

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Petition of Public Knowledge, Center for)
Digital Democracy, Consumer Watchdog,) _____ - _____
Consumer Federation of America, and)
TURN —The Utility Reform Network)

Petition for the Federal Communications Commission to Enforce
Cable Privacy Rules Against Comcast, AT&T, and Cablevision

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Public Knowledge requests, pursuant to 47 C.F.R. § 1.41, that the Commission commence an enforcement action against Comcast, AT&T, and Cablevision for violations of 47 U.S.C. §551 and 47 U.S.C. § 338(i), as appropriate.

I. Introduction

47 U.S.C. §551 and 47 U.S.C. § 338(i) (collectively referred to as “privacy rules”) require that cable and satellite providers (herein referred to as “cable operators”) obtain the “written or electronic consent of the subscriber concerned” *prior* to the collection and use of that information for advertising purposes.¹ Cable operators are also required to provide a written statement to their subscribers, which clearly and conspicuously informs the subscriber of the nature of the use of their personally identifiable information.² Through these rules, Congress and the Federal Communications Commission have emphasized the importance of giving consumer’s control over how their information is being used. Despite this, cable operators have continued to use large amounts of their customers’ data without properly obtaining customer consent or informing subscribers of

¹ 47 U.S.C. § 551(b)-(c); 47 U.S.C. § 338(i)(3)(A) (emphasis added).

² 47 U.S.C. § 551(a)(1)(A); 47 U.S.C. § 338(i)(1)(A).

the extent of the use of their information. The Commission should enforce the relevant privacy provisions to ensure that cable operators only use subscriber information when they have the consent required by law.

II. Cable Operators Collect and Share Large Amounts of Customer Data to Generate Targeted Advertising.

The use of consumer data to target consumers for advertising is on the rise. Exactly how and to what extent cable operators are leveraging their customer's data has been extensively documented in a recent report by the Center for Digital Democracy.³ Cable operators increasingly gather their customers' personal information, share and combine that information with third parties, and use it to target customers for advertising on an individual level. Verizon, Comcast, Google, AT&T, Time Warner, Cablevision and others have incorporated powerful layers of data collection and digital marketing technologies to better target individuals.

AT&T's TV Blueprint, for example, "gives advertisers working with AT&T the ability to reach people based on factors like device, operating system, whether or not they're heavy data users or the status of their carrier contract," using "sophisticated second-by-second set-top box data" and other information.⁴ AT&T pulls data "from millions of set-top boxes" and analyzes consumer viewing history and uses these data to

³ Center for Digital Democracy, *Big Data is Watching: Growing Digital Data Surveillance of Consumers by ISPs and Other Leading Video Providers* Center for Digital Democracy (March 23, 2016), available at <https://www.democraticmedia.org/sites/default/files/field/public-files/2016/ispbigdatamarch2016.pdf> (Appendix A)

⁴ Kelly Liyakasa, "AT&T AdWorks Officiates Marriage Between Mobile Data And TV Audiences," AdExchanger, 30 July 2014, <http://adexchanger.com/digital-tv/att-adworks-officiates-marriage-between-mobile-data-and-tv-audiences/>.

target consumers based on their viewing profile.⁵ Companies like Cablevision leverage granular data and precise details of household viewing behavior, and combine it with third-party data covering other intimate details of consumers' lives to analyze and target specific individuals with video advertising across a range of screens. In their own words, "this set-top box level targeting lets marketers target customers that fit particular trends, profiles, demographics and attributes, and they can also pair the Cablevision data with their own or third-party data."⁶

Cablevision and AT&T are not alone in their pervasive use of consumer data. Comcast recently acquired Visible World, which boasts of using data "from millions of enabled Smart TVs" as part of its advertising targeting service.⁷ Data points used to target consumers include income, ethnicity, education level, what kind of car they drive, purchase history, and location of their residence. Further, Comcast has acquired companies like This Technology,⁸ which is capable of inserting personalized content into network streams—including advertising messages tailored for specific individuals.⁹

These programs illustrate how cable providers give advertisers the ability to easily access and use a customer's information, without that customer knowing the extent to

⁵ "AT&T's Mike Welch on Programmatic, Addressable and the Coming Multi-billion-dollar Advanced Ad Biz."

⁶ Daisy Whitney, "Cablevision Finds Success with Census-Level, Impression-Based Ads," Beet.TV, June 16, 2015, available at <http://www.beet.tv/2015/06/kristindolan.html>

⁷ Wayne Friedman, "Comcast Buys Visible World, Expands Addressable TV Advertising," Media Daily News, 4 June 2015, <http://www.mediapost.com/publications/article/251336/comcast-buys-visible-world-expands-addressable-tv.html>.

⁸ Greg Avery, "Comcast will Fold Denver Technology Company into LoDo Tech Hub," Denver Business Journal, Aug 26, 2015, http://www.bizjournals.com/denver/blog/boosters_bits/2015/08/comcast-buys-denver-technology-company.html.

⁹ This Technology, "VEX Manifest Manipulator," <http://thistech.com/vex-manifest-manipulator>.

which that information is being used. While these practices are broadly indicative of the ways many cable operators improperly use subscriber data, AT&T, Cablevision, and Comcast are among the most egregious. The Commission should investigate these practices and find that they violate the privacy rules.

III. Cable Operators Violate Privacy Rules Because They Use Set Top Box Information to Market Subscribers Without Their Consent and Fail to Properly Disclose the Extent of the Use of Subscriber Information.

A. Cable Providers' Use of Opt-Out "Consent" is Insufficient to Constitute Prior Written or Electronic Consent Required by the Privacy Rules.

Cable providers require consumers to opt-out of the use of their information, including personally identifiable information (PII). This "consent" regime is in direct conflict with the privacy rules, which require cable providers to obtain the "written or electronic consent of the subscriber concerned" *prior* to the collection and use of that information for advertising.¹⁰ Opt-out consent is an insufficient means for cable providers to obtain the consent required under the privacy rules for several reasons. First, the Commission requires carriers to obtain consent via opt-in for use of PII and allowing cable providers to do so without a similar requirement would be inconsistent. Second, the Commission has already concluded that section 631 does not take an opt-out approach, and instead requires affirmative consent of the customer prior to the use of their information for marketing purposes. Third, there is no reasonable interpretation of the term "prior" that would allow an opt-out regime to satisfy the consent requirements of the statute. Since Congress required consent prior to use, the Commission should clarify that cable providers must obtain opt-in consent to collect and use PII for marketing.

¹⁰ 47 U.S.C. § 551(b)-(c).

The Commission's treatment of consent in the context of section 222 is at odds with an opt-out regime for information gathered under section 631. In 2007, the Commission determined (1) PII is customer proprietary network information (CPNI) and (2) carriers must to obtain opt-in consent from customers before sharing CPNI with joint venture partners and independent contractors for marketing purposes.¹¹ From the consumer's perspective, there is no distinction between the collection of PII by telecommunication carriers regulated under section 222 and cable operators. The PII collected by telecommunication carriers is identical to that collected and used by cable operators and is just as sensitive. Therefore, to remain internally and logically consistent, the Commission should require opt-in consent before cable providers collect and use their PII.

In addition, the Commission has explicitly stated that the Cable Communications Policy Act, which established section 631, does not "employ an opt-out approach but rather requires an individual's explicit consent before private information is disclosed or employed for secondary purposes."¹² Accordingly, cable operators cannot continue their current practice of using PII without the customer first opting in. Without such affirmative consent, cable providers are violating privacy rules by using their information for marketing purposes. For the above reasons, the Commission should take the affirmative step of declaring that the use of customer information requires opt-in consent,

¹¹ *Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information; IP-Enabled Services*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 6927, para 45 (2007) (*2007 CPNI Order*).

¹² *Id.*

and that absent such consent, cable providers violate privacy rules by collecting customer information and using it to deliver marketing tailored to those customers.

B. Privacy Policies do not Adequately Inform Consumers the Extent to Which Cable Operators are Using Data Harvested From Set Top Boxes.

The privacy status quo for MVPD subscribers is far from adequate. Most subscribers don't fully grasp the extent to which pay-TV companies collect data about their viewing habits, monetize it in various way, and even target ads to individual households in much the same way that online companies can serve up individually-targeted ads.¹³ Indeed, as many MVPDs are also broadband ISPs, these network operators are in a unique position to cross-reference data across different services.

The viewing data that cable companies can collect is comprehensive, and far more detailed than even self-reported Nielsen ratings data. As one analyst put it,

In terms of the data cable operators get, it's not an estimate based on a sampling, the way Nielsen's is, but rather a full accounting of every set top box owner's behavior — what they watched, how long they watched, and whether they changed channels on the commercial break.¹⁴

The Wall Street Journal recently reported that “Comcast is seeking to harness viewing data from the set-top boxes and streaming apps used by its millions of cable-TV

¹³ Philip Elliott, New Political TV Ads Can Target Individual Homes, PBS (Feb. 17, 2014), <http://www.pbs.org/newshour/rundown/new-political-tv-ads-can-target-individual-homes>.

¹⁴ From DAI to programmatic: Why advanced advertising is giving pay-TV operators a reason to stay in the video biz, Fierce Cable (Dec. 1, 2015), <http://www.fiercecable.com/special-reports/dai-programmatic-why-advanced-advertising-giving-pay-tv-operators-reason-st>.

subscribers to create products it can license to other companies.”¹⁵ According to a Comcast executive, “We do believe it’s an unprecedented set of information.”¹⁶

Crucially, MVPDs do not collect viewer data merely for their own use, but license it widely to third parties. As the Wall Street Journal explained, “Companies like Simulmedia” that specialize in targeted TV advertising “emerged in the past few years once cable and satellite companies began licensing out their set-top box data.”¹⁷ Once third parties are given access to confidential viewing data, they can combine it with still more data sources to create an even more comprehensive look into a person’s life. For example, one company has combined TV viewing data with information from retail loyalty cards.¹⁸ Given the amount of third-party access to cable viewing data they provide, it is unclear exactly how cable companies are following cable privacy laws, which require cable providers to provide a written statement to subscribers that *clearly and conspicuously* informs the subscriber of the nature of the use of their PII.¹⁹

Although many providers include statements in their privacy policies indicating that they may use PII in combination with third party data for advertising purposes,²⁰ these “disclosures” are wholly inadequate. In June 2015, the Commission, in a Notice of

¹⁵ Shalini Ramachandran and Suzanne Vranica, Comcast Seeks To Harness Trove of TV Data, Wall Street Journal (Oct. 20, 2015), <http://www.wsj.com/articles/comcast-seeks-to-harness-trove-of-tv-data-1445333401>.

¹⁶ Id.

¹⁷ Steven Perlberg, Targeted Ads? TV Can Do That Now Too, Wall Street Journal (Nov. 20, 2014), <http://www.wsj.com/articles/targeted-ads-tv-can-do-that-now-too-1416506504>.

¹⁸ Id.

¹⁹ 47 U.S.C. § 551(c) (emphasis added).

²⁰ See e.g. Cox Communications, Your Privacy Rights as a Cox Customer and Related Information, available at <https://www.cox.com/aboutus/policies/annual-privacy-notice.html#use> (“We may combine Personally Identifiable Information with demographic and other information for purposes consistent with this Notice.”)

Apparent Liability for Forfeiture and Order (NOAL), addressed the issue of adequate disclosures.²¹ The Commission found that when a disclosure deprives consumers of sufficient information to make informed choices and thereby impedes competition in the marketplace, the disclosure is insufficient to cure violations of the Commission's rules.²² Here, cable operators are using consumer information in ways that are not clear, nor conspicuous, resulting in a violation of the privacy rules.

Much like the inadequate disclosures analyzed in the NOAL, cable providers disclose that they may share and combine data for advertising purposes, but leave out the extent to which they are combining and sharing information, even when that information is known to the cable companies. Privacy policies do not inform consumers of the extent to which their information is being shared and combined with other data to target advertising on an individual level, or of any of the other practices described above. Therefore, the Commission should determine that cable operators are in violation of the disclosure requirements set forth in the privacy rules and that their privacy policies are insufficient to cure such violations.

IV. Conclusion

Privacy rules require both that cable operators obtain subscriber consent prior to the use of their information for marketing purposes, and that subscribers be informed of how their personal information will be used. As discussed above, cable operators use and share subscriber data under an opt-out regime. The Commission has determined that opt-out is not the appropriate form of consent required under the privacy rules. Cable operators also fail to clearly and conspicuously disclose the extent of the use of

²¹ In the Matter of AT&T MOBILITY, LLC., Notice of Apparent Liability for Forfeiture and Order, FCC 15-63 (Rel. June 17, 2015).

²² *Id.*

subscriber data. For these reasons, the Commission should determine that AT&T, Cablevision, and Comcast are in violation of the privacy rules.

Respectfully submitted,

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Appendix A

Center for Digital Democracy, *Big Data is Watching: Growing Digital Data
Surveillance of Consumers by ISPs and Other Leading Video Providers*
Center for Digital Democracy

**Big Data is Watching: Growing Digital Data Surveillance of Consumers by ISPs and
Other Leading Video Providers
Center for Digital Democracy**

March 2016

“Reach more than 130 million US customer connections via TV, Internet, and mobile. Billions of cross-screen advertising impressions, including TV Everywhere, online and mobile. ... The industry’s foremost targeting platform.”
“More Scale, More Targeted, More Screens.”
—AT&T AdWorks¹

The privacy of Americans faces growing new threats and challenges as phone and cable Internet service providers (ISPs) along with leading Internet companies expand their ability to capture our information.² As consumers have grown to rely on many screens to view digital content, Verizon, Comcast, Google, AT&T, Time Warner, and others have incorporated powerful layers of data collection and digital marketing technologies to better target individuals.³ A vast storehouse of consumer data is now being added to the trove of “advanced,” “addressable” and online information already gathered by cable and

¹ AT&T Adworks, <http://adworks.att.com/>. “Many cable, satellite, and telco TV service providers, along with broadcast and cable networks, now let you watch movies, TV shows, sports, and more on mobile devices. It’s all part of an initiative called “TV Everywhere.” “TV Junkies Rejoice—You Can Now Watch Shows and Movies Just About Everywhere, *Consumer Reports*, May 2012, <http://www.consumerreports.org/cro/2012/05/tv-junkies-rejoice-you-can-now-watch-shows-and-movies-just-about-everywhere/index.htm?loginMethod=auto>.

² See especially the work of digital marketing trade organizations. For example, IAB, “Standards, Guidelines & Best Practices,” <http://www.iab.com/guidelines/?topic=digital-video/>; IAB, “News: Programmatic,” <http://www.iab.com/news/?topic=programmatic/>; Gabbcon, “Gabbcon ABCD’s of Audience Buying,” <http://gabbcon.com/abcds-of-audience-buying/>.

³ The ability to gather and integrate diverse sets of data on individuals has helped give rise to what is called “people-based” targeting. See, for example, Merkle, “MerkleONE: Get People-Based with One Solution,” <http://www.merkleinc.com/merkleone>; Esther Burgeson, “People-Based Targeting,” TruSignal Audience Matters Blog, 21 Jan. 2016, <http://www.tru-signal.com/category/articles/people-based-targeting/>; LiveRail, “People-Based Targeting,” <https://www.liverail.com/technology/people-based-targeting/>; Rocket Fuel, “Rocket Fuel’s People-Based Marketing Standard,” Rocket Fuel Blog, 19 Nov. 2015, <http://rocketfuel.com/people-based-marketing-standard/>.

telephone ISPs.⁴ ISPs have made partnerships with powerful data brokers, giving them insights into our online and offline behaviors. They are incorporating state-of-the-art “Big Data” practices—such as “programmatic advertising”—that significantly threaten the privacy of subscribers and consumers.⁵ Incorporating elements of what is known as “behavioral” targeting, programmatic advertising is fueled by powerful alliances among data, media, advertising, and technology companies, and encompasses nearly all the devices and formats we rely on—including mobile, audio, and video. Superfast computers analyze our information, using algorithms and other predictive decision-making to decide in milliseconds whether to target us for marketing and more. Through digital dossiers that merge all of this information, we can be bought and sold in an instant—to financial marketers, fast-food companies, and health advertisers, for example—all without our knowledge.⁶ The stealth data-profiling apparatus that determines whether a person is bought, sold, or ignored, and used to target family, friends and others, requires the Federal Communications Commission to address the use and consequences of practices that threaten privacy and pose consumer-protection concerns.⁷

⁴ See, for example, Cisco, “Cisco Videoscape Advertising Management,” <http://www.cisco.com/c/en/us/products/video/videoscape-advertising-management/index.html>; SeaChange, “Infusion,” <http://www.schange.com/solutions-products/products/infusion>; Jeanine Poggi, “AT&T Plans 100 Upfront Events to Pitch Addressable TV Advertising,” *Ad Age*, 17 Mar. 2016, <http://adage.com/article/special-report/att-takes-tv-upfronts-pitch-addressable-advertising/303155/>; Coalition for Innovative Media Measurement, “Big Data: Data Enrichment Quality,” <http://cimm-us.org/initiatives-2/return-path-data/>; DataXu, “The Rapid Rise Of Programmatic Television,” <https://info.dataxu.com/Rise-of-Programmatic-Television-2016>; “AudienceXpress and Neustar Announce Data Partnership to Bridge Gap Between Online and TV Ad Campaigns,” 14 Mar. 2014, <http://www.marketwired.com/press-release/audiencexpress-neustar-announce-data-partnership-bridge-gap-between-online-tv-ad-campaigns-nyse-nsr-1888850.htm>.

⁵ As discussed later, Google plays a key role developing the overall framework for the use of data and programmatic advertising. For example, “Programmatic’s promise,” Google explains, “— data-driven targeting, automated workflows, cross-screen campaigns, and real-time optimization— will help advertisers get more value from TV advertising.” Rany Ng and Anish Kattukaran, “The Evolution of TV: The Promise of Programmatic TV,” Think with Google, Mar. 2015, p. 8, <https://think.storage.googleapis.com/docs/evolution-of-tv-programmatic-tv.pdf>.

⁶ The industry literature on programmatic advertising is very robust. See, for example, IAB, “Programmatic and RTB,” <http://www.iab.com/guidelines/programmatic-rtb/>; TapSense, “Ad Buyers Guide to Mobile Programmatic,” <http://www.tapsense.com/blog/post/ad-buyers-guide-mobile-programmatic>; eMarketer, “Programmatic Video—The Dramatic Rise of Connected TV, Apps and Ad Spending,” <http://www.emarketer.com/Webinar/Programmatic-VideodashThe-Dramatic-Rise-of-Connected-TV-Apps-Ad-Spending/4000111>. See also, generally, Ad Exchanger, <http://adexchanger.com/>; Exchange Wire, <https://www.exchangewire.com/>.

⁷ See “look-alike” modeling, which illustrates how current consumer data-profiling practices undermine the privacy of millions of others. LiveRamp, “So You Think You’re a Data-driven Marketer: Explaining 50+ Terms You Should Know,” <http://lp.liveramp.com/glossary>. Note also the issue of “waste.” RadiumOne, “Programmatic Ad Platform Solutions,” <https://radiumone.com/products/advertiser/programmatic/>.

Phone and cable ISPs are an especially significant and growing threat to our privacy because—as the key providers of our Internet and device connections—they have in-depth access to information about what we do online.⁸ ISPs can tie together, for example, a person’s mobile phone with set-top box use, helping them understand how the consumer is behaving online in various locations, and then use this information for home-based video targeting.⁹ ISPs, along with data brokers, ad giants, and other leading digital marketing companies, have embraced “cross-device” targeting techniques. This includes how, when, and what we do when we view video and other content—whether delivered on our mobile phones, personal computers, or streamed or hard-wired to our TVs.¹⁰ The ability of an ISP and others to identify and target us regardless of what digital device we use has effectively erased any privacy safeguards we may have enjoyed previously when

⁸ For a review of ISPs’ ability to gather information on their subscribers and customers, see, for example, Open Technology Institute, “The FCC’s Role in Protecting Online Privacy: An Explainer,” New America Foundation, 21 Jan. 2016, <https://www.newamerica.org/oti/the-fccs-role-in-protecting-online-privacy/>; “‘Protecting Privacy, Promoting Competition’ White Paper,” 16 Feb. 2016, <https://www.publicknowledge.org/documents/protecting-privacy-promoting-competition-white-paper/>; Center for Democracy and Technology, “Applying Communications Act Consumer Privacy Protections to Broadband Providers,” 20 Jan. 2016, <https://cdt.org/insight/applying-communications-act-consumer-privacy-protections-to-broadband-providers/>; Upturn, “What ISPs Can See: Clarifying the Technical Landscape of the Broadband Privacy Debate,” Mar. 2016, <https://www.teamupturn.com/reports/2016/what-isps-can-see>.

⁹ “Geo-based addressable data driven TV,” according to the AAAA, “can offer great efficiencies in delivery by using MVPD subscriber data to identify income, ethnicity, pet ownership and even purchasing behavior within specific geographies on the households or cable zones level that over-index against the desired target.” AAAA, “Data Driven Video: What Will It Mean to the Future of Video,” 2015, http://www.aaaa.org/agency/media/Documents/4As-DataDrivenVideo_031315_r1af.pdf. Geo-location or “hyper-local” targeting, much of which is made possible through our use of mobile devices and technologies such as “Beacons,” now provide an abundance of specific locational and geographic-history information on specific consumers, and used to target them—at that location and through cross-device techniques. For background on this technology, see: Placed, “How It Works,” <https://www.placed.com/how-it-works>; Mediative, Solutions: Location-based Marketing,” <http://www.mediative.com/solutions/location-based-marketing/>; “IAB Releases First Mobile Location Data Guide for Publishers,” 19 Feb. 2016, <http://www.iab.com/news/iab-releases-first-mobile-location-data-guide-for-publishers/>.

¹⁰ TV ad-targeting data also can include panel-based data (“Household browsing behaviors as recorded by sampling an audience group”), registration data (“Self reported opt-in data provided by users during registration process, such as subscription to connected TV apps), purchase behaviors (“Offline purchase behavior as matched up to the households through past purchases, subscriptions, coupons and loyalty programs”), digital tune ins (“Data provided by user approved digital listening applications as users tune into TV programming”), and social behavior (“User social behavior data as it relates to conversations, discussions and interests around TV programming”). Alex Andreyev, “Programmatic TV: From Linear to Digital,” Feb. 2015, p. 9, https://www.neoogilvy.com/wp-content/uploads/2015/02/Viewpoints_Programmatic-TV_February-2015.pdf.

we switched between devices.¹¹ As we address in this report, these practices are also being embraced by leading cable programmers, broadcast networks, streaming video, and other digital marketing companies.¹² While there is now greater availability of video content across screens, it should not be at the expense of consumer privacy.¹³

Among the advances in data collection, analysis, and ad-targeting capabilities of ISPs are the following:

- “Data is at the heart” of AdWorks, the Big Data-enabled ad division of AT&T that claims to have “the industry’s foremost targeting platform.” The AdWorks system enables marketers to “reach your audience everywhere they watch on every screen,” spanning “130 million US customer connections across TV, Internet and mobile.”¹⁴ Moving beyond what it says is the “largest TV subscriber base, with over 26 million households nationwide,” AT&T is expanding its ability to use data to reach consumers across devices, including video content “accessed on smartphones, tablets, desktop computers and connected devices.”¹⁵ Its data-targeting system involves the use of its “100% IPTV” platform, which enables

¹¹ See, for example, Allison Schiff, “A Marketer’s Guide To Cross-Device Identity,” Ad Exchanger, 9 Apr. 2015, <http://adexchanger.com/data-exchanges/a-marketers-guide-to-cross-device-identity/>; Drawbridge, “We’re Building the People Tech that Maps the Cross-Device World,” <http://drawbridge.com/technology>; Kelly Liyakasa, “Qualia Merges With BlueCava To Connect Intent To Cross-Screen Conversion,” Ad Exchanger, 20 Jan. 2016, <http://adexchanger.com/mobile/qualia-merges-bluecava-connect-intent-cross-screen-conversion/>; Tapad, “Download Tapad’s Cross-Device Data Book of Terminology Today,” 9 Feb. 2016, <http://www.tapad.com/download-tapads-cross-device-databook-of-terminology-today/>.

¹² See, for example, discussions below on the Turner Data Cloud, NBCUniversal’s Audience Targeting Platform, and Cablevision’s TAPP. See also Kelly Liyakasa, “A Programmatic TV Standard Takes Shape,” Ad Exchanger, 9 July 2015, <http://adexchanger.com/tv-and-video/a-programmatic-tv-standard-takes-shape/>. “... [T]he targeting and measurement potential of OTT goes way beyond that of network television. OTT devices can also collect data on things like app usage, purchase and downloads, all of which can dramatically increase targeting precision. So rather than reaching families in the Chicago area, for example, it’s possible to leverage demographic, behavioral and purchase data to target on an individual level.” Michael Kohn, “Standards Needed To Make OTT Work For Advertisers,” AdExchanger, 10 Aug. 2015, <http://adexchanger.com/tv-and-video/standards-needed-to-make-ott-work-for-advertisers/>.

¹³ SpotXchange, “A Programmatic TV Guide for Sellers,” 2015, p. 1, http://www.spotxchange.com/wp-content/uploads/2015/02/SpotXchange_AProgrammaticTVGuideForSellers_WhitePaper.pdf.

¹⁴ AT&T AdWorks, “Cross-screen,” <http://directvadsales.com/crossscreen.html?lpos=Header:2>; <https://datajobs.com/AT-T/AdWorks-Hadoop-Engineer-Job~2889>; <http://www.theladders.com/ATT-AdWorks-Director-IPTV-Adv-Bus-Dev-Advertising-Solutions-New-York-NY|NY|3415297?x=q>

¹⁵ AT&T AdWorks, “TV Everywhere,” <http://directvadsales.com/crossscreen.html?lpos=Header:2>; AT&T AdWorks, “The Leader in Addressable TV Advertising,” <http://adworks.att.com/?lpos=Header:1>.

significant data collection and audience-targeting capabilities for advertising.¹⁶ AT&T AdWorks has also developed a “cross-screen system to match users’ mobile, online and television devices together based on identifiers and systems” that the company has “access to.” It operates a “consumer insights platform” that uses “Big-Data” techniques to advance AT&T’s targeted-marketing objectives.¹⁷

- Comcast is able to harvest “terabytes of unstructured data” from the set-top boxes it controls, including homes that have them in “multiple rooms.” These data are then “enriched by demographics” using an array of Big-Data processing so they can be “more meaningful to advertisers,” including those targeting via “Comcast’s IP-based systems.”¹⁸ Comcast is using Rubicon’s Advertising Automation Cloud, “one of the largest cloud and Big Data computing systems in the world, [which] leverages over 50,000 algorithms and analyzes billions of data points in real time” to buy and sell individuals to marketers.¹⁹

¹⁶ “AT&T AdWorks Director IPTV Adv Bus Dev, Advertising ...,” TheLadders, <http://www.theladders.com/ATT-AdWorks-Director-IPTV-Adv-Bus-Dev-Advertising-Solutions-New-York-NY|NY|3415297?x=q>; <http://www.cisco.com/c/en/us/solutions/collateral/service-provider/iptv->.

¹⁷ AT&T AdWorks, “Research,” <http://adworks.att.com/research.html>; AT&T AdWorks, <http://directvadsales.com/>; Hassan Ali, “AT&T, in Partnership with Videology, Plans to Sell Linear TV Advertisements Using Programmatic Application,” Bidness Etc, 4 Mar 2016, <http://www.bidnesstec.com/64918-att-inc-latest-plans-to-boost-advertising-revenue/>; Daisy Whitney, “AT&T Advanced Ad Division Zeroes in on ROI, TV Addressability,” Beet.TV, 3 Feb. 2015, <http://www.beet.tv/2015/02/att-advanced-ad.html>; Shawn Curran, “Sr. Product Manager at PlaceIQ,” Linked In, <https://www.linkedin.com/in/shawn-curran-a81a7115>. See also the role of lead generation in AT&T’s digital media analytics work: AT&T, “About IT/Engineering\Technology Jobs At AT&T: Sr. Manager Digital Media Analytics,” http://connect.att.jobs/us/united-states/it_engineering_technology/jobid9908725-sr.-manager-digital-media-analytics; AT&T AdWorks, “Insights,” <http://adworks.att.com/insights.html>; Valerie Vargas, “Vice President—Advertising & Marketing Communications at AT&T,” Linked In, <https://www.linkedin.com/in/valerie-vargas-a55b765/>; “AT&T: Lead Product Development Mgr, Big Data Algorithms and Insights,” KD Nuggets, <http://www.kdnuggets.com/jobs/14/03-19-att-lead-product-development-mgr-big-data-algorithms-insights.html>. AT&T Labs work on Big Data also plays a role: “On a given day we are poring through billions of transactional, spatio-temporal, and unstructured data records, and have developed cutting edge tools for streaming data management, analysis, and visualization of this data.” AT&T Research, “Our Research: Big Data,” http://www.research.att.com/evergreen/what_we_do/research2.html?fbid=R8lFIZ4tgIi.

¹⁸ MapR, “Comcast Uses MapR for New Advertising Platform That Provides Real-Time Targeted Ads,” <https://www.mapr.com/resources/comcast-uses-mapr-new-advertising-platform-provides-real-time-targeted-ads>.

¹⁹ Rubicon’s Advertising Automation Cloud, “one of the largest cloud and Big Data computing systems in the world, leverages over 50,000 algorithms and analyzes billions of data points in real time” to buy and sell individuals to marketers. It conducts 18 billion transactions per week, makes “300 real-time data-driven decisions per transaction,” and “is constantly self-optimizing” as it analyzes consumer data. Comcast uses Rubicon’s platform to enable advertisers to “bid in real-time” to target people that access Xfinity.com and xfinityTV.com. Comcast Ventures, “Our Portfolio: The Rubicon Project,” <http://www.comcastventures.com/portfolio/rubicon-project>;

- By acquiring mobile-marketing-data company Millennial Media, Verizon gained access to customer data gathered by more than 60,000 apps, including “location, social, interest, and contextual” information. Millennial has “developed more than 700 million active server-side unique user profiles, over 60 million of which link multiple mobile devices and PCs to a single specific user . . . ,” with some 175 million monthly unique users in the “United States alone.”²⁰

Data-driven digital marketing is now central to every part of the communications, media and advertising landscape. While there are important distinctions between what an ISP and a Google or Facebook does, there are also largely shared business practices and a similar overall objective: to gather and generate revenues from individuals’ information and their daily interactions. This increasingly involves the use of video.²¹ The Federal Communications Commission’s pending proceeding on privacy should examine all the ways that broadband networks operated by Internet service providers gather and use consumer information today. The review and policy proposals need to address the data-

Rubicon, “Automation Cloud,” <https://rubiconproject.com/automation-cloud/>; Rubicon, “Buyer Cloud,” <https://rubiconproject.com/buyer-cloud/>; Jack Norris, “Big Results from Big Data—The Comcast Spotlight and Rubicon Project New Business Partnership,” MapR Blog, 30 July 2014, <https://www.mapr.com/blog/big-results-big-data---comcast-spotlight-and-rubicon-project-new-business-partnership>; Robert Andrews, “FreeWheel Plugs In Videology Ahead Of Upfronts: Rothwell,” Beet.TV, 25 Mar. 2015, <http://www.beet.tv/2015/03/4afreewheelrothwell.html>.

²⁰ “AOL to Deepen its Programmatic Leadership with Agreement to Acquire Millennial Media,” 3 Sept. 2015, <http://www.millennialmedia.com/press/aol-to-deepen-its-programmatic-leadership-with-agreement-to-acquire-millennial-media>; Millennial Media, “Annual Report,” 2015 Form-10-K, <http://investors.millennialmedia.com/phoenix.zhtml?c=238412&p=irol-sec>; Nitesh Patel, “AOL’s Acquisition of Millennial Media Will Strengthen the Reach and Depth of Verizon’s Mobile Advertising Capabilities,” Strategy Analytics,” 7 Sept. 2015, <https://www.strategyanalytics.com/strategy-analytics/blogs/media-services/wireless-media/wireless-media/2015/09/07/aol-s-acquisition-of-millennial-media-will-strengthen-the-reach-and-depth-of-verizon-s-mobile-advertising-capabilities#.VtHgKhj-BVo>.

²¹ For example, Google’s “Partner Select” programmatic video marketplace partners include “over 30 broadcasters, premium publishers and major brands have joined the marketplace including CBS Interactive, Fox News, Discovery, Animal Planet,” and others. Tyler Loechner, “Google Names Programmatic Video Marketplace Partners: Fox News, HGTV, Netflix On Board,” Media Post Real-Time Daily, 6 Jan. 2015, <http://www.mediapost.com/publications/article/241217/google-names-programmatic-video-marketplace-partne.html>. “AOL’s mobile and video advertising technology was the primary draw for Verizon, as it looks to capitalize on two of the biggest trends in the media and advertising industry: 1) The shift of media viewing time from traditional media to mobile devices 2) The move from manual digital ad purchases to programmatic buying.” Trefis Team, “With AOL In The Bag, What’s Next For Verizon?” *Forbes*, 24 June 2015, <https://www.verizondigitalmedia.com/verizon-aol/>.

targeting relationships that ISPs have with leading digital marketing companies, including Google, Facebook, ad exchanges, data brokers, and advertisers.²²

In addition to threats to privacy, there are practices that use data that can discriminate or harm vulnerable consumers, which should also be addressed by the FCC—such as the targeting of low-income households for loans through the use of video, the role of ethnic/racial data used in a digital profile, and how data about or involving children and adolescents are used for digital marketing purposes.²³

This report examines AT&T, Comcast, Cablevision, Charter, Cox, Verizon, Dish, Time Warner Cable, Viacom, Google, News Corp. (Fox), Turner Broadcasting (Time Warner), and Disney, focusing on some of their recent data- and video-related advertising practices. Next year (2017), spending for digital ads will surpass TV for the first time, totaling more than \$77 billion; TV ad spending is predicted to be around \$72 billion. Data-driven video advertising delivered to multiple “screens” increasingly plays a key role driving all this advertising.²⁴ With consumers’ appetite for video content growing,

²² For example, the practice of synchronizing ad campaigns on TV and Facebook, or the use of Google/DoubleClick services. See “4C Launches SaaS Product for Programmatic TV Synced Ads Across Channels,” 6 Jan. 2016, <http://www.4cinsights.com/2016/01/06/saas-tv-synced-ads/>; “Mediasynced—Radio & TV Commercial Sync with Online Advertising Campaigns,” YouTube, 22 Aug. 2013, <https://www.youtube.com/watch?v=RjfuferNA2Q>; Peter White, “Facebook Touts Benefits of TV Ads Synchronized with Social Media,” ReThink Research, 27 Mar. 2014, <http://www.rethinkresearch.biz/articles/facebook-touts-benefits-of-tv-ads-synchronized-with-social-media/>; Google, “Implement Nielsen Digital Ad Ratings,” DoubleClick Ad Exchange Buyer Help, <https://support.google.com/adxbuyer/answer/6177933?hl=en>; Federal Communications Commission, “Broadband Consumer Privacy Proposal Fact Sheet,” <https://www.fcc.gov/document/broadband-consumer-privacy-proposal-fact-sheet>; Skip Brand, “Fantastic Four: Comparing Agency Trading Desks’ Programmatic Efforts,” Media Post Programmatic Insider, 25 Nov. 2014, <http://www.mediapost.com/publications/article/238969/fantastic-four-comparing-agency-trading-desks-pr.html>.

²³ See “Finding Low Income Renters on TV,” AudienceXPress Media Kit, <http://www.audienceexpress.com/media-kit/>. There is a growing use of racial/ethnic data for cross-device targeting. See, for example, Multicultural Marketing Resources, “Get to Know Your Customers with Ethnic Technologies’ Proprietary Analytics,” <http://multicultural.com/multicultural-articles/get-to-know-your-customers-with-ethnic-technologies-proprietary-analytics>; Mobile Marketing Association, “Guidance Report: Location Audience Targeting,” http://www.mmaglobal.com/files/documents/guidance_report_location_audience_targeting.pdf; Refuel Agency, “Multicultural Digital Marketing Solutions,” <http://www.refuelagency.com/tactics/multicultural-digital-marketing/>; Kantar Media, “Hispanic Media,” <http://www.kantarmedia.com/us/our-solutions/media-planning-tools/srds-media-planning-platform/srds-online-databases/hispanic-media>.

²⁴ eMarketer, “Digital Ad Spending to Surpass TV Next Year,” 8 Mar. 2016, <http://www.emarketer.com/Article/Digital-Ad-Spending-Surpass-TV-Next-Year/1013671>; eMarketer, “Mobile Spearheads Digital Video Advertising’s Growth,” 22 Feb. 2016, <http://www.emarketer.com/Article/Mobile-Spearheads-Digital-Video-Advertisings-Growth/1013611>; Alex Palmer, “Magna Global: Programmatic Will Eat Half Of Display And

regardless of what screen they use, a digital data “arms race” is underway that is transforming the online and TV programming marketplace. U.S. consumers face an online and TV-connected video system where privacy is effectively lost—replaced by an “always-on” and “everywhere,” but largely invisible, system that continually gathers information from and about us. Among the key (and interrelated factors) that have created this major challenge to consumer privacy are the following:

- **The acquisition of powerful new data technology assets:** ISPs have been on a shopping spree to help build out their data-targeting system across devices and platforms. For example, Verizon acquired both AOL and Millennial Media in 2015. Comcast bought ad-technology companies Visible World (which included AudienceXpress) in 2015 and FreeWheel Media the previous year.²⁵ Through its acquisition of DirecTV, AT&T gained a major new way to use data to target its customers.²⁶
- **The unchecked expansion of commercial data collection by ISPs and others to identify, reach, and try to influence consumers regardless of where they are:** Consumers are being tracked whether they are online at home or using a mobile device elsewhere.²⁷ ISPs are working more closely with leading data brokers, marketing “clouds,” and companies specializing in both cross-device

Video Ad Budgets By 2019,” <http://adexchanger.com/online-advertising/magna-global-programmatic-will-eat-half-of-display-and-video-ad-budgets-by-2019/>.

²⁵ Haley Sweetland Edwards, “Here are the Other Companies Comcast is Gobbling Up,” *Time*, 16 July 2014, <http://time.com/2991782/comcast-time-warner-cable-merger/>; Ryan Lawler, “Comcast Is Acquiring Video Ad Company FreeWheel For \$320 Million,” *TechCrunch*, 1 Mar. 2014, <http://techcrunch.com/2014/03/01/comcast-freewheel/>; Visible World, “About Us,” <http://www.visibleworld.com/about/>; Seth Haberman, “The Next Step for Visible World: Joining One of the Most Innovative Media and Technology Companies in the Country,” *Visible World Blog*, 4 June 2015, <http://www.visibleworld.com/blog/the-next-step-for-visible-world-joining-one-of-the-most-innovative-media-and-technology-companies-in-the-country/>; Kelly Liyakasa, “In Buying Visible World, Comcast Exerts More Influence On The Demand Side,” *Ad Exchanger*, 5 June 2015, <http://adexchanger.com/digital-tv/in-buying-visible-world-comcast-exerts-more-influence-on-the-demand-side/>.

²⁶ “AT&T AdWorks: Leading the Charge in Addressable TV Advertising,” *Adweek*, 29 Nov. 2015, <http://www.adweek.com/sa-article/att-adworks-leading-charge-addressable-tv-advertising-168311>. Among Google’s steady expansion of data-targeting capabilities is its 2014 purchase of mDialog, “which identifies whether ads are targeted to the right consumer.” Garrett Sloane, “Google’s Acquisition Shows It’s Hungry for More Digital Video Advertising,” *Adweek*, 19 June 2014, <http://www.adweek.com/news/technology/googles-acquisition-shows-its-hungry-more-digital-video-advertising-158446>.

²⁷ Merkle, “MerkleONE Data Management Cloud,” <http://www.merkleinc.com/what-we-do/marketing-technology/merkle-data-management-cloud/connected-recognition#.VuW4axj-CiU>. Merkle works with a number of companies involved in video targeting, including AOL (Verizon), Google, and Videology (in which Comcast Ventures is an investor). Merkle, “Our Clients,” <http://www.merkleinc.com/what-we-do/marketing-technology/merkleone-data-management-cloud#.VuW4fxj-CiU>.

tracking and the merging of offline and online data (known as “data onboarding”).²⁸ LiveRamp, Axiom’s onboarding division, works with Cablevision, Verizon’s AOL, Dish, and others to provide far-reaching data on consumers.²⁹ Axiom, which acquired digital data company Allant last year, also helps Comcast, Dish Network, and Charter Communications “use first-party and third-party data to precisely reach consumers with relevant messages across TV platforms.”³⁰ Verizon uses elements of the Oracle Marketing Cloud. Nearly all the leading data companies have extensive partnerships with other information-targeting entities, allowing ISPs and others to quickly assemble an arsenal of cross-platform consumer data.³¹ Adobe Marketing Cloud counts Time Warner Cable among its many customers.³²

²⁸ LiveRamp, “Digital Marketer’s Guide to Addressable TV,” p.12, http://lp.liveramp.com/WP-2015-05-AddressableTV_.html (registration required). Overall, there are three broad types of data used in these purportedly “anonymous” transactions: household (limited to less than a third of all TV households in the U.S.), geographic (often supplemented by various demographic insights as well), and, most recently, data collected by Smart TVs. “Certain manufacturers such as Samsung, are creating single sign on IDs to help differentiate individuals in HH across various devices.” AAAA, “Data Driven Video: What Will it Mean to the Future of Video,” Mar. 2015, http://www.aaa.org/agency/media/Documents/4As-DataDrivenVideo_031315_r1af.pdf; Joe Abruzzo, “TV Programmatic: More than Real-Time Bidding,” *Media Post Audience Buying Insider*, 15 July 2014, <http://www.mediapost.com/publications/article/229985/tv-programmatic-more-than-real-time-bidding.html>.

²⁹ Kent Gibbons, “Axiom Buys Allant’s Advanced-Ad Business,” *Multichannel News*, 3 Dec. 2015, <http://www.multichannel.com/news/advanced-services/acxiom-buys-allants-advanced-ad-business/395702>; Allant Group, “Our Partners,” <http://www.allantgroup.com/partners.html>; “Axiom to Acquire LiveRamp,” 14 May 2014, <http://www.acxiom.com/acxiom-liveramp/>; Axiom, “Audience Onboard for AOL,” <http://www.acxiom.com/audience-onboard-aol/>. As Jennifer Koester, senior vice president of advanced advertising product & data analytics at Cablevision, explains, “The future of the TV ecosystem is ultimately multi-platform addressability, which allows advertisers to reach audiences on any screen. Buys are going to start to meld across screens. As an industry, we will need to ensure an apples-to-apples measurement and consistent metrics to demonstrate the true power of addressability. That’s where platforms like LiveRamp, come into play with the ability to facilitate audiences across screens, helping advertisers to compile more meaningful campaigns.” LiveRamp, “Digital Marketer’s Guide to Addressable TV,” p.8, http://lp.liveramp.com/WP-2015-05-AddressableTV_.html (registration required).

