

TELEVISION UPDATE H2 2017

Advanced TV's Progress

AUGUST 2017

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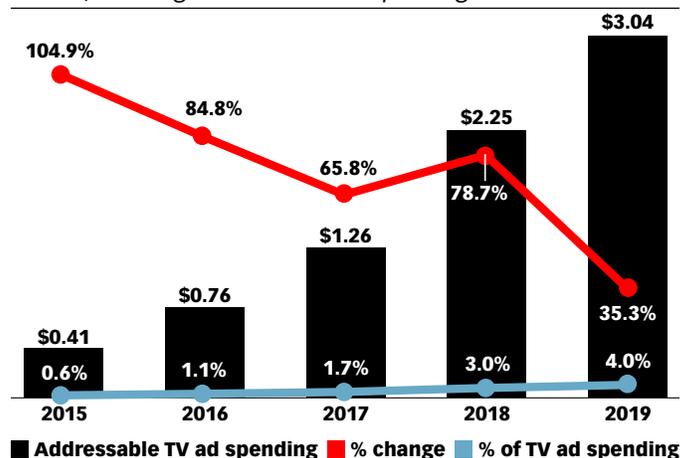
TELEVISION UPDATE H2 2017: ADVANCED TV'S PROGRESS

Advanced TV—which includes addressable, programmatic, and over-the-top (OTT)—continues to build momentum. **The TV marketplace is better prepared to transact in a digital-like manner due to sophisticated targeting that is driven by data and automation.**

- There are many subsets of advanced TV, but what they all have in common is the expansion of TV's capabilities beyond what was possible with just an analog signal and a receiver. Addressable, programmatic, OTT and interactive are all examples.
- Superior return on investment (ROI), driven by data-enriched targeting, will combine with an increase in available inventory to drive demand for addressable advertising. Simplifying addressable planning and buying could be an additional growth catalyst.
- Programmatic TV (PTV) ad spending is expected to reach \$3.80 billion in 2019 from a current level of \$1.13 billion in 2017. PTV buys are being transacted with a variety of inventory types, including premium linear inventory.
- PTV front-end planning systems that link available inventory to advanced targeting descriptions are informing TV buys. Fully automated transactions, however, are not yet a reality, as order execution systems are yet to be integrated with planning tools.
- Standardization among advanced target definitions, data sources and buyer-seller deal parameters will be necessary for the volume of PTV transactions to increase to a meaningful level.
- OTT shows promise as an ad medium, despite the currently limited audience size and ad inventory. The emergence of DirecTV Now, Sling TV and other virtual multichannel video programming distributors (vMVPDs), which offer lower-cost skinny bundles of content, may help expand the market. Surfacing relevant content for OTT viewers is one important way to increase their viewing time, and both Hulu and Roku (among others) have created tools for this purpose.

WHAT'S IN THIS REPORT? This report contains growth estimates and outlines the key drivers for addressable TV, PTV and OTT advertising.

US Addressable TV Ad Spending, 2015-2019 billions, % change and % of TV ad spending



Note: targeted TV ads delivered on a home-by-home basis via cable and satellite boxes; includes video-on-demand (VOD); excludes connected TV, smart TV and over-the-top (OTT)
Source: eMarketer, July 2017

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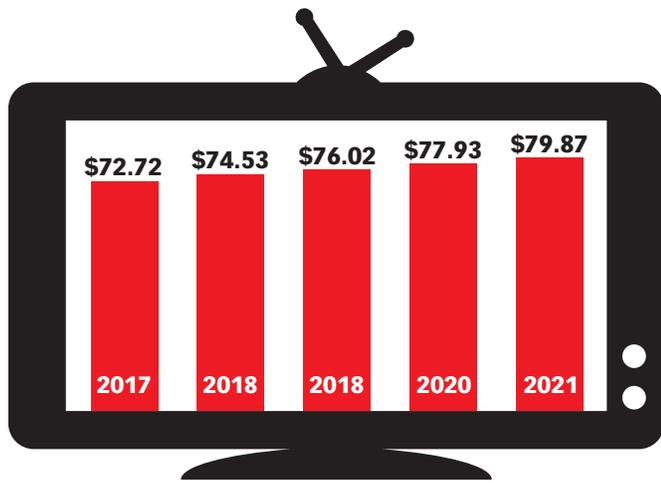
KEY STAT: US addressable TV ad spend is expected to grow from \$1.26 billion this year to \$3.04 billion by 2019.

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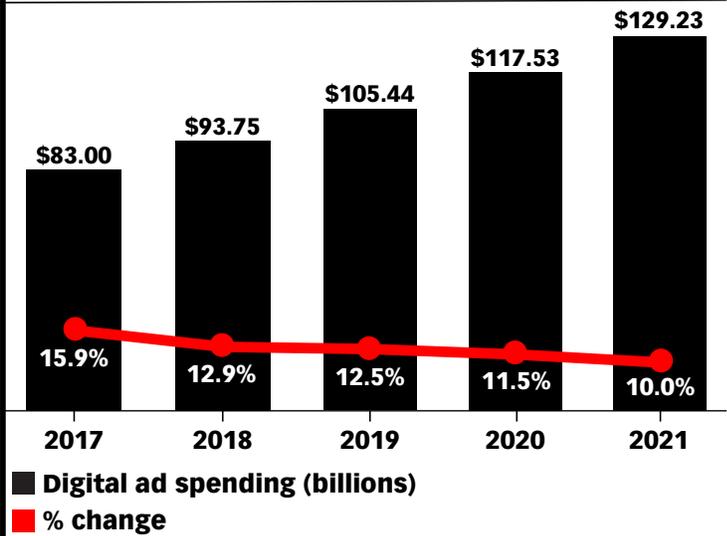
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eMarketer's H2 2017 TV Dashboard

