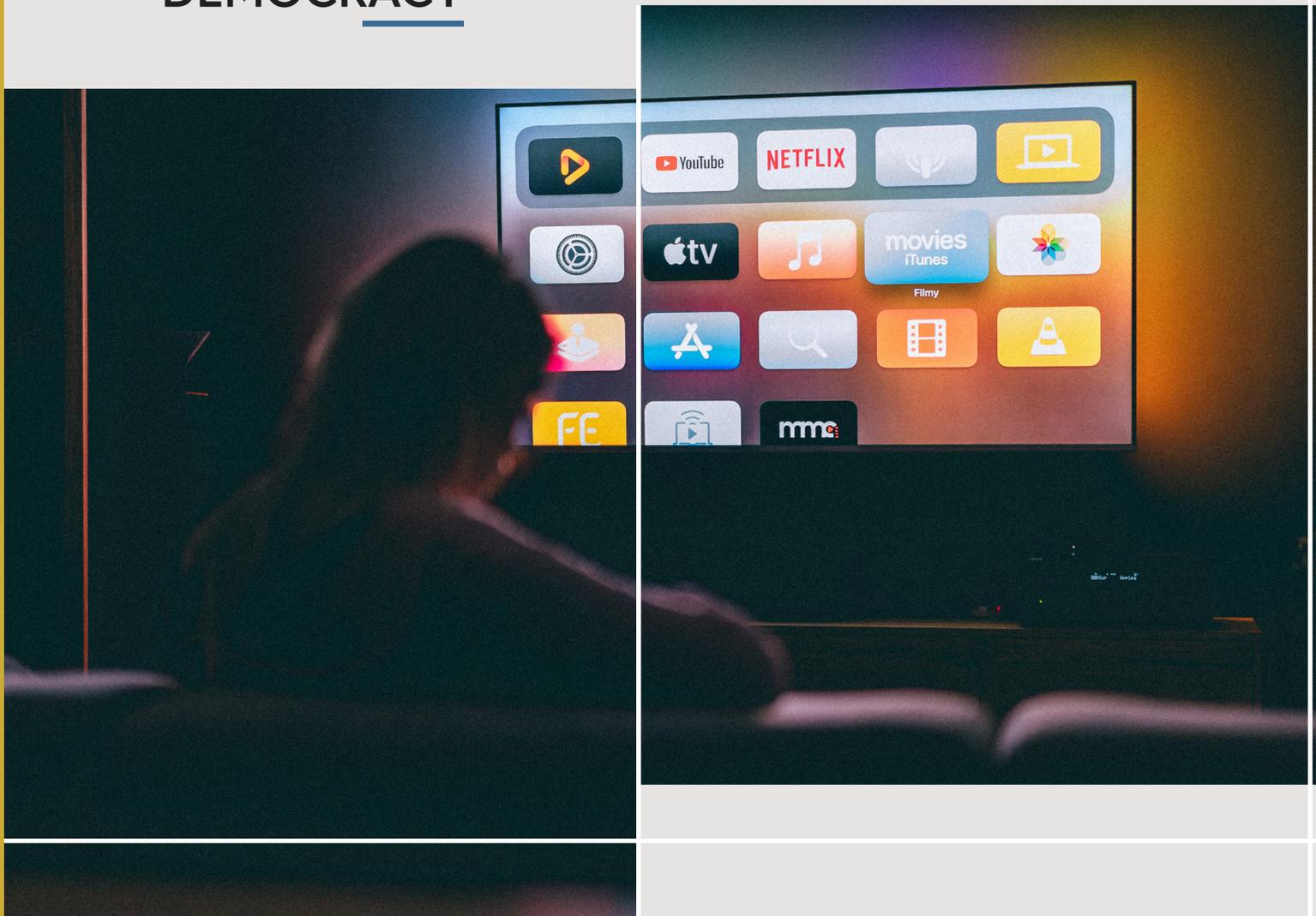


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How TV Watches Us

Commercial Surveillance in the Streaming Era

Jeff Chester
Kathryn C. Montgomery, PhD

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The Center for Digital Democracy's mission is to ensure that digital technologies serve and strengthen democratic values, institutions, and processes. CDD strives to safeguard privacy and civil and human rights, as well as to advance equity, fairness, and community.

Jeff Chester, CDD's Executive Director, founded the organization in 2001. He has been a communications policy advocate since the 1970s, playing a key role on communications and broadband regulation. The many policy issues he has advanced include internet privacy, digital marketing regulation, platform antitrust, and network neutrality.

Kathryn C. Montgomery, PhD, is Professor Emerita at American University's School of Communication, and Senior Strategist at CDD. Montgomery played a pivotal role securing the enactment of the Children's Online Privacy Protection Act (COPPA) in 1998 and has been a leader on many major TV and internet policy issues. She has written extensively about the role of digital media in society and is author of *Target: Prime Time. Advocacy Groups and the Struggle Over Entertainment Television* (Oxford University Press), and *Generation Digital: Politics, Commerce, and Childhood in the Age of the Internet* (MIT Press).

Among the many familiar icons popping up on television screens across the country is one for Tubi, a streaming service that has grown from a small start-up when it was launched ten years ago, to “one of the most popular streaming outfits in the United States,” according to a recent New York Times article, which tags Tubi as “the Little Streamer That Could.” Since Fox purchased the company in 2020 for \$440 million, Tubi has gained significant ground in the “streaming wars.” It now “consistently outranks Peacock, Max, Paramount+ and Apple TV+ in total viewing time,” the Times noted, and is “drawing even with Disney+,” with only YouTube, Netflix, Amazon and Hulu still ahead. The key to Tubi’s success is that it “runs a different business model from those competitors.” Relying solely on ad revenue, the service is offered free. With a library largely composed of “thousands of older shows and movies, many that seem to have been collected from the bargain bin,” Tubi appears to have come up with a winning formula.¹

In many ways, Tubi is the face of *connected TV*, which is now the dominant way that people get television in the U.S.² The free video service has created 270 FAST (Free Advertiser-Supported TV) channels, which feed a seemingly limitless supply of programming to its 78 million viewers, many of whom have either never had a cable TV subscription or are “cord-cutters” who no longer desire to pay considerable monthly fees. According to *The Hollywood Reporter*, Tubi has garnered an especially large audience of young, female, and multicultural viewers by catering to “top fandoms” such as horror and thriller, Black entertainment, Spanish-language and kids content.³

But Tubi is not just a TV programming service; it is a key player in a massive data-driven surveillance system that has transformed the television set into a sophisticated monitoring, tracking, and targeting device.⁴ While news articles like the one cited earlier reveal nothing about Tubi’s internal operations, one

need only read some of the company’s own descriptions to get a better understanding of how it actually functions. Tubi’s fundamental business model is based on harvesting rich and detailed information from its viewers, using the latest, state-of-the-art advertising technology (“ad tech”) tools. “We are an ad tech first platform,” the company boasts. “Everything we do is based on data.”⁵ Tubi promises advertisers access to “billions of rows of data on its customers,” gathered from their viewing behaviors.⁶ It works with some of the most important data brokers and ad-tech players in the industry—including TransUnion, LiveRamp, and The Trade Desk—to deliver data-driven and personalized target marketing through its hundreds of channels. Tubi’s data-engineering division works to ensure that Tubi can “personalize every aspect of the user’s experience, beginning with the content that they see, to how the content is displayed on the page to search,” and deploying “70+ machine learning models operating together behind the scenes.”⁷ Its in-

The connected television industry has become a central node in the expanding online digital marketplace, linking viewers to a vast infrastructure of sophisticated data analytics, monitoring, and ad-targeting systems.

house “brand and content studio,” Tubi360, enables marketers to engage in enhanced *product placement* by incorporating their brands directly into programming content to target individual viewers.⁸

The connected television industry has become a central node in the expanding online digital marketplace, linking viewers to a vast infrastructure of sophisticated data analytics, monitoring, and ad-targeting systems. Connected television makes it possible to capture and harvest viewer data in a multitude of ways—from the programs, channels and video “apps” we view; the content transmitted on the glass of our TV screens; and the growing number of interactive ad formats that increasingly dominate the streaming business. The principal method used by advertisers and publishers to buy and sell individuals online in milliseconds using computer-driven auctions—known as *programmatic advertising*—is now fully embedded in CTV.⁹ Through *generative artificial intelligence* and other emerging new technologies, CTV enables advertising to become omnipresent, targeting highly personalized pitches designed to influence viewers everywhere.¹⁰ These practices are being implemented through an expanding number of alliances and partnerships involving studios, networks, programmers, TV manufacturers, online platforms, data brokers, advertisers and technology companies. As we watch television, television watches us.