³⁰ “Launch of Axiom TV Enables Activation of Audience Data across All Television Ad Platforms,” 5 Jan. 2016, <http://www.acxiom.com/launch-acxiom-tv-enables-activation-audience-data-across-television-ad-platforms/>; Axiom, “Partner Spotlight: Comcast Media 360,” <http://www.acxiom.com/partner-spotlight-comcast-media-360/>.

³¹ Among the numerous examples of such alliances are the following: MediaMath, “Welcome to the Partner Marketplace,” <https://open.mediamath.com/partners>; LiveRail, “Technology Partners,” <https://www.liverail.com/technology-partners/>; Adobe, “Adobe Marketing Cloud Exchange,” <https://marketing.adobe.com/resources/content/resources/en/exchange/marketplace.html>; Axiom, “Partners,” <http://www.acxiom.com/partners/>. Oracle has recently assembled an array of sources of information on consumers—including from its recent buyouts of BlueKai and

- **ISPs are operating or affiliating with powerful data management platforms (DMPs) that help collect and make “actionable” data on consumers that are gathered across their devices and interactions and can be used for ad targeting.**³³ A key reason why Verizon acquired AOL is to take advantage of its

Datalogix. Oracle, “Verizon Personalizes Marketing Communication with Oracle,” <https://www.oracle.com/marketingcloud/customers/success-stories/verizon.html>; “Oracle Buys Datalogix: Creates the World’s Most Valuable Data Cloud to Maximize the Power of Digital Marketing,” 22 Dec. 2014, <http://www.oracle.com/us/corporate/press/2395487>. See also Adobe Marketing Cloud, “Every Day is a New Day in Digital for Time Warner Cable,” YouTube, 1 Apr. 2015, <https://www.youtube.com/watch?v=4H88tIQWBqY&feature=youtu.be>; and note Comcast’s use of Adobe marketing services as well: Adobe, “Customer Showcase / More Stories,” <http://www.adobe.com/customershowcase/stories.html>. The Oracle ID Graph “connect[s] identities across disparate marketing channels and devices to one customer ... enabling marketers to tie their interactions to an actionable customer profile. Oracle, “Connect with an Individual Customer Across All Channels & Devices,” <https://www.oracle.com/marketingcloud/products/data-management-platform/id-graph.html>; Kelly Liyakasa, “Behind The Data Cloud, The Basis Of Oracle’s ID Graph,” Ad Exchanger, 16 Nov. 2015, <http://adexchanger.com/data-exchanges/behind-the-data-cloud-the-basis-of-oracles-id-graph/>.

³² Adobe, “Time Warner Cable is More Than Television, Internet, and Telephone,” <http://www.adobe.com/content/dam/Adobe/en/customer-success/pdfs/time-warner-cable-marketing-cloud-case-study.pdf>. Nielsen, which partners with nearly every media company, including to help with ad targeting, acquired online data provider eXelate, which has “one of the largest audience data sets in the world with over 5 billion unique device IDs and devices worldwide, including approximately 95% of the U.S. online audience. Nielsen acquired data broker eXelate, which has “one of the largest audience data sets in the world with over 5 billion unique device IDs and devices worldwide, including approximately 95% of the U.S. online audience.” Note eXelate is involved with online video provider Brightroll and Verizon’s Precision Market Insights. eXelate, “BrightRoll Expands Suite of Mobile Audience Targeting Solutions,” 22 May 2014, <http://exelate.com/resources/news/brightroll-expands-suite-mobile-audience-targeting-solutions/>.

³³ The data that a company actually “owns”—such as customer information and purchases from a database—is called “first-party” information and is the most valuable Patrick Dolan, “Data Segments & Techniques: A New Lexicon,” IAB, 22 Jan. 2016, <http://www.iab.com/news/data-segments-techniques-a-new-lexicon/>. Today, companies are able to “layer” in their customer data profiles additional information—called “second-” and “third-” party data. Second-party data, is “first-party” data that is purchased or exchanged by another company to use, such as a “trusted supplier, retailer or publisher.” Third-party information is collected and sold by data brokers and others that brings insights and other information useful for targeting—such as a person’s buying habits and personal characteristics. “Second party data is first party data that can be purchased or traded with another brand/publisher. Marketers/publishers can go directly to companies they know will have the most relevant data, which is missing from their own first party data.” Rebecca Muir, “Second-Party Data: Not Second Rate,” Exchange Wire, 19 Jan. 2016, <https://www.exchangewire.com/blog/2016/01/19/second-party-data-not-second-rate/>. See also “Second-Party Data About To Go Mainstream,” Ad Exchanger, 29 June 2015, <http://adexchanger.com/data-driven-thinking/second-party-data-about-to-go-mainstream/>; OwnerIQ, <http://www.owneriq.com/>; Experian, “Experian Marketing Suite: Activate Your

DMP, called ONE by AOL, which promises a “Single view of the user: ONE unifies multiple data sources and provides marketers a holistic view of the consumer journey through the entire marketing funnel; improving targeting, message sequencing and ROI.”³⁴ Comcast’s “advanced advertising system,” involving “real-time data” and a “cloud delivery system,” is designed to process its “associated data flows into the hundreds of terabytes of data daily and approaching a petabyte per day” Turner’s “Data Cloud” DMP for ad targeting works with leading data companies, including Krux, Epsilon and the Oracle Marketing Cloud.³⁵

- **The use of new cross-device measurement and attribution techniques are also a significant privacy threat:** Data are gathered on our interactions across computer, mobile, and video devices to measure the impact of online, video, and other ads.³⁶ The tracking of subscribers on all their devices to determine the

Offline Audiences for True 1:1 Addressable Advertising Across Channels,” <http://www.experian.com/marketing-services/digital-audience-matching.html>; Neustar: “Neustar AdAdvisor® Guide to Third Party Data,” <https://www.neustar.biz/resources/product-literature/adadvisor-guide-to-third-party-data>. ISPs and other companies own or use what are called data management platforms (DMPs) that help bundle and activate all of this information, for marketing and other purposes. Tyler Loechner, “AOL Launches A Data Management Platform, Unveils TV Ad Targeting Tech,” Media Post Real-Time Daily, 28 Sept. 2014, <http://www.mediapost.com/publications/article/235106/aol-launches-a-data-management-platform-unveils-t.html>; AOL, “ONE by AOL,” <http://www.aolplatforms.com/onebyaol>.

³⁴ AOL, “ONE by AOL”; “AOL Launches ONE by AOL,” 14 Apr. 2015, <http://corp.aol.com/2015/04/14/aol-launches-one-by-aol/>.

³⁵ “Part of the data flow stores data in the platform’s MapR Distribution for Hadoop that runs Hive and Oozie (a job scheduler that supports ETL [extract, transform and load] database functions). This allows Comcast analysts to perform business analytics against the MapR Hadoop cluster. The group also uses MapR-DB—a key piece of the MapR implementation—to query a massive data store in real time to fine tune the ad delivery system.” “Comcast Develops Advanced Advertising Platform to Handle Real Time Big Data,” Datanami, 15 Sept. 2015, <http://www.datanami.com/2014/09/15/comcast-develops-advanced-advertising-platform-handle-real-time-big-data/>. See also its work with Rubicon Project. Jack Norris, “Big Results from Big Data—The Comcast Spotlight and Rubicon Project New Business Partnership,” MapR Blog, 30 July 2014, <https://www.mapr.com/blog/big-results-big-data-%E2%80%93-comcast-spotlight-and-rubicon-project-new-business-partnership>; “Turner Broadcasting Aligns With Epsilon, Krux And Oracle Power New Turner Data Cloud And Turner Premium Marketplace,” 30 June 2015, <http://www.krux.com/company/press-room/press-releases/turner-broadcasting-aligns-with-epsilon-krux-and-oracle-power-new-turner-data-cloud-and-turner-premium-marketplace/>. Comcast’s NBC division also works with Krux, as do other programmers, networks, and leading advertisers. Krux, “NBCUniversal Data Leakage Saga Comes to an End, Thanks to Krux,” <http://www.krux.com/customer-success/case-studies/nbcu/>.

³⁶ The role of cross-platform measurement and attribution—understanding what influences a consumer to buy a product or engage in some behavior—illustrates another key dimension where privacy is at risk. In addition, measurement information can be used to trigger different responses of individuals, including by dynamically changing the messaging for a more personalized response. ISPs can engage in “closed-loop measurement,” for example, where “sales transaction

impact of marketing, including what they buy and ads they view, is a privacy concern as well. There is a range of undisclosed-to-consumer practices that help operators and advertisers more precisely determine the impact of digital marketing, including when delivered by set-top and other connections. These practices foster further tracking and targeting of consumers, illustrating data protection concerns.³⁷

data” are assessed “against set-top box exposure” and “on sales that take place on any channel, including websites, apps, stores, branch locations, or over the phone.” LiveRamp, “Digital Marketer’s Guide to Addressable TV,” p.13, http://lp.liveramp.com/WP-2015-05-AddressableTV_.html (registration required). According to the AAAA, “Certain manufacturers such as Samsung, are creating single sign on IDs to help differentiate individuals in HH [households] across various devices.” AAAA, “Data Driven Video: What Will it Mean to the Future of Video,” Mar. 2015, http://www.aaaa.org/agency/media/Documents/4As-DataDrivenVideo_031315_r1af.pdf.

³⁷ There is also growing consolidation in the measurement industry that is triggered by the requirements of cross-device monitoring. For example, comScore and Rentrak have merged, paving the way for a “new cross-platform currency” that will track consumer behavior across platforms. “comScore and Rentrak to Merge, Creating Leading Cross-Platform Measurement Company,” 29 Sept 2015, <http://www.comscore.com/Insights/Press-Releases/2015/9/comScore-and-Rentrak-to-Merge>; Nielsen, “Solutions: Nielsen Digital Ad Ratings,” <http://www.nielsen.com/us/en/solutions/capabilities/digital-ad-ratings.html>. See also Coalition for Innovative Media Measurement, “Cross-Platform Measurement,” <http://cimm-us.org/initiatives-2/cross-platform-measurement>. comScore, for example, promises “total view of the consumer” across multiple platforms (including live TV, DVR, Desktop PC, smartphone, Tablet, radio, OTT, and TV VOD), with “Person-Centric insights for analyzing audiences across multiple platforms,” Rentrak, which was recently acquired by comScore, offers a range of services, focusing especially on TV. “Beyond traditional Nielsen TV data, Rentrak provides RPD (return path data) based on STBs from Dish, DirecTV, Charter and Fourth Wall while comScore is developing a new syndicated cross platform data set based on their successful “Project Blueprint” pilot that they ran for ESPN.” AAAA, “Data Driven Video: What Will It Mean to the Future of Video,” 2015, <http://goo.gl/MrxL5x>. “Having our massive, passive measurement of television viewership allows us to combine audience information with other databases in a way that is impossible to do with samples,” the company claims. “A viewership sample of 40,000 does not provide enough instances to match against a database with billions of transactions, such as MasterCard purchase transactions, since the overwhelming majority of those purchase transactions would be made by viewers not in the sample.” Rentrak, “2014 Annual Report: Precisely Measuring Movies & TV Everywhere,” <http://www.renrak.com/downloads/Rentrak-AnnualReport2014-FINAL.pdf>. Nielsen’s “Grabix is a web-based application, marrying Nielsen’s minute-by-minute television ratings to actual audio and video content. It allows users to: See which elements of your program content retain viewers, or drive them away; Capture ratings for each individual program segment across demographics” Nielsen, “Grabix,” <http://en-us.nielsen.com/sitelets/cls/grabix.html>. Google’s Adometry TV/Video measurement, meanwhile, offers its own brand of cross-device metrics, focusing especially on “TV sync” campaigns that supplement TV spots with synchronized online ads. “When consumers see your brand’s commercials during their favorite programming, they often jump to a second screen to search for your product or visit your website,” the company explains. “You can now leverage this multi-screen behavior to turn the dial on your TV spend.” Nielsen, “Grabix,” <http://en-us.nielsen.com/sitelets/cls/grabix.html>. See also Rubicon Project, “Programmatic 101: Attribution,” <http://buyercloud.rubiconproject.com/content/101/attribution/>; Greg Sterling, “Placed Brings

- **Phone and cable ISPs and other providers of online video claim they are “privacy-compliant,” don’t use “PII” (personally identifiable information), and that their data are so-called “anonymous” and based on “aggregate” formulations:** This is merely a “don’t-look-too-closely” claim designed to head off the scrutiny their practices require. ISPs and others tell policymakers that data targeting isn’t personal—but make it clear when discussing their capabilities to clients and others that they are engaged in various ways to target individuals. It is also more than ironic that while ISPs and other data-targeting media companies have created “automated” and “self-service” platforms that allow marketers to use an arsenal of data to target individuals and their families, the people actually affected have no such knowledge or ability to effectively control it.³⁸

The Federal Communications Commission (FCC) is in a unique and historic position to ensure the privacy of the public. The commission should adopt rules that help reverse the tide of ever-growing and unchecked collection and use of consumer data across devices. A truly “open” Internet that embraces “network neutrality” must have privacy and consumer protection at its core. Otherwise, powerful data and digital marketing gatekeepers will be in an even more influential position to influence the kinds and diversity of programming available in the marketplace. The distinctions posed by the FCC between ISPs and so-called “edge” providers needs to be reviewed in light of how the consumer digital data marketing system actually works. For example, the ability to target individuals who are viewing a cable or streaming video program when they subsequently (or simultaneously) turn to Facebook or some other application (using forms of synchronized ad targeting), illustrates how the collaboration between ISPs and other data companies requires a comprehensive FCC privacy framework.³⁹

Offline Attribution To More Programmatic Players,” Marketing Land, 28 Apr. 2015, <http://marketingland.com/placed-brings-offline-attribution-to-more-programmatic-players-126762>; Google Analytics, “Introducing the Google Analytics 360 Suite,” 15 Mar. 2016, <http://analytics.blogspot.ie/2016/03/introducing-google-analytics-360-suite.html>.

³⁸ See Cablevision, for example. “With just a few jabs at an iPad screen, the TAPP interface allows buyers to target customers in specific high-density zip codes throughout the New York DMA who also happen to be in the market for a new car or a set of golf clubs.” Anthony Crupi, “Cablevision 'TAPPS' Into the Power of Addressable Advertising,” *Ad Age*, 30 Apr. 2015, <http://adage.com/article/media/cablevision-tapps-power-addressable-advertising/298339/>.

³⁹ For example: “Knowing that TV and Facebook complement each other, we’re introducing a way for advertisers to plan, buy and measure Facebook video ads using target rating point (TRP) as the metric. Marketers can plan a campaign across TV and Facebook with a total TRP target in mind, and they can buy a share of those TRPs directly with Facebook.” Facebook for Business, “Introducing New Ways to Buy, Optimize and Measure Ads for a Mobile World,” 27 Sept. 2015, <https://www.facebook.com/business/news/ad-week-2015-announcements>. See also Twitter, “Business: TV Targeting,” <https://business.twitter.com/help/tv-targeting?lang=en&location=na>; Google, “Announcing New Ways for TV Providers to Manage Cross-screen, Addressable Digital Video Advertising,” 13 Apr. 2015, <http://doubleclickadvertisers.blogspot.com/2015/04/new-ways-for-tv-providers-to-manage.html>.

Today, consumers largely have no protection when it comes to their information. The Federal Trade Commission has been constrained for decades in its ability to issue regulations.⁴⁰ Industry “best practices” however, have done nothing to even modestly check the tsunami of data targeting practices now at work. As the following profiles of leading ISPs, networks, and a major online video ad company illustrate, the growing use of sophisticated data practices (such as programmatic advertising) require a comprehensive set of policy safeguards by the FCC. These policies should include consumer protection rules that ensure that consumer information isn’t used in unfair and discriminatory ways that can harm individuals and families—such as using financial data to target high-interest credit card or loan offers to at-risk consumers; singling out seniors to promote unnecessary medical devices and services; basing targeting profiles on racial and ethnic data; and taking advantage of young people.⁴¹

The FCC should enact rules to ensure a meaningful decision-making process by individuals, allowing them to have the right to determine and control how their information can be gathered and used. This should address all services conducted by an ISP, including when used to offer telecommunications-related services. More than “opt-in” consent is necessary. The commission’s policies for privacy should reflect long-standing “Fair Information Practices” (FIPs) that are implemented in ways that address contemporary consumer data practices.⁴² For example, the FCC should adopt data requirements that prevent pervasive and continuous data collection—such as with cross-device tracking and offline/online data profiling. It should also implement “data-

⁴⁰ An exception is the Children’s Online Privacy Protection Act (COPPA) a 1998 federal law protecting the privacy of children under 13. The authors of this report played a key role in its enactment and with its ongoing enforcement by the FTC.

⁴¹ There is tremendous interest to better use data to target children and adolescents. For example, a new project a new project undertaken by the Coalition for Innovative Media Measurement (CIMM) selected RealityMine, “a leading provider of mobile market research technologies and consumer analytics ... to undertake the Children and Teens’ Measurement project. The project’s aim is to make possible a thorough and comprehensive view of cross-platform, digital and mobile measurement of content and ads among children and teens aged two to 17. The initiative, which includes TiVo Research TV viewership data, will be the first to use a router meter for a whole home view of Internet content consumption combined with state of the art passive metering, audio fingerprinting content recognition, and advanced behavioral analytics. ‘With the ability to comprehensively analyze the total media consumption and behavior of kids and teens, our industry will be able to gain unique insights, derived from quantifiable data, into how all digital devices are being used by the next generation of media users,’ said Jane Clarke, CEO and managing director, Coalition for Innovative Media Measurement. ‘For the first time we’ll be able to have a look inside the new dynamics of cross-media usage of the entire family within a household, describe the total consumption behaviors of individuals and obtain a view on total viewership across platforms of individual programs.’” “RealityMine Chosen by Coalition for Innovative Media Measurement to Conduct Youth Total Cross-Media Usage Measurement Project,” 16 June 2015, <http://cimm-us.org/realitymine-chosen-by-coalition-for-innovative-media-measurement-to-conduct-youth-total-cross-media-usage-measurement-project/>.

⁴² Robert Gellman, “Fair Information Practices: A Basic History,” 4 Dec. 2015, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2415020.

minimization” safeguards to ensure that online records are kept to a minimum and cannot be used for ongoing targeting. The commission must also make it clear that there cannot be any deep-packet inspection that allows ISPs to examine the content of communications.

The following profiles illustrate the expansion of data practices by ISPs and others that must be addressed by the FCC’s forthcoming privacy proceeding.

ISPs and Other Video Providers Using Data to Watch Us Across Devices

AT&T

“Our value proposition is to find and target audiences based on the data we have that nobody else has access to.”

— Maria Mandel Dunsche, vice president of marketing & ad sales strategy,
AT&T AdWorks⁴³

“Reach the audience you want. Without paying for the ones you don’t. Combine the power of your 30-second TV ad with the power of digital”
AT&T AdWorks⁴⁴

“Data is at the heart” of AdWorks, the Big Data-enabled ad division of AT&T that claims to have “the industry’s foremost targeting platform.” The AdWorks system enables marketers to “reach your audience everywhere they watch on every screen,” spanning “130 million US customer connections across TV, Internet and mobile.”⁴⁵ Moving beyond what it says is the “largest TV subscriber base, with over 26 million households nationwide,” AT&T is expanding its ability to use data to reach consumers across devices, including video content “accessed on smartphones, tablets, desktop computers and connected devices.”⁴⁶ Its data-targeting system involves the use of its “100% IPTV” platform, which enables significant data collection and audience-targeting capabilities for advertising.⁴⁷

AT&T has integrated its TV Blueprint targeting system with the “addressable” individual household ad-targeting capabilities it acquired from DirecTV when it took control of the leading satellite company last year.⁴⁸ TV Blueprint “uses advanced data, science and

⁴³ “An Interview with Maria Mandel Dunsche,” eMarketer,
<http://www.emarketer.com/corporate/clients/att>.

⁴⁴ AT&T AdWorks, “Targeting,” <http://directvadsales.com/targeting.html?lpos=Header:2>.

⁴⁵ AT&T AdWorks, “Cross-screen,” <http://directvadsales.com/crossscreen.html?lpos=Header:2>;
<https://datajobs.com/AT-T/AdWorks-Hadoop-Engineer-Job~2889>;
<http://www.theladders.com/ATT-AdWorks-Director-IPTV-Adv-Bus-Dev-Advertising-Solutions-New-York-NY|NY|3415297?x=q>

⁴⁶ AT&T AdWorks, “TV Everywhere,”
<http://directvadsales.com/crossscreen.html?lpos=Header:2>; AT&T AdWorks, “The Leader in Addressable TV Advertising,” <http://adworks.att.com/?lpos=Header:1>.

⁴⁷ “AT&T AdWorks Director IPTV Adv Bus Dev, Advertising ...,” TheLadders,
<http://www.theladders.com/ATT-AdWorks-Director-IPTV-Adv-Bus-Dev-Advertising-Solutions-New-York-NY|NY|3415297?x=q>; <http://www.cisco.com/c/en/us/solutions/collateral/service-provider/iptv->.

⁴⁸ “AT&T’s Mike Welch on Programmatic, Addressable and the Coming Multi-billion-dollar Advanced Ad Biz,” FierceCable, 16 Dec. 2015, <http://www.fiercecable.com/special-reports/atts-mike-welch-programmatic-addressable-and-coming-multi-billion-dollar-ad>; “AT&T AdWorks

technology to deliver data-optimized media plans aimed to reach your target audience at scale. Using a predictive modeling algorithm developed by AT&T Labs,” along with other information, AT&T promises to deliver an “advertiser’s target audience when and where they are most likely watching content.”⁴⁹ It also incorporates a consumer’s mobile-device data, including “what wireless device they are using, what operating system they are using for their device, how large a data plan they have, and when their contract expires.”⁵⁰ TV Blueprint “gives advertisers working with AT&T the ability to reach people based on factors like device, operating system, whether or not they’re heavy data users or the status of their carrier contract,” using “sophisticated second-by-second set-top box data” and other information.⁵¹ AT&T pulls data “from millions of set-top boxes” and analyzes what a consumer views (such as on unaffiliated pay-cable networks), and uses these data to target consumers based on their viewing profile.⁵²

The company also takes advantage of its “single-person household viewer data derived from 15 million AT&T U-verse set-top boxes.”⁵³ According to Maria Mandel Dunsche, vice president of marketing and ad sales strategy at AT&T AdWorks, this type of targeting is more accurate. “[In a] multiperson household, it’s harder to nail down who is

and DIRECTV Advertising Sales Combine to Form One Advertising Organization,” 30 July 2015, http://about.att.com/story/att_adworks_now_represents_directv_advertising_products.html. AT&T’s acquisition of DirecTV also marks a major shift in the company’s approach to the multiscreen marketplace. Without abandoning its U-verse video platform altogether, AT&T will stop investing in that platform and “instead use a ‘derivative’ of DirecTV’s in-home equipment to create a new, in-home TV product that the company said will display content from AT&T and others. ... AT&T added [that] the platform, which it called a ‘home media gateway’ ... will support third-party broadband connections, LTE connections and AT&T broadband connections into users’ homes. ... AT&T is also developing a new content gateway that will link to its new in-home equipment,” allowing “users to access the same content outside their homes, including on networks that are not managed by AT&T.” This new content gateway, which will work with AT&T’s in-home platform, will reportedly become a consolidated, single platform over the next two-to-three years. Mike Dano, “AT&T to Stop Investing in U-verse CPE, Will Move to New In-home Architecture Using DirecTV System,” FierceCable, 12 Aug. 2015, <http://www.fiercecable.com/story/att-stop-investing-u-verse-cpe-will-move-new-home-architecture-using-direct/2015-08-12>.

⁴⁹ “The optimized media schedule is then distributed nationally across 70 million HHs.” AT&T AdWorks, “Addressable TV, TV Blueprint, AddressablePlus,” <http://adworks.att.com/products/tv-audience-targeting/>.

⁵⁰ “AT&T AdWorks Adds Anonymous Wireless Customer Data to TV Ad Targeting Platform,” FierceCable, 29 July 2014, <http://www.fiercewireless.com/story/att-adworks-adds-anonymous-wireless-customer-data-tv-ad-targeting-platform/2014-07-29>.

⁵¹ Kelly Liyakasa, “AT&T AdWorks Officiates Marriage Between Mobile Data And TV Audiences,” AdExchanger, 30 July 2014, <http://adexchanger.com/digital-tv/att-adworks-officiates-marriage-between-mobile-data-and-tv-audiences/>.

⁵² “AT&T’s Mike Welch on Programmatic, Addressable and the Coming Multi-billion-dollar Advanced Ad Biz.”

⁵³ Liyakasa, “AT&T AdWorks Officiates Marriage Between Mobile Data And TV Audiences.”

actually watching the TV,” Mandel Dunsche explained. “By narrowing it down to single-person household, you get a better idea of what different audiences view and can then extrapolate and develop a more broad-based media plan.”⁵⁴

Available data-marketing products from AT&T AdWorks include “Digital Boost,” which tracks users from the TV screen to subsequent activity on the Internet and the mobile Web; “In-Store Boost,” which uses hyper-local geo-location tracking to monitor the “path to purchase” from TV ad to retail transaction; “Purchase Boost,” targeted TV advertising designed to stimulate increased in-store activity; “Tune-in Boost,” measurement and refinement of TV advertising; and “iChannel Ad Effectiveness,” targeted advertising on personalized interactive TV channels. AT&T, in short, promises “More scale, more targeted, more screens. Billions of cross-screen advertising impressions including TVE [TV Everywhere], online and mobile; industry-leading technology delivering sophisticated second-by-second set-top box data; [and] ... [t]he industry’s foremost targeting platform [with the] Largest TV subscriber base with over 26 million households nationwide.”⁵⁵

There are also AT&T AdWorks products for its mobile ad platform, where subscribers are encouraged to “populate their name, address, phone number and email address” on forms designed to give advertisers a “seamless, hassle free, real-time interaction.”⁵⁶ AT&T also incorporates “custom list” data provided by its advertisers for targeting. For example, it explains that when an automotive company provides a “list of households that have auto leases expiring in the next three months,” it uses a data broker such as Acxiom or Experian to create a “match” with their subscribers, so they can be targeted.⁵⁷

AT&T AdWorks has developed a “cross-screen system to match users’ mobile, online and television devices together based on identifiers and systems” that the company has “access to.” AT&T AdWorks also developed a “location-based product line capable of using device and cell phone tower based data to determine what locations users listed.”

⁵⁴ “Essentially, single-person household data can make multiperson household campaigns smarter. Although AT&T U-verse reaches 5.9 million households, AT&T AdWorks gives marketers the ability to run data-optimized TV Blueprint media buys and reach as many as 50 million households via its multichannel video programming distribution network (MVPD) that includes players like Cox Communications. ‘What we can model, for example, is if somebody is trying to reach a tech-savvy audience,’ Mandel Dunsche said. ‘We can find women who are 25-35 with income levels over \$100,000 that are married with children and have smartphones and are heavy data users. We can get that granular level in our targeting that goes beyond the standard age and gender that traditional TV planning uses.’” Liyakasa, “AT&T AdWorks Officially Marries Mobile Data And TV Audiences.”

⁵⁵ AT&T AdWorks, <http://directvadsales.com/>

⁵⁶ AT&T, “AT&T AdWorks Announces Click-to-Fill,” 1 Oct. 2012, <http://www.att.com/gen/press-room?pid=23405&cdvn=news&newsarticleid=35455&mapcode=>; http://cargocollective.com/timothy_mcauliffe/filter/introduction/AT-T-Animation-Click-to-Fill

⁵⁷ “AT&T’s Mike Welch on Programmatic, Addressable and the Coming Multi-billion-dollar Advanced Ad Biz.”

AT&T's system is able to "target audiences who visited certain locations as well as report on whether users receiving an advertisement for a location ended up visiting it." Data is "incredibly valuable" to AT&T, explains AT&T AdWorks marketing VP Maria Mandel Dunsche. "... [W]ith 130 million customer connections across various channels—whether it's TV, mobile, broadband, and Wi-Fi, all the way through new channels and screens such as Connected Cars—AT&T has a wealth of very important types of data. But it's not just having the data, it's how you use that data. ... [I]t's really creating actionable insights that make that data valuable."⁵⁸

Every Addressable TV campaign by AT&T, it says, "is fueled by proprietary insights aggregated from over 12 million households, yielding invaluable information about an advertiser's true target. In addition, AT&T AdWorks teams up with leading data partners to expand its intelligence set across multiple industries and categories as well as define the best practices for each. Armed with these insights, brands can optimize the rest of their national ad buys."⁵⁹

AT&T's focus on targeting individual consumers regardless of what device they use, especially mobile phones, has led to new data partnerships. For example, the company is working with Opera Mediaworks and its mobile ad network to take advantage of "very precise mobile location data." According to AT&T, consumers have opted in to "sharing their location" on the apps connected with the Opera platform, which enables Opera to "tie the latitude and longitude of a device and really pinpoint what the home location of a device is."⁶⁰ AT&T AdWorks takes the mobile device's location data and matches it "with the billing address of our addressable TV customers" and then delivers "ads to the mobile devices associated." AT&T boasts that unlike "the Googles, the Facebooks, the Twitters, etc.," it can also send "cross-screen" targeted ads to the TVs. These mobile ads "offer actions such as the ability to click-to-call, add an event to a calendar or receive

⁵⁸ ATT AdWorks also has its own Data Management Platform. Shawn Curran, "Sr. Product Manager at PlaceIQ," Linked In, <https://www.linkedin.com/in/shawn-curran-a81a7115>.

⁵⁹ "Upon completion, post-campaign analyses measure impression delivery (clients pay only for those delivered to their target audience), reach and frequency. But it doesn't end there—AT&T AdWorks can also perform closed-loop analytic studies to determine lift (test vs. control groups) and calculate a true ROI." "AT&T AdWorks: Leading the Charge in Addressable TV Advertising," *Adweek*, 29 Nov. 2015, <http://www.adweek.com/sa-article/att-adworks-leading-charge-addressable-tv-advertising-168311>. AT&T AdWorks also "offers unmatched options for short-form direct response ads. These include placement of your ad in our 11 demographically targeted clusters as well as during premiere live sporting events, on individual networks, and within our interactive channels and addressable capabilities." AT&T AdWorks, "Direct Response," <http://directvadsales.com/directresponse.html?lpos=Header:2>.

⁶⁰ Opera is a Norway-based company now being acquired by a consortium of Chinese entities. Falguni Bhuta, "Opera ASA Receives Acquisition Offer from Chinese Consortium of Companies," 10 Feb. 2016, <http://blog.operamediaworks.com/>; "AT&T AdWorks Launches Cross-Screen Addressable Advertising Trial," 9 Nov. 2015, http://about.att.com/story/adworks_launches_crossscreen_addressable_advertising.html.

relevant coupons. This new ad product can also measure engagement in various ways like a visit to a retail location, coupon redemption and an in-person or digital purchase.”⁶¹

AT&T has also been collaborating with ad-tech specialist Turn to manage the telecom giant’s targeted advertising campaigns, using “Turn’s leading targeting and cross-channel media technology to help AT&T AdWorks’ clients better reach their audiences. The platform employs Turn’s campaign management, ad serving and data management capabilities.”⁶² Turn’s platform provides access to an array of far-reaching data collection, profiling, and targeting capabilities across platforms.⁶³ AT&T also has

⁶¹ “AT&T AdWorks: Leading the Charge in Addressable TV Advertising”; “AT&T’s Mike Welch on Programmatic, Addressable and the Coming Multi-billion-dollar Advanced Ad Biz”; AT&T AdWorks, “Cross-screen.” “AT&T AdWorks can combine AT&T’s ability to deliver household specific ads to more than 12 million households, the largest addressable advertising platform, with Opera Mediaworks’ cross-carrier mobile technology. As a vendor to AT&T, Opera Mediaworks can engage more than 285 million mobile subscribers from major U.S. wireless carriers. The majority of smartphones in the United States already receive customized ads from Opera within thousands of popular apps. This trial extends an advertiser’s reach and helps them better target, drive engagement and measure a campaign’s success from end to end.” “AT&T AdWorks Launches Cross-Screen Addressable Advertising Trial.” “We’re really focused on our owned-and-operated properties through U-verse and third-party relationships to broaden our reach with video and TV ad inventory,” [Maria] Mandel Dunsche [VP of marketing and ad sales strategy at AT&T AdWorks] said. “When we overlay the first-party mobile data we have, I think it [creates] something really unique in the industry.” Quoted in Kelly Liyakasa, “AT&T AdWorks Officiates Marriage Between Mobile Data And TV Audiences,” AdExchanger, 30 July 2014, <http://adexchanger.com/digital-tv/att-adworks-officiates-marriage-between-mobile-data-and-tv-audiences/>. According to Dunsche, “We have all the top national advertisers and work across industry verticals. We’re a top-five online audience network, according to comScore. We have 186 million monthly unique visitors online, and 160 million monthly unique users on mobile platforms. On TV, we have 12.7 million AT&T U-verse set-top boxes, and our AT&T AdWorks Television Audience Network has a reach of more than 37 million households. We have tremendous scale Our value proposition is to find and target audiences based on the data we have that nobody else has access to.” “An Interview with Maria Mandel Dunsche.”

⁶² According to AT&T, “None of the data we store on the Turn systems is personally-identifiable, and as an extra measure of protection we encrypt it before it leaves the AT&T firewall.” “AT&T Adworks and Turn Announce Secure, Private Cloud-based Audience Management Platform,” 29 Mar. 2012, <http://www.att.com/gen/press-room?pid=22639&cdvn=news&newsarticleid=34139&mapcode>.

⁶³ Turn, “Solutions: Digital Data Centralization,” <https://www.turn.com/solutions#digital-data-centralization>; ⁶³ Turn, “Solutions: Consumer Intelligence,” <https://www.turn.com/solutions#consumer-intelligence>. AT&T has established a state-of-the-art facility where its “clients (brands, agencies, and planners) could experience AT&T’s extensive consumer data and understand how AT&T could help them maximize their cross-platform advertising potential, now and in the future. ESI designed the AdWorks Media Lab, a dynamic sensory experience that combines compelling storytelling, data visualizations and high-tech demonstrations, to showcase the power of a targeted and unified multi-platform communications strategy. The Lab experience can be customized for each individual client—from the lighting and visual displays in the reception area to the full presentation components. With a wealth of data at their fingertips and a suite of cutting-edge solutions to explore, clients in the media lab work with

investments and works with online streaming video content providers, such as FullScreen.⁶⁴

AT&T to forge more informed, effective and meaningful connections with the right customers at the right time.” ESI Design, “Our Work: AT&T AdWorks Media Lab,” <http://www.esidesign.com/work/att-adworks-media-lab>. One of the results of this research effort is the emergence of interactive TV advertising, as AT&T AdWorks now offers its clients the opportunity to “engage [their] audience with customized, website-like experiences. Our subscribers can request coupons, enter sweepstakes, find your nearest retail location, and more,” the company promises. AT&T AdWorks, “iTV,” <http://adworks.att.com/interactive.html?lpos=Header:2>. Phil Goldstein, “Report: AT&T Injecting Advertising into Websites When Users Connect to its Wi-Fi Hotspots,” FierceWireless, 26 Aug. 2015, <http://www.fiercewireless.com/story/report-att-injecting-advertising-websites-when-users-connect-its-wi-fi-hots/2015-08-26>. “Our Emmy® Award-winning interactive solutions let you create branded experiences right on your audience’s TVs. Customers are directed to your interactive solution from the ad, so you’re able to collect essential engagement data while your audience is exploring your product.” “At the conclusion of your interactive campaign,” AT&T claims, “you’ll receive complete data detailing all your household impressions and engagement metrics.” AT&T AdWorks, “iTV.”

⁶⁴ “The Chernin Group and AT&T’s Otter Media to Acquire Majority Stake in Fullscreen,” 22 Sept. 2014, http://about.att.com/story/the_chernin_group_and_atts_otter_media_to_acquire_majority_stake_in_fullscreen.html; Brian Steinberg, “AT&T, Fullscreen to Back Digital Influencers in Months-Long Projects,” *Variety*, 11 Feb. 2016, <http://variety.com/2016/digital/news/att-fullscreen-hello-lab-digital-mobile-grace-helbig-1201702913/>.

Cablevision

*“[T]he ability to target down to the household level is a unique capability, when historically it’s been bought on an age and gender basis. Here, we have thousands of attributes. ... Because we’re dealing with authenticated data, we’re not using cookies and proxies to determine who someone is. We have matching attributes, which is more unique than doing say, cookie matching.”*⁶⁵

—Ben Tatta, president, Cablevision Media Sales

In 2015 Cablevision launched its Total Audience Application (TAPP), a programmatic “advanced data-driven tool that automates the planning of addressable and optimized linear television advertising campaigns. ... TAPP combines unique and comprehensive first-party data with the actionable insights marketers need to plan advanced television advertising campaigns in an intuitive interface, transforming the model from spot-based to audience and impressions-based media planning.”⁶⁶ In announcing TAPP, Cablevision Media Sales President Ben Tatta explained that the company was “moving more toward a Google model where it’s much more real-time with the ability to optimize.”⁶⁷

Cablevision’s “Advanced Advertising” division is accelerating work on a portfolio of products involving “dynamic ad insertion for Video on Demand, DVR and IPTV/OTT (over the top), optimized linear, addressable TV, digital, mobile, WiFi, Interactive TV and T-Commerce (TV commerce)” It offers cross-platform targeting and other contemporary data-driven marketing applications, including “programmatic segmentation, customer journey mapping, data onboarding (with Adobe/Epsilon),” integration with Acxiom/LiveRamp, and more.⁶⁸

One of the pioneers in interactive television, Cablevision now serves 2.5 million households and 7 million set-top boxes. A Cablevision executive explained that they are “pulling second-by-second tune-in and viewership data and advertisers are able to append

⁶⁵ Quoted in Kelly Liyakasa, “Cablevision Says Audience Addressability Will Trump Cookies And Proxies,” Ad Exchanger, 4 May 2015, <http://adexchanger.com/digital-tv/cablevision-says-audience-addressability-will-trump-cookies-and-proxies/>.

⁶⁶ “Cablevision Unveils Tapp—An Advanced Media Planning Platform Powered By Census-Level Television Audience Data,” 30 Apr. 2015, <http://www.aaa.org/news/agency/Pages/CablevisionUnveilsTapp-AnAdvancedMediaPlanningPlatformPoweredByCensus-LevelTelevisionAudienceData.aspx>.

⁶⁷ Quoted in Liyakasa, “Cablevision Says Audience Addressability Will Trump Cookies And Proxies.”

⁶⁸ Anthony Q. Bowen, “Director of Media Strategy at Cablevision,” Linked In, <https://www.linkedin.com/in/anthonyqbowen>; Acxiom, “Partner Spotlight: Cablevision,” <http://www.acxiom.com/partner-spotlight-cablevision/>; Cablevision, “Jobs: Associate Product Manager, Advanced Advertising,” <http://jobs.cablevision.com/job/6280739/associate-product-manager-advanced-advertising-new-york-ny/>; Maximiliano Carranza, “Strategic Partnership at LiveRamp,” Linked In, <https://www.linkedin.com/in/maxcarranza>.

tune-in data to first- or third-party data.”⁶⁹ This information is integrated with data provided by advertisers (so-called first-party data) along with third-party data from powerful data brokers such as Acxiom and Experian to identify potential targets. Kristin Dolan, Cablevision’s CEO, explained that the company’s use of set-top and other data helps it bring the capabilities of Internet advertising to its cable targeting:

What we get really excited about is the opportunity to do impression based selling versus household (or GRP type) media schedules [W]e have census level data . . . in our footprint of seven million set top boxes and we record every single channel tune in real-time, 24/7. Imagine seven million “people meters” . . . that are monitoring every single channel on the dial, and taking that information to create customized schedules for advertisers. So it’s not just the 365 People Meters that Nielsen has in our footprint. It’s every single home, and every single set-top and every single channel. You come to us and say you want to target a particular customer that has these behavioral trends or these types of income—insert any item you can tell us about and we can put together in real-time a customized media schedule that will be more effective in targeting and reaching the customer and give you real-time information back. . . . It’s basically everything you’ve been able to do on the Internet [with advertising] . . . is now going to be also available on television.⁷⁰

Cablevision is in the process of having its proposed acquisition by Netherlands-based Altice reviewed. A key feature of the deal is to take advantage of Cablevision’s “triple play subscribers—phone, TV and Internet,” which make up 65 percent of the company’s subscriber base.⁷¹ As a recent industry report makes clear, “Cablevision has rich sources of data to help advertisers find their target audiences. Cablevision can enrich its data with an array of attributes that an advertiser can choose from, going way beyond age and gender to households that rent, tech savvy households, households with pets and so on. Advertisers can introduce their own customer information to the process of building target audiences.”⁷² TAPP allows marketers to target their customers by “ethnic group” (“African American, Caribbean/Non-Hispanic, Central Asian, Eastern Europe, etc.”);

⁶⁹ Quoted in Liyakasa, “Cablevision Says Audience Addressability Will Trump Cookies And Proxies.”

⁷⁰ Quoted in Daisy Whitney, “Cablevision Finds Success with Census-Level, Impression-Based Ads,” Beet.TV, 16 June 2015, <http://www.beet.tv/2015/06/kristindolan.html> While Cablevision boasts that TAPP “brings unprecedented access” to its millions of set-top box data, it also claims that this information is aggregated and de-identified census-level audience tuning data. Such claims of anonymity are questionable, however, in terms of the practical impact on consumers in particular, as Cablevision targets specific households regardless of whether or not names and addresses are involved.

⁷¹ John Eggerton, “Altice Files Cablevision Deal With FCC,” *Multichannel News*, 15 Oct. 2015, <http://www.multichannel.com/news/fcc/altice-files-cablevision-deal-fcc/394600>.