US TV Ad Spending billions



Digital Ad Spending billions and % change



TV Audience millions

	2015	2016	2017	2018	2019
TV viewers	234.2	234.7	234.9	234.5	234.1
—Millennial TV viewers	67.9	70.8	73.6	76.2	75.2
TV households	116.0	116.1	116.1	116.1	116.1
Pay TV households	99.6	97.7	95.3	93.1	91.2
—Cable households % of pay TV households	55.2%	55.9%	57.0%	57.8%	58.5%
—Satellite households % of pay TV households	32.7%	33.2%	33.2%	32.9%	32.7%
—Telco households % of pay TV households	11.1%	10.0%	9.0%	8.4%	8.0%
—Multiple pay TV connection households % of pay TV households	1.0%	0.9%	0.9%	0.8%	0.8%
Non-pay-TV households	22.0	24.6	27.8	30.7	33.4
—"Cord-nevers" % of non-pay-TV households	71.1%	66.9%	61.5%	57.9%	55.0%
—"Cord-cutters" % of non-pay-TV households	28.9%	33.1%	38.5%	42.1%	45.0%

Note: TV ad spending includes broadcast TV (network, syndication & spot) & cable TV; excludes digital. Digital ad spending includes advertising that appears on desktop and laptop computers as well as mobile phones, tablets and other internet-connected devices on all formats mentioned; includes classifieds, directories, display (banners/static display, rich media, sponsorships and video, including advertising that appears before, during or after digital video content in a video player), email, search (paid listings, contextual text links and paid inclusion), mobile messaging (SMS, MMS and P2P messaging) and lead generation (referrals); data up to 2014 is derived from Interactive Advertising Bureau (IAB)/PricewaterhouseCoopers (PwC) data. Adult TV viewers are individuals ages 18+ who watch live or recorded video on a TV set at least once per month; includes DVR and other prerecorded video such as video downloaded from the internet but saved locally. Millennials are individuals born between 1981 and 2000. Only Millennials over age 18 are included in the TV viewer and TV time spent figures. Pay TV households are those with a subscription to traditional pay TV services; excludes IPTV and pure-play online video services (e.g., Hulu, Netflix, YouTube, etc.). Traditional pay TV services include cable, satellite, telco and fiber operators, multiple system operators (MSOs), multichannel video programming distributors (MVPDs), and major TV broadcast and cable networks. Non-pay-TV households are those that have cancelled their subscription or have never had traditional pay TV services. Cord-cutter households are those that have cancelled their subscription and no longer subscribe to traditional pay TV services. Cord-never households are those that have never had a subscription to traditional pay TV services.

Source: eMarketer, 2017

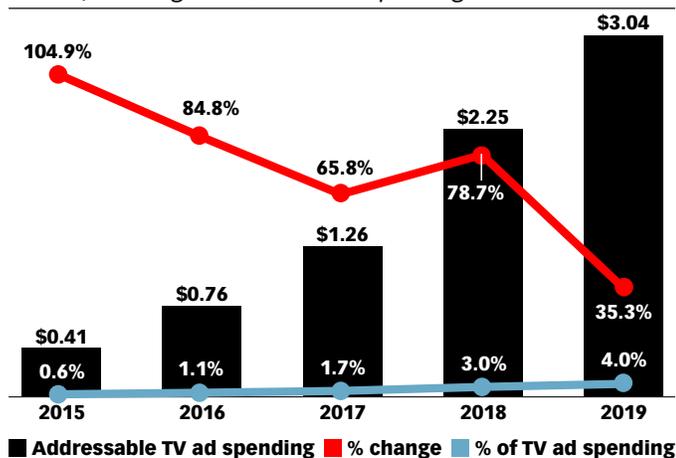
ADDRESSABLE TV

Demand for addressable TV advertising—the ability to deliver different commercials to individual households based on specific consumer targeting criteria—has been steady, but may accelerate during the next couple of years. Superior ROI, and the potential for an expansion of both available addressable inventory and the number of households that can be reached could both be drivers of this growth.

Addressable targeting aims to improve advertising effectiveness by reducing or eliminating the number of ads shown to people who are unlikely to ever purchase an advertiser's product or service. Right now, addressable ad buys typically supplement national TV plans, because they can only work with the subset of homes that are addressable-enabled. This additional addressable advertising layer means that ads reach in-target households more frequently, thereby reducing wasted ad impressions and improving the overall advertising impact.

US addressable TV ad spending is expected to reach \$3.04 billion in 2019, more than double its 2017 level of \$1.26 billion, eMarketer estimates.

US Addressable TV Ad Spending, 2015-2019
billions, % change and % of TV ad spending



Note: targeted TV ads delivered on a home-by-home basis via cable and satellite boxes; includes video-on-demand (VOD); excludes connected TV, smart TV and over-the-top (OTT)
Source: eMarketer, July 2017

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Definitions

Below are some of the most important terms used in this report.

Advanced TV: Television paired with technology that allows for new features, components or uses. Addressable, programmatic, over-the-top (OTT) and interactive are all subsets of advanced TV.

Addressable TV advertising: Targeted TV ads delivered on a home-by-home basis via cable, satellite and telco boxes. It includes both linear and video-on-demand (VOD) delivered in this way, but excludes connected TV, smart TV and OTT.

Programmatic TV (PTV) advertising: An automated, technology- or data-driven method of buying linear and OTT TV ads, both broadcast and cable, including those that appear on timeshifted TV, or recorded on a DVR or available through VOD.

