounded.

²¹ Danielle Keats Citron, Hate Crimes in Cyberspace (2014).

²² Ari Ezra Waldman, *Safe Social Spaces* (forthcoming).

hand that an article claiming that a former presidential candidate sold weapons to ISIS is pedaling a false, click-bait conspiracy theory. All they know is that a herd of highly motivated users in tight, hyperpartisan networks are clicking on it, sharing it, liking it, sharing it again, commenting on it, and sharing it over and over again. To the algorithm—and to Facebook—this is great. Engagement is at the core of Facebook's business model because it allows the company to learn more about its users and charge higher prices for its targeted advertising tools. This problem, at least, is designed in.

When humans get involved, we are left with a couple of possibilities, none of which is an anti-conservative bias. Either the bias swings both ways or perhaps content moderation at the human level is more art than science, and Facebook doesn't have enough Rodins, Rembrandts, and Vermeers. Although Facebook needs to do better, the steps we know it is taking will not solve the problem because, as we know from Facebook CEO Mark Zuckerberg's recent testimony, the company wants artificial intelligence (AI) and data-trained algorithms to do more of the work.

Mr. Zuckerberg frequently attempted to assure the panel of Senators that Facebook was working on artificial intelligence tools to address all sorts of problems, from fake news to online harassment. This makes sense, at least from Facebook's perspective. Facebook is a big company, and an even bigger platform. And, as Silicon Valley likes to say, AI scales, humans do not. That is, it's a lot harder (and far more expensive) to hire an army of people to effectively monitor and address rule violations than it is to write up an algorithm to spot offending content, train it on terabytes of data, and let it loose on the Facebook platform. AI is fallible, and not yet as good as you think it is. It doesn't understand context. It has trouble with idioms.²³ It can be biased, even racist.²⁴ An almost religious reliance on the capacity of AI and machine learning to solve Facebook's problems represents a vision with a big blind spot, 25 like when the platform asked users to send in their naked pictures so they can train their AI to spot nonconsensual nude image sharing.²⁶ More importantly, Facebook's problem isn't a scale problem. It didn't fail to pick up some misinformation, Russian agents, or data misuses because the Facebook platform is too big. It failed to identify them as bad conduct in the first place. And it did so because it operates without headwinds, friction, or regulation on how it designs its platform, gathers and manipulates data, and treats its users.

Content moderation on Facebook is part of a larger narrative about how the lack of even reasonable regulation allows Facebook to take a cavalier approach to our privacy, safety, and civic discourse. This was on stark display when Facebook allowed data on 87 million of its users to be accessed in violation of its Terms of Service.²⁷ So although the evidence isn't there to

²³ James Vincent, *Why AI Isn't Going to Solve Facebook's Fake News Problem*, THE VERGE (Apr. 5, 2018), https://www.theverge.com/2018/4/5/17202886/facebook-fake-news-moderation-ai-challenges.

²⁴ Julia Angwin, Jeff Larson, Surya Mattu & Lauren Kirchner, *Machine Bias*, PROPUBLICA (Mary 23, 2016), https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing.

²⁵ Brett Frischmann & Evan Selinger, Re-Engineering Humanity (2018).

²⁶ Madison Malone Kircher, *Facebook Would Like You to Send Them Your Nudes in the Name of Safety*, New York Magazine (Nov. 8, 2017), http://nymag.com/selectall/2017/11/facebook-wants-users-to-send-nudes-to-stop-revenge-porn.html.

²⁷ Issie Lapowsky, *Facebook Exposed 87 Million Users to Cambridge Analytica*, WIRED (Apr. 4, 2018), https://www.wired.com/story/facebook-exposed-87-million-users-to-cambridge-analytica/.

suggest a systemic bias when it comes to content moderation, there is evidence that Facebook, when left to its own devices, cares very little about the safety of our data. It only cares about collecting it. Reasonable steps must be taken to reign in Facebook's near unlimited power to violate our trust.²⁸

On the ground, privacy operates quite differently from content moderation. In *Privacy on the* Ground, Kenneth Bamberger and Deirdre Mulligan showed that empowered chief privacy officers (CPOs) are creating strong data protection policies that put users and user trust first.²⁹ They argued that American CPOs are taking advantage of gaps in U.S. privacy law to innovate and solve problems creatively, adopting a far more user-friendly approach to their companies' data privacy obligations than the law on the books would seem to require. But that user-friendly approach does not always make its way into design; Snapchat, 30 the initial version of Pokémon Go,³¹ and Uber's mobile app,³² among others, seem to have been designed without our privacy in mind. In these cases, any "company law" of privacy is not being operationalized on the ground. CPOs may set policies at the top, but they alone cannot embed robust privacy norms into the corporate ethos, practice, and routine. Nor do they design the very data hungry products that scream out for privacy protection. There are other people involved. Engineers, coders, and other technologists create the platforms and products that sweep in user data. Attorneys work with their corporate clients to turn internal data use practices into privacy policies. A phalanx of product managers shepherd concepts from beginning to end. For a CPO's vision of privacy to make its way into her company's products, these workers have to implement it. As such, any narrative of privacy on the ground cannot stop with CPOs. If we want the mobile apps, websites, robots, and smart devices we use to respect our privacy, we need to institutionalize robust privacy norms throughout the corporations that make them, including among those designing the products we use every day. That is not happening at Facebook, or at a host of other technology companies.³³