⁷² John Moulding, “Cablevision Works Towards Automation For Programmatic Linear TV,” Videonet, 6 Nov. 2014, <http://www.v-net.tv/cablevision-works-towards-automation-for-programmatic-linear-tv>.

their education (“less than High School, High School, some college, etc.”); “dwelling type” (“single family, multi-family, marginal-multi-family”); whether they rent or own; language spoken in the household; political affiliation; auto ownership and more.⁷³ “With just a few jabs at an iPad screen, the TAPP interface allows buyers to target customers in specific high-density zip codes throughout the New York DMA Buyers may select from a menu of 250 expanded demo attributions (age, sex, education, income, occupation, languages spoken, etc.) and then tick off one or more purchase-intent attributes organized by verticals such as travel, financial services and auto. ‘TAPP is basically the programmatic platform for audience-based ad campaigns,’ said Ben Tatta, president of Cablevision Media Sales.”⁷⁴

According to Ben Tatta, “We are now defining audiences in our customer’s terms, which means an automotive manufacturer can use its own customer data to message existing SUV owning households instead of those interested in sports cars, and insurance companies can target separate audiences for renters and home owners.”⁷⁵ “Not only is every impression on the Cablevision network identified (via STB tuning) but it is also authenticated, in terms of the viewer segment. In the online world the audience attributes are inferred by cookies,” but as Tatta points out, “There is no need to decipher cookies.”⁷⁶

Tatta also sheds light on Cablevision’s strong commitment to programmatic TV, “the automation for the buying of audience-based media. We translate that into impressions rather than spots. The big changes, from our perspective, are moving from spots sold on a GRP [gross rating point] basis to impressions sold on a CPM [cost per 1,000 impressions] basis, and expressing inventory in terms of impressions and providing an automated method for buying audiences.”⁷⁷ Concerning Cablevision’s TAPP system, which the company tested with “three of the top agencies—GroupM, Starcom [MediaVest Group] and Horizon [Media]”—Tatta noted that it also incorporates

Total Audience Data, which is our census-level audience data service that we provide to advertisers as well as programmers that want to get real deep insight

⁷³ Namakula Mu, “Cablevision ‘Tapp,’” Vimeo, <https://vimeo.com/144146415>.

⁷⁴ Anthony Crupi, “Cablevision ‘TAPPs’ Into the Power of Addressable Advertising,” *Ad Age*, 30 Apr. 2015, <http://adage.com/article/media/cablevision-tapps-power-addressable-advertising/298339/>. Among the companies using Cablevision’s new TAPP system is ESPN (and its parent company, Disney), which claimed that “[t]he comprehensive consumer insight from this collaboration will enable us to develop a multiplatform model that works on a national scale and ushers in a new chapter in the data and effectiveness story for our advertisers.” Jim O’Neill, “ESPN Signs On for a Swing with Cablevision’s New Addressable Ad Product,” Videomind, 13 May 2015, <http://www.ooyala.com/videomind/blog/espn-signs-swing-cablevision-s-new-addressable-ad>.

⁷⁵ Quoted in Moulding, “Cablevision Works Towards Automation For Programmatic Linear TV.”

⁷⁶ Moulding, “Cablevision Works Towards Automation For Programmatic Linear TV.”

⁷⁷ Quoted in Jeff Baumgartner, “Cablevision Makes an Impression,” *Multichannel News*, 29 June 2015, <http://www.multichannel.com/cablevision-makes-impression/391760>.

into audience measurement. This basically is a platform that allows the buy side, the agencies, to get access to that data as well as the inventory. In essence, they can plan a very granularly targeted campaign. For instance, if an auto manufacturer is targeting inmarket buyers for an SUV, it can plug into those parameters and get a sense of how many households meet those criteria within a footprint. If their desire was to buy on an impression basis, they get to plug in what their impression goals are, what their target CPM is, and it will generate a schedule that will support both their impressions as well as their CPM targets. It's nearing what has been done on the Web; the difference is we're doing it with television inventory, which is in finite supply ...⁷⁸

Oren Harveno, CEO of video ad tech vendor Eyeview, explains how his company has worked with Cablevision to target individual households: "We can use the data we know from the cookie of an individual that visited a site or ... data of someone who usually buys DIY products at a retailer ... [W]e can buy that individual household on TV and also serve them an ad that makes sense for them on TV."⁷⁹

Among Cablevision's DDTV advertising partners is ad giant WPP's interactive TV unit MODI Media. "We're starting to see the data come together where we can accurately define an appropriate household and message to them at scale," notes Modi present

⁷⁸ "By buying targeted impressions," Tatta added, "you eliminate a significant amount of waste. Depending on the type of audience an advertiser is looking for, historically spots were purchased based on age and gender al one. One of the biggest developments with impression-based buying is that those impressions can be defined in very granular terms that are more relevant to the client." Quoted in Jeff Baumgartner, "Cablevision Makes an Impression."

⁷⁹ Quoted in Robert Andrews, "Eyeview Offers Addressable TV Ads with Cablevision, DISH Inventory & Programmatic TV w/ Clypd and WideOrbit," Beet.TV, 18 Oct. 2015, <http://www.beet.tv/2015/10/eyevieworen.html>. Eyeview makes extensive use of data in its targeted ad campaigns. Its VideoIQ data management system combines CRM (customer relationship management) data, purchase activity, demographics and psychographics, website activity, and TV watching behavior for a three-pronged approach to ad targeting:

- ONBOARD
Easily onboard consumer knowledge and business intelligence from 1st and 3rd party sources
- SEGMENT
Utilize pre-defined segments and create custom audiences based on campaign performance
- ANALYZE
Analyze performance across consumer segments and store locations to optimize campaigns for the best results

Eyeview, "VideoIQ," <http://www.eyeviewdigital.com/dpo/>.

Michael Bologna.⁸⁰ Cablevision's TAAP "can now match cable audiences to a third-party data set in minutes."⁸¹

A new Cablevision patent filing promises not only to streamline the TV ad-sales process through advanced programmatic technology, but also to move the company much closer to granular, personalized TV advertising. "In a move aimed at making the buying and selling of TV spots more like Internet advertising, Cablevision has developed a programmatic [sic] ad-sales system that lets media buyers submit offers for available inventory. 'While Internet-based advertising has made progress in incorporating programmatic methods of audience discovery and targeted marketing, television

⁸⁰ Quoted in Kelly Liyakasa, "Modi's Bologna: Behind GroupM's New Addressable TV Unit," AdExchanger, 6 Jan. 2014, <http://adexchanger.com/agencies/modis-bologna-behind-groupms-new-addressable-tv-unit/>.

⁸¹ Zach Rodgers, "TV 2.0 Moves From Concept To Reality At Cannes," AdExchanger, 25 June 2015, <http://adexchanger.com/ad-exchange-news/tv-2-0-moves-from-concept-to-reality-at-cannes/>. See also "Cablevision and Modi Media Forge Long-term Partnership on Addressable TV," 2 Dec. 2015, <http://www.groupm.com/news/press-releases/cablevision-and-modi-media-forge-long-term-partnership-addressable-tv>. Modi Media specializes in addressable TV "the ability to send a TV commercial to a specific household based on a brand's actual target profile," which can involve "income, advanced demography, and purchase behavior, among others. Ads are served only to the homes that fit the specified target criteria"); hyper-local TV ("the ability to insert a TV commercial directly to a specific zone or zip code based on geographic skews, sales data, trading radius, etc. ... [which] helps focus clients' TV advertising in highly concentrated local neighborhoods without having to buy an entire market, thereby reducing waste"); and interactive TV (which "enables advertisers to engage consumers more deeply with interactive content and promotions, using TV commercials as a jumping off point," such as "dedicated advertiser channels, commercial overlays for lead generation, smart TV applications and e-commerce"). "GroupM Launches New Advanced Television Unit," 6 Jan. 2014, <http://www.wpp.com/wpp/press/2014/jan/06/groupm-launches-new-advanced-television-unit/>. Paul Haddad, senior vice president and general manager, advanced data analytics, Cablevision Media Sales, notes that "There are no technical or operational hurdles left today for implementing census level measurement in near real-time. Any excuses will be short lived as marketers mandate accurate and accountable measurement of true viewership and of advertising "across mediums" (*linear, time shifted, and on demand*). When added to the ability of creating audience segments, this type of viewership data will accurately measure reach and frequency 'by segment,' impressions 'by segment,' and—most importantly—measure conversion rates on the back end 'by segment.' This pillar becomes a critical component for marketers to determine their campaign parameters before embarking on analyzing inventory availability and optimal pricing as they evolve to programmatic buying." With regard to inventory data, Haddad explained that "Once a segment is created (*e.g., international travelers*) and its corresponding viewership is analyzed and determined (*e.g., affinity for these 150 programs and 65 networks*), the ability to purchase optimized impressions (*linear or addressable*) will be dependent on the reliability of the information of the underlying inventory; hence the need for near real-time access to inventory data. Anything shorter than near real-time information will be disruptive and cause confusion, costly over/under selling of impressions and definite margin losses to both the buyers and sellers." Paul Haddad, "Guest Blog: The Four Pillars of Data for Programmatic TV Advertising," *Broadcasting & Cable*, 1 Apr. 2015, <http://www.broadcastingcable.com/blog/currency/guest-blog-four-pillars-data-programmatic-tv-advertising/139309>.

advertising has additional challenges that complicates adoption of a programmatic model,' Cablevision states in a patent application published [in October 2015]. 'Accordingly, it would be advantageous to provide a mechanism for the programmatic buying and selling of television advertisements.' Cablevision Media Sales SVP of Technology Tom Donohue is named as inventor on the patent application, titled, 'Programatic Buying and Selling of Television Advertising.'⁸²

Leveraging granular data and precise details of household viewing behavior, and onboarding third-party data covering other intimate details of consumer's lives, Cablevision is able to analyze and target specific individuals with video advertising across a range of screens. "This set-top box level targeting lets marketers target customers that fit particular trends, profiles, demographics and attributes, and they can also pair the Cablevision data with their own or third-party data" Illustrating how ISPs provide advertisers the ability to easily access and use a customer's information without the knowledge and control of that consumer, Cablevision has "created a tool we are giving [ad agencies the ability to] access all the information and put together custom schedules on their iPad ... in a couple a minute turn-around."⁸³

⁸² Steve Donohue, "Cablevision Pursues Programmatic Ad Sales," The Donohue Report, 8 Oct. 2015, <http://www.donohuereport.com/cablevision-pursues-programmatic-ad-sales/>. "Abstract: Disclosed herein are system, method, and computer program product embodiments for the programmatic buying and selling television advertisement. An embodiment operates by receiving a request for an available advertising segment inventory meeting one or more criteria. The system transmits to a buyer system available advertising segment inventory meeting the criteria, and receives an offer for the advertising segment including an offer price and a desired date range. The system then performs a comparative analysis of the order with one or more additional received offers for the advertising segment and transmits an offer acceptance notification based on the analysis." Donohue, "Cablevision Pursues Programmatic Ad Sales." This is not Cablevision's only patent breakthrough in the advanced advertising arena. On 30 June 2015, the company was granted patent No. 9,071,370 for a "System and Method for Set Top Box Viewing Data," which covers "'critical aspects' of the cable operator's system for capturing, synthesizing, and running analytics against viewing data." Jeff Baumgartner, "Cablevision Scores Set-Top Data Patent," *Multichannel News*, 20 July 2015, <http://www.multichannel.com/news/technology/cablevision-scores-set-top-data-patent/392332>.

⁸³ Whitney, "Cablevision Finds Success with Census-Level, Impression-Based Ads."

Charter Communications

*“Young and old, Americans are spending more hours of the day on screens than ever before. Good. Because with Spectrum Reach, those TVs, tablets, computers, and smart phones become your everywhere, all-the-time multiscreen advertising arsenal.”*⁸⁴
—Spectrum Reach

Charter Communications offers a range of multi-platform “hyper” targeting services, including for television and the Internet.⁸⁵ Its Spectrum Reach division (formerly Charter Media) helps “businesses find their perfect customers through targeted, integrated advertising and promotional solutions on national cable networks, online, and at events,” including through data gathered for lead generation.⁸⁶ “Charter features data-driven advertising services across a variety of platforms,” promising to “target customers on every screen” and that ad content “airs before the content requested by the viewer.”⁸⁷

⁸⁴ Spectrum Reach, “Media,” <https://spectrumreach.com/results/client-solutions/media>.

⁸⁵ “Spectrum Reach,” LinkedIn, <https://www.linkedin.com/company/charter-media>; <https://spectrumreach.com/results/customer-journey>.

⁸⁶ Spectrum Reach, <http://www.chartermedia.com>. See also, “Charter Media Is Now Spectrum Reach | EIGHT HOURS,” Vimeo, <https://vimeo.com/126495946>; “The New Visionary Customer—Phillip Aimé,” YouTube, 17 Aug. 2015, https://www.youtube.com/watch?v=eo_tijhBVkU; Spectrum Reach, “Automotive,” <https://spectrumreach.com/results/client-solutions/automotive>.

⁸⁷ Spectrum Reach, “Spectrum Reach Commercials,” <http://chartermedia.com/what-we-do/spectrum-reach-commercials>. Charter describes its multi-screen approach as follows:

- On Air: television advertising that is targeted, engaging and efficient for businesses of all sizes. In partnership with you, we craft messages that speak directly to your customers’ desires and interests while building awareness of your product or service.
- Digital Ad Network: In today’s multi-screen world, connecting your business to the right customers can be more challenging than ever With the ability to reach your customers wherever they are, viewing whatever they like, the Charter Digital Ad Network synchronizes your TV and online advertising. This combination makes both your television and online ad campaigns more focused, more efficient and more effective.
- Online: Charter.net offers an inspiring, interactive environment for consumers to access information about products, check e-mail and explore the latest in media, technology and entertainment. Advertising on Charter.net connects advertisers with local customers 24/7 who return often and spend more time at Charter.net – the place for advertisers to gain an immediate awareness in an uncluttered environment.
- Mobile: A fresh, dynamic solution to engaging customers, mobile marketing creates a personal relationship with your customers by offering them instant opportunities on their mobile device. Timely and personal, mobile marketing targets relevant consumers and builds an exclusive database of customers for advertisers to remarket to again and again.
- On Demand: Charter OnDemand provides advertisers a ground-breaking opportunity to speak directly to interested consumers with an unlimited amount of compelling, informative and entertaining content. Charter OnDemand allows you to REACH the right people with content that creates RELEVANCY and delivers your message through direct ENGAGEMENT with the consumer.

Spectrum Reach, the company declares, “applies insightful research to understand consumer behavior and build targeted, multi-screen media plans personalized for each customer.” It offers “eight solutions,” including “targeted TV, targeted devices, targeted leads, and targeted visits.”⁸⁸ For example, using its various customer data resources, Charter delivers targeted data-driven marketing on the “small screen” through its “targeted devices” offering, placing ads “on all the devices your customers use and on the shows your customers watch.”⁸⁹ Spectrum Reach also offers its ad clients access to dashboards so they can monitor in near-real time the results of their targeting campaigns “across every screen, every device, no matter where they are.” It also provide “trackable emails” and “trackable phone calls” to ad clients such as auto dealers.⁹⁰

Charter is also working with data broker Allant (now owned by Acxiom) for expanded and enhanced integration of third-party data for even more precise targeting. “With accurate measurement (who is a customer and who is a prospect) and identity resolution (what are the facts that I know about them) we create a framework for the CMO to make sound investment decisions,” Allant promises its clients.⁹¹ Charter’s work with Zodiac Interactive is similarly designed to sharpen its ad-targeting accuracy down to the household level, using Zodiac’s full PowerUp product suite, including a set-top box software stack and a cloud-based management system. “Zodiac’s PowerUp AMS manages Charter’s multitude of devices, distributing everything from electronic program-guide data, audience data collection, caller ID info, and parental control settings. The

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- Interactive Television: Charter Interactive TV brings your customers to the edge of their seat by engaging them in the actual programming. Through Interactive TV your customers don’t simply watch, they participate. They’ll vote on questions posed while the action’s still going on, take part in on-screen polls, request more information from you, or go directly to a custom microsite to learn more on their own.

Spectrum Reach, “Advertising Platforms,” <http://chartermedia.com/advertising-platforms>.

⁸⁸ Davonna Dangerfield, “New Dashboard Provides Up-to-the-Minute Campaign Results,” LinkedIn, 1 Dec. 2015, <https://www.linkedin.com/pulse/new-dashboard-provides-up-to-the-minute-campaign-davonna-dangerfield?trk=prof-post>.

⁸⁹ Spectrum Reach, “Spectrum Reach Solutions: PreRoll,” <https://spectrumreach.com/preroll>.

⁹⁰ Spectrum Reach offers its ad clients access to dashboards so they can monitor in near-real time the results of their targeting campaigns “across every screen, every device, no matter where they are.”

⁹¹ Allant, “Digital Advertising: Advanced Digital Insight,” <http://www.allantgroup.com/digital-adi.html>. See also Philip Duddy, “Advanced TV Advertising Overview Series, Part 1: Assessing the Pros and Cons,” <http://www.allantgroup.com/blog/advanced-tv-advertising-overview-series-part-1-assessing-the-pros-and-cons>; and Diane Leung, “Advanced TV Advertising Overview Series, Part 2: Three Key Differences between Traditional and Advanced TV Metrics,” <http://www.allantgroup.com/blog/advanced-tv-advertising-overview-series-part-2-three-key-differences-between-traditional-and-advance>.

system is also set up to provide full, remote connectivity to ‘unmanaged’ devices such as retail over-the-top boxes.”⁹²

Charter is also a joint owner (with Arris Group) of cloud TV company ActiveVideo, “the developer of CloudTV™, the only cloud-based software platform enabling service providers, content aggregators, and consumer electronic (CE) manufacturers to rapidly deploy new services by virtualizing consumer premises equipment (CPE) functions in the

⁹² Jeff Bumgartner, “Zodiac Interactive Stacks Up at Charter,” <http://www.zodiac.tv/zodiac-interactive-stacks-up-at-charter/>. Additionally, PowerUp AMS brings the worlds of cable and Internet video even closer, enabling “video service providers to unify and integrate Web, mobile, game consoles, and managed devices with service providers and third-party services and Internet applications. ... AMS Solution Adapters leverage core server functionality to deliver use-case specific capabilities. Examples include ...

- Social Media Integration
- Connecting to MSO Services (e.g., Billing)
- Connecting to Third-Party Services
- Comprehensive Monitoring
- Advanced Advertising...

“Pathway to New Apps

“Incorporate tweets, Facebook updates, RSS feeds, broadcast “walled garden” content, and any other applications able to be invoked by addressable device messages.” Zodiac Interactive, “PowerUp AMS: Bringing It All Together,” <http://www.zodiac.tv/power-up-server-solutions/powerup-ams/>. See also Zodiac Interactive, “PowerUp AMS Use Cases,” <http://www.zodiac.tv/power-up-server-solutions/ams-applications/>. Bringing the worlds of data driven TV and the Internet still closer together, “Zodiac Interactive’s Advanced Targeted Advertising solution has the capability to provide features beyond legacy limitations.

With PowerUp AMS and PowerUp Targeted Advertising Applications including EBIF user agent, the ability exists to monetize a technology platform with the benefit of reusable core technology and modular extensions for desired functions:

- Telescoping
- Request for information (RFI)
- Data collection
- TVCallMe
- Customer targeting (geographic, demographic, filters)
- Unbound applications

The solution’s key elements can be integrated with existing platform and supports SCTE-130 standards, which allows RFI, telescoping and geo-targeting to increase revenue opportunities as well as richer user experiences. A use case example that demonstrates the strength of the solution is an advertising application that allows an RFI request to provide a social media experience related to the product, such as reviews and comments on the product and special deals. And with Zodiac’s patent-pending TVCallMe application, an automatic phone call between advertiser and consumer can be initiated for information and/or ordering.

Zodiac Interactive, “Advanced Targeted Advertising,” <http://www.zodiac.tv/power-up-server-solutions/advanced-targeted-advertising-2/>.

cloud. CloudTV enables the delivery of next-gen user interfaces, online content, and interactive advertising for TV to millions of set-tops and connected devices.”⁹³

Additionally, Charter has entered into a strategic agreement with Cisco for set-top boxes, through which the latter “will supply key products in support of Charter’s breakthrough next-generation video solution.”⁹⁴ Charter Communication’s bid for Time Warner Cable

⁹³ “ARRIS, Charter Acquire ActiveVideo® Through New Joint Venture,” 14 Apr. 2015, <http://ir.arris.com/phoenix.zhtml?c=87823&p=irol-newsArticle&ID=2034729>. Charter’s plan to move toward a cloud-based approach with ActiveVideo’s technology “will allow the MSO to offer its new Spectrum UI and new apps across its footprint to both new IP-capable, such as its emerging Worldbox, as well as to legacy QAM [quadrature amplitude modulation]-based boxes that don’t speak IP.” Jeff Bumgartner, “Moffett: Charter’s Cloudy Video Future Is Bright,” *Multichannel News*, 7 Dec. 2015, <http://www.multichannel.com/news/content/moffett-charter-s-cloudy-video-future-bright/395765>. “ActiveVideo is about to do for interactive advertising what it has already done for user interfaces and video applications – give cable operators and other service providers the ability to scale those products to their entire base of IP-capable and older QAM-locked set-tops, rather than just to a smaller subset of new devices.” Jeff Bumgartner, “ActiveVideo Eyes Scale With Interactive Ad Platform,” *Multichannel News*, 6 Jan. 2014, <http://www.multichannel.com/news/content/activevideo-eyes-scale-interactive-ad-platform/356586>.

⁹⁴ “Charter will offer both an HD only and an HD-DVR ‘Worldbox’ featuring dual IP/QAM capabilities, configurable up to 16 tuners, a DOCSIS 3.0 cable modem, 1 Gig of RAM, high-powered USB to enable future applications, and a terabyte of storage on the HD-DVR. Charter expects to launch its new fully featured cloud based user interface, Spectrum Guide on Worldboxes, as well as on legacy boxes currently deployed within the Charter footprint. The Spectrum Guide features intuitive search and discovery capabilities with attractive graphics and TV and movie poster art that provides customers an enhanced state-of-the-art experience.” “Charter and Cisco Enter Agreement in Support of Charter’s Breakthrough Next-Gen Video Solution,” 6 Jan. 2015, <http://newsroom.cisco.com/press-release-content?articleId=1570038>. Cisco’s Videoscape TV Addressable Advertising suite sends “marketing messages that are based on subscribers’ demographic profile, location, and other criteria. ... Cisco Videoscape TV Addressable Advertising draws on granular subscriber information to help you bring the right advertisements to the right viewers. Using set-top box measurement data and DVR hard-disk space, this solution helps you personalize the viewer experience. Cisco, “Cisco Universal Small Cell 5310,” <http://www.cisco.com/c/en/us/products/video/videoscape-tv-addressable-advertising/index.html>. Cisco’s work on data-driven advanced advertising includes helping Sky in the UK launch its “SkyAdsmart” system that includes the following features:

- Sophisticated ad-targeting engine that classifies viewers according to 90 combinable audience attributes
- First-of-its-kind viewing measurement capability that can measure advertising exposure across 500,000 subscribers, encompassing 40 million viewing events a day (for example, every time a viewer changes channels, pauses, rewinds, etc.)
- Mechanisms to download Sky AdSmart software and advertisements to millions of Sky+ HD STBs without disruption to viewers, converting deployed hardware to dynamic ad servers without the need to replace customer hardware
- Aggregation of third-party demographic data with Sky IQ, Sky’s data analysis division...

“Sky AdSmart provides an efficient, automated platform to deliver highly targeted advertising to Sky TV subscribers. Drawing on information from Sky TV and Experian, the system creates granular profiles of subscriber households. Households are associated with 90 combinable

and its proposed acquisition of Bright House Networks will make the company an even more potent force in its use of data for targeting across platforms.⁹⁵

attributes according to region and metropolitan area, household composition (including gender and life stage of the subscriber, whether the subscriber has children, children's ages, etc.), and measurements of financial outlook, lifestyle and affluence Based on the subscriber's profile, Sky AdSmart pre-positions up to 200 targeted ads on the viewer's STB. The system automatically selects the most relevant ad to serve based on the content and time of day, drawing on metadata to help ensure that it complies with all regulatory and policy rules to deliver a particular ad at a specific time. The system also provides intelligence to ensure a better user experience, for example, allowing advertisers to define exactly how often a viewer sees an ad, and how many times an ad will run in a given timeframe. Furthermore, AdSmart only charges advertisers when at least 75 percent of the ad is viewed—compared to the online commercial model, where advertisers are charged even if just a single second or frame of their ad plays.” Cisco, “Sky Customer Case Study,” <http://www.cisco.com/c/en/us/solutions/collateral/service-provider/videoscape/case-study-c36-731847.html>. A glimpse into Charter's targeted-TV-advertising aspirations is available in the company's recent hiring of 30-year ad-industry veteran David Kline as executive vice president, president of media sales. In Kline's own words, “Advertisers are asking for more and better ways to enhance their sizable investment in television ads. Our goal is to offer advertisers data-driven, better targeted ads that, in some cases, subscribers will be able to interact with. The advanced services we will make available in our markets will distinguish Charter as the advertising platform of choice.” “David Kline Joins Charter as Executive Vice President, President of Media Sales,” 5 Oct. 2015, <http://www.prnewswire.com/news-releases/david-kline-joins-charter-as-executive-vice-president-president-of-media-sales-300153979.html>.

⁹⁵ “Charter Communications to Merge with Time Warner Cable and Acquire Bright House Networks,” 26 May 2015, <http://www.prnewswire.com/news-releases/charter-communications-to-merge-with-time-warner-cable-and-acquire-bright-house-networks-300088457.html>.

Comcast

Comcast's "new advertising platform ... provides real-time targeted ads ... a cloudbased delivery platform that will move data flows into the hundreds of terabytes of data daily" and can "query a massive data store in real time to fine tune the ad delivery system."
—MapR⁹⁶

Incorporating both Comcast Cable and NBCUniversal, the Comcast Corporation is actively involved in the race to build advanced data-collection technologies into broadband networks and multi-screen video systems. Through its "Spotlight" advertising service, it provides "multi-screen" targeting that includes in-home as well as mobile devices.⁹⁷ It offers "select" advertisers the ability to use programmatic data to target "Comcast's 20 million broadband subscribers with scale and precision" via its XFINITY.com and xfinityTV.com sites.⁹⁸

In addition to its own cutting-edge research and development efforts, Comcast has also acquired a number of leading advanced advertising and data-targeting companies (including programmatic TV specialist Visible World in June 2015 and interactive ad service provider FreeWheel in March 2014, discussed further below).⁹⁹ These acquisitions build upon on Comcast's growing use of consumer data for online targeting, including through its Spotlight advertising division. Spotlight, which reaches more than 35 million households with television service and over 20 million with broadband Internet service, already features interactive and targeted advertising that "precisely segment[s] audiences based on demographic, psychographic and geographic criteria."¹⁰⁰

⁹⁶ MapR, "Comcast Uses MapR for New Advertising Platform That Provides Real-Time Targeted Ads," <https://www.mapr.com/resources/comcast-uses-mapr-new-advertising-platform-provides-real-time-targeted-ads>.

⁹⁷ Comcast Spotlight, "Ad Solutions," <http://www.comcastspotlight.com/ad-solutions/overview>.

⁹⁸ Rubicon Project, "Comcast Spotlight Selects Rubicon Project As Digital Advertising Automation Platform For Private Exchange," 3 June 2014, <http://rubiconproject.com/2014-press-releases/comcast-spotlight-selects-rubicon-project-digital-advertising-automation-platform-private-exchange/>.

⁹⁹ Seth Haberman, "The Next Step for Visible World: Joining One of the Most Innovative Media and Technology Companies in the Country," Visible World Blog, 4 June 2015, <http://www.visibleworld.com/blog/the-next-step-for-visible-world-joining-one-of-the-most-innovative-media-and-technology-companies-in-the-country/>; Ryan Lawler, "Comcast Is Acquiring Video Ad Company FreeWheel For \$320 Million," TechCrunch, 1 Mar. 2014, <http://techcrunch.com/2014/03/01/comcast-freewheel/>; Visible World, "About Us," <http://www.visibleworld.com/about/>.

¹⁰⁰ Comcast, "Comcast Spotlight," http://spotlightupload.s3.amazonaws.com/Comcast_Spotlight_2015_Media_Kit.pdf. Spotlight features both multiscreen strategies and customized advertising through its Adtag and Adcopy products. Comcast, "Comcast Spotlight." These efforts are driven, moreover, by Big Data insights, both quantitative ("from sources like Nielsen, comScore and Kantar [that] provide a precise analysis of media use") and qualitative ("from sources like MRI, Simmons, Scarborough and Bluefin [that] provide detailed aggregate information about consumers, geographies and

Comcast has also expanded its own programmatic advertising capabilities through alliances with major digital data-targeting companies. Its NBCU subsidiary's "data-enabled targeting" platform, offers "programmatic access ... across our entire portfolio."¹⁰¹ Comcast is able to harvest "terabytes of unstructured data" from the set-top boxes it controls, including homes that have them in "multiple rooms." These data are then "enriched by demographics" using an array of Big-Data processing so they can be "more meaningful to advertisers," including those targeting via "Comcast's IP-based systems." Through its work with MapReduce Comcast can "query a massive data store in real time to fine tune the ad delivery system." It is also able "to run lightning fast real-time analytics on large, changing datasets," such on its "Xfinity personalization platform," to generate insights about its customers (including for making "recommendations").¹⁰² Its "Comcast Metadata and Products and Search Services

social media activity"), as well as Comcast's own extensive audience analytics. Comcast, "Comcast Spotlight." See also Comcast, "Comcast Uses MapR for New Advertising Platform That Provides Real-Time Targeted Ads,"

https://www.mapr.com/sites/default/files/mapr_case_study_comcast.pdf; Comcast Spotlight, "Audience Analytics," <http://www.comcastspotlight.com/advertising-solutions/advertising-analytics>. And with the growing popularity of its video on demand (VOD) services, Comcast now employs digital ad insertion (DAI) technology that allow "ads to be dynamically inserted into a VOD program at the beginning and the end of program segments." Comcast, "Dynamic Ad Insertion: Unlocking the Value of Video On Demand,"

<http://www.comcastspotlight.com/blog/Changing-the-Dynamics-of-On-Demand-Advertising>.

Comcast is well poised for the future of interactive television as well. "In addition to DAI services for VOD available today," the company explains," Comcast Wholesale is enabling DAI beyond the set-top box for the future. The new CableLabs 3.0 standard for metadata allows assets to have more than one offer (and corresponding license dates, guide categories and price points) during its lifetime. When combined with new metadata fields such as Original Air Date and Series ID, these enhancements will be able to support DAI on online platforms." Comcast Wholesale, "Questions about DAI? We Have Answers,"

<http://www.comcastwholesale.com/dynamic-ad-insertion-dai>. See also Comcast Spotlight, "Interactive Technologies," <http://www.comcastspotlight.com/advertising-solutions/interactive-technologies>; Comcast Spotlight, "Interactive Television (iTV),"

<http://www.comcastspotlight.com/advertising-solutions/interactive-technologies/itv>; Comcast Spotlight, "I+ Cable Satellite Telco – Connected," <http://www.comcastspotlight.com/eyeballs>.

¹⁰¹ NBCUx, <https://together.nbcuni.com/nbcux/>. Through its ownership of leading Hispanic media platforms, it offers advanced targeting of Hispanics as well. Comcast, "Comcast Media 360 and Telemundo Introduce Geo-targeting Ad Platform," <http://corporate.comcast.com/news-information/news-feed/comcast-media-360-and-telemundo-introduce-unprecedented-geo-targeting-ad-platform>.

¹⁰² MapR, "Comcast Uses MapR for New Advertising Platform That Provides Real-Time Targeted Ads"; Hadoop Illuminated, "Chapter 10. Hadoop Use Cases and Case Studies: Comcast,"

http://hadoopilluminated.com/hadoop_illuminated/Hadoop_Use_Cases.html#d1575e2024; Lesia Myroshnichenko, "Real-Time Stream Processing Architecture with Hadoop and MemSQL," 15 Apr. 2015, Memsq Blog, <http://blog.memsq.com/real-time-stream-processing-with-hadoop/>; Sridhar Alla and Jan Neumann, "How Spark is Working Out at Comcast Scale," Strata + Hadoop

division (CoMPASS) is responsible for its “enterprise-wide cloud-based software platform which provides content navigation and discovery services that power Comcast’s customer-facing web, mobile and set top box applications.”¹⁰³

Since 2014, Comcast has worked with programmatic advertising company Rubicon Project to implement its “private” exchange that targets individual customers. It is using Rubicon’s Advertising Automation Cloud, which (at the time of the announcement) “processes 2.5 million queries per second and trillions of bids each month.”¹⁰⁴ Rubicon’s

World, 1 Oct. 2015, <http://conferences.oreilly.com/strata/big-data-conference-ny-2015/public/schedule/detail/43144>; “1st Workshop On Recommender Systems For TV and Online Video—RecSysTV 2014,” 27 May 2015, <http://videogeometry.com/>. See also the work of Comcast Labs involving “Big Data”: Comcast, “Research,” <http://dclabs.comcast.com/research/>; VideoGeometry, “Home Page of Jan Neumann,” <https://sites.google.com/site/videogeometry/>.

¹⁰³ Rick Rioboli, LinkedIn, <https://www.linkedin.com/in/rickrioboli>; Steve Donohue, “Comcast Forms CoMPASS Team to Develop Next Generation User Interfaces,” FierceCable, 23 Oct. 2012, <http://www.fiercecable.com/story/comcast-forms-compass-team-develop-next-generation-user-interfaces/2012-10-23>.

¹⁰⁴ “The technology platform is constantly self-optimizing based on the ability to analyze and learn from the vast volumes of data processed.” Rubicon Project, “Comcast Spotlight Selects Rubicon Project As Digital Advertising Automation Platform For Private Exchange.” Concerning its Rubicon alliance, one industry observer called it “a pivotal moment for Comcast. Digital advertisers for the first time could buy against 19 million subscribers across the desktop sites of Comcast’s Xfinity and Xfinity.TV brand. Although this does not yet include mobile programmatic sales, the cross-screen ‘TV Everywhere’ evolution will only propagate it.” Kelly Liyakasa, “How Comcast Could Upset The Programmatic TV Game,” Ad Exchanger, 23 June 2014, <http://adexchanger.com/digital-tv/how-comcast-could-upset-the-programmatic-tv-data-game/>. As Forrester Research’s Jim Nail added, “... assuming that they tie the cookie to the address of the subscribing household, they can do great audience targeting,” Nail stated.” Quoted in Kelly Liyakasa, “How Comcast Could Upset The Programmatic TV Game.” Through Rubicon, Comcast advertising clients also have access to Adobe’s new “self-service” technology, which “it claims is the industry’s most advanced programmatic ad platform for advertisers and media publishers leveraging fully integrated solutions in Adobe Marketing Cloud. The technology, which is part of Adobe Marketing Cloud and Adobe Media Optimizer, lets advertisers take direct control of automated ad buying for search, display and social media across ad exchanges and media networks. ... Adobe also announced its programmatic offering for media publishers, broadcasters and pay TV as a beta. Adobe Primetime offers media sellers the ability to sell video ad inventory across screens.” “Adobe Launches ‘Self-service’ Programmatic Advertising Platform,” Campaign, 17 Sept. 2015, <http://www.campaignlive.com/article/adobe-launches-self-service-programmatic-advertising-platform/1364547>.

What is Adobe Primetime?

It’s a multiscreen TV platform that helps broadcasters, cable networks and service providers create and monetize engaging and personalized TV and film experiences.

Deliver TV Everywhere.

Give viewers the TV and film content they want anywhere, across 3.4 billion devices. ...

Offer insights and results.

Insights from Adobe Marketing Cloud integrations allow media sellers to optimize campaign and ad delivery in real time. ...

Advertising Automation Cloud, “one of the largest cloud and Big Data computing systems in the world, leverages over 50,000 algorithms and analyzes billions of data points in real time” to buy and sell individuals to marketers. It conducts 18 billion transactions per week, makes “300 real-time data-driven decisions per transaction,” and “is constantly self-optimizing” as it analyzes our data. Comcast uses Rubicon’s platform to enable advertisers to “bid in real-time” to target people that access Xfinity.com and xfinityTV.com. Comcast Ventures, Comcast’s venture investment fund, includes the Rubicon Project in its extensive data-delivered ad targeting portfolio.¹⁰⁵

Comcast’s recently acquired Visible World “uses data from millions of enabled Smart TVs” for its Smart TV DNA™ targeting service.¹⁰⁶ Data for targeting include income, ethnicity, education level, what kind of car they have, products they buy, where they live, and is said to provide marketers with “high yield precision.” Visible World works with

Integrate with Adobe Marketing Cloud.

Adobe Analytics

Understand how your audience watches and engages with premium television, film and ad content.

Audience Manager

Enhance the value of your ad inventory by layering in your own audience data.

Adobe, “Adobe Primetime,” <http://www.adobe.com/sea/marketing-cloud/primetime-tv-platform.html>. The Rubicon/Adobe partnership permits Comcast to use data brokers such as Acxiom and others for targeting, and also cross-platform data integration and Acxiom-owned LiveRamp. Acxiom, “Audience Onboard for Facebook,” <http://www.acxiom.com/audience-onboard-facebook/>; LiveRamp, “Partners,” <http://liveramp.com/partners/>. Adobe, moreover, links with data broker Epsilon (which is also a partner of Comcast Spotlight). “Epsilon Partners with Adobe to Deliver Next-Generation Loyalty Platform,” 25 Mar. 2014, <http://www.adobe.com/news-room/pressreleases/201403/032514AdobeEpsilonPartnership.html>; Acxiom, “Partner Spotlight: Comcast Media 360,” <http://www.acxiom.com/partner-spotlight-comcast-media-360/>.

¹⁰⁵ Rubicon’s Advertising Automation Cloud, “one of the largest cloud and Big Data computing systems in the world, leverages over 50,000 algorithms and analyzes billions of data points in real time” to buy and sell individuals to marketers. It conducts 18 billion transactions per week, makes “300 real-time data-driven decisions per transaction,” and “is constantly self-optimizing” as it analyzes consumer data. Comcast uses Rubicon’s platform to enable advertisers to “bid in real-time” to target people that access Xfinity.com and xfinityTV.com. Comcast Ventures, “Our Portfolio: The Rubicon Project,” <http://www.comcastventures.com/portfolio/rubicon-project/>; Rubicon, “Automation Cloud,” <https://rubiconproject.com/automation-cloud/>; Rubicon, “Buyer Cloud,” <https://rubiconproject.com/buyer-cloud/>; Jack Norris, “Big Results from Big Data—The Comcast Spotlight and Rubicon Project New Business Partnership,” MapR Blog, 30 July 2014, <https://www.mapr.com/blog/big-results-big-data---comcast-spotlight-and-rubicon-project-new-business-partnership>.

¹⁰⁶ Wayne Friedman, “Comcast Buys Visible World, Expands Addressable TV Advertising,” Media Daily News, 4 June 2015, <http://www.mediapost.com/publications/article/251336/comcast-buys-visible-world-expands-addressable-tv.html>.

more than “300 advertisers, reaching approximately 80% of U.S. cable homes with an addressable footprint of 3 million homes.”¹⁰⁷

Through Visible World, Comcast now also controls AudienceXpress, a programmatic TV “advanced audience data” buying platform for advertisers. Its “data deals” with partners Nielsen, Nielsen Catalina, Rentrak (now comScore), Experian, and Neustar enable targeting campaigns to “optimize their programmatic TV campaigns in-flight ... using verified offline and online [behavioral] data” This data analysis includes “actual product purchasing behavior,” “credit card spend data,” and the multi-screen activities of consumers. Comcast’s AudienceExpress deal with Neustar, it explains, enables it clients “to tap into the same kind of online user data used by DSPs, agencies and trading desks to buy audiences over online programmatic exchanges.” As an AudienceXpress executive explained, “this partnership is an industry first. No one in the TV industry has ever combined online data with TV viewership data.”¹⁰⁸

Comcast’s FreeWheel, acquired in 2014, gives it extraordinary influence in how digital advertising works across many networks and services. FreeWheel, which claims to be “at the center of the premium video economy,” allows network operators and others to “gain unprecedented control and monetize ad experiences across all screens regardless of platform, device or rules with our rich selection of capabilities.” At the core of the company’s services for video advertising are programmatic data targeting capabilities. FreeWheel works with Google, Apple, Time Warner Cable, AOL, Adobe, and an array of

¹⁰⁷ Multiple versions of ads “to target different offers” and to “keep up with real-time developments” is one of the services it offers marketers. Seth Haberman, “The Next Step for Visible World: Joining One of the Most Innovative Media and Technology Companies in the Country,” Visible World Blog, 4 June 2015, <http://www.visibleworld.com/blog/the-next-step-for-visible-world-joining-one-of-the-most-innovative-media-and-technology-companies-in-the-country/>; Visible World, “Platforms & Products,” <http://www.visibleworld.com/platforms-products/>; Visible World, “Solutions: Marketers,” <http://www.visibleworld.com/targeted-tv-advertising-solutions/marketers/>; Visible World, “Resources: Videos,” <http://www.visibleworld.com/resources/videos/>; Visible World, “Solutions: Ad Sales,” <http://www.visibleworld.com/targeted-tv-advertising-solutions/ad-sales/>.