Over-the-top (OTT): Any app or website that provides streaming video content over the internet and bypasses traditional distribution; examples include HBO Now, Hulu, Netflix and YouTube. Traditional distribution includes IPTV, cable, satellite, wireless carriers and fiber operators, multiple system operators (MSOs), multichannel video programming distributors (MVPDs), and major TV broadcast and cable networks.

Linear OTT: An OTT service that delivers content from multiple TV, cable or satellite channels in real time.

Connected TV: A TV connected to the internet through built-in capability or through another device such as a Blu-ray player, game console or connected device (e.g., Apple TV, Google Chromecast, Roku).

Smart TV: A TV with built-in internet capability.

Subscription video-on-demand (SVOD): Defined by Technopedia as "a service that gives users unlimited access to a wide range of programs for a monthly flat rate."

Multichannel video programming distributors (MVPDs): Service providers that deliver programming over cable, satellite, or wireline or wireless networks.

vMVPDs: "Virtual" service providers such as Sling TV, DirecTV Now and Sony PlayStation Vue that deliver linear programming over the internet.

Pay TV: Television programming delivered by cable, satellite, telco or fiber operators, MSOs, MVPDs, or major TV broadcast and cable networks.

TV Everywhere (TVE): A streaming service operated by a TV, cable or satellite network—or by an MVPD—that requires users to authenticate their pay TV subscriptions in order to access the content.

KEY DRIVERS OF ADDRESSABLE TV AD SPEND

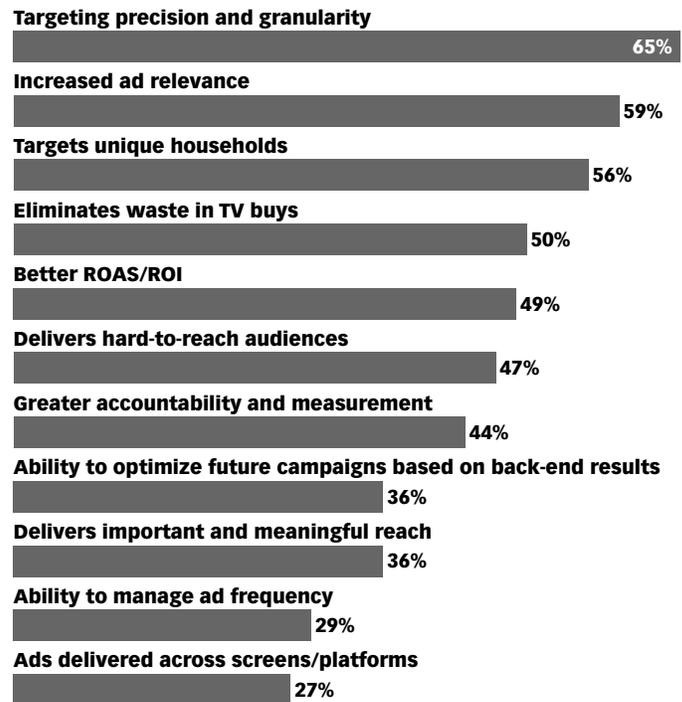
Data-enriched targeting continues to be a major reason that addressable TV advertising is in such demand. Data from third parties that can match up TV viewing data with household purchases can help ID homes that are more likely to buy other products and services. For instance, marketers have generated significant sales lift by sending additional diaper advertising to households of young families rather than empty nesters.

Advertisers cited such targeting precision as the No. 1 benefit of addressable TV, according to "Ahead of the Curve: Addressable TV Insights," a March 2017 survey of 150 US addressable TV decision-makers that was funded by AT&T AdWorks and conducted by Advertiser Perceptions.

This household-level targeting is made possible by "enriching" viewing information with consumer transaction data, first to pinpoint the households that are the prospects, and then to monitor the sales impact after the campaign has run. In effect, precision targeting is a means to achieve the ultimate advertiser end goals: improved return on ad spend (ROAS) and better accountability, which were found to be among the top benefits of addressable TV in the AT&T and Advertiser Perceptions research.

Leading Benefits of Addressable TV Ads According to US Addressable TV Decision-Makers, March 2017

% of respondents



Note: n=150; top 5 responses
 Source: AT&T AdWorks and Advertiser Perceptions, "Ahead of the Curve: Addressable TV Insights," June 22, 2017

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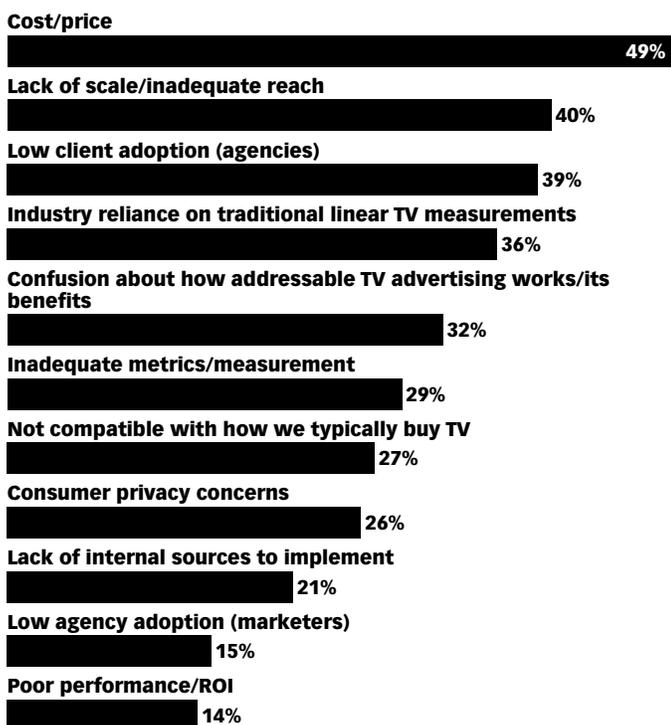
Advertisers in data-rich categories have become regular addressable dabblers—after all, they are the ones with the data such campaigns require. Eric Schmitt, senior vice president of advanced TV for Acxiom, a third-party provider of consumer transactional data used in addressable TV targeting, said the automotive and financial services industries are above-average users, followed by retail and consumer packaged goods (CPG). Beyond that, Schmitt asserts that the long tail of other industries dipping their foot in the water is growing, as with quick-service restaurants, big-box retailers and some pure-play digital advertisers.

