Comments of U.S. Public Interest Research Group
and the Center for Digital Democracy

Request for Information Regarding the Use of Mobile Financial Services by Consumers and Its Potential for Improving the Financial Lives of Economically Vulnerable Consumers

Consumer Financial Protection Bureau

Docket No. 2014-13552

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1. Summary

The U.S. Public Interest Research Group (U.S. PIRG) and the Center for Digital Democracy (CDD) commend the CFPB for its timely and much-needed review of the mobile platform-based financial services marketplace. We agree with Director Cordray that mobile technologies and services pose both opportunities and risks to consumers, their privacy, and to the kinds and price of services they are offered.[1] As the primary digital device, mobile phones have become a fundamental part of our daily lives.[2]

Financial services companies are at the forefront of industries relying on mobile devices and services to identify potential customers, sell additional products, provide new forms of payment, and offer credit and banking services.[3] Mobile consumer advertising and data-driven targeting practices for the financial, retail, and other key sectors have been shaped by industry research and standardization initiatives, as well as by market consolidation.

We believe, however, that it is important for the CFPB to understand more fully how mobile-based financial services are parts of a more comprehensive and interlinked digital applications and marketing environment. This is a critical period for the CFPB to ensure that the public receives the necessary consumer safeguards, especially for financial applications and for consumer privacy, as Americans rely on mobile devices for banking, payments, credit applications, shopping, e-commerce, and other related services.

USPIRG and CDD call on the CFPB to recognize that it must protect consumers by developing a comprehensive set of principles and safeguards for the overall digital marketplace, while also ensuring that existing consumer laws are effectively applied to online financial services.

We also concur with other comments from consumer organizations in this docket, such as the comprehensive National Consumer Law Center filing, which describe the critical need to ensure that consumer protections are extended and enhanced in the mobile marketplace.

A rulemaking following up on this request for information is required, especially to ensure that financially at-risk consumers actually benefit from mobile and digitally based financial services. The availability of financial services over a mobile device should be considered neither a panacea nor the answer to the major inequities in our society. While mobile provides greater opportunities for assisting the economically at-risk, that platform will also pose new threats to their economic well-being and privacy. As this comment discusses, contemporary mobile practices that take advantage of the powerful capabilities of personalized and pervasive digital marketing raise questions about whether at-risk consumers will be assisted in the long term. The array of tools and techniques that is already available to target ("monetize") economically vulnerable consumers more effectively could—unless addressed by the agency now—undermine and erode their ability to enhance their financial security.

The CFPB should also leverage its efforts by assisting other agencies that have primary jurisdiction over broadband communications services. For example, the Federal Communications Commission (FCC) oversees key programs promoting mobile and digital affordability for consumers. Its universal service policies now address wireless services, and its action on the pending Comcast/Time Warner Cable merger, for example, or its decisions concerning Network Neutrality proposals, have the potential to help—or harm—underserved and at-risk populations in their efforts to gain access to affordable broadband. The CFPB can comment on FCC proceedings or otherwise assist its staff, just as other agencies comment on the Bureau's proposals.[4]

12 USC Section 5511 (Subsections a-c) give the CFPB broad authority to conduct this important inquiry. "The Bureau shall seek to implement and, where applicable, enforce Federal consumer financial law consistently for the purpose of ensuring that all consumers have access to markets for consumer financial products and services and that markets for consumer financial products and services are fair, transparent, and competitive." Further, Subsection (b) provides, *inter alia*, that the CFPB's Objectives in implementing this purpose include ensuring that "(1) consumers are provided with timely and understandable information to make responsible decisions about financial transactions; (2) consumers are protected from unfair, deceptive, or abusive acts and practices and from discrimination."

2. Introduction

Few consumers understand how mobile and other digital marketing for financial products and applications actually operate.[5] A mobile device's unique capability to identify consumers' real-time location, their geographic history (where they go and when), spending habits, and other data, and to enable highly personalized real-time targeting, has created a digital financial marketing environment that is powerful but also opaque. Consumers are not given meaningful ways to control how their data are used to make financial decisions about them on mobile and allied online platforms.[6] As mobile devices quickly become our digital "wallets," with real-time payment and other financial applications, they will play an even greater role in our everyday financial lives. Yesterday's announcement from Apple about its new iPhone-based payment system reflects the overall direction of the mobile marketing industry, with the mobile phone as the key device in the digital era, and an essential part of our everyday lives.