¹⁰⁸ Joe Mandese, “AudienceXpress Brings Product Purchasing, Online Behavior Data To TV Audience Targeting,” Media Post RealTime Daily, 13 Mar. 2014, <http://www.mediapost.com/publications/article/221357/audiencexpress-brings-product-purchasing-online-b.html>; “AudienceXpress and Neustar Announce Data Partnership to Bridge Gap Between Online and TV Ad Campaigns,” Market Wired, 14 Mar. 2014, <http://www.marketwired.com/press-release/audiencexpress-neustar-announce-data-partnership-bridge-gap-between-online-tv-ad-campaigns-nyse-nsr-1888850.htm>; AudienceXpress, “Media Kit,” <http://www.audiencexpress.com/media-kit/>; AudienceXpress, “Data,” <http://www.audiencexpress.com/data/>; Neustar, “Neustar PlatformOne: Precision Marketing for a Personalized Customer Experience,” <https://www.neustar.biz/marketing-solutions>; Pete Kluge, “Display Advertising Basics (DSPs, RTB, Ad Exchanges, DMPs),” 19 May 2014, <https://www.youtube.com/watch?v=61G72kb0F04>.

leading data-targeting companies—including Krux and the Oracle Marketing Cloud (BlueKai).¹⁰⁹

Comcast’s Venture arm includes investments in mobile/location targeting, social media marketing, the use of data for profiling, and online lead generation.¹¹⁰ Videology, for example, one the ad-tech companies in which Comcast has invested, uses data and “advanced decisioning technology” to target advertising to the online and digital video audience. Its “activation engine” combines layers of consumer and personal information, including through “cookie-syncs, brittle targeting, and PII matching for use across PCs, mobile devices, tablets and Connected TVs.” Videology has “15,000 audience segments” and 25 “data partners” that can be used when targeting an individual.¹¹¹ Data partners include Acxiom, Adobe, Oracle Marketing Cloud, Krux, LiveRamp, MasterCard Advisors, Neustar, TURN, and others.¹¹² Videology is now integrated into FreeWheel’s programmatic platform, “another step forward in bringing data-enabled transactions to the premium end of the TV market.”¹¹³

¹⁰⁹ FreeWheel, “Manage Your Advertising,” <http://freewheel.tv/platform/#manage-your-advertising>; FreeWheel, “Partners,” <http://freewheel.tv/partners/>; “FreeWheel’s FourFronts Programmatic Solution Being Offered by Discovery Communications,” BusinessWire, 15 Sept. 2015, <http://www.businesswire.com/news/home/20140915005934/en/FreeWheel%E2%80%99s-FourFronts-Programmatic-Solution-Offered-Discovery-Communications>; Kelly Liyakasa, “Comcast-FreeWheel Deal Underscores Collision Of TV, Digital Video Interests,” Ad Exchanger, 7 Mar. 2014, <http://adexchanger.com/digital-tv/comcast-freewheel-deal-underscores-collision-of-tv-digital-video-interests/>; Jack Rotherham, “Change is Good: 2015 FreeWheel Client Summit Recap,” <http://freewheel.tv/freewheel-views/change-is-good-2015-freewheel-client-summit-recap/>.

¹¹⁰ Videology CEO Scott Ferber shares Comcast’s basic approach to targeted DDTV advertising (“Simply said, we put the right ad in front of the right person at the right time in the right content across digitally-enabled screens”), as he describes his company’s basic objective: “We saw the need to bring the two worlds of linear TV and digital media together to leverage the best of both. This meant building a single platform that married the certainty of TV, with the precision of digital, with the ability to drive and measure offline ROI. At its core, our technology is about connecting the dots within the new video landscape. As we developed our solution, our thinking was shaped by four key truths: 1.) consumers were consuming more content on more screens, 2.) data was becoming the gold that everyone wanted to use for targeting and measurement, 3.) video was different than display advertising and spreading rapidly across screens, 4.) technology was truly the only scalable way to connect targeted audiences across devices.” Videology CEO Scott Ferber shares Comcast’s basic approach to targeted DDTV advertising (“Simply said, we put the right ad in front of the right person at the right time in the right content across digitally-enabled screens”), as he describes his company’s basic objective: “

¹¹¹ Videology, “Products: Activation Engine,” <http://www.videologygroup.com/products/audience-engine/>; Videology, “Solutions for Marketers,” <http://www.videologygroup.com/solutions/marketers/>.

¹¹² Videology, “Third Party Data Providers,” <http://www.videologygroup.com/third-party-data-partners/>.

¹¹³ Videology, “Videology Enters FreeWheel’s FourFronts Programmatic Pilot,” 25 Mar. 2015, <http://www.videologygroup.com/news-press/P20/videology-enters-freewheels-fourfronts->

Another recent Comcast acquisition similarly reflects Comcast's commitment to adopting IP-based technologies in an effort to sharpen the focus of its targeted TV advertising services. Comcast acquired "This Technology" in August 2015."¹¹⁴ The company's VEX

programmatic-pilot/#.VsoMaBj-BVo. Videology CEO Scott Ferber shares Comcast's basic approach to targeted DDTV advertising ("Simply said, we put the right ad in front of the right person at the right time in the right content across digitally-enabled screens"), as he describes his company's basic objective: "We saw the need to bring the two worlds of linear TV and digital media together to leverage the best of both. This meant building a single platform that married the certainty of TV, with the precision of digital, with the ability to drive and measure offline ROI. At its core, our technology is about connecting the dots within the new video landscape. As we developed our solution, our thinking was shaped by four key truths: 1.) consumers were consuming more content on more screens, 2.) data was becoming the gold that everyone wanted to use for targeting and measurement, 3.) video was different than display advertising and spreading rapidly across screens, 4.) technology was truly the only scalable way to connect targeted audiences across devices." Quoted in Comcast, "How Videology Connects the Dots Within the New Video Landscape," <http://corporate.comcast.com/news-information/news-feed/how-videology-connects-the-dots-within-the-new-video-landscape>. "[Matt] Strauss [Comcast chief of video services] noted that on-demand viewing is exploding, and that pay-TV companies are in a unique position to serve that explosive demand—and cash in on it. And a major element of that strategy revolves around advanced set-top boxes and new advertising systems such as dynamic ad insertion and programmatic marketplaces. Indeed, in television's most disrupted hour, pay-TV operators are in a prime position to not only control the broadband infrastructure that will transport the video of the future, but also to facilitate the advanced advertising schemes that will support it." "In terms of the data cable operators get, it's not an estimate based on a sampling, the way Nielsen's is, but rather a full accounting of every set top box owner's behavior—what they watched, how long they watched, and whether they changed channels on the commercial break," said Alan Wolk, a senior analyst for The Diffusion Group. ... Comcast, for example, is talking to Walt Disney Company's ESPN, Time Warner Inc.'s Turner Broadcasting and Discovery Communications about packaging the MSO's viewer data into 'dashboards' that could be used for the purpose of more targeted advertising. ... While they're figuring how to monetize their set-top data by giving programmers and brands new insights into how TV—and its ads—is being watched, cable operators are also using the information to create all-new TV advertising businesses." "From DAI to Programmatic: Why Advanced Advertising is Giving Pay-TV Operators a Reason to Stay in the Video Biz," *FierceCable*, 1 Dec. 2015, <http://www.fiercecable.com/special-reports/dai-programmatic-why-advanced-advertising-giving-pay-tv-operators-reason-st>.

¹¹⁴ "We've come a long way in a short time. When it comes to realizing the full capabilities of the products that This Technology has developed, this is just the beginning," said Jeff Sherwin, founder and CEO of This Technology, in a website message about the acquisition. Comcast plans to have This Technology work alongside the VIPER team, [Comcast Chief Technology Officer Tony] Werner said. A big part of the VIPER focus in LoDo is developing the interactive advertising technology that's becoming more important as traditional linear, live TV moves to IP video." Greg Avery, "Comcast will Fold Denver Technology Company into LoDo Tech Hub," *Denver Business Journal*, 26 Aug. 2015, http://www.bizjournals.com/denver/blog/boosters_bits/2015/08/comcast-buys-denver-technology-company.html. Even this seemingly minor acquisition portends major changes for Comcast's approach to video advertising—increasingly automated and drawing on more and

Manifest Manipulator enables the insertion of personalized content into network streams—including advertising messages tailored for specific individuals.¹¹⁵ The Trajectory Execution Platform automates the real-time exchange of content and data within the rapidly expanding “dynamic advertising ecosystem.”¹¹⁶

NBCUniversal

*“We will use Comcast set-top box data to power” NBCU’s Audience Targeting Platform
... . “We’ll marry viewer data and consumer data at scale.”*

more consumer data—as well as to the larger broadband video ecosystem. This Technology’s mission statement is suggestive of this major shift:

Our goal is to provide infrastructure software to support dynamic ad insertion and alternate content delivery which is architected for efficiencies at both the end user and industry levels.

While end-to-end, vertically integrated solutions may make sense in some businesses, multiplatform dynamic advertising is executed by a relatively expansive ecosystem with many disparate and independent contributors – content providers, service providers, ad copy managers, ad sales managers, advanced data providers, and so on.

For this sort of environment, an overall architecture that provides flexibility, agility, and room for expansion is much more appropriate. ...

At the product level, we’ve created an execution platform which provides infrastructure software to assist in managing addressable, interactive, and dynamic advertising without the operational cost or bias of vertically integrated applications. Our complimentary metadata management system provides an independent, cross-platform solution for ad and content assets. And our interconnect software provides the fabric to allow independent systems, including both ours and third-party solutions, to optimally interact for real-time decision-making using industry standards.

This Technology, “Why This Technology,” <http://thistech.com/why-this-technology>.

¹¹⁵ “VEX enhances ABR [adaptive bit rate] content delivery by individually altering the stream to support dynamic advertising and alternate programs. VEX supports dynamic content substitution by first interpreting each session’s original manifest, then determining appropriate decisions, and finally providing a perfectly modified alternative manifest with seamless video splicing and the same dynamic control of video bit rates as the source ABR session. Our manifest manipulator encompasses the real-time or non-real-time manifest construction where an end user’s playback can be tailored based on policies, advertising opportunities, and/or content and alternate content events. The user, device, and network remain completely unaware of any changes.” This Technology, “VEX Manifest Manipulator,” <http://thistech.com/vex-manifest-manipulator>.

¹¹⁶ “The dynamic advertising ecosystem continues to expand as more roles, players, and requirements become available. Plus, there are multiple campaign managers and an ever-growing number of video platforms. Adding further complexity is the inability to shift one campaign manager to another video platform. The Trajectory Execution Platform connects any video infrastructure to any ad serving platform across digital cable and Internet video systems. As a result of this open architecture, you can insert dynamic advertisements in linear, time-shifted, and on-demand content in real time.” This Technology, “Trajectory Execution Platform,” <http://thistech.com/trajectory-dynamic-ad-insertion>.

A subsidiary of Comcast Corporation, NBCUniversal launched NBCUx in September 2014, offering “our clients programmatic access to premium content across our entire portfolio combined with data-enabled targeting.” The NBCUx “private exchange” enables targeting across NBCU’s programming and content assets, including NBC Sports, Telemundo, Fandango, NBC News, and others.¹¹⁸ NBC is using “set-top box viewing data from several third party sources” and will also add its own “first-party” consumer information (from Fandango, for example). Earlier in 2014, NBCU and Comcast launched “NBCU+Powered by Comcast, a “suite of new advertising products designed to increase the effectiveness of media buys through customer segmentation, advanced analytics and targeting.”¹¹⁹ This service encourages the merger of a consumer’s information from a variety of external and internal sources. This service is known as NBCU’s “Audience Targeting Platform.”¹²⁰

¹¹⁷ Quoted in Jon Lafayette, “NBCU Gets Access to Comcast Data,” *Broadcasting & Cable*, 14 May 2015, <http://www.broadcastingcable.com/news/upfront-central/nbcu-gets-access-comcast-data/140906>.

¹¹⁸ “NBCUniversal Strengthens Programmatic Business with Launch of NBCUx,” 29 Sept. 2014, <https://www.nbcumv.com/news/nbcuniversal-strengthens-programmatic-business-launch-nbcux>; NBCUx, <https://together.nbcuni.com/nbcux/>. Krishan Bhatia, NBCU’s executive vice president for digital strategy and operations, explains the multi-screen rationale for the growth of programmatic sales. “Device fragmentation is enabling new use cases for content consumption,” he observes. “In the 18-49 year old demographic, anywhere between 10-20% of our shows are being consumed through digital platforms. When you look at even younger demos, that percentage exceeds 20% and in some cases, 30%. We expect fully that in the next 2-5 years, that will increase dramatically.” Quoted in Kelly Liyakasa, “NBCUniversal’s Evolving Media Empire Hinges on a Marriage of Data and Premium Content,” *Ad Exchanger*, 3 Nov. 2014, <http://adexchanger.com/digital-tv/nbcuniversals-evolving-media-empire-hinges-on-a-marriage-of-data-and-premium-content/>.

¹¹⁹ Comcast, “NBCU+ Powered by Comcast Delivers Suite of New Advertising Products,” 30 Jan. 2014, <http://corporate.comcast.com/news-information/news-feed/nbcu-powered-by-comcast-delivers-suite-of-new-advertising-products>; Tyler Loechner, “NBCUniversal Unveils Audience Targeting Platform For TV,” *Media Post RealTime Daily*, 15 Jan. 2015, <http://www.mediapost.com/publications/article/241829/nbcuniversal-unveils-audience-targeting-platform-f.html>.

¹²⁰ Jon Lafayette, “NBCU Gets Access to Comcast Data,” *Broadcasting & Cable*, 14 May 2015, <http://www.broadcastingcable.com/news/upfront-central/nbcu-gets-access-comcast-data/140906>; Kelly Liyakasa, “Programmatic Drives 10-15% Of NBCUniversal’s Total Digital Upfront Business,” *Ad Exchanger*, 29 Oct. 2015, <http://adexchanger.com/digital-tv/programmatic-drives-10-15-of-nbcuniversals-total-digital-upfront-business/>. NBCUx also works with Google and other data targeting companies. As NBCx explains in a job posting for a manager for its Open Exchange, one of the duties is “Own & manage relationship with ad network partners (primarily Google, PubMatic, potentially others) as they relate to Open Exchange.” “Job Detail for Manager, NBCUx—Open Exchange,” Climber, <http://jobs.climber.com/jobs/Media-Publishing/New-York-NY-10176-USA/Manager-NBCUx-Open-Exchange/128538423>.

Cox Communications

“Advertising on the Cox Digital Ad Network allows you to connect to the desirable Cox high-speed subscriber throughout their online experience ... with 100% geographic precision.”
—Cox Media promotional video¹²¹

The third-largest cable entertainment and broadband services provider in the country, Cox Communications offers cross-device and data-driven targeting, spanning TV, the Internet, and mobile (including social media, apps, etc.). The company’s targeting capabilities are precise down to the “ZIP + 4 level,” and uses data involving individuals’ “average household income, ethnicity, home ownership, education, marital status, children in household, age, types of insurance” as well as identifying the “type of online content they consume.” It is able to target ads on “tens of thousands of websites” and uses the “real-time location” of its subscribers for “geo-conquesting” and “geo-fencing” via their mobile phones.¹²² Through data partnerships and related online-targeting alliances and technologies, Cox is able to gather detailed information on its online customers.¹²³

Cox has made programmatic data targeting a key priority.¹²⁴ Last year it partnered with TubeMogul to become the nation’s first cable company to offer programmatic “cross-device video ad” targeting. An array of consumer data assets and sophisticated technologies are used in this local and regional video-advertising partnership.¹²⁵ Cox is

¹²¹ Cox Media, “Cox Digital Ad Network Solutions,” <http://www.coxmedia.com/products-and-services/online/cox-digital-ad-network-solutions.aspx>.

¹²² Cox Media, “Cox Digital Ad Network Solutions”; Tyler Loechner, “Real-Time With Cox Media's Zeigler On 'Programmatic TV,’” *Media Post RealTime Daily RTBlog*, 26 May 2015, <http://www.mediapost.com/publications/article/250566/real-time-with-cox-medias-zeigler-on-programmati.html>; Cox Media, *Mobile360*,” <http://www.coxmediaproductguide.com/products/mobile360.aspx> ; Cox Media, “Digital VideoX,” <http://www.coxmediaproductguide.com/products/digital-videox.aspx>.

¹²³ Cox Media, “Products and Services: Digital VideoX,” <http://www.coxmedia.com/products-and-services/online/digital-videox.aspx>; Cox Media, “Product Guide,” <http://www.coxmediaproductguide.com/>.

¹²⁴ Cox Media, “Programmatic TV Buying,” <http://hub.coxmedia.com/h/c/174289-programmatic-tv-buying>.

¹²⁵ “Cox Media and TubeMogul Announce Partnership Spanning TV and Digital Video,” PR Newswire, 27 Feb. 2015, <http://www.prnewswire.com/news-releases/cox-media-and-tubemogul-announce-partnership-spanning-tv-and-digital-video-300042853.html>; TubeMogul, “Programmatic TV,” <https://www.tubemogul.com/programmatic-television/>; TubeMogul, “TubeMogul Software,” <https://www.tubemogul.com/tubemogul-software/>; Kevin Pamploma, “Cascading, Part 1: How Cascading Compares to MapReduce and Other Big Data Applications,” *TubeMogul*, 3 Feb. 2016, <https://www.tubemogul.com/engineering/how-cascading-compares-to-mapreduce-and-other-big-data-applications/>. “The company’s video advertising business employs Big Data analysis from ad serving, targeting, optimization and brand lift measurement.” Adam Rose, “Case Study: TubeMogul Delivers Big Data Insights at Enterprise Scale Using Qubole

also in a “private market” ad and “first and third party” data targeting partnership with MAGNA GLOBAL (IPG Mediabrands) using the AudienceXpress system (discussed above in the Comcast profile).¹²⁶ IPG’s data and targeting partnerships include Acxiom, Oracle Marketing Cloud (Datalogix), TURN, Nielsen, Polk, Google DoubleClick, Facebook, and Experian, among several others.¹²⁷

Cox’s Gamut division offers an “advanced programmatic solution” to advertisers, including at the community/local level, that uses “a wide-array of data and business intelligence tools including Experian, Comscore, Rhiza, MOAT, Theorem Analytics, and Civic Science.”¹²⁸ In 2014, Cox began working with INVIDI Technologies on a programmatic advertising trial. Invidi’s Advatar system of targeted television advertising “monetizes every subscriber in the long tail of cable television’s demographically rich networks.”¹²⁹

Videa, “a Cox-backed supply-side platform bringing automation and data-driven decision-making to broadcast television,” helps stations engage in greater data-oriented targeting. Videa’s approach to programmatic buying draws on both household data (e.g., geographical location, age, number of people in household, income, and homeowner or renter status) and shopping behavior (e.g., companies followed on social media, amount

Data Service,” <https://www.qubole.com/resources/case-study/case-study-tubemogul/>; Hartie Chang, “Crystal Clear Visibility,” 25 Jan. 2016, TubeMogul, <https://www.tubemogul.com/articles/crystal-clear-visibility/>; Jeff Fisher, “Riding Atop The Programmatic Wave,” TubeMogul, 30 Nov. 2015, <https://www.tubemogul.com/articles/riding-atop-the-programmatic-wave/>.

¹²⁶ AOL Real Estate, “Ad Buyers Can Target Cox Viewers In 2015 With AudienceXpress,” <http://realestate.aol.com/blog/videos/real-estate/518554376/>; “Cox Media, MAGNA GLOBAL and AudienceXpress to Launch First Private Programmatic TV Marketplace,” PR Newswire, 5 Dec. 2014, <http://www.prnewswire.com/news-releases/cox-media-magna-global-and-audienceexpress-to-launch-first-private-programmatic-tv-marketplace-300005396.html>; IPG Media Lab, “Programmatic,” <https://www.ipglab.com/tag/programmatic/>.

¹²⁷ Cadreon, “Partners,” <http://www.cadreon.com/partners/>; Cadreon, “Our Products,” <http://www.cadreon.com/products/advanced-tv/>.

¹²⁸ The knowledge it obtains on “consumer behaviors and attitudes, empowers us to provide a more vivid and complete understanding of how consumers think and what they do in a multichannel, multicultural world.” Gamut, “What We Do: Publishers,” <http://gamut.media/what-we-do/publishers/>; Gamut, “What We Do: Advertisers,” <http://gamut.media/what-we-do/advertisers/>.

¹²⁹ Invidi, “Advatar Targeted Television Advertising: Our Aim is True,” http://www.invidi.com/downloads/INVIDI_Advatar_Advertising.pdf. “INVIDI’s powerful suite of advanced tools enables operators to selectively target television viewers with the same pinpoint accuracy as direct mail and database marketing ... enhancing existing revenue streams and cultivating significant new revenue opportunities.” Invidi, <http://www.invidi.com>; “INVIDI and clypd Form Strategic TV Advertising Alliance,” 5 Sept. 2013, <http://clypd.com/invidi-and-clypd-form-strategic-tv-advertising-alliance/>; “Gracenote and INVIDI Team for Targeted TV Advertising System, Identifying Programs and Ads Watched in Real Time,” 16 Jan. 2013, <http://www.gracenote.com/press/01/16/2013/invidi/>.

spent on certain products, and potential interest in buying specific products based on searches).¹³⁰ Cox is also working with clypd, another company bringing “data-driven” programmatic targeting to TV.¹³¹

¹³⁰ “When you glean television household data from current buying behavior,” the company boasts, “you create a more accurate representation of the actual interests and needs of a specific group. This data will help you narrow down the focus for your advertising and identify more niche spots. These spots are usually more effective than premium spots due to the large concentration of potential customers.” Jennifer Goforth Gregory, “Television Household Data: Buyer Info or Demographic?” Videa Blog, 28 July 2015, <http://www.vida.tv/blog/television-household-data-buyer-info-or-demographic/>; <http://www.vida.tv/about/>; <http://adexchanger.com/tv-and-video/cox-turns-up-the-dial-on-tv-automation-with-launch-of-ssp-vida/>

¹³¹ clypd, “clypd Spearheads Industry-first Programmatic Advertising API for Television,” 17 June 2014, <http://clypd.com/clypd-programmatic-api-release/>.

Dish Network

“Our Programmatic TV product offers advertisers the targeting effectiveness and scale of our addressable advertising technology, full-screen ad viewability, and accurate, impression-based viewership information. Targeting criteria includes more than 80 variables per impression based on household demographics and viewing behaviors.”

—James Shears, general manager of addressable and programmatic, DISH Media Sales¹³²

The Dish Network, with nearly 14 million TV and 623,000 broadband subscribers, offers a supply-side platform (SSP) to deliver data-driven programmatic targeted advertising to its 8 million “addressable” TV households living in 210 DMAs. These Dish customers are “exposed to digital buyers” via a “household identifier” (user ID) that is part of the set-top box. Based on the subscriber data received, “events [are] fired” that place the targeted content on that person’s device. The use of programmatic data applications by Dish helps it generate additional “incremental revenue” from its subscribers.¹³³ “As the lines between smartphones, computers, and TVs continue to blur, this marketplace allows advertisers to purchase targeted television ads using the same real-time bidding technology used to serve ads in desktop and mobile,” noted Dish’s addressable and programmatic advertising general manager.¹³⁴

Last Fall, Dish announced it was testing a “programmatic exchange that lets advertisers buy commercial time during live and DVR-playback TV on an impression-by-impression basis, targeted down to the household level and using real-time bidding.” The granular buying of households to target on an “impression level decisioning” basis by Dish allows it to replicate how the majority of digital ads are bought and sold today. Dish is working with data-targeting companies Rocket Fuel and DataXU as part of its new service, as well as with online video data-ad company TubeMogul. “Moment Scoring” is one product being used by the Dish/Rocket Fuel TV alliance. Using its “Artificial Intelligence and large big data architecture,” Moment Scoring “can identify influential moments, regardless of channel and device, and distribute marketing dollars accordingly.” Such

¹³² “Q&A: How Rocket Fuel and Dish are Bringing Moment Scoring™ to TV,” Rocket Fuel Blog, 27 Oct. 2015, http://rocketfuel.com/dish_qa/.

¹³³ Todd Spangler, “Dish TV Subscriber Base Shrinks in 2015,” *Variety*, 18 Feb. 2015, <http://variety.com/2016/biz/news/dish-q4-2015-sling-tv-subscribers-1201709339/>; Ciaran O’Kane, “Programmatic TV Uncovered: IPONWEB’s Brian Golbere Explains Specifics of the Dish SSP,” *ExchangeWire*, 20 Nov. 2015, <https://www.exchangewire.com/tradertalk/2015/11/20/programmatic-tv-uncovered-iponwebs-brian-golbere-explains-specifics-of-the-dish-ssp/>; Kelly Liyakasa, “DISH Opens A Programmatic Exchange, Enables RTB,” *Ad Exchanger*, 26 Oct. 2015, <http://adexchanger.com/digital-tv/dish-opens-a-programmatic-exchange-enables-rtb/>; “DISH Media Sales Initiates Industry’s First Programmatic Impression-by-Impression Linear TV Marketplace,” *Business Wire*, 26 Oct. 2015, <http://www.businesswire.com/news/home/20151026005518/en/DISH-Media-Sales-Initiates-Industry%E2%80%99s-Programmatic-Impression-by-Impression>.

¹³⁴ “Q&A: How Rocket Fuel and Dish are Bringing Moment Scoring™ to TV.”

scoring uses significant “computational power” for each individual impression (to determine, for example, “how valuable is that impression for that advertiser”).¹³⁵ DataXU predicts that this system will soon evolve into “person targeting within the house.”¹³⁶ To move towards that goal, DISH also wants to “facilitate data matching between its network, its current and future demand-side platform partners and advertiser/agency clients.” It explained that by “using a data onboarder, the DSP could match an advertiser’s first-party data with DISH’s subscriber/household list to identify households that match its desired attributes.” While DISH claims (as do other data-targeting companies) that this process involves “anonymized requests tied to a hashed household ID,” it’s clear that specific individuals are observed and identified. As the company explains, “Over time, we can see how households are engaging with spots throughout the week and make decisions on how to value those households as we optimize more bids based on demo/viewership trends.”¹³⁷

Data play an important role in its “ONPOINT” cross-device targeting product. Dish combines set-top box data with information from third-party data providers, including Acxiom, Dunhummy, Epsilon, Experian, Polk, and Speedeon (which boasts of “Over 3,000 Data Sources—Updated Nightly!” and claims the “most complete ethnic database”).¹³⁸ Dish says it has “one of the industry’s largest data footprints” and has

¹³⁵ Jeanine Poggi, “Dish to Woo Digital Advertisers With Programmatic Exchange for Targeted TV Ads,” *Ad Age*, 26 Oct. 2015, <http://adage.com/article/media/dish-network-woo-digital-advertisers-programmatic-tv-exchange/301037/>; DataXu, “DataXu Partners With DISH Media Sales and Innovative Global Auto Maker to Drive Programmatic TV Forward,” 10 Dec. 2015, <https://www.dataxu.com/press-release/dataxu-partners-dish-auto-maker-drive-programmatic-tv/>; “Rocket Fuel Sets Industry Standard With People-Based Marketing as Default Setting Across Programmatic Marketing Platform, Starting With Self-Service DSP,” *Business Wire*, 19 Nov. 2015, <http://www.businesswire.com/news/home/20151119005388/en/Rocket-Fuel-Sets-Industry-Standard-People-Based-Marketing>.

¹³⁶ “Q&A: How Rocket Fuel and Dish are Bringing Moment Scoring™ to TV”; “Rocket Fuel and Dish Bring Moment Scoring™ to Programmatic TV,” *Rocket Fuel Blog*, 26 Oct. 2015, <http://rocketfuel.com/rocket-fuel-and-dish/>; Andy Plessner, “(VIDEO) Rocket Fuel’s New CEO Targets DISH Moments,” *Huffpost Tech Blog*, 11 Jan. 2016, http://www.huffingtonpost.com/andy-plessner/video-rocket-fuels-new-ce_b_8955490.html.

¹³⁷ Liyakasa, “DISH Opens A Programmatic Exchange, Enables RTB.”

¹³⁸ Speedeon Data, “Customer Data,” <http://www.speedeondata.com/storage/>; Speedeon Data, “Ethnic Database,” <http://www.speedeondata.com/storage/ethnic/>; Acxiom, “Partner Spotlight: Dish Media Sales,” <http://www.acxiom.com/partner-spotlight-dish/>; Experian, “Experian Addressable TV Advertising,” <http://www.experian.com/marketing-services/television-advertising.html>; Dish Media Sales, “Addressable,” <http://www.dishmediasales.com/addressable/>. In its partnership with Experian, moreover, DISH will be able to realize its personalized advertising aspirations on a variety of platforms, extending its reach from TV to mobile platforms and beyond. “For a consumer, the lines between smartphones, computers and TVs are blurring,” explains Gaynor. “DISH’s platform unites TV and digital buying, creating an easy avenue for brands to target their message comprehensively and efficiently across the entire consumer experience.” “DISH Media Sales Initiates Industry’s First Programmatic Impression-by-Impression Linear TV Marketplace,” 26 Oct. 2015, <http://about.dish.com/press-release/products->

“robust relationships with major data vendors in every vertical, including CPG, Auto, and Finance.” Ads are placed “across multiple devices and platforms,” including its Sling TV (an OTT service), Dish Anywhere, and through “Dish’s Set-Top Box applications.” It also enables targeting via ONPOINT’s mobile apps for sports content. Latinos are a distinct demographic that can be targeted as well.¹³⁹ With Sling, Dish reserves “a few minutes of ad space that it can sell itself for every hour of content,” which are “dynamically targeted” to its subscribers.¹⁴⁰ Dish also offers advertisers a number of ways to measure how their customers respond to targeted advertising.¹⁴¹

and-services/dish-media-sales-initiates-industrys-first-programmatic-impressi.As Experian North America Group President Matt Seeley observes, “The advent of addressable TV changes a lot about how you think about TV. It’s early days, but smart clients are demanding this. It’s not just an audience reach game any more. ... Experian has really been in the business of addressability for decades. We can marry an email address to almost everyone in the U.S.; we have loyalty card data; we have data from all sides. A lot of the marketing clouds have taken old technologies and painted them nicely, but they were all designed for a particular channel. We took a data-first approach and built everything from scratch. We can get real-time data from any source, and we can engage the customer on the channel they prefer: SMS, push notifications, email, display ads.” Quoted in Kim Davis, “Experian’s Data-first Marketing Suite,” The Hub, 4 Aug. 2015, <http://www.thehubcomms.com/marketing-automation/experians-data-first-marketing-suite/article/430525/2/>.

¹³⁹ Dish Media Sales, “Dish Media Sales Media Kit,” 2015-16, <http://www.dishmediasales.com/downloads/2015-Dish-Media-Sales-Media-Kit.pdf>.

¹⁴⁰ Troy Dreier, “Sling TV Says Targeted Ads Are Key to OTT Bundles: IBC Keynote,” Streaming Media, 12 Sept. 2015, <http://www.streamingmedia.com/Articles/Editorial/Featured-Articles/Sling-TV-Says-Targeted-Ads-Are-Key-to-OTT-Bundles-IBC-Keynote-106297.aspx>.

¹⁴¹ “DISH Media Sales Initiates Industry’s First Programmatic Impression-by-Impression Linear TV Marketplace.”

Time Warner Cable

“Our multi-screen audiences are an attractive base for advertisers (and we’ve) invested millions of dollars in algorithms and platforms [to find these] audiences. We’re at a point now where we are truly digital. Audiences, content and data are converging fast.”

— Sean Coar, group vice president of strategy and business decisions,
Time Warner Cable Media¹⁴²

Time Warner Cable (TWC) is expanding its cross-device and cross-platform targeting for advertisers.¹⁴³ Last year, TWC launched a multi-screen service that extended its ability to deliver “highly targeted and dynamic advertising solutions” beyond its “linear IP” and video-on-demand platforms to include such devices as tablets, smartphones, and laptops as well.¹⁴⁴ TWC began targeting iOS and Android mobile devices with plans to include Xbox, Roku, Samsung Smart TVs, and the desktop.¹⁴⁵ TWC enables the use of customer data to identify and target individuals regardless of the device that may be using.¹⁴⁶ TWC has also significantly expanded its mobile-platform marketing system, including through the use of data gathered by lead-generation techniques.¹⁴⁷ As TWC explained last summer, “We are your one-stop for targeted solutions on every screen. Backed by top data and insights in every category.”¹⁴⁸ TWC is engaged in a growing array of cross-

¹⁴² Quoted in Kelly Liyakasa, “How Comcast Could Upset The Programmatic TV Game,” Ad Exchanger, 23 June 2014, <http://adexchanger.com/digital-tv/how-comcast-could-upset-the-programmatic-tv-data-game/>.

¹⁴³ Time Warner Cable Media, “Available Solutions,” <http://www.twcmedia.com/TWC/PB/CustomerCoveragePage.aspx?pageid=4693&show=Solutions>.

¹⁴⁴ Cadent Technology, “BlackArrow Launches Advertising and Data Solutions for On-demand Content Viewed on Internet Connected Devices,” 10 Feb. 2015, <http://cadenttech.tv/blackarrow-launches-advertising-and-data-solutions-for-on-demand-content-viewed-on-internet-connected-devices/>. See also location and geo-targeting, for example: Cadent Technology, “Linear IP Advertising Infrastructure,” <http://cadenttechprod.wpengine.com/wp-content/uploads/2015/04/Linear-IP-Advertising-Infrastructure-CED-Wallchart.jpg>. The Advanced Advertising System TWC uses includes an “ad decision server” as well as what they call “server side cookies” to track ads viewed by a subscriber.

¹⁴⁵ Last Fall TWC began testing an IP-only video delivered to Roku in the New York City area. Time Warner Cable, “Time Warner Cable Tests New Way to Experience Video with TWC TV® Roku Trial in New York City,” 9 Nov. 2015, <http://www.timewarnercable.com/en/about-us/press/time-warner-cable-tests-new-way-to-experience-video-with-twctv-roku-trial-in-new-york-city.html>.

¹⁴⁶ Will Richmond, “BlackArrow Powers Dynamic Ad Insertion on Connected and Mobile Devices for Time Warner Cable,” VideoNuze, 10 Feb. 2015, <http://www.videonuze.com/article/blackarrow-powers-dynamic-ad-insertion-on-connected-and-mobile-devices-for-time-warner-cable>.

¹⁴⁷ DevelopmentNow, “Time Warner Cable,” <https://developmentnow.com/project/time-warner-cable-business-class-mobile/>.

¹⁴⁸ “TWC Media—‘Grow Your Business,’” Vimeo, <https://vimeo.com/133161396>.

platform ad targeting (“Ads Everywhere”), including via location, search, apps, online ads, and Facebook.¹⁴⁹

In February 2016, TWC rolled out its “KernelConnect” data-tracking and analysis services “across its entire footprint.” Through KernelConnect the company’s advertisers are given “unprecedented transparency” as they target subscribers (via impressions) “across all digital mediums, including linear, iPad, and mobile screens.” Data are gathered and analyzed “across multiple platforms including display, TV Everywhere, Facebook, Twitter, Google Analytics and other third party data.” Illustrating the growing integration of monitoring and measurement applications in the provision of real-time and data-driven marketing and other content, TWC describes KernelConnect as a “marketing tool.” Each day this “tool sorts and integrates over 180 million records across five internal and external sources and collects 100 gigabytes of data and more than 150 terabytes of collected, processed and stored cable set-top box data.” This information enables marketers to “track campaigns” by examining such data as “income, ethnicity, online impressions, web and social analytics,” as well as specialized TWC “profiles.”¹⁵⁰

TWC uses the data-profiling capabilities of the Adobe Marketing Cloud to create “a unified customer profile” taking into account all known first-party data, including visitor and customer CRM database information, as well as second- and third-party data from partner and paid data providers. This system is used for new customer acquisition as well. Adobe explains that “a customer new to a TWC market that has searched on Google for ‘home cable and Internet packages’ may receive an offer for the TWC Triple Play bundle” These prospects can be targeted using “household income and household spending data.”¹⁵¹

¹⁴⁹ Time Warner Cable Media, “Automotive Marketing: Trend Alert,” <http://info.twcmedia.com/autoSS.html>; Time Warner Cable Media, “How Can You Reach Healthcare Consumers?” <http://info.twcmedia.com/Healthcare-Consumer-Digital-Trends.html>; Time Warner Cable Media, “How are Diners Learning about Local Restaurants?” <http://info.twcmedia.com/Restaurant-diner-path-to-purchase.html>; Time Warner Cable Media, “The Best Solutions to Meet Your Business Goals,” <http://info.twcmedia.com/Marketing-solutions-business-goals.html>.

¹⁵⁰ “The data is then combined into one user-friendly dashboard, allowing clients to accurately measure and strategically adjust omni-screen campaigns in real-time to increase return on investment with their target audience.” “Time Warner Cable Media Rolls out KernelConnect across Its Entire Footprint, Allowing Clients to Fully Quantify and Optimize the Effectiveness of Campaigns,” Business Wire, 15 Feb. 2015, <http://www.businesswire.com/news/home/20160215005414/en/Time-Warner-Cable-Media-Rolls-KernelConnect-Entire>. TWC developed other data targeting “cross-screen” tools as well. See, for example, its Tribes and Audience Select products. “Time Warner Cable Media Introduces New Services to Connect Clients with Their Consumers Across Screens,” Business Wire, 15 May 2014, <http://www.businesswire.com/news/home/20140515006485/en/Time-Warner-Cable-Media-Introduces-Services-Connect>.

¹⁵¹ Adobe, “Adobe Customer Story: Time Warner Cable is More than Television, Internet and Telephone,” 2015. <http://www.adobe.com/content/dam/Adobe/en/customer-success/pdfs/time-warner-cable-marketing-cloud-case-study.pdf>.

Hispanics are a key target across devices for Time Warner Cable, which explains that its “digital solutions” allow marketers to reach them when they use their mobile devices and go online in other ways. Hispanic-targeting products include an “Audience Network” (including pre-rolls) and Facebook ads (“Our access to third party data allows you to more precisely target your message to the right consumer and influence purchase decisions on Facebook”).¹⁵²

As one industry observer has stated, “For Time Warner Cable, one of America's largest cable and broadband firms, Big Data helps determine the course of both their marketing efforts and their network infrastructure. . . . Big Data is also a part of everyday life in the advertising department. According to Time Warner Cable Media president Joan Gillman, the company uses sophisticated correlation solutions that meld publicly available data such as voter registration records and real estate records with local viewing habits. This helps Time Warner's clients launch custom campaigns tailored to geographic or demographic microsegments of users.”¹⁵³

¹⁵² Time Warner Cable Media, “Available Solutions”; Time Warner Cable Media, “Business Insights & Trends,” <http://www.twcmedia.com/TWC/PB/CustomerLandingPageWide.aspx?pageid=20514>.

¹⁵³ Neal Ungerleider, “How Big Data Keeps Cable TV Watchers Hooked,” *Fast Company*, 14 Jan. 2013, <http://www.fastcompany.com/3004619/how-big-data-keeps-cable-tv-watchers-hooked>.

Verizon

“Verizon feels it has an oil field filled with valuable data and AOL, and AOL Platforms specifically, has the rig to get that data out and make it valuable. ... Verizon knows about their users, about their identities and locations ... [T]he Verizon data is a powerful enabler of connecting the digital world to the real and physical world.”

—Seth Demsey, AOL platforms chief technology officer¹⁵⁴

Verizon has put a powerful Big Data-driven tracking and targeting infrastructure in place for multiple platforms and devices, including mobile phones. Its acquisition of both AOL and Millennial Media in 2015, and its advertising partnership with Microsoft, provide it extraordinary capabilities for data gathering, analysis, and “actionability” in connection with its subscribers’ information. By acquiring mobile-marketing-data company Millennial Media, for example, Verizon gained access to customer data gathered by more than 60,000 apps, including “location, social, interest, and contextual” information. The company had “developed more than 700 million active server-side unique user profiles, over 60 million of which link multiple mobile devices and PCs to a single specific user ... ,” with some 175 million monthly unique users in the “United States alone.”¹⁵⁵

Verizon, “a leader in the world of big data solutions,” has focused its machine learning and analytical resources on taking advantage of all the information it accesses, including the Internet behaviors of its customers (from network, clickstream, location, mobile devices, and other sources). Verizon’s Precision Market Insights ad-targeting product (discussed below) is an example of how Big Data and its mobile information are being used.¹⁵⁶

Through its AOL division, Verizon has cutting-edge technology to ingest and use cross-device, platform-, and application-derived data sets on individuals, giving it a “holistic

¹⁵⁴ Quoted in Robert Andrews, “Verizon Is An ‘Oil Field’ Of Data For AOL Ads, Content Delivery,” Beet.TV, 15 Oct. 2015, <http://www.beet.tv/2015/10/aolverizondemsey.html>

¹⁵⁵ “AOL to Deepen its Programmatic Leadership with Agreement to Acquire Millennial Media,” 3 Sept. 2015, <http://www.millennialmedia.com/press/aol-to-deepen-its-programmatic-leadership-with-agreement-to-acquire-millennial-media>; Millennial Media, “Annual Report,” 2015 Form-10-K, <http://investors.millennialmedia.com/phoenix.zhtml?c=238412&p=irol-sec> ; Nitesh Patel, “AOL’s Acquisition of Millennial Media Will Strengthen the Reach and Depth of Verizon’s Mobile Advertising Capabilities,” Strategy Analytics,” 7 Sept. 2015, <https://www.strategyanalytics.com/strategy-analytics/blogs/media-services/wireless-media/wireless-media/2015/09/07/aol-s-acquisition-of-millennial-media-will-strengthen-the-reach-and-depth-of-verizon-s-mobile-advertising-capabilities#.VtHgKhj-BVo>

¹⁵⁶ Prior to acquiring AOL, Verizon was its “alpha client” for its data-driven programmatic targeting operations. Andy Plesser, “We Are Building a Mobile Programmatic Tech Stack, AOL’s Bob Lord,” Beet.TV, 20 Sept. 2015, <http://www.beet.tv/2015/09/lord.html>; Verizon Big Data Analytics Group, “Big Data & Analytics,” 2014, <http://news.verizonenterprise.com/2014/03/big-data-whitepaper-analytics-technology/>; Ashok N. Srivastava, “Large-Scale Machine Learning at Verizon,” Verizon, 2014, http://mmds-data.org/presentations/2014_/srivastava_mmds14.pdf.

view of the consumer's journey ... in real-time.”¹⁵⁷ This includes data from TVs, online platforms and mobile devices.¹⁵⁸ “ONE,” AOL’s data-management platform (DMP), provides a “cross-screen data strategy” for marketers and advertisers.¹⁵⁹ Marketers are able to “plug into” Verizon’s programmatic platforms to speedily activate a consumer “across all screens.”¹⁶⁰ “Verizon has been building an intelligent advertising ecosystem backed by its reservoir of information about consumers and their devices,” explained Digiday. “Verizon can track users’ location, online habits, app preferences, family demographics, and other billing insights that only a wireless carrier could know.” Through its DMP, buying platforms, mobile ad exchange, and other data-related services, Verizon is poised to have never-ending access to the personal information of its customers. For example, a diagram of Verizon’s programmatic mobile marketplace reveals data-connected relationships with ad agency data trading desks, brands, agencies, and leading online companies (including Google, Twitter and many others).¹⁶¹

Verizon has amassed a powerful—and invisible to the public—array of data partners. For example, its mobile-oriented Millennial Media division, which brings data from individuals who use tens of thousands of apps, offers “20+ 3rd Party Data Integrations.” It targets individuals through a “suite” of applications, including by location (“pinpointed

¹⁵⁷ AOL has integrated an array of data-related capabilities through acquisitions prior to its purchase by Verizon. The entities in AOL Platforms include Advertising.com, Adap.tv, ADTECH, AOL On, AOP, Buysight, Gravity, ONE, Pictela, and Marketplace. “AOL to Build First Cross-screen Programmatic Advertising Platform—ONE by AOL,” 26 Mar. 2014, <http://corp.aol.com/2014/03/26/aol-to-build-first-cross-screen-programmatic-advertising-platfor/>; “AOL Expands ONE by AOL Platform to Drive Data-driven, Personalized Creativity in Advertising,” 15 Sept. 2015, <http://corp.aol.com/2015/09/15/aol-expands-one-by-aol-platform-to-drive-data-driven-personaliz/>.