COST AND SCALE: TWO MAJOR INHIBITORS TO GROWTH

The enthusiasm for addressable TV is tempered by some very real barriers. The "Ahead of the Curve" study found that cost/price was named by nearly half of respondents as an obstacle to greater investment in addressable TV. Two in five advertisers surveyed named limited scale or reach as an obstacle.

Leading Obstacles to Increasing Addressable TV Ad Spending According to US Addressable TV Decision-Makers, March 2017

% of respondents



Note: n=150; top 5 responses

Source: AT&T AdWorks and Advertiser Perceptions, "Ahead of the Curve: Addressable TV Insights," June 22, 2017

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Here are some other factors that brands and agencies consider when thinking about including addressable TV as a part of their campaigns:

Addressable costs more, but it may be worth it. Most addressable inventory has a higher cost per thousand (CPM) than standard national age- and gender-targeted inventory. However, media agencies and advertisers must weigh this additional cost against achieving a lower addressable, or advanced target, CPM.

For example, a yogurt marketer might pay a \$20 CPM to reach women 18-49 as part of a base national TV plan. Paying to reach women 18-49 in addressable households may cost \$24, or 20% more.

Using an advanced target of medium to heavy yogurt buyers among addressable households, however, might come in at a \$45 CPM, vs. the \$60 effective CPM required to reach the same people via a national buy. That \$45 CPM therefore represents a 25% discount over what a national buy would cost: A much higher concentration of addressable ad impressions were in-target.

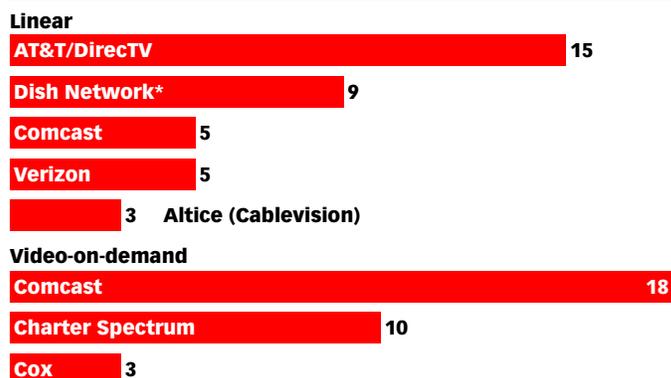
Growth in the number of addressable households.

During the past year, the total number of addressable TV households in the US has grown significantly, increasing to 68 million homes in 2017 from last year's 50 million, according to estimates from one2one Media. This growth is sourced mainly from the MVPDs that moved into addressable early: Dish Network, AT&T AdWorks/DirectTV and Altice (formerly Cablevision). (eMarketer's own estimates are somewhat higher, at 68.0 million in 2016 and 74.0 million this year, though directionally similar.)

Within the same period, the number of linear TV addressable homes rose dramatically (54%) from 22 million to 37 million, representing 31.3% of the 118.4 million US TV households, as estimated by Nielsen. AT&T/Direct TV and Dish Network, with a combined 24 million homes, account for nearly 65% of linear addressable households. If Comcast, the largest cable MVPD, lit up some or all of an additional 18 million linear homes, that would be a tipping point for linear addressable expansion, according to Jonathan Bokor, senior vice president and director of advanced media at Publicis Media. But no clear implementation date has been targeted. Comcast's addressable capability, like Charter Spectrum's, is focused on VOD advertising.

US Addressable TV Households, by Provider and Type, 2017

millions



Note: total addressable TV households in 2017=68 million; *includes Sling TV

Source: one2one Media, May 9, 2017

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Potential new sources of addressable inventory. It's true that the number of addressable households will likely soon increase enough to allow for higher target reach—and potentially greater business impact. Addressable TV's adoption could be helped even more by gaining additional access to TV inventory beyond the 2 minutes of local time per hour doled out by the MVPDs. Addressable purveyors

have been after some of the 15-plus minutes for hourly national TV for several years, but this is unlikely in the near future.

Sorenson Media, a firm specializing in video technology, is pioneering a new form of linear addressable TV advertising by overlaying household-targeted ads on purchased linear inventory designated as “replaceable.” Marketers and broadcast companies have agreed that in households where there is a smart TV connected to the internet, such ads could be replaced with targeted addressable ads in exchange for other inventory of equal value at a discounted rate. Non-smart-TV homes will always see the underlying spot, however.

To start, broadcasters will make their own TV promo inventory replaceable. The swap is triggered when a household meets an advertiser’s targeting requirements and inventory categorized as replaceable is about to air. The replaceable process occurs via software applications in smart TVs, not set-top boxes. Sorenson has forged alliances with TV set manufacturers as well as broadcast companies for developing this capability. One key benefit of the approach is the ability to execute on both national and local broadcast TV, expanding the places where addressable is available.

In Q4 2017, Sorenson plans to roll out replaceable ads in 18 million homes. “We are finalizing integration with a couple of smart TV platforms, and [are] now in the completion phase of beta testing just to make sure that everything works well together,” said Stefan Maris, Sorenson’s senior vice president of marketing and partnerships.