The transformation of television in the digital era has taken place over the last several years largely under the radar of policymakers and the public, even as concerns about internet privacy and social media have received extensive media coverage.¹¹ The U.S. CTV streaming business has deliberately incorporated many of the data-surveillance marketing practices that have long undermined privacy and consumer protection in the “older” online world of social media, search engines, mobile phones and video services such as YouTube. Millions of Americans are being forced to accept unfair terms in order to access video programming, which threatens their privacy and may also narrow what information they access—including the quality of the content itself. Only those who can afford to pay are able to “opt out” of seeing most of the ads—although much of their data will still be gathered. The capabilities of CTV also expose viewers to ads based on data profiles that can reflect highly personal and sensitive information—related to health, financial history, race or ethnicity, and political interests.

This report is designed to serve as a primer on current developments in the connected television industry, as well as a call to action, informing the U.S. public about the risks posed by this new system and the need for policy interventions at both the federal and state levels. We begin by offering a brief overview of the television industry’s evolution in the United States, which has placed this powerful medium at a critical crossroads. We then highlight six major trends that are emblematic of today’s connected TV marketplace. As we explain, all of these changes have significant and widespread implications—for consumer privacy, health, and democratic discourse. In the last section of this report, we lay out what is at stake during this critical moment in the history of the U.S. media system, identifying the threats and opportunities posed by these ongoing technological changes, and underscoring the need for clear policies to safeguard consumers and citizens, and to help guide the further evolution of this industry.

FROM OVER-THE-AIR TO “CTV”

Since its introduction over 75 years ago, the U.S. television industry has undergone several distinct phases. During its first decade, over-the-air TV went from a novel new technology to a mainstream mass medium, reaching nearly all American households by the end of the 1950s, and ushering in the era of broadcast network TV. Advertising was the business model from the outset, shaping the programming formats and content. This era continued throughout the next 20 years with little alteration in its basic business operations. In the 80s, the combination of coaxial cable and satellite technology brought us the second era of television, which spawned a growing number of specialized cable channels, many of them offering niche programming to narrower demographic groups. Some made-for-cable services promised unique programming content that was not available on broadcast television, including prestige cultural fare (e.g., Ovation) and non-commercial children’s content (e.g., Nickelodeon, first launched as Pinwheel). But while some channels like HBO continued to offer programming without advertising, the cable television industry soon embraced the advertiser model, which enabled more targeted marketing to lucrative segments of the audience, including children. With consumers paying a monthly fee for their cable connection services, this provided the industry with two streams of income. Cable television also introduced new forms of advertising and data collection, as the set-top devices required to link viewers to cable were equipped with *addressable TV* technology, enabling advertisers to track and target viewers with greater levels of granularity. With the emergence and growth of the internet era, television underwent yet another transformation, which took off in the mid-2000s, fostering a myriad of new programming services that bypassed both cable and broadcasting and were provided through the internet “over the top,” or “OTT,” as the industry called it, on *streaming channels*.

Streaming television was seen as an alternative to many of broadcast and cable television’s advertising-saturated channels. For example, Netflix was one of the first of these new channels, launching in 2007 as it transitioned from its popular DVD rental service, which relied on the U.S. mail system to enable consumers to access

a vast library of movies, documentaries, and other video programming. For a monthly subscription fee, viewers could escape the annoying interruptions of commercials and enjoy their favorite films or TV shows in their entirety. The proliferation of these paid internet-connected services over the last two decades helped usher in what many have called the second “Golden Age of TV,” spawning quality original programming and episodic series that did not rely on advertising for funding, and thus could venture into more edgy or controversial content that broke the earlier taboos that had constrained advertiser-supported program creation.¹²

As the streaming industry has evolved, its offerings have expanded to include not only subscription services such as Netflix and Amazon Prime, but also so-called *FAST channels* (Free Advertiser-Supported Television) offered by Tubi, Pluto, and Roku. Device manufacturers—such as Vizio, Samsung and LG and Amazon’s Fire—also began developing their own channels, which were joined by television versions of popular apps, such as YouTube TV. All of these services are part of what the industry now refers to as *connected TV*, or *CTV*, which has come to stand for the array of video content delivered through the internet to TV screens.¹³ CTV channels are distinct from more traditional forms of broadcast, cable and satellite television.¹⁴

With the sudden onset of the Covid pandemic in 2020, connected television experienced a dramatic rise in viewership, when hundreds of millions of Americans who were forced to stay in their homes found comfort and diversion in the vast number of channels offering a steady supply of movies, television series, sports, and other programming. These trends have continued over the last several years, as the industry has further expanded its offerings. In June 2024, Nielsen reported that “time spent streaming soared to 40.3% of total TV usage” that month, “topping the previous single category record set by cable in June 2021” and “notching the highest share of TV ever reported” by its company.¹⁵ And young people are at the forefront of this surge in viewership, with adults between the ages of 21 and 34, for example, spending nearly three-quarters of their TV viewing time watching streaming television.¹⁶ Streaming is now the dominant way that people get television in the U.S.¹⁷

KEY TRENDS RECONFIGURING THE CTV LANDSCAPE

As it continues to move further into the mainstream of American media, the connected television industry is being shaped in fundamental ways by the forces of big data, technology, and commerce into something far different from what it was when first introduced. We have identified six interrelated recent developments in the connected TV industry that are key to understanding the changing nature of contemporary television.

1. Advertising and data collection are now the driving force in the connected television industry, shaping all of its operations, influencing its program offerings, and spawning a new generation of channels.

With the rapid expansion of viewership, particularly among younger audiences, advertisers have swiftly moved to take advantage of the opportunities, investing more than \$25 billion in the U.S. in 2023, with expectations it will reach nearly \$41 billion in 2027. These trends are making CTV “one of the fastest-growing ad sectors,” according to Inside Intelligence.¹⁸ They are also accelerating growth and transformation in the industry. As of May 2024, there were “more than 5,000 channels across 18” streaming platforms in the U.S. alone.¹⁹ Many of these channels are aimed at specific target audiences, making them “an untapped gold mine of ad dollars,” since targeting can be done effectively, including through the use of consumer data profiles.²⁰ Leading CTV companies—including Disney+, Netflix and Amazon Prime—are now offering new alternative, low-cost tiers of their most popular programming with advertising included. According to one trade publication, these tiers, with their two streams of income, “tend to generate more revenues per user than ad-free tiers.”²¹

Advertising in the connected television industry—as with all of the digital media—is inextricably linked to data collection. CTV networks and programming services have built far-reaching operations and partnerships to maximize the harvesting of data in order to serve the interests of advertisers.

- For example, the Walt Disney Company has developed a state-of-the-art big-data and advertising system for its streaming operations, including Disney+. The company has amassed profiles on 110 million households and 260 million devices that can be targeted for advertising using “proprietary” and “precision” advertising categories “built from 100,000 [data] attributes.”²²
- Cable TV and entertainment industry giant Comcast operates an array of sophisticated data-driven digital marketing services for the streaming video industry.²³ Its subsidiary, NBCUniversal, claims to have acquired data on more than 200 million individuals 18+, more than 90 million households, and more than 3,000 behavioral attributes” that can be accessed for strategic audience targeting.²⁴

Since its initial launch nearly two decades ago, Netflix has changed dramatically, and is now a state-of-the-art advertising operation. It began offering customers a lower-cost ad-supported service in November 2022, initially partnering with Microsoft advertising, and is aggressively expanding its own data-driven marketing capabilities, including investing in a proprietary ad-tech system, scheduled for launch by the end of 2025.²⁵ The company has also signed deals with leading programmatic-ad-targeting partners—including Google and The Trade Desk. In a recent call with investors, Netflix executives said they were particularly proud of how well they were “monetizing” their programming through targeted marketing, and

CTV networks and programming services have built far-reaching operations and partnerships to maximize the harvesting of data in order to serve the interests of advertisers.



boasted of “the ability to put those advertisements next to content, titles, [and] stories that are impacting the social conversation.”²⁶ Netflix announced that it was now “giving advertisers new ways to buy, new insights to leverage, and new ways to measure impact,” including for fast-food, retail, auto, consumer goods, technology and entertainment brands. At its “Upfront” presentation to advertisers in May 2024, Netflix executives explained that the company was conducting “deep consumer research” to increase its knowledge of how its viewers responded to its ads. For example, it reported that its “members pay even more attention three hours into watching than they do when they first start,” and are “around twice as likely to respond to [a Netflix] ad compared to other streaming services and linear TV.”²⁷ With its series, movies, sports, and live events, Netflix vows to “give advertisers even more opportunities” to engage with fans of the programming, promising that “we’ll help you reach more fans and give you more access on-screen, off-screen, and during some of our biggest moments.”²⁸