¹⁵⁸ “The ONE by AOL suite offers Media Planning, Audience Management, Creative Optimization, Analytics and Attribution, as well as our market-leading display, video and TV DSPs. All of this connected through shared technology, data and insights”; AOL, “Platforms: ONE by AOL for Advertisers,” <http://www.aolplatforms.com/onebyaol-advertisers>.

¹⁵⁹ “AOL Announces Attribution-enabled Data Management Platform—A Milestone for ONE by AOL,” 29 Sept. 2014, <http://corp.aol.com/2014/09/29/aol-announces-attribution-enabled-data-management-platform-a/>.

¹⁶⁰ “AOL Expands ONE by AOL Platform to Drive Data-driven, Personalized Creativity in Advertising.”

¹⁶¹ Garrett Sloane, “Inside Verizon's Plan to Seal Off Its Data (and Conquer Advertising),” Digiday, 11 Sept. 2015, <http://digiday.com/platforms/inside-verizons-plan-seal-off-data-conquer-advertising/>. The company was reportedly telling its ad-tech partners that it plans to keep all the information it has access to under its direct control. Millennial Media, “One by AOL: Mobile,” <http://www.millennialmedia.com/programmatic-marketplace#tech>; Millennial Media, “MoPub Integration—SDK,” <https://support.millennialmedia.com/hc/en-us/articles/205081010-MoPub-Integrations>; Millennial Media, “Google Integration,” <https://support.millennialmedia.com/hc/en-us/articles/210562488-Google-Integrations>; Millennial Media, “Enriching Impressions with Data,” <https://support.millennialmedia.com/hc/en-us/articles/204860794-Enriching-Impressions-with-Data>; Millennial Media, “Cookie Synching,” <https://support.millennialmedia.com/hc/en-us/articles/204860984-Cookie-Synching>.

location data from multiple sources”); from “profiles” (created through “17,000 data rich audience segments using our data, partner data and your data”); and through retargeting individuals (by using “existing data to enable you to continue the conversation ... across screens”).¹⁶² Verizon’s Millennial data partners include Axciom’s LiveRamp (merging a person’s online and offline information); Placed and Xad (using actual location data); AdTruth, Drawbridge and Tapad (enabling cross-device identification of individuals); Polk, Acxiom, Oracle Data Cloud, Neustar, Experian, and eXelate/Nielsen (data brokers); Nielsen Catalina, Kantar Shopcom and Datalogix (purchase data), comScore/Rentrak (cross-device measurement); TURN and Appnexus (data-targeting); and Crossix (health-data targeting).¹⁶³

Working with these partners, Verizon offers targeting “packages” directed towards African Americans, Hispanics, gamblers, health and fitness participants, teens and millennials, and even for tobacco users. (Sites permitting such ads include Weather Bug/Earth Networks, TuneIn, and Accuweather.com).¹⁶⁴ These partnerships enable the data-driven targeting and “conversion tracking” of users of mobile apps involving dozens of third-party data-oriented companies, including using a person’s location.¹⁶⁵ Verizon’s AOL division also operates the data-marketing business for Microsoft’s cross-platform properties, including the Bing search engine, MSN, Xbox, Outlook Mail, and Skype.¹⁶⁶

¹⁶² Millennial Media, “Mobile Targeting Solutions: Pinpointed Audiences,” <http://www.millennialmedia.com/solutions/advertiser/targeting>.

¹⁶³ Millennial Media, “Marketplace,” <http://www.millennialmedia.com/programmatic-marketplace>; Millennial Media, “Partner Showcase: Strategic,” <http://www.millennialmedia.com/partner-showcase?types=strategic>.

¹⁶⁴ Millennial Media, “Partner Showcase: Supply/Demand/Strategic,” <http://www.millennialmedia.com/partner-showcase?types=supply,demand,strategic&categories=130>. Tobacco Accepted Deal ID provided by Verizon’s Millennial division is 1444934896731510619. Millennial Media, “Open Packages,” <http://www.millennialmedia.com/programmatic-marketplace/ad-exchange/open-packages>.

¹⁶⁵ Millennial Media, “Developer Documentation: Getting Started,” <http://docs.millennialmedia.com/conversion-tracking/index.html>; Millennial Media, “Developer Documentation: Supported Third Parties,” <http://docs.millennialmedia.com/conversion-tracking/references/supported-third-parties.html>; Millennial Media, “Partner Showcase: Demand,” <http://www.millennialmedia.com/partner-showcase?types=demand>. Verizon is also using Adobe Target for testing, personalization, and mobile optimization, which raises concerns about its impact on the privacy decisions of subscribers. Adobe, “Adobe Marketing Cloud: Adobe Target: Mobile App Optimization,” <http://www.adobe.com/marketing-cloud/testing-targeting/mobile-app-optimization.html>.

¹⁶⁶ Rik van der Kooi and Frank Holland, “Microsoft Expands Partnerships with AOL and AppNexus, Bing to Power Search for AOL Properties,” Microsoft Blog, 29 June 2015, <http://blogs.microsoft.com/firehose/2015/06/29/microsoft-expands-partnerships-with-aol-and-appnexus-bing-to-power-search-for-aol-properties/>; “AOL and Microsoft Expand Enterprise-level Partnership,” 29 June 2015, <http://corp.aol.com/2015/06/29/aol-and-microsoft-expand-global-enterprise-level-partnership/>.

Verizon/AOL is also using native and app ad formats that help drive additional data collection.¹⁶⁷

Verizon's Precision Market Insights "enables better 1:1 understanding of customers across physical and digital contexts ..." and takes advantage of a person's "app usage, location, clickstream" as well as other online and offline information.¹⁶⁸ Even prior to buying data-gathering assets such as AOL, Verizon had deals with Oracle (BlueKai), RUN, Experian, Acxiom, and others, enabling it to operate a "precise" cross-device and location-targeting system. RUN's "Device Connect provided Verizon's PrecisionID product," giving it insight into a person's actions on apps, mobile phones, and transactions. Verizon now has "mobile browsing and location data" (which it combined with third-party data-broker information); a "view across various types of mobile" use (such as with Facebook, YouTube, Twitter); tremendous reach (a "billion mobile browsing transactions" per month); and "scale"—including both a "US-wide location view [and a] 24-hour view of browsing and location." It also offered "precision retargeting online and offline."¹⁶⁹

While the controversy over the use of its "Unique Identifier Header" (super cookie) led to Verizon allowing its customers to opt-out of its data-targeted ad system ("relevant advertising"), it has combined its arsenal of information with that harvested by AOL/Millennial Media.¹⁷⁰ With mobile, Verizon has made several acquisitions to help it

¹⁶⁷ For example, this 2016 deal: "AOL Announces Strategic Partnership with Taboola," 20 Jan. 2016, <http://corp.aol.com/2016/01/20/aol-announces-strategic-partnership-with-taboola/>; Kelly Liyakasa, "AOL Primes A Programmatic Creative Platform," Ad Exchanger, 15 Sept. 2015, <http://adexchanger.com/creative/aol-primers-a-programmatic-creative-platform/>.

¹⁶⁸ Srivastava, "Large-Scale Machine Learning at Verizon."

¹⁶⁹ Allison Schiff, "Publicis Groupe Acquires Programmatic Platform RUN," Ad Exchanger, 28 Oct. 2014, <http://adexchanger.com/ad-exchange-news/publicis-groupe-acquires-programmatic-platform-run/>; Judith Aquino, "Run CEO On Using Verizon's PrecisionID For Deterministic Mobile Solution," Ad Exchanger, 3 June 2014, <http://adexchanger.com/mobile/run-ceo-on-using-verizons-precisionid-for-deterministic-mobile-solution/>; Vivek Gadiraju, "Data in the Real World: Leveraging Mobile Intelligence to drive results," Verizon, 2014, <http://www.docfoc.com/data-in-the-real-world-leveraging-mobile-intelligence-to-drive-results/>; Allison Schiff, "Can You Identify Me Now? A Deep Dive On Verizon's Data Practices," Ad Exchanger, 9 Oct. 2014, <http://adexchanger.com/data-exchanges/can-you-identify-me-now-a-deep-dive-on-verizons-data-practices/>; Run, <http://www.runads.com/>.

¹⁷⁰ "Verizon to Share Wireless Customers' Browsing Data with AOL's Advertising Network," FierceWireless, 7 Oct. 2015, <http://www.fiercewireless.com/story/verizon-share-wireless-customers-browsing-data-aols-advertising-network/2015-10-07>; Max Ochoa, "'Zombie' Cookie ID to be Suspended Pending Re-evaluation," Turn Blog, 17 Jan. 2015, <http://www.turn.com/blog/zombie-cookie-id-to-be-suspended-pending-re-evaluation>; Julia Angwin and Mike Tigas, "Zombie Cookie: The Tracking Cookie That You Can't Kill," Pro Publica, 14 Jan. 2015, <https://www.propublica.org/article/zombie-cookie-the-tracking-cookie-that-you-cant-kill>. Verizon has also built a data-driven targeting platform for its new "Go90" "mobile first social entertainment platform, where social conversation meets consumption... all within one app." "Verizon delivers the web, video and app data that paints the true portrait of our

deliver targeted advertising and programming to subscribers watching video on mobile devices and IP-connected TVs, including Edgecast, upLynk and Intel Media's OnCue platform."¹⁷¹

Verizon is making a major push to expand cross-device programming and targeting, including ways to favorably use its cloud infrastructure to deliver and measure digital advertising. "The new reality is that people are off the couch and on their devices, anywhere and everywhere. ... [T]he new consumer reality is your opportunity," the company says to potential OTT video clients, promising to help them deliver "dynamic, targeted ads ... [so] each user still receives a unique experience with fully dynamic

customers through things like age and location," notes a Verizon/AOL executive. Ad giant Publicis gains access to a variety of data-targeting opportunities with Go90, as part of an agreement with Verizon. Kelly Liyakasa, "AOL Unveils A Mobile Video Network ... But TV Is Still The Benchmark," *Ad Exchanger*, 29 Sept. 2015, <http://adexchanger.com/digital-tv/aol-unveils-a-mobile-video-network-but-tv-is-still-the-benchmark/>; Tim Baysinger, "Do We Need Another Video Platform? Verizon Thinks So. Go90 launches with exclusive Publicis ad deal," *Ad Week*, 29 Sept. 2015, <http://www.adweek.com/news/television/do-we-need-another-video-platform-verizon-thinks-so-167234>; Andy Plessner, "AOL is Powering Verizon's Go90 Mobile Video App for Ad Decisioning," *Beet.TV*, 22 Feb. 2016, <http://www.beet.tv/2016/02/go90-2.html>. Verizon's contracts with its app providers should be reviewed to see what data-related objectives are included. Tom Dotan, "Verizon's Digital Content Bubble," *The Information*, 25 Feb. 2016, <https://www.theinformation.com/articles/verizons-digital-content-bubble>. In March 2016, Verizon settled with the FCC in a case involving its use of so-called "supercookies" for ad tracking. Under the agreement, "Verizon Wireless is notifying consumers about its targeted advertising programs, will obtain customers' opt-in consent before sharing UIDH [Unique Identifier Headers] with third parties, and will obtain customers' opt-in or opt-out consent before sharing UIDH internally within the Verizon corporate family" Federal Communications Commission, "FCC Settles Verizon 'Supercookie' Probe, Requires Consumer Opt-In for Third Parties," 7 Mar. 2016, <https://www.fcc.gov/document/fcc-settles-verizon-supercookie-probe>.

¹⁷¹ Steve Donohue, "How Verizon Will Use Targeted Ads and 'Non-Subscription Access' to Power OTT Product," *The Donohue Report*, 26 June 2015, <http://www.donohuereport.com/how-verizon-will-use-targeted-ads-and-non-subscription-access-to-power-ott-product/>. As a recent patent application indicates, Verizon will be introducing "an advertising-based access model ... [for] 'non-subscription' access to the network, [which] permits sponsors to pay for a user's access to a wireless network instead of the user. Thus, non-subscription access grants the user free (or reduced cost) network access, and in return the user agrees to accept advertising and/or an advertiser's terms prior to gaining access." Quoted in Donohue, "How Verizon Will Use Targeted Ads and 'Non-Subscription Access' to Power OTT Product." It calls this service, now offered in "Beta," as FreeBee Data. Verizon, "Introducing FreeBee Data," <http://freebee.verizonwireless.com/business/freebeedata>.

ads.”¹⁷² Verizon also provides a set of “integrated analytics” for tracking the use of video across consumer devices.¹⁷³

Verizon also helps programmers “beat ad blockers” to thwart consumer privacy concerns: the “best way to beat ad blockers is to not do the ad insertion on the client device at all. Verizon’s server-side ad insertion (SSAI) technology dynamically stitches the ad into the content as it is streamed to the requesting device. For the playback client, it appears that there is only one video stream, which just happens to contain both the original content and the ads. ... In addition, all of the calls to the ad server take place in the cloud, away from the client device. Because of this abstraction, the ad blocker has no chance to listen for the request and intercept the call.”¹⁷⁴

Verizon is aggressively pushing the boundaries for the identification and tracking of consumers regardless of device. In January, Verizon’s investment arm “sunk \$5.5 million into intent-targeting platform Qualia, which recently merged with cross-device vendor Blue Cava.”¹⁷⁵ Qualia’s “Intent Quality Decision Engine” collects and analyzes “millions of [consumer-data] signals daily ... which are then combined with additional data and mapped to each person and all of their devices.”¹⁷⁶ A Verizon Ventures executive explained that “being able to take intent data and on a real time basis look at where those consumers are going across screens is vital, because no action today is done in isolation.

¹⁷² Verizon Digital Media, “It’s About Time,” <https://www.verizondigitalmedia.com/iat-2015/>. See also Verizon Digital Media, “Verizon Enables Digital Content Brands To Launch Multi-Platform Online Video Experiences Faster,” 10 Nov. 2015, <https://www.verizondigitalmedia.com/blog/2015/11/verizon-enables-digital-content-brands-to-launch-multi-platform-online-video-experiences-faster/>.

¹⁷³ upLynk, “Analytics,” <http://www.uplynk.com/analytics.html>; Verizon, “Verizon Digital Media Services Acquires upLynk Assets and Operations for Expanded Video Streaming Capabilities,” 13 Nov. 2013, <http://www.verizon.com/about/news/verizon-digital-media-services-acquires-uplynk-assets-and-operations-expanded-video-streaming-capabilities/>; Ryan Lawler, “Verizon Is Acquiring Content Delivery Network EdgeCast For More Than \$350 Million,” TechCrunch, 7 Dec. 2013, <http://techcrunch.com/2013/12/07/verizon-edgecast/>; Mikael Ricknäs, “Verizon Buys Intel’s Failed ‘OnCue’ TV Division,” *PC World*, <http://www.pcworld.com/article/2089740/verizon-continues-video-buying-sprees-with-intel-deal.html>.

¹⁷⁴ Verizon Digital Media, “Protecting Online Video Services Against The Threat Of Ad Blockers,” <https://www.verizondigitalmedia.com/blog/2015/12/protecting-online-video-services/?source=igodigital>.

¹⁷⁵ Allison Schiff, “2016 Edition: A Marketer’s Guide To Cross-Device Identity,” Ad Exchanger, 29 Feb. 2016, <http://adexchanger.com/data-exchanges/2016-edition-marketers-guide-cross-device-identity/>; Kelly Liyakasa, “Verizon Ventures Invests \$5.5M In Qualia, Talks Buying Into Ad Tech In An Unforgiving Climate,” Ad Exchanger, 16 Feb. 2016, <http://adexchanger.com/investment/verizon-ventures-invests-5-5m-qualia-talks-buying-ad-tech-unforgiving-climate/>.

¹⁷⁶ Qualia, “Consumers Declare their Intent Online,” <http://www.qualia-media.com/#todays-consumers>.

Combined, they're addressing how you can begin to piece together a story around ad decisioning and provide attribution about how a [mobile] exposure contributed to a sale or other action."¹⁷⁷

¹⁷⁷ Quoted in Liyakasa, "Verizon Ventures Invests \$5.5M In Qualia, Talks Buying Into Ad Tech In An Unforgiving Climate."

Disney/ABC

“Programmatic advertising is picking up momentum at Disney. What started as a small trend has now become a mainstream rally across the company. More and more Disney franchises are experimenting with real-time bidding and seeing its benefits ... the ability to understand Disney's customers' behaviours to a level that haven't been seen before.”
— Chris Wojciechowicz, digital acquisition manager, Disney¹⁷⁸

Disney has built up a growing use of data for all its operations, including programming and advertising.¹⁷⁹ In 2014, ABC began a “programmatic sales initiative” that allowed advertisers to use their own data to buy digital viewers to target. That has expanded to include “dynamic ad insertion in VOD and set-top box inventory.” “When we weave dynamic ad insertion into a set-top box VOD environment, we are enhancing our reach and scale, making a unified offering much more impactful Applying data is a big piece of what our solution looks like now, both for linear and digital opportunities,” explained an ABC executive.¹⁸⁰ ABC is working with Comcast’s FreeWheel programmatic system to deliver this capability, including first- and third-party data integration. “Clients can also plan and buy ABC campaigns using a tool that matches set-top box data to either clients’ first-party information or third party data sets to target ads based on consumer attributes,” noted its president for ad sales.¹⁸¹ ABC has deployed its Data Management platform “across sister media assets including Disney, ESPN, Maker Studio and ABC Family.”¹⁸² Disney ABC TV’s Consumer Data & Analytics division is

¹⁷⁸ Rubicon Project, “An Interview with Disney's Chris Wojciechowicz,” 12 Aug. 2014, <http://buyercloud.rubiconproject.com/content/interviews/chris-wojciechowicz-disney/>.

¹⁷⁹ “Disney | ABC TV Group: Principal Data Scientist,” KDnuggets, 14 July 2015, <http://www.kdnuggets.com/jobs/14/07-15-disney-principal-data-scientist.html>; Derrick Harris, “How Disney Built a Big Data Platform on a Startup Budget,” Gigaom, 16 Sept. 2012, <https://gigaom.com/2012/09/16/how-disney-built-a-big-data-platform-on-a-startup-budget/>; “Disney Use-Case for Big Data: Transforming into a Fact-Based Enterprise (video),” DataMashup, <http://www.datamashup.info/disney-use-case-for-big-data-transforming-into-a-fact-based-enterprise-video/>.

¹⁸⁰ Quoted in Anthony Crupi, “ABC Dips a Toe Into the Programmatic Pool: Partnership with FreeWheel Furthers the Cause of Automated Buying,” *Adweek*, 13 May 2014, <http://www.adweek.com/news/television/abc-dips-toe-programmatic-pool-157656>. See also Andy Plesser, “Addressable TV Advertising is Here, Finally, says AT&T’s AdWorks Dunsche,” Beet.TV, 30 June 2015, <http://www.beet.tv/2015/06/att-dunsche.html>.

¹⁸¹ Jon Lafayette, “Upfronts 2015: ABC Announces New Ad Data Products,” *Broadcasting & Cable*, 12 May 2015, <http://www.broadcastingcable.com/news/upfront-central/upfronts-2015-abc-announces-new-ad-data-products/140817>.

¹⁸² Disney Data & Analytics Conference, “2015 Conference Agenda,” 17-18 Sept. 2015, <http://www.disneydataconference.com/2015-agenda.html>; Vincent Flood, “ABC Goes Programmatic as First Partner for New FreeWheel Programmatic Offering,” Video Ad News, 14 May 2014, <http://www.videoadnews.com/2014/05/14/abc-goes-programmatic-first-partner-new-freewheel-programmatic-offering/>; Jeff Baumgartner, “FreeWheel Shoots for Ad Unity,” *Multichannel News*, 9 June 2015, <http://www.multichannel.com/news/next-tv/freewheel-shoots->

responsible for data acquisition, data modeling, advanced analytics, placing “data-driven decision-making at the core of our digital strategy.”¹⁸³

Disney’s ESPN works with data provider Oracle Marketing Cloud, which helps it connect to “all major DMP, DSP, exchanges, and agency trading desks.” The Walt Disney Company, for all its properties, has an “audience data and analytics” deal with Cablevision. (“The multiyear deal provides more granular, robust and actionable intelligence based on viewer tuning activity ...”). ESPN has developed a “Cross Platform Effectiveness Initiative” (XPE) measurement system for video advertising covering OTT, mobile, desktop, and TV platforms.¹⁸⁴

In an effort to “increase number and duration of video views” and to “monitor and understand user behavior by device and platform,” for example, Disney’s analytics team turned to Platfora Big Data Analytics “to perform complex customer analytics on extremely large volumes of multi-structured data, and to track usage across hundreds of devices of various types. ... ‘Our programming is distributed over the widest possible range of devices and platforms,’ explains Khai Tran, Senior Manager, Digital Media. ‘Everything from set-top boxes to laptops, mobile phones, tablets, and over-the-top devices such as Roku and Apple TV. Digital users perform more than 50 million

ad-unity/391209; Tyler Loechner, “ABC Appoints Dean As First VP Of Programmatic And Data-Driven Sales,” Media Post Real-Time Daily, 10 July 2014, <http://www.mediapost.com/publications/article/229784/abc-appoints-dean-as-first-vp-of-programmatic-and.html>.

¹⁸³ Steve Whittington, “Executive at The Walt Disney Company ▪ Analytics ▪ Strategy ▪ Marketing ▪ CRM ▪ Concept Development,” Linked In, <https://www.linkedin.com/in/steve-whittington-9385393>; Jaelyn DuPont, “Analyzing Digital Consumer Data—The Right Insights at the Right Time,” Digital Collaboratives, 15 May 2015, <http://thecollaboratives.com/2015/05/15/analyzing-digital-consumer-data-the-right-insights-at-the-right-time/>.

¹⁸⁴ Ana Livia Coelho, “ESPN and Cablevision Establish Long-Term Agreement for Audience Data & Analytics,” ESPN MediaZone, 12 May 2015, <http://espnmediazone.com/us/press-releases/2015/05/espn-cablevision-establish-long-term-agreement-audience-data-analytics/>; Steve McClellan, “More Screens Are Better Than One: ESPN Unveils New Cross-Screen Research At 4As,” Media Post Agency Daily, 25 Mar. 2015, <http://www.mediapost.com/publications/article/246443/more-screens-are-better-than-one-espn-unveils-new.html>. “ESPN’s Cross Platform Effectiveness initiative (XPE) provides a deep, longitudinal, multi-advertiser, multi-database resource for cross-platform effectiveness discovery. The hub of XPE is a continuous brand health survey, designed from the marketer’s point of view, which has been measuring cross-platform ad effectiveness for over two and a half years. Numerous other sources of longitudinal data are housed together with the survey metrics, and together they are modeled to create a set of ‘living’ variables that impact communications success and inform a host of today’s complex marketing decisions.” Chris Barton and Emily Bockino, “ESPN XPE: Connecting Fieldwork and Passive Measurement Through Modeling,” Disney Data & Analytics Conference, 17-18 Sept. 2015, <http://www.disneydataconference.com/presentations.html>.

downloads per month, to more than 40 different types of devices. In total, this comes to more than 20 million hours of use and billions of log events each month.”¹⁸⁵

¹⁸⁵ Platfora, “Case Study: Disney ABC,” <http://www2.platfora.com/rs/platfora/images/disney-abc-platfora-case-study.pdf>.

News Corp (Fox)

“With more and more of our viewers consuming content across screens, digital video is, of course, a huge focus. ... [T]he DoubleClick Ad Exchange has allowed us to connect our Internet-delivered television content ... with the controls we need to programmatic demand. This is a great step forward ... towards being able to better monetize this cross-screen content.”

—Zach Friedman, vice president of digital ad sales,
FOX News Channel & FOX Business Network¹⁸⁶

The international media company is expanding its use of consumer data and digital marketing throughout its cross-platform programming operations.¹⁸⁷ News Corp uses (and is a major investor in) the programmatic data-targeting leader Rubicon Project.¹⁸⁸ It also works with leading data broker and data technology companies such as Krux and Merkle. Fox Broadcasting is applying forms of Big Data to spur advanced and programmatic advertising with its digital media products, including “cross-platform data acquisition and mining.”¹⁸⁹ It is focused on advertising initiatives for social and mobile media, as well as with video on demand, connected TV, and elsewhere online.¹⁹⁰

¹⁸⁶ Quoted in DoubleClick, “Announcing New Ways for TV Providers to Manage Cross-screen, Addressable Digital Video Advertising,” Apr. 2015, <https://www.doubleclickbygoogle.com/articles/announcing-new-ways-tv-providers-manage-cross-screen-digital-video-advertising>.

¹⁸⁷ For example: “A data-driven advertising product combining News Corp’s readership data with insights from big data analytics poster child, Quantum, is among several new digital offerings launched” last July. “News Corp Partners with Quantum and MCN to Launch New Digital Advertising Products,” CMO, 31 July 2015, <http://www.cmo.com.au/article/580909/news-corp-partners-quantum-mcn-launch-new-digital-advertising-products/>; “News Corp To Acquire Move, Inc.” 30 Sept. 2014, <http://newscorp.com/2014/09/30/news-corp-to-acquire-move-inc-2/>; “News Corp Australia Announces Series of Commercial Launches,” 29 July 2015, <http://www.newscorpastralia.com/news/news-corp-australia-announces-series-commercial-launches>; “Job Details: Director, Ad Solutions,” Fox Careers, 11 Feb. 2016, <https://foxcareers.com/Search/JobDetail/FNG0004655?organization=Fox+Networks+Group>; Michelle Manafy, “Q&A with Jeff Misenti, Chief Digital Officer, Fox News on Cross-platform Advertising,” Digital Content Next, 24 Mar. 2014, <https://digitalcontentnext.org/blog/2014/03/24/qa-with-jeff-misenti-cdo-fox-news-on-cross-platform-advertising/>.

¹⁸⁸ “News Corp Australia Announces Series of Commercial Launches”; Susan Kuchinskas, “Rubicon Acquires Fox Audience Network,” Click Z, 1 Nov. 2010, <https://www.clickz.com/clickz/news/1866161/rubicon-acquires-fox-audience-network>.

¹⁸⁹ Edward Skolarus, “Vice President, Digital Advertising & Advanced Platforms at Fox Broadcasting Company,” Linked In, <https://www.linkedin.com/in/edwardskolarus>.

¹⁹⁰ Fox, “Position Description and Candidate Profile: Senior Vice President of Digital Marketing Solutions,” May 2014, <http://cupusa.org/wp-content/uploads/2014/05/Fox-SVP-Digital-Marketing-SolutionsLPD1.pdf>.

Through Krux, News Corp accesses a “people data activation” data management platform that engages in cross-device identification of individuals. Krux’s system integrates an array of data, drawing on such partners as Acxiom, Nielsen’s eXelate, Neustar, and Equifax’s IXI.¹⁹¹ In 2016, News Corp’s three most important digital marketing initiatives include “doing more with data,” including for “measurement [and] targeting.”¹⁹² News Corp. is also an “inaugural partner” with Merkle’s MerkleOne data platform, a system designed to “match” first-, second- and third-party data sets. Merkle’s data assets include online and offline sources, creating “online digital targeting” applications that tap into “over 2 billion records” on 275 million individuals.

News Corp owned 21.3 percent of the Rubicon Project as of 2015.¹⁹³ Through its work with Rubicon, News Corp (Fox) has access to “Big Data Analytics and Machine Learning” and an “Advertising Automation Cloud” that uses “large volumes of data” to target consumers.¹⁹⁴ It also bought interactive video advertising platform True[X] in 2014, which is working with Comcast’s FreeWheel to give it access to inventory from “FreeWheel’s base of media and entertainment brands (such as from NBCUniversal, Turner Broadcasting, Viacom, Sky, DirecTV and ABC.)”¹⁹⁵ Also in 2014, Fox entered into agreements with Google’s DoubleClick Ad Exchange, Facebook’s LiveRail (data onboarding), and Vindico, a video ad platform provider, to bring more data to bear when targeting consumers online.¹⁹⁶ Last September, News Corp purchased global digital and

¹⁹¹ Through Krux, News Corp. accesses its “people data activation” system that identifies a person across devices for targeting. Krux, “Partners,” <http://www.krux.com/partners/>.

¹⁹² Jay Sayers, “News Corp. on Programmatic, Ad Automation—Impacts For 2016,” 25 Feb. 2016, <https://jaysears.com/2016/02/25/news-corp-on-programmatic-ad-automation-impacts-for-2016/>.

¹⁹³ Rubicon Project, “News Corporation,” <http://rubiconproject.com/investors/news-corporation/>; Judith Aquio, “Flashback: Why The News Corp. Deal Was A Turning Point For The Rubicon Project,” Ad Exchanger, 5 Feb. 2014, <http://adexchanger.com/online-advertising/flashback-why-the-news-corp-deal-was-a-turning-point-for-the-rubicon-project/>.

¹⁹⁴ Rubicon Project, Annual Report, 2015, <http://investor.rubiconproject.com/investors/financial-information/sec-filings/default.aspx>; Kelly Liyakasa, “Merkle Brews A Custom Audience Platform For Marketers and Publishers,” Ad Exchanger, 28 Sept. 2015, <http://adexchanger.com/digital-marketing-2/merkle-brews-a-custom-audience-platform-for-marketers-and-publishers/>. It’s worth noting that Merkle’s product has relationships with an array of data companies, including Oracle, Google, and Adobe. Merkle, “DataSource,” <http://www.merkleinc.com/datasource#.VtSPPBj-BVo>.

¹⁹⁵ Mike Shields, “21st Century Fox to Acquire Ad Tech Firm TrueX for \$200 Million,” *The Wall Street Journal*, 17 Dec. 2014, <http://blogs.wsj.com/cmo/2014/12/17/21st-century-fox-to-acquire-ad-tech-firm-truex-for-200-million/>; Kelly Liyakasa, “Fox’s True[X], FreeWheel Team Up To Help TV Companies Take On Big Tech Providers,” Ad Exchanger, 15 Dec. 2015, <http://adexchanger.com/digital-tv/foxs-truex-freewheel-team-up-to-help-tv-companies-take-on-big-tech-providers/>.

¹⁹⁶ Yuyu Chen, “Fox Takes Leap Into Programmatic,” Click Z, 11 Sept. 2014, <https://www.clickz.com/clickz/news/2364483/fox-takes-leap-into-programmatic>; Kelly Liyakasa, “Grazing In ‘Preferred’ Pastures – Why Google Expanded ‘Partner Select,’” Ad Exchanger, 8

social video ad platform Unruly, which has a “powerful set of 2 trillion video views and sophisticated targeting capabilities ... [and] uses historical sharing behavior to predict the potential for video ads to go viral across all digital touch points.”¹⁹⁷

Jan. 2015, <http://adexchanger.com/digital-tv/grazing-in-preferred-pastures-why-google-expanded-partner-select/>; Todd Spangler, “Fox TV Stations Group Inks Pact with Facebook’s LiveRail for Online-Video Ads,” *Variety*, 4 Dec. 2014, <http://variety.com/2014/digital/news/fox-tv-stations-group-inks-pact-with-facebooks-liverail-for-online-video-ads-1201371311/>.

¹⁹⁷ “News Corp To Acquire Social Video Ad Platform Unruly,” 16 Sept. 2015, <http://newscorp.com/2015/09/16/news-corp-to-acquire-social-video-ad-platform-unruly/>.

Turner Broadcasting

“Convergence has arrived. Data and content are officially hitched.”
—Donna Speciale, president, Turner Broadcasting Ad Sales¹⁹⁸

Advanced data targeting has been a key strategy for Turner Broadcasting (part of Time Warner) and it is continually expanding how it uses information to deliver cross-platform marketing.¹⁹⁹ Its “Turner Data Cloud,” an “advanced data management platform,” works with powerful data brokers and data targeting companies, including Krux, Oracle’s Data Cloud, and Epsilon (Alliance Data). The cloud enables Turner to gather, analyze, and use first- and third-party data, and also allows advertisers to “directly link” in order to “effectively execute targeting in digital and soon linear.” Turner’s Cloud “incorporates an understanding of past, present and future consumer behavior” to deliver a “360-degree view.” The cloud permits “marketers to shop for data culled from Turner’s various TV and digital properties,” including information on individuals “who have shared stories via social media” or “downloaded games Then, that data can be potentially married with a marketer’s own data”²⁰⁰ For example, Krux (which engages in “people data activation”) helps Turner incorporate what it calls “anonymized Turner IDs” with data for better cross-platform targeting, with Oracle and Epsilon enabling “some of the more complex CRM data integrations where marketers might want to bring offline or

¹⁹⁸ Quoted in “Turner Broadcasting ‘Turns It Up’ at 2015 Upfront,” 13 May 2015, <https://pressroom.turner.com/us/turner-advertising-sales/upfront-2015-turner-broadcasting-turns-it#.VcpnAHg5vdm>.

¹⁹⁹ “Turner Ad Sales monetizes the company’s portfolio of leading news, sports, kids and entertainment properties through advertising and brand activations. Attracting a wide-scale audience of diverse consumers, the collection includes leading media brands CNN, HLN, TBS, TNT, truTV, Cartoon Network, Boomerang, Adult Swim, Bleacher Report and Turner Sports’ high-profile coverage of the NBA, MLB, NCAA and PGA. In addition, the company has digital sales partnerships with the NBA, NASCAR, NCAA and PGA.” “Turner Takes Next Step to Re-Imagining Advertising with TURNER IGNITE,” 4 Jan. 2016, <http://www.turner.com/pressroom/turner-takes-next-step-re-imagining-advertising-turner-ignite#sthash.qWRwFGcH.dpuf>; “Cannes Conversations: Michael Salerno of Turner Broadcasting—The Jay Sears Interview,” MyersBizNet, 10 June 2014, <http://www.jackmyers.com/jackmyers-think-tank/Cannes-Conversations-Michael-Salerno-of-Turner-Broadcasting--The-Jay-Sears-Interview.html>; “Turner Digital Partners with Rubicon Project for New Programmatic Ad Buying Platform,” Portada, 28 Oct. 2013, <http://www.portada-online.com/2013/10/28/turner-digital-partners-with-rubicon-project-for-new-programmatic-ad-buying-platform/>; “Turner Broadcasting Launches the New Turner Data Cloud to Power the Turner Premium Marketplace,” 13 May 2015, <https://www.turner.com/pressroom/united-states/turner-advertising-sales/upfront-2015-turner-data-cloud>.

²⁰⁰ “Turner Takes Next Step to Re-Imagining Advertising with TURNER IGNITE”; Mike Shields, “Turner Broadcasting Pitches In-House Data Alongside New TV Shows,” CMO Today, 13 May 2015, <http://blogs.wsj.com/cmo/2015/05/13/turner-broadcasting-pitches-in-house-data-alongside-new-tv-shows/>; “Turner Broadcasting Launches the New Turner Data Cloud to Power the Turner Premium Marketplace.”

multichannel data to the table”²⁰¹ Epsilon is helping Turner bring “together all first- and third-party data sources and integrating predictive analytics [to] anticipate consumer behavior.”²⁰² Turner’s programmatic data targeting incorporates a number of formats, including real-time bidding, open exchange, and private marketplaces (PMP).²⁰³

Turner is also incorporating IBM’s Watson “state of the art cognitive technology” to help “obtain actionable insights about advertisers and trends,” “infusing new levels of data and science into advertising decisions.” Watson will help fuel Turner’s “Incite”—the company’s “core intelligence platform for advertising sales”—as will data broker Neustar’s predictive analytics for marketing service.²⁰⁴ A “wide combination of new analytics” is also being used to “better help target” consumers on “digital and traditional TV platforms.” Turner’s other recent “advertising solutions” initiatives include “Launchpad, TargetingNow, AudienceNow, ROINow, ProvableROI and Branded Content.”²⁰⁵ Last year, Turner announced it would use Rentrak’s “advanced

²⁰¹ Kelly Liyakasa, “Turner Broadcasting: TV Companies Can Have Data Clouds Too,” Ad Exchanger, 1 July 2015, <http://adexchanger.com/digital-tv/turner-broadcasting-tv-companies-can-have-data-clouds-too/>; Krux, “People Data Activation,” <http://www.krux.com/resources/people-data-activation-completeness-paper/>.

²⁰² “Turner Broadcasting Partners With Epsilon To Launch Turner Data Cloud,” PR Newswire, 30 June 2015, <http://www.prnewswire.com/news-releases/turner-broadcasting-partners-with-epsilon-to-launch-turner-data-cloud-300106689.html>.

²⁰³ For example, qualifications for a recent Turner programmatic job included the following requirements:

- Solid knowledge of audience data
 - Ex: DLX, Blue Kai, Krux, Nielsen, Comscore, Rentrak, TRA, Server data, ACR data
- Solid Knowledge of advanced data sets in the media space (ex: Nielsen Catalina, Nielsen Buyer Insights, Rentrak, TRA)
- Solid knowledge of Ad technologies and how they can leveraged to create new advertising solutions (ex: ACR, geo location, beaconing)
- Solid knowledge of advertiser side data solutions
 - Ex: Homescan, Scantrack, IRI, NPD, JD Power, Rentrak Studio, etc.
- Solid Knowledge of data integration techniques and processes
 - Data matching & key vendors, etc.

Turner, “VP Ad Innovation \ Programmatic Solutions,” http://jobsatturner.com/new-york/sales/vp-ad-innovation_-_programmatic-solutions-jobs.

²⁰⁴ “Neustar to Acquire Marketing Analytics Technology Provider MarketShare to Create Global Leader in Marketing Services,” 5 Nov. 2015, <https://www.neustar.biz/about-us/news-room/press-releases/2015/neustar-to-acquire-marketing-analytics-tech-provider>.

²⁰⁵ Wayne Friedman, “Turner Ad Sales Starts Business Unit Turner Ignite,” Media Post Media Daily News, 4 Jan. 2016, <http://www.mediapost.com/publications/article/265851/turner-ad-sales-starts-business-unit-turner-ignite.html>; “Turner Takes Next Step to Re-Imagining Advertising with TURNER IGNITE”; “Turner Broadcasting Aligns With Epsilon, Krux And Oracle Power New Turner Data Cloud And Turner Premium Marketplace,” 30 June 2015, <http://www.krux.com/company/press-room/press-releases/turner-broadcasting-aligns-with-epsilon-krux-and-oracle-power-new-turner-data-cloud-and-turner-premium-marketplace/>; Jason

demographics” service to help its Targeting Now and AudienceNow “advanced advertising products ... optimize audience delivery to an advertiser’s specific marketing targets”²⁰⁶

Illustrating the convergence of data targeting with digital advertising formats that blur distinctions between editorial and marketing content, Turner announced it will become “a giant native ad platform.” Its new “Native Plus” service is being run “within Turner’s new Ignite division that will focus on both content and data solutions.” A Turner official notes that “we don’t see data and content as separate entities.”²⁰⁷ As Stephano Kim, Turner Broadcasting’s chief data strategist, explained,

We are joining forces with industry-leading data and technology companies to power the Turner Premium Marketplace powered by an unrivaled central repository of data. Fueling multi-screen ecosystems, Turner Premium Marketplace will enable our sales divisions to take their client conversations to a new level of insight and strategy to more effectively execute advertising campaigns across Turner’s portfolio. Brands advertising on Turner properties now have the enhanced ability to reach the most appropriate and desirable audiences across all user experiences wrapped in our premium content.²⁰⁸

Advertisers and agencies can access Turner’s Premium Marketplace either directly or programmatically.²⁰⁹

Lynch, “Turner Shakes Up Its Ad Sales Division to Streamline Agency and Client Partnerships,” *Adweek*, 8 Dec. 2015, <http://www.adweek.com/news/television/turner-shakes-its-ad-sales-division-streamline-agency-and-client-partnerships-168487>.

²⁰⁶ “Turner Broadcasting to Utilize Rentrak Advanced Demographics Ratings to Fuel Ad Targeting Products on Select Media Buys,” PR Newswire, 30 Sept. 2015, <http://www.prnewswire.com/news-releases/turner-broadcasting-to-utilize-renttrak-advanced-demographics-ratings-to-fuel-ad-targeting-products-on-select-media-buys-300151284.html>. Turner supported Rentrak’s merger with comScore. Media Industry Demonstrates Broad Support for the Announcement of a comScore and Rentrak Merger,” 8 Oct. 2015, <http://www.comscore.com/Insights/Press-Releases/2015/10/Media-Industry-Demonstrates-Broad-Support-for-the-Announcement-of-a-comScore-and-Rentrak-Merger>.

²⁰⁷ Jeanine Poggi, “Turner Seeks To Become One Big Native Ad Platform,” *Advertising Age*, 4 Jan. 2016, <http://adage.com/article/media/turner-seeks-big-native-ad-platform/301959/>.

²⁰⁸ “Turner Broadcasting Aligns with Epsilon, Krux And Oracle Power New Turner Data Cloud And Turner Premium Marketplace,” 30 June 2015, <http://www.krux.com/company/press-room/press-releases/turner-broadcasting-aligns-with-epsilon-krux-and-oracle-power-new-turner-data-cloud-and-turner-premium-marketplace/>.

²⁰⁹ Liyakasa, “Turner Broadcasting: TV Companies Can Have Data Clouds Too.” Last August, Turner expanded its commitment to video streaming, acquiring a majority stake in iStreamPlanet, “which the company hopes will boost its over-the-top and live-streamed video offerings. Although iStream will remain as a standalone company with its own board of directors, Turner Broadcasting CTO Jeremy Legg said the acquisition will help the broadcaster migrate its core video infrastructure to the cloud, enhance video-on-demand services and develop both ad-free and ad-supported over-the-top solutions.” Kelly Liyakasa, “Turner’s iStream Acquisition A Bid

For IP-Based Video,” AdExchanger, 17 Aug. 2015, <http://adexchanger.com/digital-tv/turners-istream-acquisition-a-bid-for-ip-based-video/>.