We call on the CFPB to initiate a broad rulemaking to ensure that consumers can effectively use mobile and related applications without placing their privacy at risk or exposing themselves to new forms of predatory lending or other harmful practices. The CFPB has a unique role to play, ensuring (1) equitable and affordable access to mobile phone services for low-income consumers; (2) the provision of transparent, non-discriminatory, and fair digital services delivered by the financial services sector; and (3) the protection and control of consumer information through rules that protect privacy.[7] Without question, the convenience and power of mobile devices and applications provide financially at risk, unbanked, and other vulnerable consumers greater opportunities to save money on banking transactions and payments, as well as additional ways to build financial resources, make more effective decisions on purchasing, etc. But the availability of financial services over a mobile device should not be considered a panacea for redressing the major inequities in our society, as these devices will bring both opportunities to aid consumers as well as new challenges that they must confront.

3. Examining the Interconnected Mobile and Digital Landscape[8]

The CFPB, however, cannot protect the interests and privacy of financial consumers by addressing only mobile applications. The online industry views the mobile platform as an integral part of a holistic "marketing and media ecosystem"—and the CFPB as well should recognize that it must protect consumers by developing comprehensive principles and safeguards for the digital marketplace.[9] The provision and marketing of financial services on mobile devices are integrated into a broader set of industry practices on all digital media. Increasingly, consumers are identified and tracked across all "screens," which, due to our often-simultaneous use of multiple devices, enables far more effective commercial targeting. Practices designed to track and target consumers while they are on personal computers, such as through the use of "cookies" and other persistent identifiers, have migrated to mobile devices.[10] Data collected from consumers via desktop computer applications involving search or e-commerce, in-store loyalty programs, offline databases, and more, directly influence how these individuals may be treated when they seek mobile financial services. Key digital marketing principles and practices, such as how to utilize "engagement" strategies that take advantage of consumers' subconscious and emotional behaviors, influence how the online marketplace addresses consumers, including on mobile devices.[11]

While some may argue that the digital and mobile marketplaces are changing too rapidly to enable effective regulation, we urge the CFPB to reject that specious argument. The primary commercial business model for digital media—known as one-to-one marketing—was developed during the Internet's earliest days.[12] Under this paradigm, all of an individual's online data are collected and analyzed so that person can be targeted with highly personalized marketing. While data-driven micro-targeting has evolved from the desktop to now include all of our digital media experiences, the principle is the same.

All of a consumer's data are collected and used, regardless of "screen" or application used.

4. The "Mobile Moment"[13]

Mobile devices now dominate our use of digital media, as our time on phones, tablets, and "apps" outpaces our involvement with other forms of online media.[14] Financial services firms are the second-largest spender on digital marketing (after the retail industry). According to eMarketer, financial services companies will spend $6.20 billion in 2014 for paid digital media services, a figure that is predicted to grow to $9.57 billion by 2018. The majority of this spending—62 percent—is for "direct response," with the remaining 38 percent dedicated to promoting their brands. (Direct response is defined as "designed to elicit a specific call to action that prompts a target audience to respond immediately and directly to an advertiser.")

The U.S. financial services industry is expected to spend $2.20 billion on mobile advertising this year, again the second highest spender in its category. As eMarketer explained, "for many large advertisers in financial services, the shift to mobile is well underway."[15] Americans have grown comfortable buying products and services via mobile devices. Mobile commerce (M-commerce) generated around $25 billion in revenues in 2013, according to comScore, through purchases made via mobile phones and tablets.[16]

Financial marketers are also responding to the growth of the mobile financial services marketplace. Nearly 84 million adults in the U.S. engaged in some form of mobile banking last year. Mobile banking growth is being facilitated by a variety of factors, including the rapid adoption of mobile/smartphones, "robust functionality" (such as mobile remote deposits, peer-to-peer payments, etc.), larger screens, and "concerted marketing and advertising" campaigns by financial companies to "push customers to use mobile banking." The adoption of financial apps that allow for more convenient purchasing of products, even loans, will continue to drive the growing reliance on mobile devices.[17] Leading companies openly discuss how our relationships with mobile phones and services have a uniquely "addictive" quality that helps foster their use.[18]