Meanwhile, NBCUniversal is selling dynamic insertion addressable VOD inventory in households subscribed to Comcast, NBCUniversal’s parent company. Under this scenario, TV ads are served on the fly to specific homes that meet advertisers’ targeting criteria. Currently there is no indication from any of the major TV network groups that linear addressable inventory comes from the national TV time; this capability would require complex agreements between the TV network groups and distributor MVPDs.

IMPLEMENTING ADDRESSABLE: MAKING THE HEAVY LIFTING EASIER

Planning and buying addressable advertising continues to be thorny, requiring the composition of complex addressable target audiences, the integration of third-party data sources, coordination across multiple MVPDs, and often intricate measurement setups to gauge effectiveness. Simplifying the process and the labor costs that come with it would almost certainly attract more ad spend.

“[The] hardest part is all the planning that goes into it before: defining the segment, matching the data, running the counts, figuring out what the appropriate segment is, determining how it’s best going to be measured,” said Michael Bologna, president of one2one Media, which provides an addressable advertising service for agencies and brands. To help demonstrate the intricacies of the addressable TV process, here are the steps that might be required to advertise a midsize pickup truck:

- 1. Create a target audience.** An advertiser needs to establish a consumer segment description that meets campaign objectives, such as targeting those buying or using a competing brand, or existing high-value customers, or consumers of specific product models or line extensions. Expanding or contracting the target audience can have a significant impact on sales results. For example, Maria Dunsche Mandel, vice president and head of marketing at AT&T AdWorks, recalled an instance in which a truck advertiser chose to narrow its consumer target from trucks to pickup trucks to drive increased sales lift within the more precisely targeted homes.
- 2. See what’s feasible.** Will the likely return on the addressable TV campaign cover or exceed the premium such campaigns require? Here are some of the most important points to consider in that vein:
 - **Cost-effectiveness:** The addressable effective target CPM must be lower than what could be purchased through national media, as it was in the yogurt example outlined earlier. The truck campaign would require a similar cost-benefit exercise.

- **Target audience size:** Is the target small enough to be distinct from the general population, but large enough for an addressable media investment to make sense? For example, owners of midsize Subaru pickup trucks that are more than seven years old likely account for a very small share of the population—perhaps less than 1% of households. Exclusively targeting these people would probably result in missing the chance to advertise to many others in the market for a midsize pickup truck.
- **Data and measurement:** Implementing 1:1 household-level addressable TV buys requires access to individual households' consumer information to determine whether they meet targeting criteria. Targets can be quite granular, but data for smaller consumer target segments, when matched with TV viewing data sources, can sometimes render too few homes to provide a valid indicator of campaign performance. The same data sources used for addressable target creation must be depended on for tracking sales lift.

3. Send out requests for proposals (RFPs). Every MVPD sells its addressable TV commercial inventory separately to media agencies, who must then piece together the transactions to achieve a consolidated buy. So, for example, a campaign running on AT&T/ DirecTV, Dish, Altice and Comcast requires four separate negotiations over price, four target sizings and ultimately four tracking and measuring efforts, all to be rolled up into one performance report. All these campaign requirements need to be ironed out ahead of time. Some sort of unified consortium across MVPDs would simplify things, but is not likely to happen any time soon—if ever. “You would need the MVPDs to simulate an open addressable marketplace by pooling their inventory into one transactional platform,” offered Publicis' Bokor. For now, media agencies must go one by one to MVPDs.

4. Campaign execution and measurement setup.

Addressable TV campaigns are usually layered on top of national TV base plans, so the effect of the addressable portion needs to be measured separately. Let's assume that the campaign targets households with owners of midsize trucks that are three or more years old. To isolate the addressable impact, a small portion of these target homes in the addressable footprint are designated as control households and receive no addressable brand advertising. The test target homes, by contrast, receive brand advertising. Any sales lift among the test homes above and

beyond that found in control homes is attributed to the addressable TV campaign, not national campaign advertising, which would have reached all addressable households at about the same rate.

5. Campaign results. The advertiser/media agency must collect and roll up all results across individual MVPD buys. CPMs for the effective target (pickup truck owners) and standard age/gender CPMs are reported and compared with historical benchmarks for the pickup truck brand. Additionally, sales lift in the target test homes is compared with changes in sales within the control group. Sales increases among both test and control groups are common, but the additional advertising weight in the test homes often sharpens the lift.

The intricacies of this process have prompted media agencies to form groups to help create industry standards and turnkey execution for the addressable video market. one2one Media's Bologna noted the challenge: “There is no software made for coordinating addressable, and no one-size-fits-all process. We are looking to streamline and shape this process.”

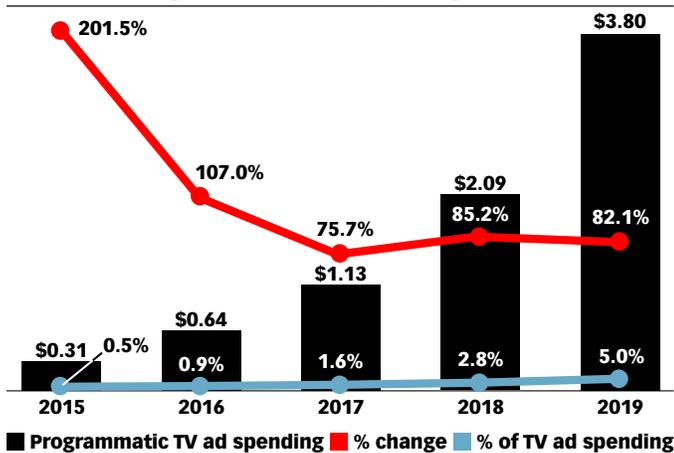
PROGRAMMATIC TV (PTV)

PTV—the automated, technology- or data-driven way of buying linear TV inventory—includes everything from TV ad dollars invested in reaching addressable TV households (often facilitated via cable and satellite set-top boxes or VOD capabilities) to instances where data and some automation might be used to inform and optimize linear TV audiences and ad buys.