Viacom/CBS

“Big data and predictive analytics are reinventing TV advertising, bringing targeting and precision audience modeling from digital marketing to the world of linear and digital television. And with the emergence of these capabilities in premium context of television, an entire set of new business models—and new businesses—are triggering explosive innovation and growth. Viacom Vantage, Viacom’s data and analytics platform, is at the forefront of this change, and we are offering a select few individuals the opportunity to work with us to define the next generation of television advertising.”
—Viacom job posting²¹⁰

In April 2015, Viacom “announced Viacom Vantage, an innovative, data-driven ad product that enables advertisers to reach their custom targets at the program level across the Viacom Media Networks portfolio.” Vantage “invests in first-, second- and third-party data sets,” uses “predictive algorithms,” and utilizes the “data and matching capabilities” of Vantage to deliver targeted advertising on linear and digital Viacom content. “Viacom has added staffers to collect various streams of information—set-top box viewership, mobile-location information, consumer-purchase patterns and more—and then interpret them to help clients optimize their advertising buys,” reported one trade publication. Viacom’s “data team” provides its ad division with “a deep understanding of Viacom audience across digital, linear and social assets.” Vantage also involves a “granular understanding of a path analysis for individual viewers” across a range of content, taking advantage of “first- and third-party data sets so we can look across screens.” The company is able to track individuals across their online “journey” in order to assess the effectiveness of the targeted marketing.²¹¹

In November, Viacom announced a “strategic partnership” with TiVo Research designed to help “augment its precision and consumer targeting capabilities.” Viacom gained the ability to combine its “advanced predictive engine” with TiVo’s “granular set-top box data, matched directly to purchase and consumer engagement data”²¹² Viacom also

²¹⁰ Viacom, “Product Manager—Ad Innovations—Vantage,” Linked In, https://www.linkedin.com/jobs2/view/66796711?trk=jsrp_job_details_text.

²¹¹ Viacom discusses “custom segments” used for Vantage, which need to be disclosed along with the data used to identify, analyze, and target individuals. How such “deterministic” identification occurs should be made public. Kelly Liyakasa, “Viacom: TV Media 2.0 Will ‘Connect Viewing And Audience Data Deterministically,’” Ad Exchanger, 7 Aug. 2015, <http://adexchanger.com/ad-exchange-news/viacom-tv-media-2-0-will-connect-viewing-and-audience-data-deterministically/>; “Viacom Unveils ‘Viacom Vantage,’” 29 Apr. 2015, <http://news.viacom.com/press-release/ad-sales/viacom-unveils-viacom-vantage>.

²¹² “Viacom Unveils ‘Viacom Vantage.’” “TiVo Research has built the industry’s largest cross-media single-source panel, including second-by-second tune-in data anonymously matched to online exposure and purchase data for more than two million US homes. Viacom, which reaches a cumulative 3.4 billion television subscribers worldwide and 650 million social media followers, will unlock new capabilities for its marketing and advertising partners through an advanced application of its predictive engine to this sophisticated data set.” “Viacom and TiVo Research

“taps into browser data that examines consumers’ online shopping habits” Among the advertisers using this service are companies that target youth as well as communities of color.²¹³ Since 2015, Viacom’s Vantage has worked with Rentrak (now owned by comScore) to “precisely target consumer audiences” across devices and platforms, using a data-broker-based “advanced analytical technology.”²¹⁴ Viacom’s “Audience Science” division, which feeds Vantage, engages in “audience onboarding, advanced analytics and data activation.”²¹⁵

Viacom has been using a data-driven, programmatic, and cross-platform ad-targeting system for several years, including work with Adobe and the Rubicon Project.²¹⁶ Viacom’s cross-platform data targeting services also incorporate social media information, reflecting an “Always On” multi-platform strategy in which it “harnesses the power of its 220 million social followers to create and distribute real-time video and editorial content across on-air, online, mobile and social.” The “Viacom Social Echo Graph” is part of the recently developed Viacom Velocity services, which are focused on

Announce Strategic Partnership,” 2 Nov. 2015, <http://finance.yahoo.com/news/viacom-tivo-research-announce-strategic-130200252.html>.

²¹³ “After testing Viacom’s data technology with Mtn Dew in 2013, Pepsi intends to make fuller use of it next year, says Emily Silver, senior director of media and digital for PepsiCo. Americas Beverages. The goal, she explains, is to find the Viacom programs and networks that draw audiences most interested in beverages like Sierra Mist, and learn how to apply Viacom’s ad optimization to other platforms.” Brian Steinberg, “Viacom Bets on Big Data to Boost Its Revenues,” *Variety*, 3 Nov. 2015, <http://variety.com/2015/tv/news/viacom-big-data-measurement-1201631273/>.

²¹⁴ “Rentrak and Viacom Sign TV Ratings and Advanced Demographic Measurement Agreement,” 1 May 2015, <http://investor.rentrak.com/releasedetail.cfm?releaseid=910145>; “Media Industry Demonstrates Broad Support for the Announcement of a comScore and Rentrak Merger,” 8 Oct. 2015, <http://investor.rentrak.com/releasedetail.cfm?ReleaseID=935848>. “... Colleen Fahey Rush, executive VP of strategic insights and research for Viacom Media Networks, [said] in a statement. “Our partnership with Rentrak further strengthens our insights arsenal and our ability to unlock new levels of targeting.” Jon Lafayette, “Viacom Makes Data Deal with Rentrak,” *Broadcasting & Cable*, 1 May 2015, <http://www.broadcastingcable.com/news/currency/viacom-makes-data-deal-rentrak/140459>.

²¹⁵ Kelly Liyakasa, “Viacom Snags Agency Vet Zilberbrand To Ramp Up Advanced Data Strategy,” *Ad Exchanger*, 2 Oct. 2015, <http://adexchanger.com/digital-tv/viacom-snags-agency-vet-zilberbrand-to-ramp-up-advanced-data-strategy/>.

²¹⁶ Jay Sears, “Robert Brett of Viacom Media Networks —The Jay Sears Interview,” *Media Village*, 13 Feb. 2014, <https://www.mediavillage.com/article/robert-brett-of-viacom-media-networks-the-jay-sears-interview/>; “Viacom International Media Launches Programmatic Ad Exchange with Rubicon Project,” *Portada*, 23 Sept. 2015, <http://www.portada-online.com/2013/09/23/viacom-international-media-launches-programmatic-ad-exchange-with-rubicon-project/>; “Viacom Introduces ‘Surround Sound’ Cross-Platform Audience Targeting for Advertisers,” 21 Mar. 2012, <http://ir.viacom.com/releasedetail.cfm?ReleaseID=658524>; “VIMN Launches Commercial Innovation Group to Help Brands Create Better Multiplatform Connections with Fans,” 19 May 2015, <http://www.vimn.com/press/content/vimn-launches-commercial-innovation-group-to-help-brands-create-better-multiplatform>.

branded content and other marketing integrations.²¹⁷ Viacom’s Echo is a partnership with Spredfast, a social media monitoring company that helps clients “identify influencers for your brand, campaigns, and competitors” and “curate relevant social content across every major social network.” Viacom is able to get ongoing data, via a dashboard, on how people in the U.S. are responding to its various “branded content campaigns” across such social media as Facebook, Google, Twitter, Amazon, Instagram, and others.²¹⁸ Viacom describes Viacom Velocity as a “full-service group offering insights-driven integrated marketing and creative content solutions from Viacom Media Networks Music and Entertainment”²¹⁹ According to Jeff Lucas, head of sales for Viacom Music and Entertainment, “Viacom Echo is a one-of-a-kind service that mirrors the way our content travels beyond our screens, across social media and throughout the pop culture. We want to take our clients and their brands with us on that journey.”²²⁰

Viacom’s current advanced-advertising initiatives are reflected in its work in “audience science,” which covers the following activities:

- *Audience Onboarding & Segmentation* (Data Sourcing, Partnerships & Architecture)—Responsible for building the infrastructure architecture that allows Viacom to successfully ingest disparate data sets across linear, digital and off-line behavior and marry the data to actionable 360 executions and effectiveness measurements.
- *Advanced Analytics*—Works closely with the Audience Onboarding and Segmentation teams to draw insights and actionable models and methods to support both Sales and Marketing teams.

²¹⁷ Echo, according to Viacom, “is all about finding the shared voice of the client and working together to create a concept and make content and expressions for every platform with a cadence for what every platform does best.” Natan Edelsburg, “Upfronts: How Viacom Velocity is Working with Spredfast to Sell Social TV,” *The Drum*, 22 Apr. 2015, <http://www.thedrum.com/news/2015/04/22/upfronts-how-viacom-velocity-working-spredfast-sell-social-tv>.

²¹⁸ Spredfast, “Intelligence,” <https://www.spredfast.com/social-media-marketing/spredfast-intelligence>; Spredfast, “Experiences,” <https://www.spredfast.com/social-media-marketing/spredfast-experiences> Edelsburg, “Upfronts: How Viacom Velocity is Working with Spredfast to Sell Social TV”; “Viacom and Mass Relevance Partner to Launch EchoGraph, Exclusive Social Media Measurement Platform for Advertisers,” 10 Apr. 2014, <http://ir.viacom.com/releasedetail.cfm?ReleaseID=839552>; Spredfast, “Social Network Partnerships,” <https://www.spredfast.com/social-media-marketing/partner-program>.

²¹⁹ “Viacom Velocity introduced the Viacom Echo Social Media Network, a new service [through which] the company . . . develop[s] creative campaigns for clients on the company’s platforms and engineers their extension across social media and measurable earned media.” “Viacom Introduces Unit to Help Advertisers Blend Pitches with Programming,” 22 Jan. 2014, <http://ir.viacom.com/releasedetail.cfm?ReleaseID=820527>.

²²⁰ “Viacom Introduces Unit to Help Advertisers Blend Pitches with Programming.”

- *Digital Media Executions*—Harnesses our 1st party and outside data sources and leverages them to target and message across all forms of digital – display, video, social and cross-device.²²¹

Viacom’s CBS division is also engaged in “data-driven” advertising, including working with programmatic marketers as well as having its own data management platform. It streams video content, including to mobile devices, using data to bolster ad revenue by creating “persistent viewer profiles.”²²² CBS Interactive is also a member of Google Partner Select, “a premium video marketplace that brings together the best of brand advertising with the best of programmatic.” CBS works with Google’s DoubleClick advertising system, which has access to significant data-targeting resources.²²³

²²¹ “Viacom Continues to Expand Commitment to Data Strategy with Latest Highly Regarded Hire, Julian Zilberbrand,” 2 Oct. 2015, <http://www.businesswire.com/news/home/20151002005380/en/Viacom-Continues-Expand-Commitment-Data-Strategy-Latest#.Vhn1Ddb6lFK>.

²²² Kelly Liyakasa, “CBS Television Distribution Finds Power In Cross-Platform Video,” Ad Exchanger, 17 Dec. 2015, <http://adexchanger.com/tv-and-video/cbs-television-distribution-finds-power-in-cross-platform-video/>; Cynthia Littleton, “Leslie Moonves Talks Apple TV, Ad-Free Version of CBS All Access,” *Variety*, 8 Dec. 2015, <http://variety.com/2015/digital/news/leslie-moonves-cbs-all-access-stephen-colbert-1201656577/>; Kelly Liyakasa, “How CBS Strategizes Cross-Screen Video,” Ad Exchanger, 13 Mar. 2015, <http://adexchanger.com/digital-tv/how-cbs-strategizes-cross-screen-video/>; Robert Andrews, “CBS All Access Subscribers Younger, Better Targeted: Debevoise,” Beet.TV, 7 Jan, 2015, <http://www.beet.tv/2015/01/cescbsdebevoise.html>.

²²³ Mike Shields, “Google Nabs Media Partners Including CBS Interactive and Fox News for Premium Video Exchange,” Wall Street Journal CMO Today, 6 Jan. 2015, <http://blogs.wsj.com/cmo/2015/01/06/google-nabs-media-partners-including-cbs-and-fox-news-for-premium-video-exchange/>; Neal Mohan, “Video and the Moments That Matter,” DoubleClick Advertisers Blog, 6 Jan. 2015, <http://doubleclickadvertisers.blogspot.com/2015/01/video-and-moments-that-matter.html>; Neal Mohan, “Unlocking the Brand Opportunity,” DoubleClick Advertisers Blog, 4 June 2014, <http://doubleclickadvertisers.blogspot.com/2014/06/unlocking-brand-opportunity.html>. In 2015, CBS launched its data-driven “Campaign Performance Audit, an approach that uses performance-based metrics to help advertisers maximize their television spending and improve return on investment. Nielsen assets being employed as part of CPA include Nielsen Catalina Solutions, Nielsen Buyer Insights, Nielsen MotorStats, Nielsen MRI Fusion, Nielsen Brand Effects and Nielsen Cambridge Media Demand Landscape.” Jon Lafayette, “CBS Jumps into Data with New Ad Product,” *Broadcasting & Cable*, 17 Mar. 2015, <http://www.broadcastingcable.com/news/currency/cbs-jumps-data-new-ad-product/138866>.

Google

“Data-driven targeting will leverage advertisers’, broadcasters’ and distributors’ growing investments in data by applying it to all media campaigns across all screens, including traditional TV.”

—Rany Ng, product management director, Google²²⁴

Google is in the forefront of using programmatic and other data-driven advertising across platforms, including digital video. Building on its own unique set of data assets and capabilities, including its DoubleClick Exchange service and expertise in effective marketing formats, Google illustrates how the role of data and our use of digital devices is fundamentally transforming our viewing across screens.

Through its ongoing Think with Google series, “Evolution of TV,” the digital marketing company has offered both its own vision for our video future as well as a practical guide for marketers who wish to take advantage of many new ways to target viewers. Google explains that “The Shift to TV over the internet is having a profound impact on television delivery, advertising and the viewer experience,” which is being driven by “the transformation of seven dynamics” in the “TV industry and advertising marketplace.”²²⁵ These seven dynamics are “reaching across screens,” Internet TV streaming, cloud-based TV distribution, measurement, programmatic ad technology, addressable advertising, and viewer engagement. Google has a major stake in this transformation, given its ownership of the world’s largest video platform (YouTube, with 1 billion unique users each month); its own video-streaming device (Chromecast), and especially its extensive data-driven advertising portfolio (including video ads). As it says in one of its reports, “advertisers follow their audiences, so ads will continue to be a primary source of revenue from programming delivered over the internet Through advances in video ad decisioning and dynamic ad insertion, campaigns can deliver the right message to the right user at the right time.”²²⁶

“Ad monetization technology” (such as dynamic ad insertion, or DAI) is one of the keys to ensuring that multi-platform video is successful, explains Google: “ad monetization platforms will be able to dynamically select the best ad for each viewer and seamlessly insert them” Cloud based services for “TV scale on the internet” enable the placement of “uniquely addressed” ads, regardless of whether they are distributed by content owners, “syndication partners, apps, sites ... [or] devices.” In its “TV’s Migration to the Cloud” study, Google notes that “With TV programming in the cloud, marketers

²²⁴ Rany Ng, “Programmatic TV: A Monumental Upgrade For Advertisers,” *Ad Exchanger*, 26 May 2015, <http://adexchanger.com/ad-exchange-news/programmatic-tv-a-monumental-upgrade-for-advertisers/>.

²²⁵ Greg Philpott and Anish Kattukaran, “Evolution of TV: 7 Dynamics Transforming TV,” *Think with Google*, Dec. 2014, https://think.storage.googleapis.com/docs/evolution-of-tv-7-dynamics-transforming-tv_articles.pdf.

²²⁶ Philpott and Kattukaran, “Evolution of TV: 7 Dynamics Transforming TV.”

would be able to customize an ad specific to an individual”²²⁷ The ad creation and delivery process is facilitated by the use of programmatic data-targeted advertising to “uniquely address audiences across devices so that every impression matters.”²²⁸ Google defines programmatic TV as a “technology-automated and data-driven method of buying and delivering ads against TV content. This includes digital TV ads served across the web, mobile devices, and connected TVs, as well as linear TV ads served across set-top boxes.”²²⁹ “Data-driven targeting” plays a central role, as Google explains:

Data is one of the fundamental components of programmatic and this is true for TV as it is for digital. The promise of programmatic TV, as it pertains to data, is to achieve parity with and then move beyond the age, gender, reach, and frequency components of targeting Not only do first-, second-, and third party data sets segment audiences more precisely, they also help advertisers and programmers fine-tune the delivery . . . even as users switch between screens.²³⁰

Having access to all this data also enables marketers to alter their use of data and content through “real-time optimization” (illustrating the growing scrutiny over our interactions online). Expanded data gathering and profiling also facilitates the impact of dynamic ad insertion (DAI). Google explains that “Not only does DAI technology have the potential to address the complexity of cross-screen, cross-device ad delivery, it can also increase the value of each ad spot since it allows each individual viewer to get his or her own unique and highly relevant stream of ads.”²³¹

Google provides a number of programmatic data-targeting services for video. It offers a “Google Partner Select Programmatic Premium Marketplace,” for example, that connects “a select set of publishers investing in top-quality video with the brands that want to buy against it.” Its TrueView video ads for YouTube are sold programmatically. It also offers programmatic targeting for so-called “native advertising” formats (where advertising assumes the features of informational content to obscure its intent) “across multiple kinds of screens.” Google enables broadcasters (via its mDialog technology) to identify targeted advertising opportunities on the Internet to coincide with their programming

²²⁷ Greg Philpott and Anish Kattukaran, “The Evolution of TV: TV’s Migration to the Cloud,” Think with Google, Apr. 2015, p. 5, <https://think.storage.googleapis.com/docs/evolution-of-tv-migration-to-the-cloud.pdf>.

²²⁸ Philpott and Kattukaran, “Evolution of TV: 7 Dynamics Transforming TV.”

²²⁹ Rany Ng and Anish Kattukaran, “The Evolution of TV: The Promise of Programmatic TV,” Think with Google, Mar. 2015, <https://think.storage.googleapis.com/docs/evolution-of-tv-programmatic-tv.pdf>.

²³⁰ Ng and Kattukaran, “The Evolution of TV: The Promise of Programmatic TV.”

²³¹ Greg Philpott and Anish Kattukaran, “Evolution of TV: Reaching Audiences Across Screens,” Think with Google, Feb. 2015, <https://think.storage.googleapis.com/docs/evolution-of-tv-reaching-audiences-across-screens.pdf>.

schedules.²³² In January it announced the availability of “real-time ads” so advertisers can capitalize on live events (such as sports, politics, and awards shows). “The format can be ‘dynamically inserted’ across YouTube, ‘hundreds of thousands of apps’ and about 2 million sites across the Google Display Network, according to Tara Walpert Levy, managing director of agency sales for Google. ... YouTube is productizing ways to ‘time’ mobile, video and display ads more sequentially with what’s happening on live TV.”²³³ Google is using data-targeted ads as part of its Google Fiber Internet and television service in Kansas City. “Google Fiber set-top boxes are IP based,” which allows for continuous monitoring and changes via the cloud—including for targeted marketing.²³⁴

²³² Neal Mohan, “Unlocking the Brand Opportunity,” DoubleClick Advertiser Blog, 4 June 2014, <http://doubleclickadvertisers.blogspot.com/2014/06/unlocking-brand-opportunity.html>; Kelly Liyakasa, “Google Switches On Programmatic For TrueView Video Ads,” Ad Exchanger, 16 Apr. 2015, <http://adexchanger.com/digital-tv/google-switches-on-programmatic-for-trueview-video-ads/>; Rany Ng, “Announcing New Ways for TV Providers to Manage Cross-screen, Addressable Digital Video Advertising,” DoubleClick Publisher Blog, 13 Apr. 2015, <http://doubleclickpublishers.blogspot.com/2015/04/new-ways-for-tv-providers-to-manage.html>.

²³³ Kelly Liyakasa, “Google Debuts ‘Real-Time Ads’ To Drive Live Engagement,” Ad Exchanger, 20 Jan. 2016, <http://adexchanger.com/ad-exchange-news/google-unveils-real-time-ads-drive-live-engagement/>.

²³⁴ Google, “Ads Settings for Fiber TV,” <https://support.google.com/fiber/answer/6093739?hl=en>; Google Fiber, “Fiber TV Trials Local Ads in Kansas City,” Google Fiber Help Forum, 20 Mar. 2015, https://productforums.google.com/forum/#!category-topic/fiber/tv/kansas_city/other/N4cyjy_B4bc; Philpott and Kattukaran, “The Evolution of TV: TV’s Migration to the Cloud.” As *Wired* magazine points out, “Google is about to make ads on television work just like ads on the web. Through Google, advertisers will know how many times their ads were viewed. They’ll be able to target audiences based on location and viewing history. In other words, TV advertisers will have access to the same audience intel online advertisers take for granted. Finally, after all this time, your TV is going to know as much about you as your web browser.” Klint Finley, “Thanks to Google, TV Ads Are About to Start Watching You,” *Wired*, <http://www.wired.com/2015/03/google-fiber-ads/>.

Appendix B

AT&T Privacy Policy

AT&T Privacy Policy

About Our Privacy Policy

Whenever you do something like buy one of our products, watch a show or download an app, information is created. Because we know your privacy is important, we have a Privacy Policy to explain how we collect, use and protect that information. There's a quick summary below, and the entire policy is written in [an easy FAQ format](#). We want to simplify this, so you can make informed choices about your privacy, and then spend the rest of your time enjoying our products and services.

Effective July 24, 2015

A Quick Summary of Our Privacy Policy

Our privacy policy applies to your use of our products and services. We will always provide you with notice of material changes to this Policy. In order to do things like constantly improve our services, products and relationship with you, we may collect different types of information that help us learn more about how you use our offerings.

Here's some of the information we collect:

- **Account Information** includes your name, address, telephone number, e-mail address, service-related details such as payment data, security codes, service history and other information like that;
- **Network Performance & Usage Information** tells us how you use our networks, our products and our services, and how well our equipment and networks are performing;
- **Web Browsing & Wireless Application Information** tells us about the websites you visit and the mobile applications you use on our networks;
- **Location Information** tells us where your wireless device is located, as well as your ZIP-code and street address;
- **TV Viewing Information** tells us about which programs you watch and record and similar information about how you use our video services and applications.

Here are the three basic ways we collect it:

- We get information from you when you do things like make a purchase from us;
- We collect it from how you use our products and services;
- We obtain information from other sources, like credit agencies, marketing companies, and other service providers.

Here are just some of the ways we use it. To:

- Provide services and improve your customer experience;
- Send you bills for your services;
- Respond to your questions;
- Address network integrity and security issues;
- Do research and analysis to maintain, protect, develop and improve our networks and services;
- Let you know about service updates, content, offers and promotions that may be of interest to you;

- Improve entertainment options;
- Deliver Relevant Advertising;
- Create External Marketing & Analytics Reports;
- Assist in the prevention and investigation of illegal activities and violations of our Terms of Service or Acceptable Use Policies.

Some examples of who we share your Personal Information with:

- **Across AT&T companies** to give you the best customer experience and to help you get everything we have to offer.
- **With other companies that perform services on our behalf** only as needed for them to perform those services. We require them to protect your information consistent with our Policy.
- **With other companies and entities, to:**
 - Respond to 911 requests and other emergencies or exigencies;
 - Comply with court orders and other legal process;
 - Assist with identity verification, and preventing fraud and identity theft;
 - Enforce our agreements and property rights; and
 - Obtain payment for products and services including the transfer or sale of delinquent accounts to third parties for collection

Details on Personal and Anonymous & Aggregate Information

- What is Personal Information? Information that identifies or reasonably can be used to identify you.
- What is Anonymous? This is information that doesn't identify you and can't reasonably be used to identify you specifically.
- What is Aggregate? We take a whole bunch of people's data and combine it into anonymous groups or categories.
- How do we use this information? We use and share this information in many ways including research, analysis, retail marketing, and Relevant Advertising. This data is also included in External Marketing & Analytics Reports.
- Want to learn more? Go [here](#).

Our privacy commitments

- We don't sell your Personal Information to anyone for any purpose. Period.
- We keep your [Personal Information](#) in our business records while you are a customer, or until it is no longer needed for business, tax or legal purposes.
- We will keep your information safe using encryption or other appropriate security controls.

Our Online Privacy Policy for Children

- We want you to know that we don't knowingly collect personally identifying information from anyone under the age of 13 unless we first obtain permission from the child's parent or legal guardian.

Your Choices & Controls

- For information about children's safety and parental controls, view our [AT&T Smart Controls and DIRECTV Parental Controls](#).

- You have choices about certain types of advertising you get from us;
- You can control whether your anonymous information is used in our External Marketing & Analytics Reports;
- You can choose whether to receive marketing calls, e-mails or text messages from us;
- You have a choice about how we use your Customer Proprietary Network Information.

Visit our [Privacy Policy](#) for more information.

- [Definitions](#)
- [Scope of this Policy](#)
- [The Information We Collect, How We Collect It, And How We Use It](#)
- [Information Sharing](#)
- [Online Activity Tracking and Advertising](#)
- [Location Information](#)
- [Aggregate and Anonymous Information](#)
- [External Marketing & Analytics Reports](#)
- [Online Privacy Policy for Children](#)
- [Data Protection & Security](#)
- [Changes](#)
- [Choices & Controls](#)
- [How to Contact Us](#)

Your California Privacy Rights

California Civil Code Section 1798.83 entitles California customers to request information concerning whether a business has disclosed Personal Information to any third parties for their direct marketing purposes. As stated in this Privacy Policy, we will not sell your Personal Information to other companies and we will not share it with other companies for them to use for their own marketing purposes without your consent.

California Web Site Data Collection & "Do Not Track" Notices

Web Site Data Collection: We do not knowingly allow other parties to collect personally identifiable information about your online activities over time and across third-party web sites when you use our websites and services. AT&T provides information about the opt-out choices it makes available, and the opt-out choices provided by certain third-party website and mobile application analytics companies we use [here](#).

"Do Not Track" Notice: Because the providers of "do not track" and similar signals do not yet operate according to common, industry-accepted standards, AT&T currently does not respond to those signals. For more information on Do Not Track, please visit www.allaboutdnt.com.

California customers who wish to request further information about our compliance with these requirements, or have questions or concerns about our privacy practices and policies may contact us at privacypolicy@att.com, or write to us at AT&T Privacy Policy, Chief Privacy Office, 208 S. Akard, Room 1033, Dallas, TX 75202.

AT&T Privacy Policy FAQ

Our AT&T Privacy Policy in easy, FAQ format.

We understand that everyone thinks that privacy policies are long, complicated and difficult to

understand. So we're going to try to make this as simple as possible.

DEFINITIONS

Let's start with what we mean when we say:

Aggregate Information: Information that we combine into anonymous groups of customers or users. One way to think of it is in terms of a survey or opinion poll. Aggregate information would tell you that 80 percent of the people voted for a candidate, but not who actually voted. These groups are large enough to reasonably prevent individuals from being identified.

Anonymous Information: Information that doesn't directly identify and can't reasonably be used to identify an individual customer or user.

Customer: Anyone who purchases or uses our products or services. When a customer purchases retail products or services for use by others, like a family account, those family members also are customers.

Mobile Application: A software application that runs on smartphones, tablet computers or other mobile devices and that allows users to access a variety of services and information.

Personal Information: Information that directly identifies or reasonably can be used to figure out the identity of a customer or user, such as your name, address, phone number and e-mail address. Personal Information does not include published listing information.

Relevant Advertising: Uses aggregate information about groups of people (like age, ethnicity, income range, where those groups live and work, and their interests) to develop advertising that is more likely to be useful to that group. It does not use individual data about what a specific person might like. "Online behavioral advertising" is one type of relevant advertising. It uses interest categories based on the websites visited by groups of people to deliver advertising online.

User: Anyone who visits our websites or uses our mobile applications.

Website: And other terms like "Internet site," "site" and "web page" all mean the same thing, namely any page or location on the Internet, no matter what device (cell phone, tablet, laptop, PC, etc.) or protocol (http, WAP, ftp or other) is used to access the page or location.

QUESTIONS ABOUT THE SCOPE OF THIS POLICY

1. What does this Policy cover?

This Privacy Policy covers our practices regarding the information we collect about our customers and users (how we collect it and how we use it). Use of our products and services, as well as visits to our websites, are subject to this Privacy Policy.

2. Do you have any Privacy Policies other than this one?

Yes. Companies that do not operate under our brand, or certain co-branded services, may have separate privacy policies

Some areas outside the United States require us to work a little differently. In that case, AT&T may adopt separate privacy policies as necessary to reflect the requirements of applicable local laws. Satellite TV subscribers in certain U.S. Territories also may have separate privacy policies.

The [Joint AT&T EchoStar Privacy Policy](#) for AT&T|DISH Network Customer Account Information remains in effect for AT&T|DISH subscribers.

3. What about my family members and other users of my AT&T account? Does this Policy apply to them?

Yes. You're responsible for making sure all family members or other users under your account understand and agree to this Policy. Get everyone together and talk about it. Or, send it by e-mail to make sure they're on board. Hang it on the fridge. Up to you, just share it!

4. When is information not covered by this Policy?

Any time you give information to companies other than AT&T. Some examples are:

- When you use a non-AT&T Wi-Fi service;
- When you download applications or make purchases from other companies while using our Internet or wireless services;
- When you go to a non-AT&T website from one of our websites or applications (by clicking on a link or an advertisement, for example);
- If you use public forums - such as social networking services, Internet bulletin boards, chat rooms, or blogs - the information is publicly available, and we cannot prevent distribution and use of that information by other parties;
- Information about your location, usage and the numbers you dial when you're out and about and roaming on the network of another company;
- When you purchase or use non-AT&T products (such as wireless devices, internet browsers and mobile applications) in combination with AT&T services;
- When we license our brand to other companies for their use in marketing and selling certain non-AT&T products and services, information you give those companies is not covered by this Policy.

5. Can my information be covered by this policy and other privacy policies at the same time?

Yes, that can happen. For example:

Sometimes we will provide a service with other companies. In that case your information may be subject to this Policy and that of the other companies. For example, if you use AT&T High Speed Internet services "powered by" Yahoo! Inc., your information may be covered by both this Policy and the [Yahoo! Privacy Policy](#).

If you purchase one of our products or services from a retailer like Best Buy or Amazon.com, for example, any information you provide to them may be subject to both their policy and ours.

If you connect to our Wi-Fi service through another network, such as one provided in a hotel, airport or other venue, any information collected from your use of that network could be subject to either the AT&T policy or the venue policy, and sometimes both. The same thing applies if you connect to our network through your employer's corporate network, or any network operated by a non-AT&T company.

We think it's a great idea to take a look at the privacy policies of any companies you do business with to learn how they use your information.

6. What about business customers?

We may have written product or service agreements with our business customers that contain specific provisions about confidentiality, security or handling of information. When one of these agreements differs from or conflicts with this Policy, the terms of those agreements will apply. This Policy does not apply to commercial satellite TV customers. In all other instances, the terms of this Policy apply.

QUESTIONS ABOUT THE INFORMATION WE COLLECT, HOW WE COLLECT IT AND HOW WE USE IT

1. What information do we collect?

We may collect different types of information based on your use of our products and services and on our business relationship with you.

- **Account Information:**

- **Contact Information** that allows us to communicate with you. We get this information when you order or register for our services. This would include information like your name, address, telephone number and e-mail address.
- **Billing Information** related to your financial relationship with us, such as the services we provide to you, the telephone numbers you call and text, your payment history, your credit history, your credit card numbers, Social

Security number, security codes and your service history.

- **Technical & Usage Information** related to the services we provide to you, including information about how you use our networks, services, products or websites. Some examples include:
 - **Equipment Information** that identifies the equipment on our networks, such as equipment type, device IDs, device status, serial numbers, settings, configuration and software.
 - **Network Performance & Usage Information** about the operation of the equipment, services and applications you use on our networks. Examples of this might include wireless device location, the number of text messages sent and received, voice minutes used, calling and texting records, bandwidth used, and resources you use when uploading, downloading or streaming data to and from the Internet. We also collect information like transmission rates and delays, data associated with remote monitoring services and security characteristics.
 - Some Network Performance & Usage Information and some Billing Information is **Customer Proprietary Network Information or "CPNI."** Unique rules apply to CPNI. Go [here](#) to learn more about what it is, how we use it and the choice you can make about that use.
 - **Web Browsing & Mobile Application Information** such as IP addresses, URLs, data transmission rates and delays. We also learn about the pages you visit, the time you spend, the links or advertisements you see and follow, the search terms you enter, how often you open an application, how long you spend using the app and other similar information.
- **Location Information** includes your ZIP-code and street address, as well as the whereabouts of your wireless device. Location information is generated when your device communicates with cell towers, Wi-Fi routers or access points and/or with other technologies, including the satellites that comprise the Global Positioning System.
- **TV Viewing Information** is generated by your use of any of our satellite or IPTV (U-verse) services. These services may include video on demand, pay per view, DVR services, applications to watch your TV on the go for tablet or smartphone (such as the TV Everywhere app) and similar AT&T services and products, including the programs and channels you and those in your household watch and record, the times you watch and how long you watch. It also includes information like the interactive channels and games provided by U-verse or DirectTV. We also collect information related to your use and interaction with the equipment in your home, including the TV receivers, set top boxes, remotes and other devices you may use to access our services.

2. How Do You Collect Information?

In three basic ways:

- **You Give It To Us** when you make a purchase or set up an account with us;
- **We Automatically Collect Information** when you use our networks, products and services. For example, we use network tools to collect your call records; we collect wireless device location from our network and from your device; and we also use cookies, web server logs and other technologies.
- **We Obtain Information from Outside Sources** like credit reports, marketing mailing lists, and commercially available geographic and demographic information along with other publicly available information, such as public posts to social networking [sites](#).

3. How Do You Use My Information?

We use your information to improve your experience and to make our business stronger. Some examples include:

- Providing and managing your services, responding to your questions and addressing problems;
- Delivering customized content, or advertising, such as personalized offers for products and services that may be of interest to you;
- Communicating service updates, offers and promotions;
- Protecting network integrity and security, ensuring quality control, optimizing capacity and preventing misuse;
- Network enhancement planning, engineering and technical support;
- Conducting research and analysis for maintaining, protecting and developing our networks and our services;
- Preventing illegal activities, suspected fraud, and potential threats to our networks and our customers' networks;
- Investigating violations of our Terms of Service, Acceptable Use Policies, or other service conditions or restrictions; and
- Protecting the safety of any person.

4. Do you use the information I store using one of your cloud services?

We only use it to provide you with that service, unless we first get your permission to use it for something different.

QUESTIONS ABOUT INFORMATION SHARING

1. Do you provide information for phone books and Caller ID?

Yes and No.

Yes, we share the names, addresses and telephone numbers of our wireline telephone and U-verse Voice customers with businesses that publish directories and provide directory assistance services. We are required by law to do that. We honor your request for non-published or non-listed phone numbers. Once we provide published listing information to those businesses, they may use, sort, package, repackage and make it available again in different formats to anyone.

Yes, We also provide wireline and wireless calling name and number information for CallerID, and related services like Call Trace, which allow a person receiving a call to obtain the name and number of the party calling them.

No, we do not give listing information for wireless numbers to phone book publishers or directory assistance services without your permission.

2. Do you share my Personal Information internally?

Yes. Our products and services are developed, managed, marketed and sold by a variety of AT&T companies. Sharing this information helps us offer you the high quality, seamless and innovative range of products you have come to expect from us. Some of these include:

- Wireless voice, data, Internet, home security, automation and remote monitoring services provided by AT&T Mobility and AT&T Digital Life; and
- The suite of satellite and IPTV services, Voice and High Speed Internet Access services offered by AT&T companies.

If one of our subsidiaries does not operate under the AT&T brand, information sharing with that subsidiary is handled as though it is a non-AT&T company.

3. Do you share my Personal Information with other companies for them to market to me?

We will only share your Personal Information with other companies for them to use for the marketing of their own products and services when we have your consent.

4. Are there any other times when you might provide my Personal Information to other companies or entities?

Yes. We share your Personal Information with companies that perform services for us, like processing your bill. Because we take our responsibility to safeguard your Personal Information seriously, we do not allow those companies to use it for any purpose other than to perform those services, and we require them to protect it in a way consistent with

this Policy.

Companies that perform these services may be located outside the United States or the jurisdiction where you reside. If your Personal Information is shared with these companies, it could be accessible to government authorities according to the laws that govern those jurisdictions.

There are also occasions when we provide Personal Information to other companies or other entities, such as government agencies, credit bureaus and collection agencies, without your consent. Some examples include sharing to:

- Comply with court orders, subpoenas, lawful discovery requests and other legal or regulatory requirements, and to enforce our legal rights or defend against legal claims;
- Obtain payment or make refunds for products and services that appear on your AT&T billing statements, including the transfer or sale of delinquent accounts or refund obligations to third parties for collection or payment;
- Enforce our agreements and protect our rights or property,
- Assist with identity verification and e-mail address validation;
- Notify, respond or provide information (including location information) to a responsible governmental entity in emergency or exigent circumstances or in situations involving immediate danger of death or serious physical injury; and
- Notify the National Center for Missing and Exploited Children of information concerning child pornography of which we become aware through the provision of our services.

5. Do you share my personally identifiable TV Viewing Information with other companies?

We don't share your personally identifiable TV Viewing Information with other companies for them to use for the marketing of their own products and services without your consent. We are required to notify you about the special requirements we must follow when it comes to sharing your personally identifiable TV Viewing Information in response to a Court Order:

Notice Regarding Disclosure of Personally Identifiable Information of Satellite and IPTV Subscribers in Response to A Court Order

- In the case of a court order obtained by a non-governmental entity, AT&T is authorized to disclose personally identifiable information collected from TV subscribers as a result of the subscriber's use of TV service only after providing prior notice to the subscriber.

- In the case of a court order obtained by a governmental entity, AT&T is authorized to disclose personally identifiable information collected from TV subscribers as a result of the subscriber's use of TV service only if, in the court proceeding relevant to the order:
 - The governmental entity offers clear and convincing evidence that the subject of the information is reasonably suspected of engaging in criminal activity and that the information sought would be material evidence in the case; and
 - The subject of the information has an opportunity to appear and contest the governmental entity's claim; and
 - We have provided notice to the subscriber as required by applicable state law.

QUESTIONS ABOUT MY INFORMATION & ADVERTISING

1. Do you use my information to send me advertising?

Yes. We may use information like the preferences you have expressed and interests you have demonstrated on our websites, in our stores and through use of our products and services, to provide you with marketing information and advertisements for AT&T products and services. Those ads may be delivered on our websites and mobile applications. This is called "first party" advertising. It is part of our service relationship and you are not able to opt-out from this type of advertising.

We or our advertising partners may also use [anonymous information gathered through cookies and similar technologies](#), as well as other anonymous and aggregate information that either of us may have to help us tailor the ads you see on non-AT&T sites. For example, if you see an ad from us on a non-AT&T sports-related website, you may later receive an ad for sporting equipment delivered by us on a different website. This is called "online behavioral advertising," which is a type of Relevant Advertising.

2. Do you use my information for other types of Relevant Advertising?

Yes. We may also use information we get through your use of our products and services, from our advertising partners, and information like your age and gender to deliver Relevant Advertising that is not online behavioral advertising. We combine your anonymous information with that of other users into aggregate "audience segments." These segments are based on particular interests and/or factual characteristics that everyone in that audience segment is likely to share. We might use that information to send you advertisements that are relevant to those interests or characteristics.

We are careful to create Relevant Advertising with aggregate audience segments that are large enough that you can't be identified individually.

3. Do you use the location of my device for advertising purposes?

Yes. AT&T uses information about the locations you visit in order to create combined wireless location interest characteristics that can be used to provide Relevant Advertising to you and others like you.

Location characteristics are types of locations - like "movie theaters." People who live in a particular geographic area (a city, ZIP-code or ZIP+ 4 code, for example) might appear to have a high interest in movies, thanks to collective information that shows wireless devices from that area are often located in the vicinity of movie theaters. We might create a "movies characteristic" for that area, and deliver movie ads to the people who live there.

We may associate your wireless device with a particular geographic area, such as a city, ZIP-code, or ZIP + 4 code, based on your billing address or the cell towers you connect with most frequently.

In addition to other privacy protections, the process we use to create our audience segment includes a requirement that the ZIP + 4 or other geographic area to which a wireless location is assigned must contain a minimum of 25 households. ZIP + 4 codes with less than 25 households are combined with other ZIP + 4 codes to satisfy this requirement.

4. What's in it for me?

Just like the name says, you get advertising that's more relevant to your interests. For example, if a particular audience segment, like adults between the ages of 21 and 25 with a certain income range, has demonstrated a greater interest in movies than other segments, we might send them a movie ad for a movie geared toward young adults. This is just one way we deliver content that's more relevant.

5. How do you use information about the programs I watch on TV to advertise to me?

We combine information about the shows that our customers are watching with their common interests to help us figure out what types of advertising they might be interested in seeing.

It sometimes works like this: We look at the group of people watching a particular show. We identify common characteristics within that group. We use those characteristics to identify and deliver advertising that might be most relevant to watchers of that TV show. We might also deliver that same advertising during shows that appear to have similar audiences.

6. Do I ever have a chance to tell you what I'm personally interested in?

Yes. With some programs offered or powered by AT&T you can sign up to receive text-message offers from businesses that are near your current location and match the interests you've selected. You can change your mind at any time and stop participating in these programs.

When we add new offers like AT&T Internet Preferences we'll let you know, so you can decide if you'd like to participate. For example, we may offer you free or discounted services in exchange for the use of your Personal Information for advertising and other similar purposes. We promise, before we use any of your Personal Information (including information we gather as an Internet service provider) for such purposes, we will always give you the opportunity to make an informed choice about whether to participate

7. What information do you provide to advertisers?

AT&T may provide reports to advertisers and other business customers about the success of its advertising campaigns. Those reports contain aggregate information about the number of times a particular ad was viewed, when it was viewed, whether it was viewed on a TV, a mobile device or a computer, demographics associated with the viewing audience and other similar information. Your anonymous information will not be included in aggregate reports about the success of Relevant Advertising campaigns if you have opted-out of Relevant Advertising delivered by AT&T.

QUESTIONS ABOUT LOCATION INFORMATION

1. What is location information?

Exactly what it sounds like! It includes your ZIP-code and street address, as well as the whereabouts of your wireless device.

2. How is it used?

We use it in all kinds of ways, here are some examples:

- **We Provide Wireless Voice and Data Services:** We monitor, collect and use wireless location information, together with other information we get from our network and your wireless device, to maintain and improve our network. We also might use location information with your consent to provide you with a customized experience. For example, when you dial 411 Directory Assistance for a business telephone number, we might use your wireless location information to return the number of the business location closest to you.
- **Location Based Services (LBS):** Your device can be used to access a ton of services based on location. We offer these services via applications that have been pre-loaded or downloaded by you on your device. LBS also may be provided via

text message or other functionality. We'll give you prior notice and ask for your consent when your location is used or shared. The form of consent may vary, but will be appropriate for the type of AT&T LBS you use.