5. The Mobile Consumer Journey[19]

A robust and comprehensive digital marketing system that takes advantage of consumers' digital lifestyles, especially their use of mobile phones, has emerged. Key features of this system include widespread data gathering and analysis; use of real-time location; specialized mobile ad-targeting services that reach a person in real time; formats for ads and commercial content specifically honed for the mobile platform; measurement services that identify how we interact with mobile applications; apps and other specialized applications that make ongoing targeting easier to accomplish; frameworks to utilize mobile and other digital "path-to-purchase" strategies; a focus on multicultural consumers' use of mobile services; and "Big Data"-driven technologies and practices that incorporate consumer mobile data into comprehensive and actionable user profiles. For example:

- Mobile data collection: Mobile devices and applications enable marketers to seamlessly gather and analyze information on consumers, which can be used to target them with personalized advertising and commercial services. Mobile data are integrated with other profile information on consumers that is gathered from both online and offline sources, as well as from other digital services.[20]

- Growing use of hyper-location: There is widespread deployment of locational-based collection and targeting technologies, involving "Beacons," "geo-fences," "tiles," and other geo-technologies that permit highly granular geographic-focused marketing practices. Geographic-based targeting, combined with data-profiling predictive analytics, can lead to potentially discriminatory practices that further sub-divide and undermine a neighborhood based on race, ethnicity, income, buying behaviors, etc. Financial marketers' increasing ability to take advantage of consumers' real-time location and interest in a product and service to make an offer may not be in their best long-term interest.[21]

- Mobile data-driven targeting networks: An array of companies provide a highly sophisticated set of services to reach mobile consumers. Through the growing practice of "programmatic" or "audience" buying, an individual mobile consumer can be identified and targeted in milliseconds, using data generated from data brokers and other sources. The right to reach a specific consumer can be sold to the highest bidder via an open "auction," or through a special private sale.[22] Digital ad automation enables the use of data to identify someone as "waste"—a consumer not to be served an ad or offer. **Action Item:** The CFPB should ensure that decisions regarding who is to be considered "waste" or a "target" are transparent and accountable to the individual consumer.[23] Few consumers know—let alone can control—how these mobile targeting firms, which are used by financial services companies and others, operate.

- Mobile ad and marketing application standardization: The mobile advertising and marketing industries have developed standardized practices and formats to create and deliver mobile advertising applications, such as immersive "rich media," as well as interactive ad "units" designed to trigger consumer behaviors. Financial services companies are using these services.[24]

- Mobile measurement infrastructure: In digital media, the delivery and use of content by consumers are integrated with measurement tools, attribution analysis, and related metrics. Financial marketers use measurement applications to help identify whom to target and how to target mobile consumers. Increasingly, near or real-time measurement of a consumer's interaction with an ad or content can be used to change the elements of a marketing campaign (called "inflight" changes).[25]

- Mobile app targeting: A comprehensive system is in place to identify consumers who can be targeted to get them to download and use an app. App business models also foster ways to further “monetize” app users. Both Facebook and Google, for example, have extensive resources to facilitate how app developers can better target consumers.[26]

- Mobile Path to Purchase: Mobile and other digital marketers have developed a framework designed to promote ongoing tracking and commercial targeting of consumers, from online to in-store. Affiliated with an approach called “Zero Moment of Truth,” these key paradigms illustrate the central role mobile devices play in the financial lives of consumers, and how marketers have developed a robust regime to take advantage of their use.[27]

- Multicultural mobile targeting: Industry research shows that multicultural consumers rely on mobile and other digital media services often in unique and innovative ways, and help influence the behavior of others. A distinct digital marketing infrastructure has developed for specifically targeting Hispanics and African Americans.[28]

- Big Data and mobile applications: The same techniques and technologies that gather, analyze, and make information on individual consumers actionable (such as with data management platforms, predictive analytics, etc.) also incorporate consumers’ mobile-related data. This information is melded with other online and offline profile data, as financial marketers and others seek to gain and use a comprehensive view of consumers.[29]