The data Facebook has on us, the vast majority of which is collected passively, without us even knowing, is collected in a regulatory and legal void. We have no comprehensive data privacy law in this country. The privacy laws we do have apply in relatively narrow contexts, not applicable here. But leaving things up to Facebook is a recipe for disaster. Take a look at Mr. Zuckerberg's testimony again.

²⁸ See Ari Ezra Waldman, Privacy as Trust: Information Privacy for an Information Age (2018).

²⁹Kenneth A. Bamberger & Deirdre K. Mulligan, Privacy on the Ground: Driving Corporate Behavior in the United States and Europe 6 (2015)

³⁰Complaint, *In the Matter of Snapchat, Inc.*, FTC File No. 132 3078, Docket No. C-4501 (F.T.C. May 8, 2014) [hereinafter, Snapchat Complaint], *available at* https://www.ftc.gov/system/files/documents/cases/140508snapchatcmpt.pdf.

³¹See Laura Hudson, *How to Protect Privacy While Using Pokémon Go and Other Apps*, N.Y. TIMES (July 12, 2016), http://www.nytimes.com/2016/07/14/technology/personaltech/how-to-protect-privacy-while-using-pokemon-go-and-otherapps.html? r=0.

³² See Lily Hay Newman, *Uber Didn't Track Users Who Deleted the App, but it Still Broke the Rules*, WIRED (Apr. 24, 2017 6:58 PM), https://www.wired.com/2017/04/uber-didnt-track-users-deleted-app-still-broke-rules/ (discussing the Uber app's use of fingerprinting to identify users even after they have deleted the app from their phones).

³³ Ari Ezra Waldman, *Designing Without Privacy*, 55 HOUSTON L. REV. 659 (2018).

A common theme in his responses was his professed desire to give users more "control" over data. Mr. Zuckerberg used the word 54 times. All of the Senators at the hearing used it 11 times. But it is not at all clear what more control means or what it will accomplish. If, by control, Facebook means more buttons to click, more confusing words to read in a privacy policy, and just more of the same tweaks we see from Facebook every time it breaches our privacy and apologizes, we are going to see something like Cambridge Analytica happen again. Privacy policies are confusing, ³⁴ inconspicuous, ³⁵ and no one reads them. ³⁶ They are long ³⁷ and difficult to understand. ³⁸ Even privacy experts find them misleading. ³⁹ And a litany of scholars and experts have shown that although privacy policies are at the foundation of our self-regulatory approach to data privacy and are supposed to provide us with notice of data use practices and the choice to opt out, they, in practice, provide neither sufficient notice nor choice.

III. Next Steps

On its own, Facebook is unlikely to take any measure that creates friction with user engagement. Clicks, or more broadly, engagement on the platform, is the lifeblood of the Facebook business model. The more we like, the more we comment, the more pictures we upload, and the more we simply browse the Internet, the more Facebook knows about us, the better it can train its News Feed and facial recognition algorithms, and the more money it can charge those who want to target us for advertisements. So, anything that increases engagement is good for the bottom line. Anything that gets in the way of data collection is bad for business. Hoping that Facebook will regulate itself to protect our privacy and safety is, therefore, a fool's errand.

There are, however, reasonable steps Congress and regulators can take to protect us against Facebook's worst privacy failures.

1. *Take design into account*. Technology design, or the architecture of a platform, is central to protecting privacy. Most data is collected behind a user interface, without us having to key in information. That means that how a product or website is designed has a

³⁴ Joel R. Reidenberg et al., *Disagreeable Privacy Policies: Mismatches Between Meaning and Users' Understanding*, 30 BERKELEY TECH. L.J. 39, 40, 87-88 (2015) ("[A]mbiguous wording in typical privacy policies undermines the ability of privacy policies to effectively convey notice of data practices to the general public.").

³⁵ Janice Y. Tsai et al., *The Effect of Online Privacy Information on Purchasing Behavior: An Experimental Study*, 22 INFO. SYS. RES. 254, 266-67 (2011).