FAST channels are one of the latest innovations, and are now becoming a dominant presence in the connected television landscape. The number of FAST channels available is skyrocketing.²⁹ Many are organized according to a schedule, as with broadcast and cable

FAST channels are designed to tap into a bonanza of data-driven advertising revenue streams.

television, which the industry refers to as *linear TV*.³⁰ FAST channels are designed to tap into a bonanza of data-driven advertising revenue streams. One of the key selling points for advertisers is that streaming CTV ads are largely “non-skippable” and can deliver a “full-screen” viewing experience.³¹ While these channels are a response to people curtailing their costly cable, satellite and paid-streaming-app subscriptions, the industry also sees them as a “gateway to paid services,” acting as a form of “sampler” or “front porch” that can lure potential future paid subscriptions and also help retain current fee-paying customers.³² By 2030, experts predict, there will be thousands of FAST channels offered by content providers, which will include advertisers creating their own programming.³³ Black, Brown, and Asian viewers are a key target for FAST channels. (See Sidebar: “Targeting Multicultural Viewers on FAST Channels.”)

2. Whether watching ad-supported or paid channels, viewers of connected television are subjected to comprehensive and ongoing surveillance of their viewing behaviors; through “identity graphs” and other new data-mining technologies, this information is merged with vast amounts of additional data, making it possible to track and target individuals across the online landscape, and offline as well.

Connected television has become an essential link in the expanding data collection, identity tracking and targeting industry, enabling the capture of what has become the most valuable kind of data sought by marketers. So-called *first party data* is information that a website, app, or other business collects from its users with whom it has a direct relationship. This data is obtained through an “opt-in” system, where consumers agree to its collection and use. With streaming television, consent can quite easily be obtained as a condition for signing up for service. Information about an individual’s viewing, shopping, and other behaviors then becomes fair game.³⁴ In most of these cases, viewers are completely unaware of what information is being collected or how it is used. In the growing digital marketplace, connected television is considered one of the most important sources of first-party data, along with loyalty programs gathered by retailers. Through a wide range of collaborative relationships with data brokers, *identity management* operations, and other ad-tech companies, an individual’s first-party streaming video data becomes a key part of one’s *universal ID*, enabling marketers to reach that person across the online world—on social media, mobile, gaming, and other platforms—and also when shopping in grocery and other “offline” retail stores.³⁵

The digital marketing industry has developed a number of tools for identifying and tracking individual consumers.

- For example, dozens of *cookieless IDs* have been developed that incorporate streaming video and device data into their profiles for advertisers, including Google, Amazon, Roku, Samsung and LG.³⁶ As data broker Experian explains, “Like cookies, cookieless IDs provide you with a comprehensive view of a consumer’s digital activity... that allows the advertising industry

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to maintain our understanding of consumers’ digital actions, helping to ensure we continue to generate smart, data-driven insights, targets, activation strategies, personalized experiences, and measurement and attribution.”³⁷ A recent industry analysis of CTV proclaimed that “unlocking value in the ecosystem” will enhance “efficiency and effectiveness” by “data linkage capabilities across providers and channels to connect... identity, demographic & behavioral data” for targeting.³⁸ In other words, marketers know how valuable consumer streaming information is, and are doing everything they can to mine and exploit it.³⁹

- Another key tool is the *identity graph*, which combines all the known information, including various IDs, about individuals so they can be targeted wherever they may be online or off. LiveRamp, which was spun off from data giant Acxiom, is a major player in the use of CTV data for its “RampID” system. As the company explains, its “people-based IDs” make it possible to “link individuals and households to the right digital identifiers including cookies, mobile device IDs, Advanced TV IDs, and user accounts at social networks. As a result, we are able to match online and offline data with a high degree of speed and accuracy.”⁴⁰ The company has an extensive set of partnerships with premium publishers, platforms and data providers, as well as geolocation, health, and financial companies, which it describes as “the building blocks of RampID.”⁴¹
- Data brokers are also involved in developing identifiers used for CTV.⁴² For example, Experian’s

“Syndicated Audiences” data service, which provides up to “2,300 average attributes per household,” is available for use by nearly all the leading CTV and streaming-media marketing companies, including Roku, NBCUniversal, Univision, Samsung and The Trade Desk.⁴³ Another data broker, TransUnion, has significantly expanded its power to deliver data-driven ads to CTV viewers, acquiring a set of companies to further leverage its far-reaching consumer data-profiling operations that reach 98 percent of the U.S. population. These acquisitions include the purchase of TruOptik and its “household-level identity, targeting and measurement” identity-graph system used for CTV. TransUnion also expanded its “TruAudience” consumer-identity system for marketers, which is supported by “advanced artificial intelligence (AI) to cluster identifiers into individuals and households and then score the strength of those identities” to be available for targeting.⁴⁴

Leading television and media companies are heavily invested in online identity enterprises. Comcast’s NBCUniversal (NBCU) division, which operates its well-known TV network and Peacock CTV service, has its own identification system as part of “NBCUnified.” NBCU’s identity platform “unifies the vast first-party-consumer data sets from across NBCU,” including from its “expansive network of consumer touchpoints across movies, entertainment, news, sports, ecommerce, subscriptions, theme parks” that, it says, is “generating a billion entertainment data points.” A key component of this data unification is the “NBCU ID—a persistent identifier of who a customer is to us over time and across touchpoints.”⁴⁵ Among NBCU’s many data-marketing alliances for CTV is the use of the “UDID 2.0” identity-profiling system for its Peacock streaming channel. “UDID” was initially developed by leading and CTV-focused ad-tech company The Trade Desk, which enables its clients to target individuals based on their CTV and other online behaviors, including through the use of AI. Now operated as an “open source” venture, UDID claims it simplifies “identity resolution at the household and the individual level,” enabling advertisers to “activate their first party data across” the internet. Among the leading companies using the UDID 2.0 system are Fox’s Tubi, Disney, Comcast, and Warner Bros. Discovery, Acxiom, Nielsen, Comscore and Experian.⁴⁶

This dizzying array of advertising technologies, tools, and software has created a vast and unprecedented system for ongoing surveillance within the connected television industry, which operates almost entirely under the radar of viewers or the public.

3. In the world of connected TV, viewer surveillance is now built directly into the television set, making manufacturers central players in data collection, monitoring, and digital marketing.

No longer a neutral conduit of programming, the television set itself has become an integral part of the connected TV commercial surveillance system. Major manufacturers are able to leverage their control over these appliances in order to gather and monetize extensive data from viewers, including the programs they watch, the digital devices they use, and their shopping behaviors. These companies can easily gain access to such valuable first-party data when consumers follow the consent process as they set up their TVs. This information is further enhanced through a string of partnerships with data brokers. As explained earlier, set manufacturers are also now offering their own FAST channels to capture even more data that can be sold to advertisers.

One of the key surveillance tools used by CTV is *automatic content recognition (ACR)*, software technology built into a smart TV set that tracks and analyzes the content and advertising appearing on its screen.⁴⁷ As trade publication AdExchanger describes it, “ACR is integrated within a TV’s operating system, where it captures frame-by-frame screenshots of content. ACR ingests pixels on-screen to assign a value to each frame, which is considered an ‘unknown fingerprint’ at this stage.... The software then sends these ‘fingerprints’ to a database that logs content available on TV to find a known match and identify the content. Once ACR identifies the show, it can tie that viewing data to a specific household....”⁴⁸

- LG Ad Solutions is one of a number of manufacturers deploying this system, promising its marketing clients that it can take advantage of the 40 million LG smart TVs, in some 32 million U.S. households, to control the “home screen” on hundreds of FAST and other channels appearing on its sets, along with information about a person’s

non-streaming TV digital device. LG leverages all of this information to provide marketers with “big TV audience data and video AI designed to connect brands with audiences across all screens.”⁴⁹ While LG claims that its “TV Audience Data Collection” has been “anonymized,” the list of data categories it uses for “precise audience targeting” reveals an extensive, highly granular, and intimate amount of information that, when combined with contemporary identity technologies, enables tracking and ad targeting at the individual viewer level. This includes tune-in data (“consumption of programming across linear and streaming channels”); “devices connected to the TV and Internet”; premium content that viewers pay for along with favored streaming apps; “new subscriptions, activations, cancellations, series purchased”; whether someone plays games in the home (“heavy or light video gamers”); what ads they are exposed to on channels or apps; as well as location data (“zip code, geo-data for targeted activation & closed-loop attribution for foot traffic”).⁵⁰