Without question, the convenience and power of mobile devices and applications provide financially at-risk, unbanked, and other vulnerable consumers greater opportunities to save money on banking transactions and payments, have additional ways to build financial resources, make more effective decisions on purchasing, etc. But enthusiasm for the potential of mobile services to ultimately assist at-risk Americans should be tempered by addressing the commercial imperatives of the financial marketplace, where the underbanked are seen as an important new revenue-generating market for banks and other financial services companies. As a 2014 report from data broker Acxiom observed, these consumers are “a new frontier for retail bank growth.” Another study on the revenue possibilities noted as well that “the unbanked and underbanked represent future profitable customers for traditional financial services institutions.” Key to serving this market, these and similar reports explain, is the widespread adoption of mobile and digital communications by underbanked and under-served consumers. Acxiom and other marketers increasingly offer an array of highly sophisticated digital marketing services for more effective personalized targeting of this market segment. But such practices directed towards financially vulnerable consumers have consequences.[30] It is critical that the CFPB’s actions encourage marketplace actions that promote financial opportunity and provide unbanked and underbanked consumers access to asset-building products and to all the other benefits of the regulated, insured financial system, rather than allow firms to target these consumers for second-class products.[31]

For example, consumers urged to apply for payday loans via an engaging, geo-targeted, real-time offer based on their digital profile will not result in protecting their financial interests (and raising as well the ability of consumers to read the digital "fine-print" about a loan's terms and conditions on a small screen). Similarly, a loan offered during the holidays—made precisely when consumers are shopping for their family in the toy aisle and their data profile shows them already in debt or using expensive forms of credit—will not help them in the long term.[32] Nor will "bait-and-switch" tactics that offer free service one day and tack on fees the next. Clearly, there is much work for the CFPB to do to protect the interests of consumers in the mobile financial marketplace.

6. Responses to Specific Requests for Comment

USPIRG and CDD urge the CFPB to address the following issues raised in this Request for Information:

Question 5b. Fostering affordable access to mobile services: The CFPB should work with the Federal Communications Commission to expand how "Universal Service," "E-Rate," and other programs designed to redress the digital divide can help support broadband mobile connections to communities and individual consumers.[33] The agency should participate at the FCC to ensure that if broadband-related mergers are determined to be in the public interest and therefore allowed to proceed, then the merger approval includes robust mandatory conditions to expand wireless access to low-income communities in order to expand the availability of mobile financial products.[34] Financial services companies should also be encouraged to provide free or low-cost data access for their apps and other online services—without requiring consumers to have their information used in exchange for such an arrangement. The CFPB should also work with the FCC and nonprofit technology organizations, municipalities, and others to promote the development of community, not-for-profit broadband networks.[35]

6. Mobile financial services marketing is already pervasive online, through search engines, mobile ad networks, apps, social media, mobile video, and other applications. Underserved populations rely primarily on their mobile devices to access the Internet, more so than other demographic groups. But given their capability to deliver highly targeted financial offers via mobile devices in real time—identifying that a consumer is a candidate for a payday or some other expensive financial product, and incorporating appealing multimedia imagery and digital ad formats designed to elicit subconscious-oriented "engagement"—mobile marketers, unless regulated, have both the technical capability and the profit motive to place financially underserved Americans at risk.[36]

11. The CFPB should review the role of mobile-oriented loyalty programs, to identify what data are collected, how they are analyzed, and how specific targeted offers are made. Loyalty programs are designed to spur additional spending, by taking advantage of consumers' profiles to deliver highly personalized promotions or offers in real-time (and to various family members). The growing role of data-driven loyalty programs may

negatively impact a consumer's financial status in both the short and longer term. And there are, of course, key privacy issues to be addressed as well.[37]

16. The CFPB must analyze the impact that the real-time and location-aware financial mobile services marketplace will have on economically vulnerable consumers. While there will be legitimate advantages for consumers to obtain product information, pricing options, and discounts, the overall priorities of the Big Data-driven mobile marketing environment will be to get consumers to spend. The CFPB should issue regulations regarding how real-time financial offers are made to consumers, ensuring that companies don't engage in unfair point-of-presence promotion of loans (including where incentives, such as rewards, points, and other inducements are used to trigger decisions that could harm a consumer).[38]

17e. The Bureau should review the mobile and digital marketing practices that have been deployed to target financially at-risk consumers, youth, rural Americans, Hispanics, including Spanish-language and other non-English-dominant groups, as well as African Americans. As we previously stated, many of these groups are already the focus of specialized digital marketing and advertising technologies and practices. The ability to target individual mobile users with tailored offers based on where they live, how much money they earn, the language they speak, their credit history, and behavioral interests allows for far greater segmentation—and potential discrimination—than we have witnessed so far. Economically vulnerable consumers could be unfairly singled out by this process and offered financial opportunities that undermine their ability to be independent. The very same personalized targeting apparatus could also purposefully bypass them with better offers, if they are labeled and scored—unbeknownst to them—as not providing long-term financial rewards.