Two fundamental elements make PTV distinct from more manual ways of buying: First, high-scale automation of transactions that follow buyer-seller specifications and second, the capacity for data-driven, audience-based buying using third-party data. Tools and systems have been built to facilitate the front-end data-driven planning aspect of programmatic TV, where advanced targets and TV inventory come together to help construct TV ad schedules. However, fully automated transactions are not yet a reality, as order execution systems are not yet integrated with planning tools.

PTV ad spending in the US is likely to gain momentum over the next couple of years. eMarketer estimates that outlays will total \$1.13 billion in 2017 and increase to \$3.80 billion in 2019, accounting for 5.0% of the total US TV ad market at that point.

US Programmatic TV Ad Spending, 2015-2019
billions, % change and % of TV ad spending



Note: the use of software platforms to automate the buying, selling or fulfillment of live TV and VOD advertising, distributed through cable, satellite or broadcast networks
Source: eMarketer, July 2017

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PTV transactions can include all types of linear TV inventory. The method holds great potential for advertisers that purchase TV commercial time across 40 or 50 of the

212 local US TV markets, for example, by reducing the labor required to buy in each individual market. And the data-enriched, advanced targeting inventory now available for on-demand content from MVPDs, OTT and other addressable advertising is well-suited for PTV.

clpyd, which creates intermediate software for PTV transactions, is now helping to facilitate premium national programmatic buys for 53 TV networks. Of these, 37 are releasing inventory into an open marketplace where media agencies can buy advanced targets across the entire group. The remaining 16 networks transact within a private marketplace, where one buyer and one seller conduct business.

THE ROAD TO AUTOMATION

Looking at a typical example of programmatic TV ad buying as it stands today will help show what's been achieved and what still needs to happen to improve the process:

1. First, the media buyer and media seller must agree on **terms and requirements** for the campaign. These are the most important components of a TV ad deal:
 - **Target audience:** The buyer and seller define this with two components—the standard age/gender demographics and advanced TV targets. Together, they form the basis for audience guarantees. A golf equipment advertiser, for example, might identify men 35-64 as the standard target, while defining the advanced target as adults who golf six or more times per year.
 - **Gross ratings points (GRPs):** The sum of all campaign ad impressions expressed as a percent of a target population. Each GRP represents 1% of the target, and the total can be over 100 when there's an overlap of ad exposure due to repeated viewings.
 - **Audience guarantees:** How good is good enough when it comes to delivering the target audience? If a shortfall results, the programmer will typically provide a "make good," or additional inventory to make up for it. If, for example, a show's actual GRPs for men 35-64 were 7 percentage points less than agreed on, meaning that viewership included 7% fewer people in that group than expected, then the TV network would issue a 7% inventory credit for additional airings of the commercial. Buyers and sellers must also agree on whether a similar guarantee applies to the advanced TV target.

- **Data sources:** Nielsen is the default when it comes to age/gender audience estimates, but both parties need to agree on advanced target sources, which may include third-party data providers such as Acxiom, Experian and Nielsen Catalina. Custom, first-party data from a marketer may also be used.
- **Pricing:** The buyer and seller establish plausible price floor and ceiling ranges so that overall CPM goals can be achieved. For example, a media agency may specify that it will pay no more than a \$22 CPM for adults 18-49, while a seller would set a minimum inventory price of \$10 CPM. The final cost is likely to be close to the middle, around \$16.
- **Inventory transparency:** Both parties must agree on what exactly the inventory consists of. For instance, some inventory might be defined down to the day/date and air time on a program-by-program basis, while others may specify more general dayparts or time periods, with little to no program specificity. The more specification, the higher the CPM is likely to be. Many experts believe that without a decent amount of transparency about what's being bought, it will be difficult for programmatic transaction volume to grow. "If you want to limit PTV scale, [a lack of transparency is] a perfect recipe," wrote Chris Peterson, managing partner of media agency R2C Group, in a column for AdExchanger.

2. Pre-buy TV ad schedule. After the terms are agreed on, the buyers input the GRP goals for the target audience, daypart GRP levels and advertiser restrictions on specific content into pre-buy software, which builds a TV schedule that maximizes advanced target GRP delivery. It does this by purchasing inventory that is more likely to reach golf equipment purchasers, while also maintaining GRP goals for the standard target. For example, the goal for adult buyers of golf equipment (the advanced target) could be 440 GRPs during August 2017, while the goal for men 35-64 overall (the standard target) might be 400 GRPs. In this case, the advertiser specified a plus-10% advanced target advantage, which translates to an additional 40 advanced target GRPs ($440/400=1.10$).

3. Proposal review and revision. Buyers evaluate the TV schedules generated by the PTV planning system, and adjust them if necessary to meet their audience delivery and cost guidelines. For example, the buyer may ask the seller to revise overall pricing, or to place additional ads on particular networks or in select

dayparts, or to modify the ads' timing. These revisions are largely manual and are likely to take several iterations before they are ready for the next step.

4. Order placement and trafficking. After proposal revisions are finalized, ads are trafficked to the TV networks included on the buy for scheduled placement. Order placement remains largely manual: Current TV network sales order systems were designed to process just standard age/gender target transactions, and the ability to accommodate advanced targeting orders is still in its infancy.

5. Order reporting and stewardship. The commercials finally air on the various networks, and audience delivery reports are automatically generated to comply with the terms in step one. However, buyers can also pull customized reports as often as they need to.

THE STANDARDIZATION STRUGGLE CONTINUES

Programmatic TV is at its most automated in step two in the previous example, when advanced targeting data can be linked with sellers' inventory. As noted, the multiple schedule revisions in step three are almost entirely manual. Order and placement poses the biggest challenge to automation, as legacy processing systems on the TV network side need to connect with the intermediary planning systems.