- Like LG, Samsung uses an ACR technology system that “identifies what viewers are watching on their TV on a regular basis,” and gathers data from a spectrum of channels, including “Linear TV, Linear Ads, Video Games, and Video on Demand.”⁵¹ It can also determine which viewers are watching television in English, Spanish, or other languages, and the specific kinds of devices that are connected to the set in each home.⁵²
- Smart TV company Samba’s marketing materials reveal the extent of personalization that is now possible in the connected television marketplace. Its ACR technology is integrated into two dozen global TV set manufacturing brands, including Sony, Philips and Panasonic, creating a system that “provides advertisers and media companies a unified view of the entire consumer journey” though its access to 111 million U.S. households and “517 million targetable devices.”⁵³ Its “SambaID driven identity platform can, with 90% accuracy,” reveal “which phones, tablets, PCs and TVs belong to an individual.”⁵⁴ Samba boasts that it can “identify households that are watching competitors’

Its “SambaID driven identity platform can, with 90% accuracy,” reveal “which phones, tablets, PCs and TVs belong to an individual.”

ads, and enable you to target those households on their digital devices.”⁵⁵ Samba’s partners include Disney, Amazon, LiveRamp and The Trade Desk.⁵⁶ Its new “Samba AI TV Genome” system is designed to help advertisers take advantage of real-time, second-by-second understanding of everything seen on-screen by a viewer, including “actors, music, visual effects and objects,” to help generate “contextually relevant ad experiences.”⁵⁷

- Through its operating system, branded TV sets, and streaming devices, Roku enables “content publishers to build and monetize large audiences” while providing “advertisers with sophisticated tools to reach and engage consumers.”⁵⁸ One key advantage as the “programmer of the home screen,” says the streaming device company, is that it can shape how viewers discover content from the start of their streaming journey and makes Roku the “lead-in” for all content.⁵⁹ Roku tells advertisers they can leverage its automatic content recognition technology to provide them “a detailed understanding of the content and ads their desired audiences view,” including when viewing video and engaged in gaming.⁶⁰ As Roku explains, with “first-party data on 70+ million active accounts and Automatic Content Recognition (ACR), we have a wealth of information and can learn what certain TV viewers are watching in real-time.”⁶¹

Companies using ACR claim that it is all opt-in data, with permission required to use it. But the ACR system is bundled into new TVs as part of the initial set-up, and its extensive role in monitoring and sharing viewer actions is not fully explained. As a consequence, most consumers would be unaware of the threats and risks involved in signing up for the service.

4. Connected TV is ushering in an entirely new generation of advertising, taking advantage of generative AI, identity management, and other technologies to create powerful, personalized marketing messages, insert them seamlessly into viewing experiences—often in real time—and follow individuals beyond the screen onto all their other digital devices online and off.

With American families now paying an average of \$46 per month for streaming television channels, some consumer publications are offering advice on how to save money on these services. For example, one article suggests that “savvy streamers can save up to \$546 this year by switching to” new ad-supported streaming tiers offered by Netflix, Amazon’s Prime Video and other companies. The only “small annoyance” is that these new channels “drop ad blocks willy-nilly into shows at random intervals,” interruptions that “may be worth putting up with for those lower monthly fees.”⁶² Another consumer blog advises consumers to “accept commercial breaks for your wallet.... [and] endure a few commercials, save some money, and use the ad breaks for snack runs, just like in the old days.”⁶³

But today’s television is far different from what it was in the “old days.” The technological capabilities of connected TV have enabled marketers to develop a growing spectrum of advertising formats and techniques that permeate today’s media landscape. Commercials are no longer confined to several minutes of interruptions. Today’s digital interactive ads are fully integrated into every aspect of the television experience. And they are designed not just to be viewed but to trigger instant responses from viewers.

- Roku’s “action ads” and its other commercial formats provide a useful snapshot of how extensively advertising has been incorporated into streaming television. These include “native” ads that permit marketers to “embed your brand within the Roku Operating System,” including on its home screen (“an unmissable moment when streamers turn on their TVs”), as well as on the “Roku City” screensaver (“organically integrate your brand into the screensaver as a billboard, building, or even an entire neighborhood”). Advertisers can sponsor a “channel guide” that “auto-plays” their ads “as

users make their channel selection.” These come with a variety of video ads, including a “custom vignette,” a “short-form video” that integrates its message “directly” into Roku’s own “programming or talent.” Interactive Action Ads are designed to encourage viewers to click on ads, offers, and other promotional information, and to foster an ongoing relationship with them. Individuals are prompted to provide their email addresses or text information in order to receive a QR code and a video “vignette” specifically designed for them to enable a “seamless check-out experience.”⁶⁴

*Artificial intelligence (AI), including generative AI, is transforming both CTV and advertising, enabling sophisticated and powerful new forms of personalization. AI functionality is already integrated into smart TVs and streaming devices as a feature of the ACR system that helps advertisers monitor viewers.*⁶⁵ “Generative AI ads are taking CTV personalization to a whole new level,” explains the data broker company Experian, enabling the creation of thousands of hyper-targeted variations of an ad in seconds.⁶⁶ For example, Gen AI can be used to change individual streams of video content, including “swapping the actors’ clothing and voiceover elements, store locations, local deals, promo codes and more.”⁶⁷

- CTV data and ad-tech firm Samba TV uses AI so brands can “accurately and quickly measure the impact” of their ads across video platforms.

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The system provides advertisers with a “detailed understanding of their portrayal throughout the programming,” illustrating the growing power that advertisers hold over CTV content.⁶⁸

- The Trade Desk calls its AI-based ad-targeting apparatus “Kokai,” which incorporates “powerful predictive engines” to provide marketers with “real-time recommendations and optimizations.” Kokai relies on “deep learning algorithms across all aspects of the digital media buying process” to advance programmatic data targeting for CTV and other digital media. By analyzing “more than 13 million advertising impressions every second, each of which may contain thousands of distinct signals,” Kokai promises to help marketers target the right person “at the right price... at the best time.”⁶⁹
- CTV companies also plan to use generative AI to create personalized programming schedules for FAST channels and “quickly identify and schedule” the advertising to be inserted into a video stream.⁷⁰

The longstanding and often controversial practice of *product placement*, where brands and brand logos are prominently inserted into a television program or film scene, is one of the core marketing strategies of today’s connected television industry. Advances in video-production technologies have created new forms of *virtual product placement*, which can be targeted to a demographic group or to a specific individual.

- Ad-technology company TripleLift works with Amazon Web Services (AWS) to dynamically insert product placement ads into streaming TV shows by “using a combination of custom-built models and machine learning... [L]ocations and surface areas in premium video and TV content” are identified to

Marketers can now extend their reach beyond the television screen, following viewers as they engage with other digital devices throughout their daily lives.

deliver brand messaging “and nonintrusive ad units into select scenes.”⁷¹ New scenes featuring product exposure can be inserted in real-time “without interrupting the viewing experience,” claims an AWS case study.

- NBCU’s Peacock is working with TripleLift as its “partner to power In-Scene Ads, enabling marketers to digitally insert brands—2D signage and 3D product placement—directly into content during post-production.”⁷²
- A major operator of FAST channels offers a Generative AI-driven “BrandDiscovery” system that “allows brands to target their CTV ads based on the emotions of specific scenes within TV shows,” relying on algorithmic decision-making. It “analyzes a scene’s text, images, and sentiment, determines an emotional score, and then places ads with a similar emotional score.”⁷³
- Generative AI will further facilitate “product placement within a show to the individual” and also enable ads to reflect the “mood” of the programming.⁷⁴ Through new ad tech software products like “BrandDiscovery,” Gen AI enables advertisers to “understand, classify, and apply on-screen imagery, sounds, and dialog to create targetable segments *in real time* for content genres... and emotional sentiment... [giving them] precise control over where their ads appear...”⁷⁵

Marketers can now extend their reach beyond the television screen, following viewers as they engage with other digital devices throughout their daily lives. For example, Vizio’s “Household Connect” service enables marketers to take advantage of its data to “extend their campaigns beyond the TV to millions of additional touchpoints and devices. So after seeing an ad on TV, viewers will see a complementary ad or call-to-action on their computer, tablet, or mobile device shortly thereafter.”⁷⁶ By utilizing its own proprietary identity data system, Roku’s “OneView” ad technology enables advertisers to target individuals not only on its CTV platform, but also across other websites and apps. In June 2024, Roku announced the opening of its own “Roku Exchange,” which uses “rich content signals,” data and “AI optimization” to enable more advertisers to target Roku viewers across platforms.⁷⁷

5. Contemporary measurement in television is now part of a far-reaching and sophisticated digital media and marketing system, monitoring a spectrum of viewer responses, including “cross-platform” behaviors, social interactions, and purchasing decisions, and connecting those responses to specific TV advertising and program content.