Adolescents are an important focus for online and mobile marketers, given their status as "digital natives." These young people confront an ever-growing mobile-marketing apparatus designed to get them to spend money on brands and products. Multicultural youth, in particular, are a key target for greater consumer spending, given their use of mobile devices and growing economic influence. Such targeting of youth can place their families at further economic risk. The CFPB should develop specific safeguards to ensure that young people are not unfairly treated, placing new economic pressures on their parents or caregivers.[39]

18. There is widespread and continuous collection and use of consumers' financial and related data that have a direct impact both on their own welfare and on that of their families. The amount and diversity of data gathered from mobile and other digital services today provide a detailed dossier on our spending behaviors and other economic activities. Consumer financial data are at the core of contemporary consumer targeting practices for mobile devices and other online platforms. It is incumbent upon the CFPB to ensure that consumers' financial privacy is protected when they are online, including on the mobile platform. Despite calls for privacy regulation made by the FTC and consumer groups during the 1990's, there has been little progress. Without CFPB action, it is likely that effective rules protecting consumer financial privacy will not be

forthcoming at this critical moment. The CFPB should build on the Administration's Consumer Privacy Bill of Rights, proposed more than two years ago, as well as on the work already done by the FTC, to develop rules that place consumers' financial data under their control.[40]

While the Federal Trade Commission has addressed a number of key mobile data practices, and has articulated its own privacy framework, it does not have the ability to enact regulatory safeguards.[41] Nor does it have sufficient resources to effectively assess the overall and specific impact of mobile and related digital applications on consumer financial services. The online industry has established a number of self-regulatory programs, including on privacy.[42] But these guidelines are inadequate, fail to address actual digital and mobile media data-gathering and -use practices, and have been criticized by experts as well as by regulators. Nor have stakeholder discussions on privacy led to any significant change in how consumer data are used today.[43]

USPIRG and CDD believe that a formal rulemaking to address consumer financial privacy will provide the agency with sufficient information on current industry practices that will lead to sensible and effective policies for the benefit consumers and the financial services industry alike.

28. Greater segmentation, via expansive, real-time, and continuous data collection and analysis (such as for scoring), is one of the fundamental elements in the digital marketplace. All of the data that are gathered about us today—from our use of mobile phones, PC's, loyalty cards, etc.—are flowing into Big Data platforms. Massive amounts of online and offline information are processed in milliseconds, helping construct elaborate personal profiles. These digital dossiers are scored and used to determine how we are treated by the marketplace. For example, a score can be based on what a consumer's long-term value for a particular company or product might be. Our behaviors may lead to scoring that triggers offers for high-cost payday lending, insurance, or educational loans. Big Data scoring practices enable companies to bypass or ignore certain individuals, offering special deals to some and higher prices to others. All of this occurs without the understanding, let alone consent, of the individual. In a rulemaking, the CFPB should assess how such segmentation, including real-time scoring and the variables used therein, impacts financially at-risk and other consumers. The Bureau should develop rules that ensure consumers have access to this scoring data and can correct or challenge them if necessary.

The CFPB should also review how data security is addressed by the financial services marketplace and help protect the public from data breaches that expose their sensitive information.

30. Texting is an app that can be used on plain old cell phones. In our view, although a number of credit card companies have provided "low-balance" and "payment due" warning apps—largely to their smart-phone customers—there is tremendous untapped potential for financial services providers to use texts to nudge their more at-risk consumers, who may use plain cell phones, into better financial behavior. However, the

tradeoffs involved need to be explored, since text message services, despite their low marginal cost, are abused as profit centers by many telecommunications carriers, although banks generally provide the services for free.