A fully automated PTV process is likely at least two to three years off in the future, as work continues on building out sales system back ends.

The expanding diversity of target audiences made possible by PTV will require streamlining and standardization if the volume of transactions is going to increase significantly.

These are the key issues that need to be resolved if such targeting is to grow meaningfully beyond current levels:

Target definitions: Buyers and sellers currently use standard age and gender target definitions (such as women 25-54) as a base for TV commercial transactions. Perhaps advanced TV targets should be defined more consistently—for example, "auto intenders" (those who intend to buy an auto within a certain amount of time) may need to always be the same group, regardless of data sources or the make/model of car they are after.

OVER-THE-TOP (OTT)

Data source quality and utility: Advanced TV target viewing and consumer data can be drawn from many different sources. How do they stack up regarding sample size, data collection methods, data cleaning, population representation, recency, reporting frequency, reporting timeliness, modeling techniques and modeling validation?

Planning and deal parameters: Buyers and sellers must agree on an advanced target audience universe for audience guarantees prior to TV campaign execution, as well as for post-campaign evaluation. Does the consumer target universe stay fixed over time, or would it float according to universe changes during and after the campaign?

A number of industry trade organizations are beginning to address PTV and advanced targeting standardization issues. The Advanced Target Standards Group (ATSG), which began with core representation from major TV networks, now includes advertisers and media agencies. Its key standardization initiatives include target definitions, data source quality and planning/deal parameters. The Coalition for Innovative Media Measurement (CIMM), funded by advertisers, TV networks and media agencies, is dedicated to the development of TV audience and cross-media measurement. Finally, the Interactive Advertising Bureau (IAB) has an Advanced TV Committee that puts forth and executes industry initiatives to facilitate the modernization of the television ecosystem, regardless of how the content is delivered.

Paid advertising is in its nascent stages within the OTT environment, as marketers stand by for larger OTT audiences and more ad inventory availability. vMVPDs such as DirecTV Now, Sling TV and Sony Playstation Vue have emerged, offering lower-cost skinny bundle programming while also promising to expand OTT ad inventory and drive viewership. OTT offers digital-like targeting capabilities made possible by streaming technology.

OTT'S PROMISE FOR ADVERTISERS

More and more marketers are coming to believe that all TV programs' content and advertising will eventually be streamed through IP-based connected devices, allowing more precise targeting and advertising execution. Using such technology would allow them to "buy across all networks, and use a single methodology, and retain control over the optimization," according to Publicis's Bokor.

The prospect of MVPDs replacing millions of set-top boxes with pure-play streaming technology, however, is unlikely—at least in the near future. The more immediate scenario is one in which streaming capability continues to grow but coexists with set-top boxes, as MVPDs look to more fully amortize their considerable investments in set-top box technology.

eMarketer projects that about 52% of the US population, or 168.1 million people, will have access to a smart TV or other connected TV device in 2017, and this number is expected to increase to 194.4 million by 2021. The annual growth rate will level off to under 10% starting next year.

US Connected TV Users, by Device, 2016-2021

	2016	2017	2018	2019	2020	2021
Connected TV users (millions)						
Smart TV	62.0	81.2	94.2	102.6	109.3	114.3
Connected game console	58.4	62.8	66.5	69.5	71.8	73.9
Roku	32.6	38.9	45.9	53.4	61.3	69.0
Google Chromecast	29.9	36.9	44.5	51.8	58.3	64.6
Amazon Fire TV	26.3	35.8	44.1	50.8	56.1	62.6
Blu-ray player	29.0	29.0	29.0	29.0	29.0	29.0
Apple TV	19.9	21.3	22.6	23.6	24.4	25.2
Total	152.7	168.1	181.5	188.1	191.6	194.4

	2016	2017	2018	2019	2020	2021
Connected TV user growth (% change)						
Amazon Fire TV	103.2%	36.3%	23.2%	15.1%	10.5%	11.5%
Smart TV	39.9%	30.8%	16.1%	8.9%	6.5%	4.6%
Google Chromecast	31.1%	23.4%	20.6%	16.3%	12.5%	10.8%
Roku	24.9%	19.3%	18.1%	16.4%	14.8%	12.5%
Connected game console	8.9%	7.5%	6.0%	4.5%	3.3%	2.9%
Apple TV	12.0%	7.2%	6.3%	4.3%	3.5%	2.9%
Blu-ray player	1.1%	0.0%	0.1%	0.0%	0.0%	0.0%
Total	10.9%	10.1%	8.0%	3.6%	1.9%	1.5%

	2016	2017	2018	2019	2020	2021
Connected TV user penetration (% of connected TV users)						
Smart TV	40.6%	48.3%	51.9%	54.6%	57.0%	58.8%
Connected game console	38.2%	37.3%	36.6%	37.0%	37.5%	38.0%
Roku	21.3%	23.1%	25.3%	28.4%	32.0%	35.5%
Google Chromecast	19.6%	22.0%	24.5%	27.5%	30.4%	33.2%
Amazon Fire TV	17.2%	21.3%	24.3%	27.0%	29.3%	32.2%
Blu-ray player	19.0%	17.3%	16.0%	15.4%	15.2%	14.9%
Apple TV	13.0%	12.7%	12.5%	12.6%	12.8%	12.9%

Note: individuals of any age who use the internet through a connected TV at least once per month
Source: eMarketer, July 2017