³⁶ See, e.g., George R. Milne & Mary J. Culnan, Strategies for Reducing Online Privacy Risks: Why Consumers Read (or Don't Read) Online Privacy Notices, 18 J. INTERACTIVE MARKETING 15, 15 (2004); Jonathan A. Obar & Anne Oeldorf-Hirsch, The Biggest Lie on the Internet: Ignoring the Privacy Policies and Terms of Service Policies of Social Networking Services (forthcoming), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2757465 [https://perma.cc/D7M2-JWSW].

³⁷ George R. Milne, Mary J. Culnan & Henry Greene, *A Longitudinal Assessment of Online Privacy Notice Readability*, 25 J. Pub. Pol'y & Marketing 238, 243 (2006). Lorrie Cranor estimates that it would take a user an average of 244 hours per year to read the privacy policy of every website she visited. *See* Lorrie Faith Cranor, *Necessary but Not Sufficient: Standardized Mechanisms for Privacy Notice and Choice*, 10 J. on Telecomm. & High Tech. L. 273, 274 (2012). This translates to about 54 billion hours per year for every U.S. consumer to read all the privacy policies she encountered. *See* Aleecia M. McDonald & Lorrie Faith Cranor, *The Cost of Reading Privacy Policies*, 4 I/S: J.L. & Pol'y For Info. Soc'y. 540, 563 (2008).

³⁸ See Mark A. Graber, Donna M. D'Alessandro & Jill Johnson-West, *Reading Level of Privacy Policies on Internet Health Web Sites*, 51 J. FAM. PRAC. 642, 642 (2002).

³⁹ Reidenberg et al., *supra* note 34, at 87-88.

significant impact on data collection and user safety. But design principles are often neglected, both in law⁴⁰ and on the ground when companies are making new technology products. Requiring companies to take organizational and technical measures to embed privacy into data processing, technology products, and corporate structures is known as "privacy by design." It is part of the General Data Protection Regulation, taking effect in under a month in Europe,⁴² and it has been endorsed by the Federal Trade Commission⁴³ and the Office of the Attorney-General of California. When this Congress acts to protect the privacy of all Americans, it should include "privacy by design" mandates, as well.

- 2. Regulate artificial intelligence. We cannot hope that Facebook will adequately regulate itself. We have hoped that since 2007, and Facebook has continued to misuse our data, apologize, and go right back to its bad behavior. At a minimum, the artificial intelligence tools Facebook plans to use to right its ship must be regulated in many of the ways that University of Maryland law professor Frank Pasquale has recommended in his book, Black Box Society. Facebook must be transparent about how its AI works, about how and where AI is being deployed, and about the values embedded in those algorithms. If Facebook had been more transparent about its technical processes and its values, users and businesses would be less surprised when posts get taken down or when audiences narrow. But transparency is only the beginning. Facebook users deserve to understand and evaluate the values embedded in how those algorithms are designed.
- 3. Recognize that we entrust our data to companies like Facebook. Facebook is not a passive conduit of information. We recognize that we give over information to Facebook in exchange for a free service that "scratches its users social itches," to use James Grimmelmann's phrase. But that does not mean we relinquish that information with the expectation that it will be seen and used by everyone under the sun. Rather, we entrust our information to Facebook under specific circumstances and for specific purposes. Facebook should be understood as a trustee of that information, as Yale Law School Professor Jack Balkin has argued, with many of the legal implications that come with it.

⁴⁰ Woodrow Hartzog, Privacy's Blueprint: The Battle to Control the Design of New Technologies (2018).

⁴¹ Ari Ezra Waldman, *Designing Without Privacy*, 55 HOUSTON L. REV. 659 (2018).

⁴² See General Data Protection Regulation, Art. 25, "Data protection by design and by default", http://ec.europa.eu/justice/data-protection/reform/files/regulation oj en.pdf (last visited Jan. 17, 2018).

⁴³ Fed. Trade Comm'n, Protecting Consumer Privacy in an Era of Rapid Change: Recommendations for Businesses and Policymakers, at 22 (2010), *available at* https://www.ftc.gov/sites/default/files/documents/reports/federal-trade-commission-report-protecting-consumer-privacy-era-rapid-change-recommendations/120326privacyreport.pdf.

⁴⁴ CAL. DEP'T OF JUSTICE, OFFICE OF THE ATTORNEY GENERAL, PRIVACY ON THE GO: RECOMMENDATIONS FOR THE MOBILE ECOSYSTEM, at 1, 4 (Jan. 2013), *available at* https://oag.ca.gov/sites/all/files/agweb/pdfs/privacy/privacy_on_the_go.pdf ("Our recommendations, which in many places offer greater protection than afforded by existing law, are intended to encourage all players in the mobile marketplace to consider privacy implications *at the outset* of the design process.") (emphasis in original).