- **LBS from other providers:** With your consent (to us or the other company) we also may enable LBS from other companies by providing location information to their developers or location service providers.
- We use it for [Advertising](#).

3. How accurate is wireless location information?

It depends on the technology we're using. For example, we can locate your device based on the cell tower that's serving you. The range could be up to 1,000 meters in any direction from the tower in urban areas, and up to 10,000 meters in rural areas. Wi-Fi networks provide more accurate location information, associating you with the place where the network is located - like a coffee shop - or to an area within or around that place.

Services such as 411, 911, a "friend locator" application or a navigation/mapping application, require more precise information. So for those we develop a more precise estimate of location by associating the serving cell tower ID with other information, like the latitude and longitude of the tower, radio frequency parameters, GPS information and timing differences in radio signals. Depending on a variety of factors, those methods may estimate the location of your device to within 30 to 1000 meters.

4. Are you the only ones who can locate my wireless device?

Other companies may also be able to locate your device. For example, your handset manufacturer and your operating system provider may be able to locate your device. If you download mobile applications, those apps may be able to obtain your location directly from your handset or the operating system. Mobile applications that give you access to your employer's network may also give your employer the ability to locate your device.

We urge you to review Policies of all providers.

QUESTIONS ABOUT AGGREGATE AND ANONYMOUS INFORMATION

1. Where do you get anonymous information?

Sometimes we'll collect information about how you use our products [using cookies and other similar technologies](#). This information doesn't include your Personal Information and is considered anonymous.

When we collect information that identifies you personally, we may anonymize it for certain purposes. We remove data fields (such as name, address and telephone number)

that can reasonably be used to identify you. We also use a variety of statistical techniques and operational controls to anonymize data. Anonymizing information is one of the tools we use to protect your privacy.

2. Tell me more about aggregate information.

Aggregate information is a form of anonymous information. We combine data that meet certain criteria into anonymous groups. For example, we might want to compare how customers in Beverly Hills, CA (or any city, county or ZIP-code) use their cell phones to how customers in Boulder, CO use their cell phones. In order to do that, we would combine customer data in each of the geographies into anonymous groups and look at all that aggregate data to understand how the two groups are different or similar.

3. Do you share anonymous or aggregate information?

Yes, we may share this information with other companies and entities for specific uses, which may include:

- Universities, laboratories, think tanks and other entities that conduct networking, social, behavioral, environmental and other types of scientific research, for the purpose of creating fundamental new knowledge;
- Municipalities, government or other entities that may use this data for purposes such as municipal and transportation planning, and emergency and disaster response coordination.

We share this information in external reports like our External Marketing & Analytics Reports and Metric Reports.

QUESTIONS ABOUT EXTERNAL MARKETING AND ANALYTICS REPORTS

1. Tell me more about the External Marketing & Analytics Program.

We use aggregate information to create External Marketing & Analytics Reports that we may sell to other companies for their own marketing, advertising or other similar uses.

These reports may be a combination of information from wireless and Wi-Fi locations, TV Viewing, calling and texting records, website browsing and mobile application usage and other information we have about you and other customers. You have a choice about whether your anonymous information is included in the reports that we sell or provide to other companies.

Some examples of External Marketing & Analytics Reports include:

- Reports for retail businesses that show the number of wireless devices in or near their store locations by time of day and day of the week, together with demographic characteristics or other information about the users (such as device type, age or gender) in those groups.
- Reports that combine anonymous TV Viewing behaviors with other aggregate information we may have about our subscribers to create reports that would help a TV network better understand the audiences that are viewing their programs, those that are not, how frequently they watch, when they watch and other similar information; and
- Reports for device manufacturers that combine information such as device type, make and model with demographic and regional location information to reflect the popularity of particular device types with various customer segments.

2. Do you provide companies with individual anonymous data as part of your External Marketing & Analytics Program?

Yes. For example, we might share anonymous TV Viewing Information with media research companies that combine this data with other information to provide audience analysis services about what shows certain audience segments are watching. When we provide individual anonymous information to businesses, we require that they only use it to compile aggregate reports, and for no other purpose. We also require businesses to agree they will not attempt to identify any person using this information, and that they will handle it in a secure manner, consistent with this Policy.

3. Do you use my anonymous information in other types of external reports?

Yes, we may use your anonymous information to provide Metrics Reports to our business customers and service suppliers. These reports are considered part of the underlying service and we do not sell them to other customers or suppliers.

For example, if you connect to our Wi-Fi service in a hotel, airport or other venue you should know the operator of that venue is our business customer, and that we will provide that operator with Metrics Reports about usage of and communications with the Wi-Fi network in their location. Those reports contain statistical information like:

- The number of devices connecting to the Wi-Fi network, duration of Wi-Fi sessions and the amount of bandwidth used during those sessions; and
- Foot-traffic data, including the numbers of devices inside and outside the store at a given time; the number of new and frequent visitors; where visitors are located within the store (e.g., specific departments or other locations within the venue) and frequency of visits and time spent within the store.
- **NOTE:** When your wireless device is turned on, it regularly sends out signals that

enable it to connect to cell towers, Wi-Fi access points or other technologies so that we (and others) are able to provide you with services. These signals can be used to determine your device location. You can turn Wi-Fi to the "off" position on the "settings" feature of your device to prevent the collection of these signals by Wi-Fi equipment in retail stores and other public places.

Another example, we also license video programming from content providers. As part of our agreement, we provide them with Metrics Reports. These reports contain combined measurements and statistical information related to the number of TV subscribers who watched or accessed a particular program at a particular time and other similar measurements.

QUESTIONS ABOUT OUR ONLINE PRIVACY POLICY FOR CHILDREN

1. Do you collect information about my children's use?

We do not knowingly collect personally identifying information from anyone under the age of 13 unless we first obtain permission from the child's parent or legal guardian.

2. What happens when my child is using an account not registered to them?

Internet and wireless devices and services purchased for family use may be used by children without our knowledge. When that happens, information collected may appear to us to be associated with the adult customer who subscribes to our services and will be treated as the adult's information under this Policy.

3. What can I do to help better protect my child's information?

We encourage you to spend time online with your children, and to participate in and monitor their online activity. We have developed a website that offers safety and control tools, expert resources and tips designed to help you manage technology choices and address safety concerns. Please visit [AT&T Smart Controls](#) for more information.

4. What if my child has an AT&T e-mail sub-account?

If you create an AT&T e-mail sub-account for a child under the age of 13:

- With your permission we collect your child's name, nicknames and aliases, alternative e-mail address, birth date, gender and ZIP-code.
- We use the information collected on sub-accounts to create and maintain those accounts, for research, to customize the advertising and content seen on our pages and for other marketing purposes. Your child can use their AT&T e-mail address and password to log onto websites and online services provided by us, like [uverse.com](#). We and our advertising partners may collect and use information about customers who log onto those sites as described in the "[Questions about the](#)

[Information We Collect, How we Collect It and How We Use It](#)" section of this Privacy Policy. A list of the advertising partners who collect information on our sites and the ability to opt-out of advertising provided by those partners is available [here](#)

- We will not contact a child under the age of 13 about special offers or for marketing purposes without parental consent.
- You or your child can review, edit, update, and delete information relating to your child's sub-account and, if you no longer wish your child to have such an account, you can revoke your consent at any time, by logging on to manage your account [here](#).

You may e-mail us at privacypolicy@att.com, call us at 800.495.1547 or write to us at AT&T Privacy Policy, Chief Privacy Office, 208 S. Akard, Room 1033, Dallas, TX 75202 with any questions or concerns you may have about our Children's Online Privacy Policy.

QUESTIONS ABOUT DATA PROTECTION AND SECURITY

1. Do we sell your Personal Information?

No. We do not sell your [Personal Information](#) to anyone, for any purpose. Period.

2. How long do we keep your Personal Information?

We keep your [Personal Information](#) as long as we need it for business, tax or legal purposes. After that, we destroy it by making it unreadable or undecipherable.

3. What safeguards does AT&T have in place?

We've worked hard to protect your information. And we've established electronic and administrative safeguards designed to make the information we collect secure. Some examples of those safeguards include:

- All of our employees are subject to the [AT&T Code of Business Conduct \(COBC\)](#) and certain state-mandated codes of conduct. Under the COBC, all employees must follow the laws, rules, regulations, court and/or administrative orders that apply to our business - including, specifically, the legal requirements and company policies surrounding the privacy of communications and the security and privacy of your records. We take this seriously, and any of our employees who fail to meet the standards we've set in the COBC are subject to disciplinary action. That includes dismissal.
- We've implemented technology and security features and strict policy guidelines to safeguard the privacy of your Personal Information. Some examples are:

- Maintaining and protecting the security of computer storage and network equipment, and our security procedures require employee user names and passwords to access sensitive data;
- Applying encryption or other appropriate security controls to protect Personal Information when stored or transmitted by us;
- Limiting access to Personal Information to only those with jobs requiring such access; and
- Requiring caller/online authentication before providing Account Information so that only you or someone who knows your Account Information will be able to access or change the information.
- Although we strive to keep your Personal Information secure, no security measures are perfect, and we cannot guarantee that your Personal Information will never be disclosed in a manner inconsistent with this Policy (for example, as the result of unauthorized acts by third parties that violate the law or this Policy).

4. Will you notify me in case of a security breach?

Laws and regulations guide us in how to give you notification when certain types of sensitive information are involved in a security breach. We will provide you with notice in accordance with these laws and regulations.

5. Can I review and correct my Personal Information?

Yes. We are happy to help you review and correct the Personal Information we have associated with your account and billing records. Please contact us.

6. Have your privacy practices been certified?

Yes, and we're very proud of it! TRUSTe has awarded us the [TRUSTe Privacy Seal](#). As an independent third party, TRUSTe's mission is to accelerate online trust among consumers and organizations globally through its leading privacy Trustmark and innovative trust solutions.

Our TRUSTe Privacy Seal signifies that TRUSTe has reviewed our Privacy Policy and practices for compliance with [TRUSTe's program requirements](#). These include transparency, accountability and choice regarding the collection and use of your Personal Information. The TRUSTe program covers only information that is collected through our [certified web sites](#).

QUESTIONS ABOUT FUTURE CHANGES

1. What happens if there is a change in corporate ownership?

Information about our customers and users, including Personal Information, may be shared and transferred as part of any merger, acquisition, sale of company assets or transition of service to another provider. This also applies in the unlikely event of an insolvency, bankruptcy or receivership in which customer and user records would be transferred to another entity as a result of such a proceeding.

2. Will I be notified if there are changes to this policy?

We may update this Privacy Policy as necessary to reflect changes we make and to satisfy legal requirements. We will post a prominent notice of the change on our websites. We will provide you with other appropriate notice of important changes at least 30 days before the effective date.

YOUR CHOICES & CONTROLS

1. You can choose not to receive some types of advertising online, on your satellite TV service or on your wireless device.

- Opt-out of Relevant Advertising delivered by AT&T [here](#).
- Opt-out of Online Behavioral Advertising provided by AT&T and other advertisers on your computer by clicking the "[Advertising Choices](#)" link at the bottom of our web pages.
- Opt-out of interest-based advertising on att.net powered by Yahoo! [here](#).
- Opt-out of online behavioral advertising from many other ad networks [at the Network Advertising Initiative \(NAI\) site](#).
- When you see online ads for AT&T products and services that display this icon , click and you will get information on how to opt-out.
- To limit collection of data on web sites that may be used for advertising, go [here](#) for information on how to manage cookies and other similar technologies on your computer.

2. Do I have choices about receiving first party advertisements from AT&T?

Because first party advertising is part of the service you receive when you visit our websites and use our mobile applications, we don't offer an opt-out for first party advertising.

3. You can also choose not to receive other types of marketing from AT&T.

We realize that unwanted marketing contacts can be a hassle and we've worked hard to meet the expectations of customers and potential customers who have expressed a desire to limit certain types of solicitation communications from us.

E-Mail: Every marketing e-mail we send contains instructions and a link that will allow you to stop additional marketing e-mails for that product or service type. You also can unsubscribe from AT&T marketing e-mails [here](#).

Text Messages: Opt-out of AT&T marketing text message contacts by replying "stop" to any message.

AT&T Consumer Telemarketing: Ask to be removed from our consumer telemarketing lists by contacting us at [one of the numbers listed here](#). You also can ask the AT&T representative to remove you from our telemarketing lists when you receive a marketing or promotional call from us.

AT&T Business Telemarketing: Where required by state laws and/or regulations, we honor requests to be removed from our telemarketing lists from business customers.

Federal Do Not Call: The FTC maintains a National Do Not Call Registry at [donotcall.gov](#), and your state may maintain its own Do Not Call Registry. Putting your number on these Registries also may limit our AT&T telemarketing calls to that number.

Postal Mail: To review our Residential Do Not Mail Policy Statement and to limit postal mail solicitations, click [here](#). You will still receive billing statements, legal notices, product updates and other similar correspondence, and you may still receive some promotional mailings.

All of our practices are designed to satisfy state and federal legal requirements limiting marketing contacts. Those laws and regulations - such as the requirements governing the state and federal "Do Not Call" lists - generally permit companies to contact their own current and, in some cases, former customers, even when those customers are listed on the federal and state "Do Not Call" lists.

Restricting our use of your CPNI will not eliminate all types of our marketing contacts.

4. Can I choose to exclude my anonymous information from your External Marketing & Analytics and other similar reports?

Yes. Click [here](#) to opt-out. This opt-out also applies to the sharing of your anonymous information with other companies for their use in creating marketing and analytics reports. Although this opt out does not apply to Metrics Reports, it will apply if we combine Metrics Report information with other customer information (like

demographics) to create reports that we provide to our business customers or service suppliers.

5. What is DNS error assist?

When you mistype a web address, or the address is not working, DNS Error Assist provides an automated list of similar pages – such as possibly the one you meant to type – for your consideration. The service is provided on your AT&T residential broadband connection, and you can opt-out [here](#). If you opt-out, you will get a standard “no results found” error message instead of the error-assist page.

6. Are there any other opt-out choices I should know about?

We may use services provided by analytics companies to obtain information about website performance and how you use our mobile applications and other products and services. Go [here](#) for more information about the opt-outs made available by some of those vendors, and to make choices about participation.

7. These Choices and Controls also are available at www.att.com/yourchoices.

HOW TO CONTACT US ABOUT THIS POLICY

- We encourage you to contact us directly at either of these addresses below for any questions about this Privacy Policy.
 - E-mail us at privacypolicy@att.com
 - Write to us at AT&T Privacy Policy, Chief Privacy Office, 208 S. Akard, Room 1033, Dallas, TX 75202.
- For questions not related to privacy click on the "Contact Us" link at the upper right hand corner of this page. You also can access your online account from the upper right hand corner of our home page at att.com for additional service options.
- If you do not receive acknowledgment of your privacy inquiry or your inquiry is not addressed to your satisfaction, you may contact TRUSTe through the [TRUSTe Watchdog Dispute Resolution Process](#). TRUSTe will serve as a liaison to resolve your concerns.
- You also have the option of filing a complaint with the FTC Bureau of Consumer Protection, using an [online form](#), or by calling toll-free 877.FTC.HELP (877.328.4357; TTY: 866.653.4261). Other rights and remedies also may be available to you under federal or other applicable laws.
- If you are a satellite TV subscriber, you also have certain rights under [Section 338\(i\) of the Federal Communications Act](#).

Customer Proprietary Network Information (CPNI)

What is CPNI?

Customer Proprietary Network Information (CPNI) is information that AT&T and other telecommunications carriers obtain when providing your telecommunications services to you. CPNI includes the types of telecommunications services you currently purchase, how you use them, and the billing information related to those services, including items such as the types of local, long distance and wireless telecommunications services that you have purchased and your calling details. Your telephone number, name and address are not considered CPNI.

Use and Disclosure of CPNI

We use your CPNI to offer you additional services of the type you already purchase from AT&T. We also may use your CPNI to offer you products and services, packages, discounts and promotions from the AT&T companies, such as High Speed DSL Internet access, wireless service and TV services, which may be different from the types of services you already purchase.

AT&T uses technology and security features and strict policy guidelines to safeguard the privacy of CPNI and protect it from unauthorized access or improper use. AT&T does not disclose CPNI outside of the AT&T companies or their agents without customer consent except as required or allowed by law. When AT&T uses third parties to perform services on its behalf that require the use of CPNI, AT&T requires that they protect CPNI consistent with this privacy policy. *AT&T does not sell CPNI to unaffiliated third parties.*

Restricting our use of your CPNI

If you wish to restrict our use of your CPNI for marketing purposes, you may contact a customer service representative at the customer service phone number located on your AT&T telephone bill or one of the following numbers:

Wireless - 1-800-331-0500

Business - 1-888-944-0447

Residential - 1-800-288-2020

Spanish Language - 1-800-870-5855

For assistance in other languages, please visit world.att.com.

Legacy AT&T Consumer - 1-800-222-0300

Restricting our use of your CPNI for marketing purposes will not affect the provision of any AT&T products or services to which you subscribe, nor will it eliminate all types of AT&T marketing contacts.

Customer Service Contact Numbers

Wireless — 1-800-331-0500

Business — 1-888-944-0447

Residential — 1-800-288-2020

Spanish Language — 1-800-870-5855

Satellite TV Services – 1-800-DIRECTV or 1-800-351-5000

For assistance in other languages, please visit world.att.com.

Legacy AT&T Consumer — 1-800-222-0300

Customers of the following AT&T family of companies may contact us directly using the following:

AT&T Internet Services — Customers can manage newsletter subscriptions or other e-mail communications from Yahoo! by modifying their [AT&T Yahoo! Marketing Preferences](#).

Appendix C

Comcast Privacy Policy

[Customer Agreements and Policies](#)

Comcast Customer Privacy Notice

For Cable Video, High-Speed Internet, Phone, and Home Security Services

Summary of this privacy notice

This privacy notice applies to our cable video, high-speed Internet, phone and communications, and home security services. It describes the limitations imposed on our collection and disclosure of personally identifiable information about subscribers, the nature of personally identifiable information we collect, how we use that information, when and why we may disclose that information and to whom, how long we maintain that information, how you can access your personally identifiable information, how you can set preferences and opt out of certain uses of information, and your rights under law and this notice concerning your personally identifiable information. Please read the entire notice to understand our privacy policies and practices. You can also find answers to your specific questions quickly by using the links below.

View full privacy notice:

[English \(PDF\)](#) | [Spanish \(PDF\)](#)

The Adobe Acrobat Reader is needed to view the privacy notice. To install this free software, you can [download it now](#).

[FAQs](#)

Finding information quickly in this privacy notice

- [Why is Comcast providing this notice to me?](#)

I. Collection

- [What kind of information does this notice apply to?](#)
- [For what purposes may Comcast collect personally identifiable information and CPNI?](#)
- [What kind of personally identifiable information and CPNI does Comcast collect?](#)
- [What kind of information does Comcast collect if I use cable video services?](#)
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II. Use

- [How does Comcast use personally identifiable information and CPNI?](#)
- [How does Comcast use activity data and other data in connection with cable video service?](#)
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- [Under what circumstances may Comcast disclose personally identifiable information to others?](#)
- [To whom may Comcast disclose personally identifiable information?](#)
- [When may Comcast disclose personal information to others in connection with phone service?](#)
- [When is Comcast required to disclose personally identifiable information and CPNI by law?](#)
- [How does Comcast protect personally identifiable information?](#)
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IV. Customer Access and Choice

- [How can I see my personally identifiable information or CPNI and correct it, if necessary?](#)
- [How do I manage or opt out of uses of information about my Comcast account?](#)
- [How do I give or withhold my approval for Comcast to use CPNI to market additional products and services to me?](#)
- [How do I place myself on Comcast's "do not call" and "do not mail" lists?](#)
- [What e-mail communications will Comcast send to me and how do I manage them?](#)
- [What can I do if I think my privacy rights have been violated?](#)
- [Will Comcast notify me if it changes this notice?](#)
- [How do I contact Comcast?](#)

Why is Comcast providing this notice to me?

As a subscriber to cable service or other services provided by Comcast, you are entitled under Section 631 of the federal Cable Communications Policy Act of 1984, as amended, (the “Cable Act”) to know the following:

- the limitations imposed by the Cable Act upon cable operators in the collection and disclosure of personally identifiable information about subscribers;
- the nature of personally identifiable information we collect;
- the nature of the use of personally identifiable information;
- under what conditions and circumstances we may disclose personally identifiable information and to whom;
- the period during which we maintain personally identifiable information;
- the times and places at which you may have access to your personally identifiable information; and
- your rights under the Cable Act concerning personally identifiable information and its collection and disclosure.

Personally identifiable information is information that identifies a particular person; it does not include de-identified, anonymous, or aggregate data that does not identify a particular person or persons. This notice is also provided to you in accordance with applicable California law, which only applies to our customers located in California who are served by a cable television corporation.

In addition, Section 222 of the Communications Act of 1934, as amended, (the “Communications Act”) provides additional privacy protections for certain information related to our phone and Internet services:

- information about the quantity, technical configuration, type, destination, location, and amount of your use of the phone and Internet services; and
- information contained on your bill concerning the type of phone and Internet services and features you receive.

That information is known as customer proprietary network information or CPNI for short. This notice, which includes our CPNI Policy, describes what CPNI information we obtain, how we protect it, and how it may be used. If you are a customer of our phone and Internet services, you have the right, and Comcast has a duty, under the Communications Act and applicable state law, to protect the confidentiality of CPNI. In addition, the FCC’s rules provide additional privacy protections specific to our phone services that we describe in this notice.

We explain below under “HOW DO I GIVE OR WITHHOLD MY APPROVAL FOR COMCAST TO USE CPNI TO MARKET ADDITIONAL PRODUCTS AND SERVICES TO ME?” how you can approve our use of CPNI or withdraw your approval in the event Comcast decides to use CPNI for marketing purposes.

Special Note: Our CPNI Policy applies to the voice and Internet communications-related services provided by the applicable Comcast operating company that delivers those services to our customers.

In this notice, the terms “Comcast,” “we,” “us,” or “our” refer to the operating company, subsidiaries or affiliates of Comcast Cable Communications, LLC that (i) owns and/or operates the cable television system in your area pursuant to a cable television franchise with the local franchising authority, or (ii) is the operating company that delivers voice services in your area. The term “you” refers to you as a subscriber to one or more of our cable service and other services.

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I. Collection

What kind of information does this notice apply to?

The Cable Act applies to personally identifiable information that you have furnished to Comcast, or that Comcast has collected using the cable system, in connection with the provision of cable service or other services. The Communications Act applies to CPNI related to our regulated phone and Internet services, and certain orders of the Federal Communications Commission apply the CPNI rules to our interconnected voice over Internet protocol communications services.

Special Note: This notice only applies to our cable video service, our high-speed Internet service, our phone and communications services, and our home security service. It applies to you as a subscriber to one or more of these services as provided for by applicable law and except as otherwise noted. It does not cover information that may be collected through any other products, services, or websites, even if you access them through our cable services and even if they are co-branded with Comcast brands or the brands or logos of our affiliated companies. You should read the privacy policies for these other products, services, and websites to learn how they handle your personal information. You can read the privacy policy for Comcast’s web services at <http://xfinity.comcast.net/privacy>.

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For what purposes may Comcast collect personally identifiable information and CPNI?

The Cable Act authorizes Comcast as a cable operator to use the cable system to collect personally identifiable information concerning any subscriber for the following purposes:

- to obtain information necessary to render our cable service or other services to our subscribers; and

- to detect unauthorized reception of cable communications.

The Cable Act prohibits us from using the cable system to collect personally identifiable information concerning any subscriber for any purposes other than those listed above without the subscriber's prior written or electronic consent.

The Communications Act authorizes us to use, disclose, or permit access to individually identifiable CPNI in our provision of:

- the telecommunications services from which this information is derived; or
- services necessary to, or used in, the provision of these services, including the publishing of directories.

The Communications Act prohibits us from using CPNI for any purposes other than those listed above except as permitted or required by law or with your approval.

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What kind of personally identifiable information and CPNI does Comcast collect?

Comcast collects information from you at several different points when you request, turn on, and use our services under an account we create for you. Some of this information is personally identifiable information, but much of it is not. We collect certain personally identifiable information that our subscribers furnish to us in connection with the provision of cable service or other services. In order to provide reliable, high quality service to you, we keep regular business records containing information about you that may constitute personally identifiable information. These account records include some, but typically not all, of the following information:

- your name;
- service address;
- billing address;
- e-mail address;
- telephone number;
- driver's license number;
- social security number;
- bank account number; and
- credit card number.

With respect to phone services, examples of CPNI include information typically available from telephone-related details on your monthly bill:

- location of service;
- technical configuration of service;
- type of service;
- quantity of service;
- amount of use of service; and
- calling patterns.

CPNI does not include your name, address, and telephone number, because the Communications Act classifies that information as "subscriber list information" which is not subject to the CPNI protections. However, that information is also subject to certain protections as described below under "To whom may Comcast disclose personally identifiable information?" The FCC has not yet adopted specific rules or definitions regarding CPNI as it relates to Internet access.

We also collect and maintain certain other information about your account. For example, this information may include:

- your account number;
- billing, payment, and deposit history;
- additional service information
- customer correspondence and communications records;
- maintenance and complaint information;
- the device identifiers and network addresses of equipment used with your account;
- records indicating the number of television sets, set-top boxes, modems, telephones, home security and automation devices, or other devices connected to our cable system; and
- additional information about the service options you have chosen.

Some of our services permit you to establish secondary accounts, and if you do so we collect similar information in order to establish and service the secondary accounts. During the initial provisioning of our services, and during any subsequent changes or updates to our services, Comcast may collect technical information about your televisions, any set-top boxes, computer hardware and software, cable modems, telephones, other cable or other service-related devices, home security and automation devices, and customization settings and preferences. Additionally, if you rent your residence, we may have a record of whether landlord permission was required prior to installing our cable services as well as your landlord's name and address.

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What kind of information does Comcast collect if I use cable video services?

When you use cable video services, our cable system automatically generates information about your use of the services and their features, and we collect much of this information as part of providing services to you. For example, we receive information about the use of set top boxes, remote controls, electronic program guides, video players, applications, and other devices and software connected to our cable system. This information includes which channels, programs, and advertisements are viewed and for how long, for example. It may also include information about navigation through program guides and applications, and use of devices like remote controls and tablets. Except as described below, we collect this *activity data* without names and addresses or other personally identifiable information and we consider it *de-identified* data.

Our system may collect activity data with personally identifiable information for particular requests or transactions like when you order a pay-per-view program or purchase a product. This information typically consists of account and billing-related information such as the programs or other products, services, or features ordered so that you may be properly billed for them. Follow your program guide commands or any special instructions on your screen when you make these transactional requests. These commands and instructions will explain your choices so that you can complete or cancel your requests as you wish.

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What kind of information does Comcast collect and use to improve your cable services and deliver relevant advertising?

Comcast's cable system, set-top boxes, and other equipment generate activity data that we collect and store. We use this information for a number of purposes including to determine which programs are most popular, how many people watch a program to its conclusion, and whether people are watching commercials. As described below under "How does Comcast use personally identifiable information and CPNI?," we may also provide information like subscriber lists or certain de-identified, anonymous, and/or aggregate information (such as activity data) to third parties working on our behalf -- such as audience measurement or market research firms. We, or these firms, working as our service providers, may combine this information with aggregated or non-aggregated demographic information (such as census records) and other audience attributes, such as purchasing data, demonstrated interests (for example, in sports programs or movies), loyalty programs, organizational affiliations, advertiser customer lists, and the like to provide us with audience analysis data. We require third parties working on our behalf to treat all information we provide as confidential and to use it only for Comcast's business purposes. We may also work with academic or research interest groups to analyze de-identified, anonymous, and/or aggregate information we provide to them for specific purposes or projects.

We use this information and analysis to improve our cable video service and other services and make programming and advertising more relevant to our subscribers. We may also use this information to distribute and deliver relevant programming and advertising to you without disclosing personally identifiable information about you to programmers or advertisers. In addition to this privacy notice, we may provide additional notices to you regarding specific advertising or other initiatives. These notices will describe the initiatives in greater detail and may, as appropriate, contain information you can use to choose to participate, or not participate, in these initiatives.

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II. Use

How does Comcast use personally identifiable information and CPNI?

We collect, maintain, and use personally identifiable information and CPNI as permitted by the Cable Act and the Communications Act and other applicable laws. We use this information primarily to conduct business activities related to providing you with our cable service and other services, and to help us detect theft of service. Generally speaking, we use personally identifiable information in connection with:

- billing and invoicing;
- administration;
- surveys;
- collection of fees and charges;
- marketing;
- service delivery and customization;
- maintenance and operations;
- technical support;
- hardware and software upgrades; and
- fraud prevention.

More specifically, we also use personally identifiable information to:

- install, configure, operate, provide, support, and maintain our cable service and other services;
- confirm you are receiving the level(s) of service requested and are properly billed;
- identify you when changes are made to your account or services;
- make you aware of new content, products, or services that may be of interest to you;
- understand the use of, and identify improvements to, our services;
- detect unauthorized reception, use, or abuse of our services;
- determine whether there are violations of any applicable policies and terms of service;

- manage the network supporting our services;
- configure and update cable service and other service-related devices and software; and
- comply with law.

The Communications Act further permits Comcast to use, disclose, and permit access to CPNI obtained from our customers, either directly or indirectly, to:

- initiate, render, bill, and collect for telecommunications services;
- protect our rights and property, and protect our users of these services and other carriers from fraudulent, abusive, or unlawful use of, or subscription to, these services;
- provide any inbound telemarketing, referral, or administrative services to you for the duration of the call, if you initiated the call and you approve of the use of this information to provide these services; and
- to provide call location information concerning the user of a commercial mobile phone service.

Comcast may not use CPNI to market products and services to you other than enhancements to services you already have without your approval in accordance with our policies described below.

Comcast transmits, and may collect and store for a period of time, personally identifiable and non-personally identifiable information about you when you use our high-speed Internet and phone services to:

- send and receive e-mail, video mail, and instant messages;
- transfer and share files;
- make files accessible;
- visit websites;
- place or receive calls;
- leave and receive voice mail messages;
- use the applicable communications center or voice center;
- establish custom settings or preferences;
- communicate with us for support; or
- otherwise use the services and their features.

Comcast transmits, collects, and stores comparable information when you use our home security service. Our transmission, collection, and storage of this information are necessary to render the services. In certain situations, third-party service providers may transmit, collect, and store this information on our behalf to provide features of our services. These third parties are not permitted to use your personally identifiable information except for the purpose of providing these features.

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How does Comcast use activity data and other data in connection with cable video service?

We associate activity data with particular devices such as set top boxes, portable devices, and other supported devices so that we know where to deliver the services and how to troubleshoot them. In general, Comcast uses de-identified and aggregate activity information to understand better how our customers use our products and services so that we can improve them, including by delivering more relevant content and advertising. We may try to determine how well our products and services deliver value to our customers, for example, by determining which programs are most popular, how many people watch a program to its conclusion, and whether and how often people are watching commercials. As discussed below, we may also combine activity data with other non-personally identifying demographic and similar information from our business records.

When we collect activity data, we may also use it to determine how many people view commercials (impressions) and to provide de-identified or aggregate reports to third-party advertisers. When we do this reporting on advertising impressions we do not provide any personally identifiable information about our subscribers to third-party advertisers. We, or our service providers, may combine de-identified activity data with other data to determine and report how an advertiser's messages are viewed, including on other platforms and services.

We may also use activity data to help us learn how popular certain programs are and how our customers as a whole generally prefer to view certain kinds of programming using cable video service (such as whether they like to watch certain programs live, or they prefer to view them when we offer them on demand, on mobile devices, or online). As described below, this may require us to compare or combine activity data on our cable system with online activity data. We may also use activity data to determine whether promoting content and services in certain ways helps attract a larger audience and more customers. While we may provide aggregate reports on these observations to programmers or others, we do not provide any personally identifiable information about our subscribers, or the activities of individual subscribers, to those programmers and others.

We may also use, or combine information about, your use of our cable services with other information we obtain from our business records (such as your Comcast account number or device identifiers), or from third parties, to deliver better and more relevant products, services and advertising. However, we do not store or share your activity data in association with your name or address, except as necessary to render or bill for our services. We may try to determine, using aggregated data, which groups of our customers use which of our products and services and how they use them. To do this we, or third parties working on our behalf, may combine demographic and other generally available information, or advertiser information, including purchasing data and membership in loyalty programs, with our subscriber lists. From this information, we or our third party providers

prepare de-identified and aggregated reports about how groups of customers with common characteristics – such as age and gender, or a demonstrated interest in a particular third party product – use our services and respond to the programming and advertising that we distribute. We may use this information to improve and communicate with you about our own products and services, and also to help us deliver relevant information and advertising on behalf of other companies and advertisers to certain subscriber groups – known as *ad groups*– who may be most interested in this information and advertising. When we do this, we do not share your personally identifiable information with these advertisers, unless you provide your express consent.

We may also combine personally identifiable information, which we collect as described in this notice as part of our regular business records, with personally identifiable information obtained from third parties for the purpose of creating an enhanced database or business records. We may use this database and these business records for marketing, advertising, and other activities related to our cable service and other services. We also maintain records of research concerning subscriber satisfaction and viewing habits, which are obtained from subscriber interviews, questionnaires, and surveys or panels.

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How does Comcast use information about use of cable video services on other platforms like websites or mobile applications?

We may compare or combine information such as *activity data* we receive when you use cable video services to view content or advertising with information about your use of content and advertising that we deliver on other platforms, such as on our Xfinity websites and mobile applications. We may also compare or combine this information or data with that generated by your viewing of advertising placed or sold by Comcast on other websites and mobile applications. We do this to better understand, among other things, how our customers access and use our products and services in all of the places that we offer them.

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III. Disclosure

Under what circumstances may Comcast disclose personally identifiable information to others?

Comcast considers the personally identifiable information contained in our business records to be confidential. The Cable Act authorizes Comcast as a cable operator to disclose personally identifiable information concerning any subscriber if the disclosure is:

- necessary to render, or conduct a legitimate business activity related to, the cable service or other services provided to the subscriber;
- required by law or legal process (described below under “When is Comcast required by law to disclose personally identifiable information and CPNI by law?”); or
- of the names and addresses of subscribers for “mailing list” or other purposes (subject to each subscriber’s right to prohibit or limit this disclosure and the CPNI Policy described below under “How do I place myself on Comcast’s ‘do not call’ and ‘do not mail’ lists?”).

The Cable Act prohibits us as a cable operator from disclosing personally identifiable information concerning any subscriber for any purposes other than those listed above without the subscriber’s prior written or electronic consent.

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To whom may Comcast disclose personally identifiable information?

We may disclose personally identifiable information as provided for in the Cable Act when it is necessary to render, or conduct a legitimate business activity related to, the cable service or other services we provide to you. These kinds of disclosures typically involve billing and collections, administration, surveys, marketing, service delivery and customization, maintenance and operations, incident verification and response, service notifications, fraud prevention, and services to improve our programming and advertising offerings, for example. We may also collect, use, and disclose information about you in de-identified, anonymous, or aggregate formats, such as ratings surveys and service usage and other statistical reports, which do not personally identify you, your particular viewing habits, or the nature of any transaction you have made over the cable system. The frequency of any disclosure of personally identifiable information varies in accordance with our business needs and activities.

The Cable Act authorizes Comcast as a cable operator to disclose limited personally identifiable information to others, such as charities, marketing organizations, or other businesses, for cable or non-cable “mailing list” or other purposes. From time to time we may disclose your name and address for these purposes. However, you have the right to prohibit or limit this kind of disclosure by contacting us by telephone at 1-800-XFINITY or by sending us a written request as described below under “How do I contact Comcast?” Any “mailing list” and related disclosures that we may make are limited by the Cable Act to disclosures of subscriber names and addresses where the disclosures do not reveal, directly or indirectly, (i) the extent of any viewing or other use by the subscriber of a cable service or other service provided by us; or (ii) the nature of any transaction made by the subscriber over our cable system.

We may sometimes disclose personally identifiable information about you to our affiliates or to others who work for us. We may also disclose personally identifiable information about you to outside auditors, professional advisors, service providers and vendors, potential business merger, acquisition, or sale partners, and regulators. We make these disclosures as provided for in the Cable Act. Typically, we make these disclosures when the disclosure is necessary to render, or conduct a legitimate business activity related to, the cable

service or other services we provide to you. We may be required by law or legal process to disclose certain personally identifiable information about you to lawyers and parties in connection with litigation and to law enforcement personnel.

If we (or our parent company) enter into a merger, acquisition, or sale of all or a portion of our assets, subscribers' personally identifiable information will, in most instances, be one of the items transferred as part of the transaction. If this notice will be changed as a result of a transaction like that, you should refer below under "Will Comcast notify me if it changes this notice?"

We may also use or disclose personally identifiable information about you without your consent to protect our customers, employees, or property, in emergency situations, to enforce our rights under our terms of service and policies, in court or elsewhere, and as otherwise permitted by law.

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When may Comcast disclose personal information to others in connection with phone service?

Comcast may disclose to others personally identifiable information in connection with features and services such as Caller ID, 911/E911, and directory services as follows:

- We may transmit your name and/or telephone number to be displayed on a Caller ID device unless you have elected to block such information. Please note that Caller ID blocking may not prevent the display of your name and/or telephone number when you dial certain business or emergency numbers, 911, 900 numbers, or toll-free 800, 888, 877, 866 or 855 numbers.
- We may provide your name, address, and telephone number to public safety authorities and their vendors for inclusion in E911 databases and records, inclusion in "reverse 911" systems, or to troubleshoot 911/E911 record errors.
- We may publish and distribute, or cause to be published and distributed, telephone directories in print, on the Internet, and on disks. Those telephone directories may include subscriber names, addresses, and telephone numbers, without restriction to their use.
- We may also make subscriber names, addresses, and telephone numbers available, or cause such subscriber information to be made available, through directory assistance operators.
- We may provide subscribers' names, addresses, and telephone numbers to unaffiliated directory publishers and directory assistance providers for their use in creating directories and offering directory assistance services.
- Once our subscribers' names, addresses, and telephone numbers appear in telephone directories or directory assistance, they may be sorted, packaged, repackaged and made available again in different formats by anyone.

We take reasonable precautions to ensure that non-published and unlisted numbers are not included in our telephone directories or directory assistance services, but we cannot guarantee that errors will never occur.

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When is Comcast required to disclose personally identifiable information and CPNI by law?

We make every reasonable effort to protect subscriber privacy as described in this notice. Nevertheless, we may be required by law to disclose personally identifiable information or individually identifiable CPNI about a subscriber. These disclosures may be made with or without the subscriber's consent, and with or without notice, in compliance with the terms of valid legal process such as a subpoena, court order, or search warrant.

For subscribers to our cable video service, Comcast may be required as a cable operator to disclose personally identifiable information to a third-party or governmental entity in response to a court order. If the court order is sought by a non-governmental entity, we are required under the Cable Act to notify the subscriber of the court order. If the court order is sought by a governmental entity, the Cable Act requires that the cable subscriber be afforded the opportunity to appear and contest in a court proceeding relevant to the court order any claims made in support of the court order. At the proceeding, the Cable Act requires the governmental entity to offer clear and convincing evidence that the subject of the information is reasonably suspected of engaging in criminal activity and that the information sought would be material evidence in the case.

For subscribers to our high-speed Internet, phone, and home security services, Comcast may be required to disclose personally identifiable information and individually identifiable CPNI to a private third party in response to a court order, and, if so, we are required to notify the subscriber of the court order. Comcast may also be required to disclose personally identifiable information and individually identifiable CPNI about subscribers to high-speed Internet, phone, and home security services to a government entity in response to a subpoena, court order, or search warrant, for example. We are usually prohibited from notifying the subscriber of any disclosure of personally identifiable information to a government entity by the terms of the subpoena, court order, or search warrant.

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How does Comcast protect personally identifiable information?

We follow industry-standard practices to take such actions as are necessary to prevent unauthorized access to personally identifiable information by a person other than the subscriber or us. However, we cannot guarantee that these practices will prevent every unauthorized attempt to access, use, or disclose personally identifiable information.

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How long does Comcast maintain personally identifiable information?

Comcast maintains personally identifiable information about you in our regular business records while you are a subscriber to our cable service or other services. We also maintain this information for a period of time after you are no longer a subscriber if the information is necessary for the purposes for which it was collected or to satisfy legal requirements. These purposes typically include business, legal, or tax purposes. If these purposes no longer apply, we will destroy, de-identify, or anonymize the information according to our internal policies and procedures.

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IV. Customer Access and Choice

How can I see my personally identifiable information or CPNI and correct it, if necessary?

You may examine and correct, if necessary, the personally identifiable information regarding you that is collected and maintained by Comcast in our regular business records. In most cases, the personally identifiable information contained in these records consists solely of billing and account information. We will correct our records if you make a reasonable showing that any of the personally identifiable information we have collected about you is inaccurate.

If you have Internet access, you can view and change certain information yourself by going to www.comcast.com/myaccount and signing in with your Comcast username and password to access the My Account feature. If you are a home security customer, you can go to the subscriber portal at www.xfinity.com/xhportal.

You may also examine the records containing your personally identifiable information at your local Comcast office upon reasonable prior notice to us and during our regular business hours. If you wish to examine these records, please contact us by mail or telephone at 1-800-XFINITY, giving us a reasonable period of time to locate and, if necessary, prepare the information for review, and to arrange an appointment. You will only be permitted to examine records that contain personally identifiable information about your account and no other account.

If you make an affirmative, written request for a copy of your CPNI, we will disclose the relevant information we have to you at your account address of record, or to any person authorized by you, if we reasonably believe the request is valid. However, subscribers to our phone services should be aware that we generally do not provide them with records of any inbound or outbound calls or other records that we don't furnish in the ordinary course of business (for example, as part of a bill) or which are available only from our archives, without valid legal process such as a court order. In addition, we cannot correct any errors in customer names, addresses, or telephone numbers appearing in, or omitted from, our or our vendors' directory lists until the next available publication of those directory lists. Further, we may have no control over information appearing in the directory lists or directory assistance services of directory publishers or directory assistance providers that are not owned by our subsidiaries or us.

Comcast reserves the right to charge you for the reasonable cost of retrieving and photocopying any documents that you request.

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How do I manage or opt out of uses of information about my Comcast account?