33. This question asks (prior to sub parts 33a and 33b) one of the most important questions in the entire Request for Information:

> *Are additional financial consumer protections needed to protect low-income or otherwise economically vulnerable consumers in the use of mobile financial services? Please explain.*

Yes, in particular additional protections are needed in connection with the exploding use of non-transparent lead-generation websites and auction tools to categorize and pass consumers off to service providers that often will not be the best choice for a consumer. As the Bureau knows, lead generation has migrated online, embracing today's Big Data-driven digital age and taking advantage of our daily use of mobile devices, social networks, and websites. Credit card and other financial companies, auto dealers, for-profit schools, and many other businesses pay online lead generators to gain access to "qualified potential customers" along with an array of information on them, including their email address, telephone number, and the websites they visit and other online behaviors. Often, as in the case of lead-generation use by payday lenders or for-profit schools, leads are purchased in a reverse auction. Generally the firm with the least-consumer-friendly product bids the most and wins that consumer as a lead. In such a marketplace, consumers, particularly at-risk consumers, lose.

Online lead generation in the U.S. is a big business, with at least $1.75 billion spent by advertisers in 2013 to find "potential customers online." Consumers aren't informed that when they conduct a search on their mobile phones for financially related products and services, or interact with an ad, they may be put in contact with lead generators. Nor are consumers aware that their privacy is at risk, through mobile lead-generation practices that include real-time verification of consumers' information (such as when they begin filling out a form on their phone). Mobile sites created for lead-generation purposes can be structured to trigger a "click-to-call" function that will bring the consumer immediately to a salesperson at a call center. **Action Item:** As part of its rulemaking for mobile services, the CFPB should issue rules ensuring that consumers have the necessary safeguards with regard to mobile lead generation.[44]

33b. The CFPB's experience in other areas has shown time and again that covered persons do not always adequately supervise their third-party agents acting as service providers and vendors. But the CFPB has issued guidance to address the problem.[45] At this time, we believe that the strong rule on the use of mobile applications, coupled with the CFPB's and other prudential regulators' supervisory and enforcement authority over covered persons, are adequate to identify and respond to third-party threats to at-risk populations, without additional legislation. However, we will continue to monitor this area closely.

7. Conclusion

While mobile financial services may help consumers, as the CFPB's notice states, "achieve their financial goals" and offer "safer, more affordable products and services," these services may not ultimately be used to ensure these worthwhile objectives. A CFPB review of the digital and mobile marketplace, we suggest, will reveal a powerful Big Data-driven digital marketing system with far-reaching capabilities focused on the effective "monetization" of consumers. Increasingly at the core of today's mobile and digital marketing system are applications designed to encourage ongoing spending for both individuals and their families. Unless CFPB proactively ensures that financially at-risk consumers are treated fairly by the mobile and digital marketplace, we fear they will confront new risks to their well-being.

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[1] Richard Cordray, "Prepared Remarks of CFPB Director Richard Cordray at the Mobile Request for Information Field Hearing," Consumer Financial Protection Bureau, 11 June 2014, http://www.consumerfinance.gov/newsroom/prepared-remarks-of-cfpb-director-richard-cordray-at-the-mobile-request-for-information-field-hearing/ (viewed 5 Sept. 2014).

[2] Mark Bergen, "Welcome to the New First Screen: Your Phone," *Ad Age*, 17 Mar. 2014, http://adage.com/article/digital/millward-brown-study-shows-mobile-outpacing-tv/292183/; James O'Toole, "Mobile Apps Overtake PC Internet Usage in U.S.," CNN Money, 28 Feb. 2014, http://money.cnn.com/2014/02/28/technology/mobile/mobile-apps-internet/ (both viewed 5 Sept. 2014).

[3] eMarketer, "US Digital and Mobile Banking 2014: User Forecast, Key Trends and Marketing Opportunities," Aug. 2014, personal copy. See also Jerry Canning, "The Full Value of Mobile in Financial Services," Think with Google, Mar. 2013, https://www.thinkwithgoogle.com/articles/full-value-mobile-financial-services.html; Yahoo, "Finance," https://advertising.yahoo.com/Industries/Finance/index.htm; Rocket Fuel, "Finance," http://rocketfuel.com/solution/details/industry/finance; Amir Efrati, "Apple's Mobile Wallet Talks Heat Up," The Information, 23 July 2014, https://www.theinformation.com/Apple-Mobile-Wallet-Talks-Heat-Up; Adobe, "Solutions/Financial Services," http://www.adobe.com/solutions/financial-services.html (all viewed 5 Sept. 2014).