Measuring viewer responses to programming and advertising has been a fundamental part of the television business since the 1950s. For many years, the A.C. Nielsen Company was a central player in the TV ratings industry, deploying various techniques—such as viewer diaries and “Audimeter” devices attached to TV sets—to monitor television use in a small sample of households. With the growth of digital technologies and big-data systems, measurement has evolved into a massive industry, capable of tracking all users and viewers and capturing extensive and highly detailed data about them in real time. Measurement technologies are now woven seamlessly throughout the operations of all media and marketing companies, part of the extensive ad-tech system that includes identity graphs, continuous data collection, and cross-platform tracking.⁷⁸ Using all of these technologies and systems, marketers are able to know the precise reaction that consumers have to their commercial messages, and can fine tune the ads with increasing granularity for maximum impact.

The major connected television companies are now in the measurement business, developing their own proprietary systems and partnering with a phalanx of specialized advertising-technology enterprises that offer a variety of services. In addition to counting the total number of viewers and identifying their demographics (age, geo-location, income, etc.), measurement companies now play a key role in shaping both the program content and the advertising, along with assessing how a particular ad impacted consumer behaviors online and offline. These companies also serve as data brokers, deploying identity-data “resolution” tactics to identify potential consumer targets, and provide insights to advertisers for how an ad should be ideally constructed, and which programs, content genres, and channels would be ideal targets for ad campaigns. As measurement company Cint

explains, “because connected TV advertising links to a viewer’s internet history, the ads can use data to provide specialized ad targeting for viewers, more similar to digital advertising. Many of these ads can’t be skipped, meaning maximum engagement for companies.”⁷⁹

In contrast to traditional television ratings, contemporary measurement systems can generate an expansive set of viewer responses to advertising, including “online activities like sales, app downloads, website visits, registrations [and] offline actions like in-store traffic and purchases.”⁸⁰ The increasing integration of measurement and identity technologies makes it possible to assess the impacts of advertising not only on groups of TV viewers, but also on individuals, with increasing granularity. Barcodes on grocery store products can help “track individual purchases after viewing CTV advertisements.”⁸¹

- As measurement specialist Innovid explains, “data is just a bunch of numbers if you don’t make it actionable... [and] then it’s a goldmine.”⁸² To help brands understand who has seen their ad, Innovid places a piece of tracking software, known as a “marketing pixel” or a “web beacon,” within an ad, which it then delivers to viewers through its own ad-serving technology.⁸³ Its “Identity Graph” processes data involving “6 billion events per day,” culled from a comprehensive view of U.S. CTV viewers involving 95 million households.⁸⁴ Innovid also participates in “ad decisioning” through “data and creative personalization integrations,” involving the gathering of identity data from partners that include LiveRamp and TransUnion. Among its other allies are Google, The Trade Desk, Roku, Nielsen, Meta, Comcast and others.⁸⁵
- iSpot is a panel-based measurement company working with The Trade Desk and Roku, as well as with data company Epsilon. Through these partnerships, it is able to tap into a variety of big-data sources to identify audience behaviors, including from “tens of millions of set-top devices and household data” and ACR information to create a “combined TV-data footprint of over 80 million TV devices into one powerful big-data spine.”⁸⁶
- “Attention measurement” is now a major metric, which assesses not just whether or not a person is

seeing an ad, but the extent to which that individual is actually paying *attention* to the advertising message. iSpot's "attention analytics" uses ACR data to "determine what the viewers are watching and whether or not they dropped out during the ad," part of the company's "attention index," which it makes available to marketers.⁸⁷

The operations of today's Nielsen corporation are emblematic of the ways in which measurement has changed in the digital era. Its services have extended beyond panels and sample households to encompass the expanding universe of connected TV viewing and big data analytics, partnering with Comcast, Roku, Vizio, and LG.

- For example, the alliance with TV set maker LG's advertising division gives the company access to "the largest ACR data footprint in the industry," so that "advertisers activating campaigns on LG smart TVs will have the opportunity to receive 'Always On' streaming measurement and big data."⁸⁸
- Its Nielsen ONE cross-platform video-measurement technology deploys its own "Identity Graph" system to track and identify viewers, generating "more than 20,000... custom and syndicated segments.... [s]panning automotive, CPG, retail and other key industries," which can be used to target CTV and other viewers.⁸⁹
- Nielsen's "Gracenote ID" division can help identify for marketers and programmers what "mood" is evoked by a show (e.g. "thrilling, emotional"); its "theme" ("revenge, rivalry"); the setting ("Futuristic worlds, Vehicles"); the "Subject" addressed ("Bitterness, Obsessions with the Past"); and "Scenario" ("Haunted by the Past, Race against time").⁹⁰ This information not only helps streaming companies determine the most effective programming "environment" for a particular ad, but also enables the creation of "captivating images that are tailored to individual viewers" in order to "supercharge" merchandising.⁹¹
- In June 2024, Nielsen, which has built its own "Big Data + Panel" measurement apparatus, became interoperable with LiveRamp. The "deal seamlessly connects first- and third-party data sources," which

also brings together "integrations with publishers, platforms, data providers and agency holding companies," Nielsen announced. The measurement company will now use RampID to enable marketers to target "on-the-fly audiences at scale," including CTV viewers.⁹²

The connected television industry continues to engage in research and development efforts to further refine its measurement systems. For example, NBCU, Warner Bros. Discovery, Fox and Paramount are members of a measurement-method-development industry consortium called "OpenAP," which is being used to facilitate collective ad-targeting practices using an "identity spine" to "unlock cross-platform capabilities for advanced TV advertising."⁹³ There are also other industry-wide initiatives to ensure that smart-TV data can be used for more effective ad targeting by developing common standards.⁹⁴

6. Connected television is increasingly integrated with online shopping services and offline retail outlets, creating a seamless commercial and entertainment culture where viewers can make purchases in direct response to the ads they see, or the program content they watch.

In the earliest days of cable television, shopping channels were among the new offerings available to viewers, featuring continuous 24/7 pitches for jewelry, clothing, home appliances, and other products that could be purchased instantly by calling a toll-free number. The growth of connected TV has created a new 21st-century version of these channels, superpowered by today's contemporary digital media and marketing operations, which rely on continuous data collection, granular monitoring of viewer behavior, and both demographic and individualized targeting. Streaming services are converging with media, marketing, and retail sales. Ecommerce companies now share their valuable search, shopping, and ordering data with the food and beverage industry. The entire experience has become seamless, with viewers prompted to make instant decisions either while they are viewing television commercials, or watching their favorite programs.

- One of the biggest players in the new connected TV ecommerce enterprise is Amazon, which

pioneered online shopping and also has established a dominant presence in the streaming television industry with Amazon Prime Video and other services. While connected television is currently only a small part of Amazon's overall revenue, the company views CTV as the next major platform to promote and sell products and advertising, as it so successfully does on its ecommerce site. Already, marketers can sell products and buy video ads that run on Amazon's website store and its extensive CTV video inventory, making *shoppable ad formats* and the shopping cart available at all times.⁹⁵ Amazon's advantage, of course, is its massive consumer data operation. Its Amazon Advertising division informs marketers that it has an abundance of "powerful, exclusive first party signals" that are fed to machine-learning models that analyze "consumer events and behaviors, across the path to purchase" and "predict interest and affinities" for advertising.⁹⁶ Amazon enables brands to tap into its proprietary "marketing cloud" and data-targeting engine, which offer a laundry list of sophisticated ad-tech tools, such as "audience segmentation, enrichment, signal joining, audience creation and activation, media buying and tactic optimization."⁹⁷ It recently announced that it was incorporating "the latest in AI technology" into its "Performance +" targeting system, making it possible to "analyze billions of browsing, buying, and streaming signals in conjunction with real-time information about the content being viewed to understand where customers are in their shopping journeys and serve them relevant ads across devices, channels, and content types without needing third-party cookies."⁹⁸

- NBCU recently unveiled several "commerce enhancements" to advance "shoppable television," including a new service called "Virtual Concessions," in which "viewers of highly anticipated sporting events or ready to binge movie marathons can purchase food, beverages, and other items to be delivered to their doorstep."⁹⁹ Through its "AI-powered MustShopTV ad innovation," according to NBCU, "brands [can] connect with fans as they shop at the moment" while viewing Peacock's programming. This "shoppable integration" addition builds on what Comcast and

NBCU recently unveiled several "commerce enhancements" to advance "shoppable television," including a new service called "Virtual Concessions," in which "viewers of highly anticipated sporting events or ready to binge movie marathons can purchase food, beverages, and other items to be delivered to their doorstep."