You may opt out of receiving more relevant advanced advertising delivered with programs made available through our cable video service by going to <http://www.xfinity.com/adservices>. Even if you opt out, you will still receive advertising and we will continue to send you Comcast marketing messages based on the way you use our products and services and the information we have collected about you.

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How do I give or withhold my approval for Comcast to use CPNI to market additional products and services to me?

Various direct and indirect subsidiaries and affiliates of Comcast Cable Communications, LLC offer many communications-related and non-communications related services, such as high-speed Internet and home security services. From time to time we may like to use the CPNI information we have on file to provide you with information about our communications-related products and services or special promotions. Our use of CPNI may also enhance our ability to offer products and services tailored to your specific needs. In addition, Comcast also offers various other services that are not related to the services to which you subscribe. Under the CPNI rules, some of those services, such as Comcast cable video services, are considered to be non-communications related products and services. Therefore, you may be asked during a telephone call with one of our representatives for your oral consent to Comcast's use of your CPNI for the purpose of providing you with an offer for communications related or non-communications related products and services. If you provide your oral consent for Comcast to do so, Comcast may use your CPNI only for the duration of that telephone call in order to offer you additional services.

If you deny or restrict your approval for us to use your CPNI, you will suffer no effect, now or in the future, on how we provide any services to which you subscribe.

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How do I place myself on Comcast's "do not call" and "do not mail" lists?

You may contact Comcast at 1-800-XFINITY to ask us to put your name on our internal company “do not call” and “do not mail” lists so that you do not receive marketing or promotional telephone calls or postal mail from us or made at our request. You also have the right to prohibit or limit disclosure of your personally identifiable information for “mailing list” or other purposes as described above in this notice by contacting us at 1-800-XFINITY.

If you prefer to contact Comcast in writing instead of by telephone, you may send a written request to the address listed below under “How do I contact Comcast?” Be sure to include your name and address, your Comcast account number, and a daytime telephone number where you can be reached in the event we have any questions about your request. The person who is identified in our billing records as the subscriber should sign the written request. If you have a joint account, a request by one party will apply to the entire account. If you have multiple accounts, your notice must separately identify each account covered by the request.

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What e-mail communications will Comcast send to me and how do I manage them?

We may send a welcome e-mail and sometimes other information to new subscribers to our cable service and other services (including each new secondary account holder, where applicable). We may also send service-related announcements to our subscribers from time to time. For example, we may send you an e-mail announcement about a pricing change, a change in operating policies, a service appointment, or new features of one or more of the cable service or other services you receive from us. You may not opt-out of these service-related communications. If you fail to check your primary e-mail address for service-related announcements, you may miss important information about our services, including legal notices, for example.

We reserve the right to send you promotional or commercial e-mail as permitted by applicable law. You can manage the promotional or commercial e-mails Comcast may send to you by following the instructions contained in the e-mails or by going to the Web page located at www.comcast.com/preferences and following the directions there. We may ask for additional information on this preferences page such as your zip code, for example. By providing this additional information to us we will be able to better inform you of the availability of special offers and promotions in your area. If you no longer wish to receive these e-mails you may opt-out of receiving them by going to the same page and changing your contact preferences.

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What can I do if I think my privacy rights have been violated?

If you believe that you have been aggrieved by any act of ours in violation of the Cable Act or other applicable laws, we encourage you to contact us directly as described below in “How do I contact Comcast?” in order to resolve your question or concern. You may also enforce the limitations imposed on us by the Cable Act as applicable with respect to your personally identifiable information through a civil lawsuit seeking damages, attorneys' fees, and litigation costs. Other rights and remedies may be available to you under federal or other applicable laws as well. This customer privacy notice neither supersedes nor modifies any arbitration agreement to which you may be bound relating to the provision of our cable video service, our high-speed Internet service, our phone and communications services, or our home security service to you as a subscriber to one or more of these services.

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Will Comcast notify me if it changes this notice?

As required by the Cable Act, we will provide you with a copy of this customer privacy notice at the time we enter into an agreement to provide any cable service or other service to you, and annually afterwards, or as otherwise permitted by law. You can view the most current version of this notice by going to <http://www.xfinity.com/Corporate/Customers/Policies/CustomerPrivacy.html>.

We may modify this notice at any time. We will notify you of any material changes through written, electronic, or other means and as otherwise permitted by law. If you find the changes to this notice unacceptable, you have the right to cancel your service. If you continue to use the service following notice of the changes, we will deem that to be your acceptance of and consent to the changes in the revised privacy notice. This includes your consent for any personally identifiable information that we may collect and use starting on the effective date of the revised notice, as well as for any personally identifiable information that we have collected prior to the effective date of the revised notice. However, we will only deem your continued use of the service to be your acceptance of and consent to changes in the revised privacy notice for changes made after December 31, 2006.

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How do I contact Comcast?

If you have any questions or suggestions regarding this privacy notice, or wish to contact us about your personal information, please reach us as follows:

Phone: 1-800-XFINITY

Website: <http://customer.xfinity.com/contact-us/>

Mail: Comcast Cable Communications, LLC

Attn: Law Department - Customer Privacy Notice

One Comcast Center

Philadelphia, PA 19103-2838

Revised and effective: August 1, 2015

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Appendix D

Cablevision Privacy Policy

Cablevision Customer Privacy Notice

Effective March 1, 2016

Cablevision is committed to protecting the privacy of its customers. This notice is designed to give you a general understanding of how Cablevision protects your privacy in connection with our cable television services (such as Optimum TV), our high-speed Internet services (such as Optimum Online), our voice services (such as Optimum Voice) and any other cable service or communication service we may provide to you using our cable system as such services are defined by applicable law, as well as Optimum.net (together "Covered Services").

This notice does not generally cover other Cablevision websites, such as Optimum.com, interactive television channels, or other products or services that may be accessed through Covered Services. These other services are governed by separate privacy notices, which we encourage you to review when using these other services to understand how your information is handled. This notice does not cover Cablevision's Lightpath service.

In this notice, "we" and "Cablevision" refer to CSC Holdings, LLC (formerly CSC Holdings, Inc.) and/or any affiliate of CSC Holdings, LLC that owns, operates, or provides Covered Services.

A. Information We Collect and Receive, and How We Collect It

In connection with the initiation and ongoing provisioning of Covered Services, as well as with our ongoing efforts to improve the quality and value of the Covered Services, we may maintain certain information related to you that you provide to us or that we collect using the cable systems ("Subscriber Information"). Certain Subscriber Information may be personally identifiable ("Personally Identifiable Information"). Personally Identifiable Information does not include, among other things, any aggregate data or other data which does not identify a particular person or information which by itself does not identify a particular person, such as your zip code, gender, MAC address or other equipment identifiers, or certain other unique numbers or codes. We may collect Personally Identifiable Information using the cable system in order to obtain information necessary to render our cable service or other services to our subscribers or to detect unauthorized reception of cable communications, as well as for other purposes described in this notice.

When You Interact With Us: Subscriber Information may include information which you provide to us such as your name, service address, billing address, work address, email address, home telephone number,

work telephone number, mobile phone number, date of birth, social security number, driver's license number, credit card number and expiration date, bank account number, and other financial information. In addition, as part of our normal course of business, we generate and maintain billing and account information such as your billing history, the services to which you have subscribed, your payment history, your maintenance and repair history, the kind, location, configuration, device identifiers, MAC, and IP

addresses of equipment (including TV sets, set-top boxes, CableCARDS, modems, telephones, IP enabled devices) connected to our facilities. For customer services purposes, we also may keep copies of correspondence concerning your account or records of complaints or inquiries that may be made about our service. In addition, we may sometimes collect responses to customer satisfaction surveys for analytics and research purposes. We may also collect information that helps us detect unauthorized use of our services.

When You Use Our Services: We may also collect service-specific Subscriber Information depending on the Covered Services to which you subscribe. For example:

- **Optimum Voice.** If you are a subscriber of a covered Cablevision voice service such as Optimum Voice (which is an interconnected Voice-over-Internet Protocol "VoIP" service), we may collect customer proprietary network information ("CPNI"). CPNI is information that relates to the quantity, technical configuration, type, destination, location, and amount of use of an interconnected VoIP service or telecommunications service subscribed to by any customer, and that is made available to the carrier by the customer solely by virtue of the provider-customer relationship; and information contained in the bills pertaining to interconnected VoIP service, telephone exchange service or telephone toll service received by a customer. CPNI does not include the "subscriber list information" we collect, which includes your name, address, and telephone number that has been published or accepted for publication in any directory format, as well as (for business listings) your primary advertising classifications. The disclosure and use of CPNI is subject to specialized restrictions as described in Section F below.

- **Internet Service, including Optimum Online and Optimum WiFi Hotspots.** If you subscribe to a covered Cablevision high-speed Internet service such as Optimum Online, we may collect broadband data, including information regarding geolocation and/or service usage, including bandwidth used (including for specific third party website traffic and app usage), system and connection performance, browsers used, device type, device identifiers, dates and times of access, and internet resource requests/browsing history (such as a log of visited URLs). We may maintain records of Internet Protocol addresses and email accounts that we assign to you, as well as any violations or alleged violations of applicable terms and conditions of usage. Certain broadband data is also considered CPNI. Additional information about our privacy practices specific to our high-speed Internet service, including more detail regarding data collection, can be found in the [Additional Privacy Information for Cablevision's High Speed Internet Service](#).

Optimum TV. If you are a digital cable television subscriber, we may also automatically collect information about your use of our systems, such as changing your television channel, reviewing listings in an electronic program guide, using your remote, interacting with your DVR, ordering or viewing on-

demand programming, engaging in other interactive programming features, or when using the Optimum App (such as audio files when using voice-based search) or other similar IP enabled device applications. We collect this information for purposes and uses including billing, service optimization, troubleshooting and customer service, operations, programming, including VOD, pay-per-view, program and content recommendation features and functions, advertising targeting and optimization, data

analytics, e-Bill, operation of certain Optimum Select services, and as otherwise described in the following section.

Information Provided to Us by Third Parties: Sometimes, we also obtain additional information from publicly available sources such as research consultants, data service providers, and marketing firms to supplement the information we collect from you. From time to time, we may combine this publicly available information with information that we collect from you. In addition, we may also obtain information from our business partners and/or their service providers or clients, to assist with data collection, reporting and ad response measurement, as well as to assist with delivering and analyzing the performance of relevant marketing messages and advertisements. The types of information that we may receive from third parties includes, but is not limited to demographic data (including, but not limited to gender or age range) and interest data (including, but not limited to demonstrated interest in or interaction with a particular product/website).

Information Collected on Our Websites: We collect data about visitors to our subscriber website, Optimum.net, using automated means such as cookies, clear GIFs, and passive automatic electronic collection, which are described in more detail in our [Website Privacy Notice](#). We may work with third-party companies to engage in such collection.

B. How We Use Subscriber Information

We use Subscriber Information, including Personally Identifiable Information, to conduct business activities such as account administration, service provisioning, operations, billings and collections, marketing, analytics, customer service, technical support, manage network performance, and for fraud prevention.

These purposes may specifically include the use of Personally Identifiable Information to:

- help us provide high-quality, competitively-priced Covered Services in an efficient manner;
- ensure that you receive the services to which you have subscribed and execute requests that you make;
- provide you with programming, services and advertising that are of an enhanced value and interest to you;
- facilitate billing and collections functions and obligations (including any reporting to credit bureaus or collection agencies to obtain payment for our billed products and services);
- provide you with accurate and high quality customer service, including responding to subscriber inquiries and troubleshooting;
- comply with tax obligations, accounting rules, and contractual obligations to vendors;
- ensure that you receive information about products and services that may be of interest to you; ensure compliance with applicable laws and the terms, conditions, notices and policies governing the

Covered Services;

protect our rights, such as preventing fraud, service theft, and abusive practices; and
improve our facilities and the services that we provide over them.

We may use Subscriber Information to generate de-identified or aggregated information - that is, data from which Personally Identifiable Information has been removed. We may also employ automated processes to generate de-identified or aggregated information from any of our Covered Services. De-identified or aggregated information does not identify you in a personal way, and our collection, use, and disclosure of de-identified or aggregate information is not subject to any of the restrictions in this notice and its use and disclosure is subject to our discretion. For example, we may use de-identified or aggregated information for purposes such as measurement of viewership of programming and advertising, creation of tuning and viewing cohorts or segmentations, providing targeted content for our services or facilitating delivery of relevant third party advertising/promotional messages through our Covered Services.

We may use certain Subscriber Information, including viewing activity and other use of the cable system (as described in Section A above), broadband data (also as described in Section A) and Personally Identifiable Information, for marketing or analytics purposes. Such use may include facilitating display ads for our products and services shown to you on other websites and web services across the Internet. When we do this, we may provide third party service providers with access to certain of your Personally Identifiable Information in order to place de-identified coded data into cookies on your browser (or employ similar technology), and to provide you with more relevant offers and updates through display media. If you do not wish to receive these types of ads, you may opt out of most such advertising by going to the following websites, operated by industry trade and self-regulatory organizations: <http://networkadvertising.org/choices> (operated by the Network Advertising Initiative) or <http://www.aboutads.info> (operated by the Digital Advertising Alliance).

If you are a digital cable television subscriber, we may use the viewing activity or usage data that we have collected, in combination with data we receive from third parties (such as data collected when you visit or log in to third party websites or engage in offline transactions), to deliver ads to audiences based on demographic information (e.g., gender or household size) and/or interest information (e.g., travel or sports). We may work with third party data and service providers who de-identify data we hold to facilitate this advertising and link it to the above data. You can opt out of many of these providers through the links provided in the preceding paragraph, or you can opt out directly through us, as described in the below paragraph.

Although not required to do so, we offer you a choice as to whether you wish to have targeted third party advertising/promotional messages delivered to your set-top box or certain other IP-enabled device applications. To exercise this choice, PLEASE CALL US AT 1-888-425-2591 or visit <http://optimum.net/privacy-preferences>. Additionally, Cablevision provides Subscribers with the opportunity

to restrict the use of program and content recommendations in association with certain Cablevision services, including our recommendations features and functions, by visiting <http://optimum.net/privacy-preferences>. Please note, your preferences may not take effect immediately and do not retroactively apply to existing advertising/promotional messages or campaigns.

Our use of certain Subscriber Information associated with voice service however, is limited as described in

Section F below.

Individuals who may be authorized to have access to Personally Identifiable Information include our employees, agents, and affiliates within our family of affiliated businesses (including but not limited to Newsday, Madison Square Garden and AMC Networks), though we seek to limit access to individuals on a need to know basis. Sometimes, we may provide access to certain Personally Identifiable Information to select third parties to assist us in providing services or for other legitimate business purposes. For example, we may provide access to certain information to companies providing services to us, including installation and repair, billing, call center, sales and marketing, market research, fulfillment, mailings, data storage, data scrubbing, data analytics and processing, bill collection, auditing and accounting, credit reporting, and legal services. We may also provide access to third parties who assist us in providing targeted advertising and audience analysis services, opportunities and initiatives. We will provide access to CPNI (a term described in Section A above) for use in sales and marketing only to our agents and affiliates. The frequency of such access depends on our business needs.

Geolocation Data: We use service address, device and/or access point location data for a variety of purposes, including to facilitate emergency services, provide our services, our and third-party location-based applications and services including, but not limited to, navigation, promotional offers, weather services and the like and deliver location-based advertising that may be of interest to you and/or for reporting and ad response measurement. Where we offer our own location-based applications, we provide you with notice and choice about whether specific location-tracking features available on your device are turned on.

Many types of wireless applications and services use device location data, including applications provided by other companies and wireless device operating systems. When you are considering new applications or services, you should carefully review the location-based services' or application providers' privacy policies to learn how they collect and use your information.

C. When We Disclose Subscriber Information

Except as set forth below, Cablevision will not disclose Personally Identifiable Information to third parties unless:

- it is necessary for us to render our Covered Services or conduct a legitimate business activity related to our Covered Services;
- or you provide appropriate consent in advance.

If you subscribe to a non-voice Covered Service, we may rely on a special provision of law that allows us to disclose mailing-list information about you to marketing organizations, programmers and other businesses. Mailing-list information includes your name, addresses, and the non-voice services to which you subscribe (for example, basic tier, HBO). IF YOU DO NOT WANT US TO DISCLOSE MAILING-LIST INFORMATION

ABOUT YOU ON THE BASIS OF THAT PROVISION OF LAW, PLEASE CALL US AT 1-888-425-2089. Please note, your opt-out preferences may not take effect immediately and cannot be applied retroactively. After your opt-out takes effect, we will limit our disclosures of your mailing-list information to the other disclosures described in this notice, which are permitted by other provisions of law.

If you subscribe to a covered Cablevision voice service such as Optimum Voice, applicable regulations allow us to disclose subscriber list information. For example, we may give your name, address, and number to organizations who publish phone directories or who provide 411 services or similar public services. We may transmit your name and number so that the person you call can see such information on his or her Caller ID. Certain procedures allow you to block transmission of Caller ID information. You may contact us to obtain additional information about these procedures. We may also transmit your name, number, and registered location to a public safety answering point ("PSAP") when you dial 911 for emergency services. Disclosure of CPNI data is subject to additional specific limitations, as described in Section F below.

We may also provide your Personally Identifiable Information to third parties when you expressly consent to such disclosure, such as when you interact or make purchases from third party vendors who utilize Optimum technology or request information from third parties through certain interactive channels.

We may furnish certain de-identified information, on either an aggregate or non-aggregate basis, (which may include information about viewing habits, geolocation and system interaction) to third parties, such as advertisers and programmers, for purposes that may include but not be limited to providing you with more relevant programming, advertising and features, increasing the value of the Covered Services, providing you with information or offers about products or services that we believe may be of interest to you, or assisting third parties with media, programming and content planning and purchasing efforts. Likewise, if you are a digital cable subscriber, we may work with third party data and service providers who de-identify data about you so that we may facilitate advertising based on demographic or interest-based data collected from different platforms, whether offline or online (such as information collected when you visit or log in to a website).

You acknowledge, consent and agree that we may access, preserve and disclose your Subscriber Information, including your Personally Identifiable Information, your account information and content if required to do so by law or in a good faith belief that such access, preservation or disclosure is reasonably necessary to:

- comply with legal process;

enforce our Terms of Service, Privacy Notice(s), or other contracts with you;

respond to claims that any content violates the rights of third parties;

respond to your requests for customer service;

respond to inquiries from government agencies regarding customer-initiated complaints provided to such agencies;

- or protect the rights, property or personal safety of Cablevision, its agents and affiliates, its users and the public.

We may also disclose information to law enforcement agencies in emergency circumstances, where the disclosure of such information is consistent with the types of emergency disclosures permitted or required by law.

Finally, we also reserve the right to disclose and transfer all of your Subscriber Information, including your Personally Identifiable Information, to a successor company in connection with a merger, acquisition or sale of all, or components, of our business.

D. We May Keep Information About You for Some Time

We generally keep some or all Subscriber Information for as long as necessary for the purpose(s) for which it was collected or as required by law. When information is no longer needed or required to be maintained, we destroy it in accordance with our internal policies.

E. You May Obtain Access to Information About You

You also have the right to inspect Personally Identifiable Information that Cablevision has collected and maintains in connection with the provision of Covered Services to you. If you would like access to such information, please notify us in writing at the local business office specified on your service bill. We will then contact you to set up an appointment during regular business hours. Please note, Cablevision reserves the right to charge you its reasonable costs in connection with retrieving Subscriber Information and providing you with access thereto. In order to obtain telephone CPNI, please see Section F below.

Subscribers may choose not to receive promotional or marketing telephone calls or postal mailings regarding the Covered Services by contacting us at 1-888-425-2088 for placement on Cablevision's "Do Not Call" list or by contacting us at 1-888-425-2090 for placement on Cablevision's "Do Not Mail" list. Please note, any Subscriber requests after May 1, 2010 to be placed on the "Do Not Mail" list will only be effective for the 12-month period following such request. If Subscribers wish to continue to remain on the "Do Not Mail" list, Subscribers will need to make another request upon the expiration of the previous request. Please also note, "Do Not Call" and "Do Not Mail" requests may take up to thirty (30) days to become effective.

F. Special Rules About Telephone-Related Information

Under federal law, you have a right, and we have a duty, to protect the confidentiality of a category of telephone-related information known as "customer proprietary network information" or "CPNI." Cablevision

restricts access to your telephone CPNI. For example, call detail records, which contain information about the calls you make are available online. In order to access call detail records online, you must have an Optimum ID and password. All other telephone CPNI is restricted by requiring a password and/or by requiring that you provide certain non-public verification information over the phone to confirm your identity. A written request may also be used to obtain your telephone CPNI. You must send the written request to Cablevision OV at 6 Corporate Center Drive, Melville New York 11747, Attn. Shared Services - CDR. All requests will be verified.

Cablevision also restricts the use of your telephone CPNI. Unless we have your appropriate consent, Cablevision does not share your telephone CPNI with non-affiliates for marketing purposes. We may, however, use telephone CPNI or share de-identified information to tailor your service and to market related Cablevision Optimum Voice products and services to you.

G. Our Collection and Use of Information is Subject to Legal Limitations

The Cable Act imposes limitations with respect to the collection and disclosure of personally identifiable information by cable operators, unless you provide us consent to collect or disclose information in another fashion, such as by accepting this Privacy Notice as part of the sign-up process for our Covered Services. Generally speaking, cable operators may not use the cable system to collect personally identifiable information concerning subscribers without prior consent of the subscriber concerned except to obtain information necessary to render our cable service or other services to our subscribers or to detect unauthorized reception of cable communications. In addition, subject to certain specified exceptions, cable operators generally may not disclose personally identifiable information without consent of the subscriber concerned. Also, cable operators must take such actions as are necessary to prevent unauthorized access to such information by a person other than the subscriber or cable operator. If we violate your rights, you may be entitled to bring a civil action in a federal court, which may award actual, liquidated, and punitive damages, fees and costs, and other remedies that may be available. In addition, if anyone asks us to provide information about you, we may have to notify you, and you may have the right to appear in court.

H. How We Protect Subscriber Information

We employ physical, electronic, and procedural safeguards to protect Subscriber Information. For example, we utilize secure socket layer (SSL) encryption to protect certain information you provide to us; employ verification measures to protect e-mail during delivery; maintain certain subscriber databases in restricted

areas; and secure the content by use of firewalls and other security methods. We also limit access to databases containing subscribers' Personally Identifiable Information to specifically authorized employees and agents and other parties identified in the disclosure section above.

Despite these measures, we do not guarantee the security of information stored in our database or that

unauthorized parties will not intercept information you send or receive over the Internet. As a shared resource, the Internet subjects our services and you to the risk of unauthorized access to files and data, even when security measures are implemented. If you use Cablevision's high-speed Internet service such as Optimum Online, to send, receive or post personal or confidential information, you do so at your own risk.

I. Questions About This Notice

If you have any questions about our privacy protections, notices and policies, please write to us at:

CSC Holdings, LLC
Attn. Shared Services Dept
6 Corporate Center Drive
Melville, NY 11747

J. Updates To This Notice

We will review this privacy notice periodically as we deem appropriate and when we change or update Covered Services. We will notify you of any material changes by posting the revised notice on our Optimum website or by written or electronic correspondence. Your use of the Covered Service(s) following the notice of a revised notice constitutes your acceptance of the revised privacy notice.

Effective March 1, 2016

Website Privacy Notice

(New Website Privacy Notice Effective June 22, 2013)

To our website visitors - Cablevision respects your privacy rights. This Website Privacy Notice ("Privacy Notice") is designed to provide you with information about how Cablevision protects your privacy in connection with your use of this website. **By using any of our Cablevision websites that linked you to this notice, you accept this Privacy Notice.**

To our subscribers - If you are also a subscriber of any of Cablevision's cable television services (such as Optimum TV), our high-speed Internet services (such as Optimum Online), our voice services (such as Optimum Voice), other online services (such as interactive television channels including Optimum Autos and Optimum Homes), or any other Cablevision cable service or communication service, we encourage

you to review the separate privacy notices and terms of use agreements for those services. Cablevision's other services are governed by those separate privacy notices and agreements. The use of <http://www.optimum.com> and <http://www.optimumrewards.com> is governed by this Privacy Notice. Your use of <http://www.optimum.net> is not covered by this Privacy Notice, but is instead governed by

the [Cablevision Customer Privacy Notice](#).

A. How we collect visitor information

CSC Holdings, LLC ("Cablevision") operates this website. In this Privacy Notice, "we," "us," "Cablevision," and "our" refer to CSC Holdings, LLC (formerly CSC Holdings, Inc.) and its affiliates. We use the term "visitor" to refer to a person who accesses any part of the website for any amount of time.

We may collect, maintain, and access certain information you provide and information collected from your use of the website and services available through the website. This visitor information may include information that can be associated with you personally ("Personally Identifiable Information"). Visitor information may include, among other things, your first and last name, your home addresses, and your telephone number, your Cablevision account information, and your payment card information.

We will collect Personally Identifiable Information about you when you voluntarily provide it to us. When you use website features that ask you for certain information, for example, when you register for membership in Optimum Rewards, you provide Personally Identifiable Information. You can navigate through the website without giving us Personally Identifiable Information, but certain activities such as obtaining offers and discounts through OptimumRewards.com is only available to our subscribers who log in. You can navigate through the website without giving us Personally Identifiable Information, but certain activities such as obtaining offers and discounts through Optimum Rewards is only available to our subscribers who log in.

We may also collect Personally Identifiable Information if we survey visitors about various topics, including their television viewing preferences and how we can improve our programming, website, and services. Responding to any such survey is entirely voluntary.

Sometimes, we also obtain additional information from publicly available sources such as research consultants, data service providers, and marketing firms to supplement your information. From time to time, we may combine this publicly available information with information that we collect from you.

Personally Identifiable Information does not include aggregated data, anonymized information, or other information that does not identify a particular person. Your zip code and gender are examples of types of data we collect that are not Personally Identifiable Information. We may generate anonymized or aggregated information from the information we collect. This is information from which any Personally Identifiable Information has been removed. Anonymized or aggregated information does not identify you. Our collection,

use, and disclosure of anonymized and aggregated information are not subject to any of the restrictions in this Privacy Notice. Anonymized or aggregated information may include, among other things, Internet server and browser identification, the Internet service provider, duration of visit, and domain type. This aggregated information will not reveal any Personally Identifiable Information about any specific visitor.

We may also collect visitor information in the following ways:

- **Cookies.** Similar to most website operators, we use "cookies" to collect information about your visit to our website and to manage information concerning your preferences. A cookie is a small encrypted computer code added to a file on your computer as a record of your visit. It does not collect or provide your name or any other personal information about you. It can, however, be used by this website to note information about your visit, such as your type of web browser, operating system and Internet Protocol address, to better tailor the site for you. It can also be used to recognize you when you return as a repeat visitor to our website. We use cookies, for example, to monitor the times when visitors log-on to the website, to track the number of sweepstakes and promotions you enter, to estimate the audience size of the website for sponsors and advertisers, and to track visitor preferences. Cookies do not allow the website to access Personally Identifiable Information that you have not otherwise provided. You can control what cookies are accepted by your computer through the settings on your web browser or by deleting them from your computer. Doing so, however, may limit the personalization available to you. We, our third party service providers, advertisers or our partners also may use cookies to help deliver, manage and measure the performance of advertisements displayed on or delivered by or through the Cablevision or Optimum network of sites or other networks or sites, or to send you customized ads about our own products and services as you access other websites and web services. This may also help us, our service providers and partners provide more relevant advertising. For more information regarding third-party ad servers, see "Service providers' and other third parties' collection and use of information" below.

- **Clear GIFs.** Like many websites, we may use clear GIFs (also known as "web beacons," "Internet tags," or "pixel tags"). Clear GIFs are lines of code that allow websites to summarize overall visitor usage patterns and to provide personalized services. We may use clear GIFs, for instance, to track visitor preferences or to gather aggregated information about visitor usage patterns. We do not use clear GIFs to collect any Personally Identifiable Information about visitors.

- **Passive Automatic Electronic Collection.** Like operators of most other websites, we collect and log information automatically, either directly or through a third party service provider. For example, we collect your Internet Protocol ("IP") address, the name and location of your Internet Service Provider, the type and version of your browser, the length of time you visit the website, your search queries on the website, and the average number of pages you viewed. Logging your IP address does not by itself provide us with your name, e-mail address, or home or work address. We use this log information for systems administration purposes and for technical troubleshooting. We may also use it to gather general demographic information about you, such as your general location.

B. How we use visitor information

We use Personally Identifiable Information collected from visitors and from Optimum Rewards members for several important purposes, including:

to help us fulfill service requests;

- to notify you about sweepstakes and promotional events and to allow you to participate in those sweepstakes and events;
- to protect the security of visitors and the website;
- to facilitate e-commerce transactions, such as purchases of goods and services;
- to help prevent fraud;
- to provide you with a website and services of enhanced value to you; and
- to market and promote our services and website.

In addition, some of the sweepstakes and special events that we may notify you about may be produced with the support of non-affiliated sponsors or our promotional partners. We may use Personally Identifiable Information collected in conjunction with such events to market additional services and events by Cablevision, by its promotional partners, by sponsors, or by all of these entities. For each sweepstakes and special or promotional event, we will post applicable rules for the event on the website. We may also post on the website any supplemental terms, conditions, or privacy provisions for the specific event.

We use anonymized or aggregated information to improve website services, to gauge the effectiveness of the website, and to improve and enhance visitors' experiences on the website. In some cases we may combine information collected from subscribers with demographic or other information (such as census records or customer information in our regular business records) for aggregated and anonymized studies or segmentation. We use such studies to improve, market and promote our services and this website. We use anonymized profile data to tailor advertising to individual visitors, including those that have visited our own websites.

In addition, we may use Personally Identifiable Information and visitor information for marketing purposes, including to facilitate display ads for our products and services shown to you on other websites and web services across the Internet. When we do this, we may provide third party service providers with access to certain of your Personally Identifiable Information in order to place de-identified coded data into cookies on your browser (or employ similar technology), and to provide you with more relevant offers and updates through display media. If you do not wish to receive these types of ads, you may opt out of most such advertising by going to: <http://networkadvertising.org/choices> or <http://www.aboutads.info>.

C. When we disclose visitor information

Except as described in this Privacy Notice, we will not disclose Personally Identifiable Information collected through the website to entities other than to Cablevision affiliates unless (a) it is necessary to enable us to

provide services or to conduct legitimate business activities related to the website; or (b) you give your consent before we disclose your Personally Identifiable Information.

We may share your Personally Identifiable Information with persons or companies who help us operate the website by providing services, such as sweepstakes fulfillment services, maintenance and technical

services, and e-commerce contractors, and marketing services (collectively "service providers"). We may provide your Personally Identifiable Information to other third parties when you expressly consent, such as when you make a purchase from a third-party vendor using our website. If you use a payment card for goods or services on the website, our service providers may share your Personally Identifiable Information and payment card data with others, for example with a ticket agent, a payment card processing company, and a shipping or fulfillment company, to complete your purchases and orders.

We contractually require our service providers to maintain at least the same level of confidentiality for the Personally Identifiable Information we provide to them as we maintain for such information. Additionally, we require that our service providers' use of such information not exceed that needed to provide the service.

We currently conduct joint activities with Cablevision affiliates. We will not share visitors' Personally Identifiable Information collected through the website with our affiliates except as provided in this Privacy Notice. We may disclose the content of any e-mail visitors send to us to our affiliates or to other persons. Please see our [Terms of Use](#).

We may provide aggregated or anonymized information about visitors to our advertisers, to sponsors, to promotional partners, and to affiliates. Such information may include, for example, how many persons visited a particular page or activity and the preferences and dislikes of visitors. Such information does not include Personally Identifiable Information about any individual visitor.

You acknowledge and agree that we may disclose your Personally Identifiable Information if we are required to do so by law or if we have a good faith belief that such disclosure is reasonably necessary (a) to comply with applicable law, a subpoena, or other legal process; (b) to investigate violations of this Privacy Notice, our Terms of Use, or other contracts we have with you; (c) to respond to claims that any content violates the rights of third parties; (d) to respond to your requests for customer service; and (e) to protect the rights, property, or personal safety of the public, Cablevision, its agents, its users, or the website.

We reserve the right to disclose and transfer your visitor information, including your Personally Identifiable Information, in the event of a merger, acquisition, or sale of all, or components, of our business.

D. How long we will keep visitor information

Cablevision may retain Personally Identifiable Information and other information collected through the website for as long as is reasonable for the purposes for which it was collected.

E. How we protect visitor information

We follow industry-standard practices to protect information collected through the website. Visitors'

Personally Identifiable Information is stored in Cablevision databases in physically secure facilities. Visitors' financial and payment card information is transmitted via encrypted technology. If we share visitor information with Cablevision affiliates, the affiliate will follow similar practices to protect Personally Identifiable Information collected through the website.

Any information transmitted over the Internet may be subject to breaches of security. Although we follow commercially reasonable practices to securely store the information we collect and to work with responsible third parties, we cannot guarantee these practices will prevent every unauthorized attempt to access, use, or disclose such information.

F. Service providers' and other third parties' collection and use of information

Cablevision may provide opportunities for visitors to purchase certain goods and services through this website. Our service providers may handle some of these transactions. If you choose to use these services, our service providers may request that you provide your Personally Identifiable Information to them so that they can process your order or request. These service providers usually have their own privacy notices and terms of use. After you leave this website, information you disclose to a service provider and information the service provider collects from you will be subject to its privacy Notice and terms of use. Cablevision is not responsible for its service providers' collection, use, or disclosure of information.

This website may include banner ads, other advertisements, and links to websites of Cablevision affiliates and non-Cablevision entities. These affiliates and other entities may solicit and collect Personally Identifiable Information and may store cookies on website visitors' computers. When you leave this website to visit the website of a Cablevision affiliate or of another entity, you will be subject to the privacy Notice and terms of use agreement of that website operator. Cablevision is not responsible for the ads, links, content, activities, or information practices of other websites.

We may use the services of third parties to provide us with data collection, reporting and ad response measurement, as well as to assist with delivery of relevant marketing messages and advertisements. These third parties may view, edit, or set their own cookies or web beacons to facilitate the delivery of ads to you. We, our third party service providers, advertisers and/or business partners may also place web beacons for these third parties. The use of cookies or web beacons by these third parties is subject to their own privacy notices. [Click here](#) for more information about third party advertising practices and how to opt- out.

G. How we protect children's online privacy

This website is not directed to children under the age of 13. We do not knowingly collect Personally Identifiable Information from children under the age of 13. If we become aware that we have received

Personally Identifiable Information of a child under 13, we will delete the information from our records. We offer parents and guardians additional guidelines to help keep their children's personal information safe and your family's Internet participation enjoyable. For more information on how to keep your family and children safe on the Internet, please visit the [Internet Smarts](#) section of our Power to Learn website.

H. Notice to visitors from outside the U.S.

The website is published in the United States. By visiting this website, by using services offered through the website, or by providing Personally Identifiable Information to us or to our service providers, you agree that we may collect, use, and disclose your Personally Identifiable Information as described in this Privacy Notice, including by transferring such information from the country where you live to the United States.

I. Notice to California residents: Your California Privacy Rights

Individuals who reside in California and who have provided their Personally Identifiable Information to the website may request information regarding disclosures of this information to third parties for direct marketing purposes. Such requests must be submitted to us at the following address:

CSC Holdings, LLC
Attn. Shared Services Dept
6 Corporate Center Drive
Melville NY 11747

Such requests may be made only once each calendar year. We may not respond to requests sent to addresses other than the one shown above.

J. Changes to this Privacy Notice

We may change this Privacy Notice at any time. We will notify you of material changes by posting the revised Privacy Notice on the website. We encourage you to periodically review the Website Privacy Notice to inform yourself of any changes. The revised Privacy Notice will be effective on the date it is posted unless the revised notice states otherwise. If you use the website after the effective date of the revised Privacy Notice, we will conclude that you accept the revised Privacy Notice.

K. Questions about this Notice

Please contact us if you have any questions about this Privacy Notice:

CSC Holdings, LLC

Attn. Shared Services Dept
6 Corporate Center Drive
Melville NY 11747

Effective June 22, 2013

Cablevision Mobile Application Privacy Notice

Cablevision is committed to protecting the privacy of its customers. This short-form privacy notice is designed to give you a general understanding of how Cablevision protects your privacy in connection with our mobile applications, including but not limited to Optimum, Optimum DVR Manager, Optimum WiFi Register, Optimum WiFi Finder, and Optimum Cares (hereinafter collectively referred to as the "Mobile Applications"). These applications are generally designed for use by existing Cablevision subscribers. These applications have limited functionality for non-subscribers but may collect Personally Identifiable information from non-subscribers.

Please note that Cablevision's privacy practices with regard to its cable television services (such as Optimum TV), our high-speed Internet services (such as Optimum Online), our voice services (such as Optimum Voice), and any other cable or communication services we may provide (the "Covered Services") have their own privacy notices, which are posted at: <http://www.optimum.net/Privacy/Sub> and <http://www.optimum.net/Privacy/OOL> (the "Cablevision Customer Privacy Notices").

In this notice, "we" and "Cablevision" refer to CSC Holdings LLC (formerly CSC Holdings, Inc.) and its respective subsidiaries and affiliates that own, operate, or aid in the provision of the Mobile Applications.

Please review this notice carefully prior to using the Mobile Applications. By using the Mobile Applications, you acknowledge that you understand and consent to the collection, use, and/or disclosure of your information in accordance with this notice.

A. How We Collect Information

In connection with the provision of the Mobile Applications and our ongoing efforts to improve the quality and value of Cablevision's services, we may maintain certain information related to you that you provide to us or that we collect using the Mobile Applications ("Mobile Subscriber Information"). We may collect your first and last name, your home address, your e-mail address, your telephone number, your account number,

your payment card or banking information, and your Optimum ID and Password in order to render our services through the Mobile Applications or to detect unauthorized use of our services. We may also collect usage information such as records of the kind, location, configuration, device identifiers, MAC, and IP addresses of equipment utilized in association with the Mobile Applications.

Your use of the Mobile Applications, with the exception of the Optimum WiFi Finder, is necessarily tied to your Cablevision subscriber account. Accordingly, the collection, use and disclosure of your personally identifiable information as it relates to the Mobile Applications, is governed by the [Cablevision Customer Privacy Notice](#), to which you, as a subscriber, have already agreed. If there is any conflict between provisions of this short-form notice and the applicable Cablevision Customer Privacy Notices, the Cablevision Customer Privacy Notices will govern. The use of non-subscriber information is covered solely by this notice.

Through the Mobile Applications, Cablevision may also collect the following application specific information:

Optimum and Optimum DVR Manager Applications: To utilize the Optimum and Optimum DVR Manger Applications, you must be a digital cable television subscriber. In conjunction with provision of our digital cable television services through these applications, we may automatically collect information when you interact with our systems such as changing your television channel, reviewing listings in an electronic program guide, interacting with your DVR, ordering or viewing on-demand programming, and engaging in other interactive programming features. This information will be used as described in the Cablevision Customer Privacy Notice(s), including for billing, troubleshooting, operations, or other service related purposes such as VOD, program and content recommendation features and functions, e-Bill, or use of certain Optimum Select services such as requests for information or product purchases. There is no limitation on Cablevision's use of this information in de-identified or aggregate form.

Optimum WiFi Register Application: In order to utilize the Optimum WiFi Register Application to automatically sign in and get online from any of Cablevision's Optimum WiFi Hot Spots, you must be an Optimum Online subscriber and you must explicitly agree that Cablevision may upload and maintain a copy of your MAC Address. If you are an Optimum WiFi Register user and an Optimum Online subscriber, we may maintain records of Internet Protocol addresses assigned to you. We may also collect usage information for the purpose of managing or operating the Optimum WiFi Services. Cablevision does not collect or utilize Personally Identifiable Information from non-subscribers through Optimum WiFi Register.

Optimum WiFi Finder Application: Regardless of whether you are an Optimum Online subscriber, when you use the Optimum WiFi Finder Application to search for a wireless hotspot near you, either by manually entering an address or allowing the application to use your current location, camera, and/or motion features, Cablevision collects information relating to that search ("Location Data") and uses that information

to deliver you a list of wireless hotspots near you. Location Data collected through the WiFi Finder may be used to deliver results, manage information concerning your preferences, gather statistics about your visit, and/or to provide and improve current and future services. There is no limitation on Cablevision's use of this information in de-identified or aggregate form. Cablevision does not collect or utilize Personally Identifiable Information from non-subscribers through Optimum WiFi Finder.

Please Note: You may revoke this application's permission to use your current location at any time, using the location services settings on your device.

Optimum Cares Application: In order to utilize the Optimum Cares Application, you must have an existing Optimum ID and Password. The information you provide will be used as described in the Cablevision Customer Privacy Notices, including for billing, troubleshooting, operations, or other customer service-related purposes. Cablevision also collects Location Data information which may be used to deliver results, manage information concerning your preferences, and/or to provide and improve current and future services. There is no limitation on Cablevision's use of information in de-identified or aggregate form.

B. How We Use Information

We may use non-personally identifiable or aggregated usage information from our applications for any purpose, including for programmer, advertiser and internal research, and to improve our systems, the content that subscribers receive, and their service experience (for example, to measure viewership of channels, TV shows and commercials). We may also use this information to provide targeted content for our services such as programming and advertising or provide our recommendation features or functions to you. Finally, we may also use this information to deliver relevant third party advertising/promotional messages using your set-top box or through other IP-enabled device applications without disclosing Personally Identifiable Information to these third party advertisers.

C. When We Disclose Information

We may furnish certain non-personally identifiable information collected from non-subscribers, on either an aggregate or non-aggregate basis in our discretion.

D. We May Keep Information for Some Time

We generally keep some or all information for as long as necessary for the purpose(s) for which it was collected or as required by law. When information is no longer needed or required to be maintained, we destroy it in accordance with our internal policies.

E. Questions About The Notice

If you have any questions about our privacy protections and notices, please write to us at:

CSC Holdings LLC
Attn: Shared Services
6 Corporate Center Drive
Melville, NY 11747

F. Updates To The Notice

We will review this privacy notice periodically as we deem appropriate and when we change or update the Mobile Applications. Cablevision may, in its sole discretion, change, modify, add, or remove portions of this Notice at any time. Cablevision may notify you of any material changes by making the revised Notice available to you through the Mobile Applications, by written or electronic correspondence, or through an update - required or otherwise - to the application. Your use of the Mobile Applications, following notice of such change, modification or amendment, constitutes your acceptance of the revised privacy notice. If you do not agree to any portion of the revised Notice, you must cease all use of the application.

Effective July 13, 2015