[4] See, for example, Federal Trade Commission, "FTC Staff Submits Comment to CFPB on Mortgage Disclosure Forms," 2 Oct. 2012, http://www.ftc.gov/news-events/press-releases/2012/10/ftc-staff-submits-comment-cfpb-mortgage-disclosure-forms (viewed 7 Sept. 2014).

[5] See, for example, research conducted on consumer awareness about online data collection practices. Joseph Turow, Jennifer King, Chris Jay Hoofnagle, Amy Bleakley, and Michael Hennessy, "Americans Reject Tailored Advertising and Three Activities that Enable It," Social Science Research Network, 29 Sept. 2009, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1478214; Carnegie Mellon University CyLab Usable Privacy and Security Laboratory, "Current Projects and

Selected Publications: Privacy Decision Making," http://cups.cs.cmu.edu/index.php#p3p; "Berkeley Consumer Privacy Survey," Berkeley Law, http://www.law.berkeley.edu/privacysurvey.htm (all viewed 5 Sept. 2014).

[6] USPIRG and CDD have recently written on this topic. See Edmund Mierzwinski and Jeffrey Chester, "Selling Consumers, Not Lists: The New World of Digital Decision-Making and the Role of the Fair Credit Reporting Act," Suffolk University Law Review, 1 Oct. 2012, http://suffolklawreview.org/selling-consumers-not-lists/; Edmund Mierzwinski and Jeffrey Chester, "Big Data Means Big Opportunities and Big Challenges: Promoting Financial Inclusion and Consumer Protection in the "Big Data" Financial Era," 27 Mar. 2014, http://www.uspirg.org/reports/usf/big-data-means-big-opportunities-and-big-challenges (both viewed 5 Sept. 2014).

[7] There is growing concern over the use of Big Data in commercial digital environments to create or replicate forms of discriminatory services, on pricing, product availability, quality, etc. See, for example, The Leadership Conference, "Civil Rights Principles for the Era of Big Data," http://www.civilrights.org/press/2014/civil-rights-principles-big-data.html; Michael Schrage, "Big Data's Dangerous New Era of Discrimination," HBR Blog Network, 29 Jan. 2014, http://blogs.hbr.org/2014/01/big-datas-dangerous-new-era-of-discrimination/; Seeta Peña Gangadharan, "The Dangers of High-Tech Profiling, Using Big Data," *New York Times*, 7 Aug. 2014, http://www.nytimes.com/roomfordebate/2014/08/06/is-big-data-spreading-inequality/the-dangers-of-high-tech-profiling-using-big-data (all viewed 5 Sept. 2014).

[8] Google, "The New Multi-Screen World Study," Think with Google, Aug. 2012, http://www.thinkwithgoogle.com/research-studies/the-new-multi-screen-world-study.html (viewed 5 Sept. 2014).

[9] See, for example, IAB, "Digital Marketing Ecosystem, In Partnership with Econsultancy," 24 Oct. 2012, http://www.iab.net/events_training/seminar/2420892; IAB, "Marketing & Media Ecosystem 2010 Study," http://www.iab.net/research/industry_data_and_landscape/309763 (both viewed 5 Sept. 2014).

[10] See, for example, IAB, "Why HTML5: The Mobile Opportunity," http://www.iab.net/mobilecenter/makemobilework/webinars; Google, "The New Multi-Screen World Study"; Gavin Dunaway, "ID Is Key: Unlocking Mobile Tracking & Cross-Device Measurement, Part 2," AdMonsters, 3 Aug. 2013, https://www.admonsters.com/blog/id-key-unlocking-mobile-tracking-cross-device-measurement-part-2; Mobile Bridge, "Introduction," http://www.mobilebridge.com/#introduction (all viewed 5 Sept. 2014).

[11] Understanding how the digital marketing industry conceptualizes and implements its work on "engagement" is necessary if consumer safeguards are to be effectively developed. See "IAB Defines Cross Platform Ad Engagement And Identifies Core Digital Metrics As Part Of The Making Measurement Make Sense (3MS) Initiative," 10 Feb. 2014, http://www.iab.net/about_the_iab/recent_press_releases/press_release_archive/press_release/pr-021014_3ms; Laurie Sullivan, "IAB Redefines Ad Engagement, Clarifies Core

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