NBCU call their "Checkout" feature, which helps facilitate product purchases "using "an embedded [virtual] shopping cart" generated through viewing its programming (including a partnership with Wells Fargo bank for a "transactional experience").¹⁰⁰

- Disney is incorporating a "native streaming shoppable ad format" so viewers can "purchase their favorite items without disrupting their viewing experience." Heralding its "Shop the Stream" system, Disney will send "personalized prompts for products" to a person's phone via a "push notification" or email, so they can make purchases "without disrupting the viewer experience." The tactic is based on research that Disney says "taps into the natural behavior of streaming audiences—most viewers are watching TV with a second screen in their hand or nearby."¹⁰¹
- Another major connected TV company offering shopping services is Roku, which partners with Shopify to "let viewers purchase products from Shopify merchants directly from their TV" through "Roku Action Ads."¹⁰² Payment and shipping details are prepopulated using a viewer's Roku Pay

information, allowing the order to be placed with the push of a button. Upon purchase completion, they return to the streaming experience and receive an email confirmation with shipping and other details directly from the merchant.”¹⁰³

CTV companies are also forming alliances with supermarkets and other retailers, drawing from extensive sources of online and offline data, including TV viewing and shopping behaviors, to forge powerful new hybrid *retail media* operations. In June 2024, for example, leading grocery chain Albertsons launched a “Collective TV” operation designed to “unlock” data gathered from its retail operations along with streaming digital TV.¹⁰⁴ Albertsons’ partners for its streaming video targeting include LiveRamp and Google. A recent spate of alliances has taken place, involving some of the largest retail chains, ad-tech specialists, and leading brands—including Disney, Kroger, Walmart, Roku, Comcast/NBCUniversal, Pepsi and many others.¹⁰⁵ In February 2024, Walmart announced that it would be acquiring Vizio—an example of the speed of consolidation in the market to link retail purchasing, loyalty and streaming video data.¹⁰⁶ The Vizio operating system, called “SmartCast,” allows “audiences to stream content for free by watching ads,” attracting 20 million smart TV households” that spend “2 billion hours per year” on its platform. Leading data brokers, including Experian and TransUnion, work with Vizio to help advertisers access rich datasets on consumers for CTV and related targeting. Vizio also operates hundreds of ad-supported FAST channels. One reason Walmart wants Vizio is to expand the data-targeting capabilities of its digital marketing “Walmart Connect” service. If the merger is approved by regulators, Vizio’s SmartCast service will place “Walmart Connect directly in the homes of millions of viewers,” and expand overall the data used to target viewers by the retail giant.¹⁰⁷

TARGETING MULTICULTURAL VIEWERS ON FAST CHANNELS

Racial and ethnic communities in the U.S., especially Blacks, Hispanics and Asian Americans, have long been singled out by marketers as highly lucrative targets, at the forefront of adopting the latest digital media services and considered especially loyal to brands.¹⁰⁸ According to the industry, this “multicultural media ad market is expected to surge to a record \$45 billion.”¹⁰⁹ Black and Brown viewers are quickly becoming a key target for advertiser-supported FAST channels. Black viewers are “more likely to watch content from FAST services than viewers overall,” noted a recent marketplace research report, and “are among the most valuable for media brands because historically they are much more likely to spend more time with media and entertainment.”¹¹⁰

The value of Hispanic viewers to advertisers has spawned dozens of new connected TV channels specifically designed for these audiences:

- Warner Bros. Discovery (WBD) recently announced ten new FAST channels targeting Hispanics, part of what it calls its “Más” (More) lineup, adding to its existing Spanish-language channel offerings (such as its “Discovery en Español”). The Más channels create “unparalleled opportunities for advertisers to connect with this vital audience,” explained one ad executive.¹¹¹ Though the company bills these new channels as “meticulously curated to celebrate and elevate Hispanic heritage,” some of the programming featured—which includes *Shark Week*, *Celebrity IOU*, *Girls Meet Farm*, and *The Great Food Truck Race*—may not quite live up to such lofty goals.¹¹²
- Canela Media, a WBD Spanish-language programming partner—offers more than 70 FAST channels targeting U.S. Hispanic viewers. Its “Canela TV” FAST channels are integrated with a data-driven “precise targeting” system called “Canela Audience Solutions,” offering brands “more opportunities to seamlessly integrate with content.”¹¹³ The media company, which says it has more than 45 million viewers, recently announced a rewards program where viewers “will earn points for how often they watch” its shows.¹¹⁴ Leading Hispanic media company TelevisaUnivision’s FAST channels are part of its ViX streaming video content service, which are available on many CTV platforms, including Roku, Vizio and Amazon’s FreeVee.

Advertisers using TelevisaUnivision can tap into “thousands of psychographic and behavioral consumer variables... to build and activate complex audience definitions” using its data partner MRI-Simmons. This data is part of the “TelevisaUnivision Hispanic household graph,” used to “drive audience-based advertising buys” across all its properties.¹¹⁵

The rising costs of streaming TV subscriptions makes FAST channels especially of interest to Black viewers, according to industry reports:

- “In this recessionary time, you can get a relatively inexpensive smart TV with, in most cases, hundreds of FAST channels already embedded in the operating system of those sets,” explained one TV executive.¹¹⁶ As a Paramount researcher who works with its FAST Pluto TV channel explained, Black audiences also like the “lean-back viewing experience” offered by FAST channels. “What we’re seeing is that for the Black audience, the comfort and ease of watching television is more important than for everyone else. You don’t need to register, you don’t need to pick any show and it’s very easy to navigate.”¹¹⁷ Though the market is still small, several leading CTV companies are already offering FAST channels specifically targeted to Black audiences. These include Tubi, Pluto, and Amazon Freevee.¹¹⁸

THE CONNECTED TELEVISION LANDSCAPE: SNAPSHOTS OF KEY PLAYERS

Netflix

A fixture in the streaming business for years, Netflix is known for its effective data-mining operation and ability to extract insights from the preferences and behaviors of its millions of subscribers. The company is able to cash in on the abundant “first-party” data it harvests to advance its advertising-supported business model.¹¹⁹ Citing research from its “predictive behavioral outcomes” ad-measurement partner Edo, Netflix executives claim that its viewers are “twice as likely to respond to an advertisement on Netflix” compared to other TV services.¹²⁰ It is now offering additional ad products and features. . . . [W]e can now run :10, :20, and :60 second ads globally—offering clients around the world multiple formats to leverage. We’ve expanded our category availability to include dating, enhanced financial services and pharma, and enabled additional targeting like mobile devices, more genres, time of day, and continued audience demos.” Netflix also offers a bevy of advertising “enhancements,” such as its new “binge ad” that “taps into the viewing behavior of watching multiple episodes in a row”; marketers can now “showcase QR codes” in their advertising, along with additional opportunities for sponsorship of programs (with Frito-Lay being one of the first) and what are called “Moment Sponsorships,” featuring “cultural moments for advertisers to tap into like local holidays.”¹²¹

Amazon

E-commerce pioneer Amazon operates a complex of data-driven device and content services. Its streaming video applications include Amazon Prime, Amazon Fire, Amazon Marketing Cloud, AWS (Amazon Web Services), Amazon Freevee (formerly IMDb), Twitch, and the new “Amazon Live” FAST channel. According to eMarketer, there are nearly 100 million U.S. Amazon Prime households in 2024, which will help it generate \$4.76 billion in streaming-video ad revenues this year in the U.S. Amazon Prime began offering ads at the beginning of 2024, and is expanding the number of specialized marketing formats available to marketers.