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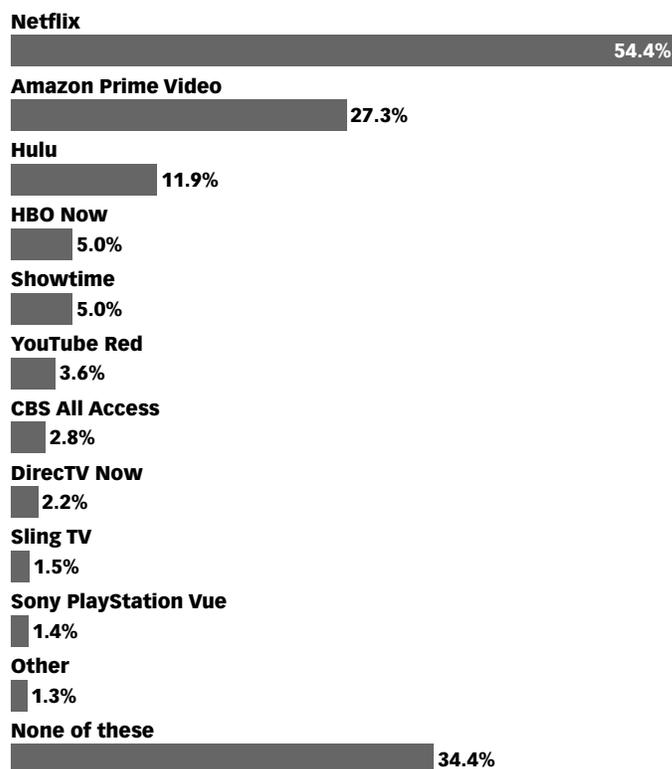
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During the next couple of years, the potential to increase OTT advertising dollars depends on the following drivers, some of which are more likely to occur than others:

More sources of ad-supported content. Most OTT content viewing on TV sets currently occurs in subscription-based environments with no advertising, as with premium services provided by Netflix, Amazon and Hulu. Other services, like “regular” Hulu and CBS All Access, still charge but also include a limited number of commercials. Next come the vMVPDs, with a base of 2.0 million subscriber households, about 1.4 million of which don’t subscribe to a traditional MVPD, according to Pivotal Research Group. vMVPDs serve as distributors for streamed or live ad-supported TV programming—much like that provided by cable, satellite and telco operators—and offer lower-cost skinny program bundles, which are becoming more popular. Beyond these larger players exist tens of thousands of app-based content sources that make up the OTT long tail. Some of the more prominent apps include gamer-centric Twitch, content aggregator Mashable and sports-oriented Red Bull TV.

Subscription Video-on-Demand (SVOD) Services Used by Internet Users in North America, Q1 2017

% of respondents



Note: ages 18+
Source: TiVo, "Q1 2017 Video Trends Report: Consumer Behavior Across Pay-TV, PVOD, OTT, TVE, Streaming Devices and Content Discovery," June 9, 2017

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Right now, OTT ad inventory amounts to a small fraction of linear TV commercial volume, although it is growing rapidly. The potential growth of vMVPDs may drive OTT advertising, and the decline in pay TV subscriptions is a possible sign that vMVPDs will grow in the near term.

OTT’s share of TV viewing increases. Marketers will likely gravitate toward OTT ad opportunities as viewership grows both in numbers and time spent watching content. Since the growth in the number of people with OTT access is expected to level off during the next several years, compelling content will be needed to attract and keep viewers coming back to the OTT environment. In order to drive up the amount of time spent with OTT content, viewers need a better way to find the content most likely to reflect their interests.

Viewers get more help finding content they like. Connecting viewers with the right content is a challenge in TV in general, and potentially more so for OTT, given the thousands of app-based content choices. Roku, which has 14 million installed connected TV devices, indexes hundreds of OTT channels to aid viewers in

EMARKETER INTERVIEWS

finding relevant content. “We recently introduced a new feature into the Roku operating system that powers smart TVs called More Ways to Watch,” said Scott Rosenberg, Roku’s senior vice president and general manager of advertising. “It identifies what show a user is watching, then proposes other ways to view an in-progress episode from the beginning on apps such as Netflix or Hulu. It also allows users to find other episodes of a series and surfaces recommendations for similar content.”

Hulu has pursued its own content map by purchasing an interest in The Video Genome Project (VGP), which has amassed video content metadata to help better classify specific subgenres. Hulu combines VGP metadata with its existing content recommendation engine to provide subscribers with relevant content options. YouTube, Amazon and Netflix have also developed highly sophisticated content recognition engines.

OTT operators increase their ad load. Last year, Turner Entertainment chief Kevin Reilly admitted that cable networks had “overstuffed the bird,” referring to the 16 or more commercial minutes aired during a typical hour of programming. The ad load on most OTT programming is about half the amount of linear TV advertising on national cable networks. Hulu allows approximately 8 minutes of advertising per programming hour, for example. So far, OTT programmers have resisted increasing the amount of ad time, since the lighter ad volume is a key part of the OTT value proposition.

Improved audience measurement. Right now, OTT lacks standardized, third-party audience measurement that can serve as a TV-like currency. Content providers in the OTT space can offer audience counts based on streaming activity logged on their own servers, but these numbers can’t be directly compared with Nielsen’s linear TV viewing estimates due to differences in data collection and reporting methods. Meanwhile, Nielsen is developing Total Content Ratings (TCR), a product that measures and reports viewing of TV programs from linear sources, connected TVs, and tablets and other second-screen devices. Companies like Roku and Hulu have entered into custom agreements with Nielsen to provide audience estimates, capturing ad impression counts for basic demographics like women 25-54. Roku claims to be the first OTT entity to offer audience guarantees for campaigns run on its platform.

Microtargeting. As mentioned previously, targeting is already a big reason that advertisers are drawn to OTT ads, and improving the precision of that targeting will only make the ads more attractive.



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