1. Its “Feature Rotator” is “a carousel-like ad placement appearing above the fold of the screen, making it the most visible part of the Prime Video app.” Amazon has given the Feature Rotator ad format “the most prominent placement” on its Fire TV home screen to engage “viewers the moment they power up their device, . . . [enabling] advertisers to connect with viewers. . . before they start streaming” in order to leverage their data profiles. Brand-friendly “sponsored channels and tiles” are available—the latter delivering marketing content designed to appear “native” on the streaming screen. When a viewer temporarily stops the

program stream they can be targeted with an “interactive pause ad featuring brand messaging and imagery along with “Add to Cart” and “Learn More” buttons.”¹²²

2. In Spring 2024, Amazon introduced a new “interactive and shoppable” FAST channel appearing on both Prime Video and Freevee. “Customers in the U.S. will now have more ways to shop with Amazon Live creators, brands and celebrities,” it explained. The channel incorporates a “shop the show technology” enabling viewers to “browse, shop, and engage” with products using their mobile device, so “customers can easily add items to their shopping cart and complete their purchases in just a few clicks without ever leaving what they’re watching.”¹²³
3. Amazon’s recent move into sports programming, such as its “Thursday Night Football,” is designed to enable advertisers to deliver “interactive video ads” that “create moments that take viewers from content to commerce, without ever having to leave the game.”¹²⁴

Roku

“Make Your brand unmissable,” urges streaming video provider Roku, which promises advertisers that as the “No. 1 streaming platform” it can provide the reach and data to accomplish that goal. Through its multiple functions—device manufacturer, digital video technology provider, chief

programmer and ad provider—Roku is able to collect “rich behavioral” information to enhance its ad targeting. Roku’s ad and commerce partners include Kroger, Walmart, DoorDash, Cox Automotive, Best Buy and Comcast’s FreeWheel. Through its deal with grocery chain Kroger, Roku allows “advertisers to leverage Kroger Precision Marketing’s customer purchase data to build high-performing audiences based on data from 60 million households who shop at Kroger.” Roku also touts its brand advertising “integrations” with Coca-Cola, Disney, McDonald’s, Barbie and others.¹²⁵

Vizio

TV and advertising company Vizio says that its “ownership of the hardware, software and data validates viewership and ensures ads are served without fault,” including its ACR capture information. In February 2024, Walmart announced it was acquiring Vizio—an example of the speed of consolidation in the market to link retail purchasing, loyalty and streaming video data. The Vizio operating system, called “SmartCast,” allows “audiences to stream content for free by watching ads,” attracting 20 million smart TV households that spend “2 billion hours per year” on its platform. Leading data brokers, including Experian and TransUnion, work with Vizio to help advertisers access rich datasets on consumers for CTV and related targeting. Vizio also operates hundreds of ad-supported FAST channels.¹²⁶

Disney/Disney+

Building on its history of harnessing technology to support its entertainment business, the Walt Disney Company has developed a state-of-the-art big-data and advertising system for its video operations. This includes an apparatus to identify consumer targets for its advertisers through the “Disney Audience Graph—consisting of millions of households, CTV and digital device IDs... continually refined and enhanced based on the numerous ways Disney connects with consumers daily.” The company claims that its ID Graph incorporates 110 million households and 260 million device IDs that can be targeted for advertising using “proprietary” and “precision” advertising categories “built from 100,000 [data] attributes.” Like other major digital marketers, Disney gathers and leverages a tremendous amount of information on consumers and families, including its first-party data that can be refined for targeting using “advanced modeling techniques.” Disney partners with LiveRamp to integrate its RampID identifier into its Audience Graph that enables greater capabilities to use profile data for target marketing across platforms and devices. Leading streaming channel Hulu is among the many Disney-owned brands available for ad targeting.¹²⁷

- Disney’s “audience identifier BridgeID” was announced last June, an ad-targeting system that “allows advertisers to activate their audiences against Disney’s proprietary data for precision insights,” and which is integrated with the company’s “DRAX” (Disney Real-time Ad Exchange) ad-buying

and CTV-connected platform. (Although Disney claims that this system incorporates privacy safeguards that prevent the creation of “persistent profiles,” it is clearly designed to deliver specific actions from individuals, ultimately revealing more data to both Disney and its ad clients).¹²⁸

- Disney’s capabilities to reach and influence viewers and consumers in ways that “activate” them include methods that “leverage streaming behavior to build brand affinity and reward viewers,” including through Disney+ and its “kids” content.¹²⁹ Disney has also added “geotargeting and age/gender targeting” to its suite of advertising offerings, which can be delivered using exclusive deals, such as “programmatic buying through private marketplaces and invite-only auctions.” This year Disney is expanding its use of the data it collects to offer additional targeting of families, including on “behavior, psychographics and household characteristics.”¹³⁰ For its streaming TV and other video ad services, the company has developed a host of data and digital marketing alliances, including data broker Experian, supermarket chain giant Kroger (with Pepsi as an initial client), The Trade Desk (with Unilever as one of the first brands), and Hershey’s, to name just a few.¹³¹ Disney also operates a “clean room” that enables marketers to more effectively identify and target viewers and others, allowing advertisers, in Disney’s words, “to find the right audiences in the right place at the right time.”¹³²

Comcast/NBC Universal (NBCU)

Cable TV and entertainment industry giant Comcast operates an array of sophisticated data-driven digital marketing services for the streaming video industry, including its CTV-focused FreeWheel ad-tech subsidiary.¹³³ FreeWheel's "Beeswax" service "processes billions of Adtech events in real time"—some 10 billion ad-event opportunities daily—to enable leading marketers to deliver data-driven targeted ads on CTV and other video outlets.¹³⁴ In 2020, Comcast's NBCUniversal division announced its own programmatic data-driven ad-targeting system now called "One Platform Total Audience." This system powers NBCU's "streaming activation" of consumers targeted across "300 end points," including streaming video programming and mobile phone use. Advertisers can use the "machine learning and predictive analytics" capabilities of One Platform, including its "vast... first-party identity spine," which can be coupled with their own data sets "to better reach the consumers who matter most to brands." To further its ability to meld and operationalize different datasets to reach its "user-authenticated streaming inventory," NBCU is working with LiveRamp, Google and The Trade Desk's UID2 identity-targeting system.¹³⁵

1. In Spring 2024, at the annual "Upfront" presentation to advertisers, NBCU said it was adding "generative AI to power audience targeting and drive advertiser performance... to analyze massive amounts of content... paired with... extensive first party data sets to produce [300] emotion-based AI-powered...

highly predictive segments that allow marketers to identify the right audiences with the right content, [and] which will have the most impact for their campaign."¹³⁶

2. NBCU's "Ad Innovation" capabilities include a variety of formats, including "AI Curator: promote ad drive our audience to a second screen experience where they will use AI to curate one-of-a-kind experiences"; "Peacock Engagement Ad: personalized interactive experiences... with call-to-action messaging during standard ad breaks in Peacock content... creating a shoppable moment"; "Peacock Power Break: After a video has been paused for more than five seconds, a static brand advertisement takes over the screen with color, copy & imagery based on the user's demographic, psychographic or platform behavioral data... [using] NBCUnified 1st-party data triggers to dynamically customize creative elements..."; and an "AR Portal: NBCU's Augmented Reality technology... brings fans directly into the meta-universe of their favorite programs... unlocked by the NBCU code, [allowing] fans to fully engage with your brand within an immersive content experience."¹³⁷
3. NBCU has partnered with leading companies to help measure and dynamically refine the impact of its marketing campaigns for advertisers, lining up "always-on data feeds" with measurement firms including VideoAmp, EDO, iSpot, Innovid, Catalina and Kochava.¹³⁸

LG

Home entertainment and appliance company LG Electronics manufactures smart TVs and also operates a CTV marketing division. In May 2024, LG Ad Solutions adopted The Trade Desk's UDID 2.0 approach to leveraging first-party data that "enhances targeting capabilities" across various platforms. The year before, it entered into a partnership with consumer-data company Acxiom, purchase-data provider LoopIQ, as well as Nielsen to further the capabilities of advertisers. LG Ad Solutions has teams of data scientists, including at a location in India, engaged with projects designed to further its ad-targeting capabilities. The TV set and digital marketing company is working to further enhance the ability of advertisers to deliver "shoppable" programming. It's "actionable ads" format is "designed to drive consumer action in a leaned back environment, without disrupting the content on-screen."¹³⁹

Samsung

"The future of advertising is already here," touts the South Korea-based electronics company, telling advertisers that its "data provides you with unique insights about your targets." To lure viewers into their data-gathering and digital advertising apparatus, its Samsung TV Plus service offers "free, premium entertainment that allows content owners and advertisers to engage consumers at scale," including 350 ad-supported (FAST) channels. Its ad services are also available through its relationships with "over 30" streaming apps that operate on its TVs.

- Through Samsung's "Audience Builder" system, marketers can take advantage of all the viewing and other consumer information

readily available to target consumers—including mobile phone data. The Audience Builder has a "smart audience" feature where marketers can find similar ("lookalike") audiences to target based on an analysis of viewing behaviors of a "seed audience of an Advertiser's existing customers." They can also "mix and match" data to identify targeting prospects using Samsung's own information and through its partnerships with many leading data companies, including Experian, Acxiom, Polk and Epsilon.¹⁴⁰

- Samsung has a special focus on gamers, including "how they engage with their game consoles. Samsung Ads' ACR data recognizes hundreds of the most popular game titles in the U.S. and identifies gaming sessions as separate from [TV] viewing sessions... enabling us to help brands reach players of specific consoles, games and genres," it explains in a recent report. Samsung informs marketers that it can help them "reach new, active, lapsed and churned Gamers throughout a game's lifecycle... [W]e can do this from the moment someone turns on their TV and as they enter their gaming session." "Enhanced" gamer targeting includes the harvesting of "real-time TV and Gaming behaviors from Smart TVs, mobile, and connected devices," with an option to add "additional targeting layers" using other data.¹⁴¹
- As with other CTV companies, Samsung is expanding its interactive shoppable advertising offerings. It is embedding technology from KERV Interactive, an "AI-powered interactive video technology platform" that "uses machine learning techniques and AI to recognize depth, dimension, and objects within video

in real-time. It is designed to “unlock consumer touchpoints within the content that can effectively deliver additional marketing opportunities.”¹⁴²

Google/YouTube and Connected TV

For many viewers, YouTube is synonymous with streaming video, especially those who are intimately at ease viewing its programming on their mobile devices and similar screens. Google’s acquisition of YouTube in 2012 quickly transformed the video platform into a global, cutting-edge advertising powerhouse, pioneering new commercial break formats (e.g., skippable, 15 second, etc.) and unleashing a vast array of highly sophisticated data- and influencer-driven tactics. YouTube opened up the nearly endless possibilities to enable brands and marketers to use all kinds of video content, including what’s known as “user-generated,” to deliver targeted ads. Recently, Google expanded YouTube’s efforts to provide services on smart and connected TVs. Google’s video-streaming division is now the “most-watched streaming service for TV in America,” reaching “over 159 million people on CTV in the U.S.,” based on measurement company Nielsen reporting.¹⁴³ YouTube TV, says Google, is “the next generation TV content viewing experience that lets you watch live and video-on-demand shows from all the major US broadcast networks.... YouTube TV is accessible on mobile devices, computers and easily streamed to your TV.” And for Google, that means selling ads.¹⁴⁴

- The service comes with a cloud-based digital video recorder (DVR) “with no storage space limits and 6 accounts per household.” “With YouTube TV ads,” according to Google, advertisers “can deliver personalized live TV experiences to

viewers across YouTube TV and network partners.” These ads leverage “Google powered technology,” such as its collection of “powerful signals to... deliver more relevant and personalized ads.” Like other streaming video ad companies, Google uses technologies that enable custom ads to be integrated into programming. Digital Ad Insertion (DAI) technology enables “custom and targeted ads in both live and digital video recorded content” to be inserted “across moments, devices and formats.” Ad formats available include “non-skippable in-stream ads” as well as the ability to place ads within someone’s DVR content. Google explains to ad clients that “for every hour of most programming on YouTube TV, there’ll be around 16 minutes of ads specifically targeted to every viewer, even if they are watching the same show.”¹⁴⁵

- In addition to YouTube TV, there is also Google TV, which is described as “the new, personalized experience that comes built-in to smart TVs and streaming devices from top brands [and] powered by an underlying operating system called Android TV OS.” “Google TV can be accessed on smart TVs and streaming devices with Google TV built in (via its Chromecast application), and also through the Google TV mobile app for Android or iOS.”¹⁴⁶
- In June 2024, YouTube and Instacart announced a partnership designed to use the latter’s consumer data to help brands target YouTube viewers via “instantly shoppable experiences.... [V]iewers can click directly from these YouTube ads to an Instacart product page to purchase the featured items for same-day delivery.”¹⁴⁷

THE NEW ERA OF SURVEILLANCE TELEVISION

The growth and expansion of streaming services have created a television industry that is able to offer its viewers a cornucopia of programming content, with hundreds of different niche channels catering to every possible audience segment, in many ways surpassing the “blue skies” promises made during the earliest days of the internet of a 500-channel digital universe. With a smart television set, it is possible to find almost any kind of program one seeks—from original episodic series to theatrical or made-for-TV movies to live sports from around the world—all accessible on a 24/7 basis. As television continues to merge with the retail industry, the TV set is becoming a one-stop shopping service, offering on-time delivery of goods, services, and meals as part of a seamless entertainment and consumption experience. According to the most recent viewing data, U.S. consumers are embracing today’s connected television with great enthusiasm, with the likelihood that it will become even more popular in the coming years, assuming a central place in the cultural and commercial lives of Americans.

But all of the pleasures and conveniences that this new medium offers come with a steep price. And it goes beyond the rising monthly rates that consumers have to pay to access many of these streaming services, or the annoyance of commercial interruptions in some of their favorite programs. The widespread technological and business developments that have taken place during the last five years have created a connected television media and marketing system with unprecedented capabilities for surveillance and manipulation. While the latest generation of television sets may not look that different from what they used to be, their behind-the-screens operations are much more far-reaching, intrusive, and influential than anything that existed before. As viewers enjoy their favorite movies, TV series, and sports events, they are largely unaware of the complex and growing infrastructure of identification, tracking, personalization, and targeting technologies that we have described in the preceding pages. Television is now a major link in today’s digital commercial surveillance system, which encompasses a broad spectrum of technologies, platforms, and industries.

The widespread technological and business developments that have taken place during the last five years have created a connected television media and marketing system with unprecedented capabilities for surveillance and manipulation.

One of the greatest societal costs of this new system is consumer privacy. The current self-regulatory approach to protecting the privacy of connected television viewers is highly inadequate, with a set of consent mechanisms that are unwieldy, forbiddingly complex, and ultimately deceptive. Anyone who wants to sign up for a streaming service or install a new smart TV set must go through a series of steps that make it nearly impossible to stop or reduce data collection, tracking and targeted advertising.¹⁴⁸ The process also involves interacting with dozens of different data and digital marketing companies, as well as various technologies such as automated content recognition (ACR) that are all part of CTV commercial and data operations.

Many of these entities offer misleading and disingenuous “privacy policies” and self-serving descriptions of their systems that fail to explain the complex processes they use to extract data from consumers, track viewing and other behaviors, and facilitate targeted marketing. As a consequence, buying a smart TV set in today’s connected television marketplace is akin to bringing a digital Trojan Horse into one’s home.

While CTV companies and their affiliates assure consumers that they do not collect or share personal information, these terms have been rendered meaningless in the contemporary era of “cookieless IDs,” “identity graphs,” and other ad-tech tools for

identifying and targeting consumers. So-called “first-party data,” collected through faulty and deceptive consent mechanisms, has become a key building block in the creation of comprehensive identity profiles and multiple targeting tactics that dominate streaming video and other internet services today. This includes the complex and largely stealth interplay of hundreds of data-source alliances involving marketing “clouds,” predictive AI technologies, and continuous analysis of behaviors—online and off.

The panoply of connected television advertising techniques—from virtual product placement to “non-skippable” ads to AI-enhanced personalization—are part of a new generation of commercial practices purposefully designed to tap into unconscious processes and prompt impulsive behaviors. Pervasive measurement systems can track whether the techniques work, enabling further refinement in real time. The full integration of connected TV, online platforms, and retail services is closing the loop between processing advertising messages and making purchasing decisions. As with social media, mobile and geolocation tracking and gaming, today’s millisecond and super-computer-based decision-making apparatus is structured in ways that make it impossible for any meaningful individual control. Finally, the proliferation of free advertiser-supported FAST channels raises the prospect of a two-tiered system of connected television services that subjects certain segments of the public to even greater amounts of commercial surveillance, manipulative advertising techniques, and other harms.

The expansion of connected television also has important implications for the health and wellbeing of our democracy. In this year’s election, both major parties are prioritizing CTV’s data and personalized targeting capabilities as essential tools in their campaigns.¹⁴⁹ According to data broker Experian, “CTV is the fastest-growing medium for political ads,” which are predicted to see more than \$1.5 billion in spending in the upcoming 2024 election.¹⁵⁰ A “massive shift in viewership habits,” explains TV set maker and digital ad company LG, makes 2024 “the first cycle where political marketers now have the ability to reach all voter demographics... in a way that was not possible in the past.”¹⁵¹ Political campaigns are taking advantage

According to data broker Experian, “CTV is the fastest-growing medium for political ads,” which are predicted to see more than \$1.5 billion in spending in the upcoming 2024 election

of the full spectrum of ad-tech, identity, data analysis, monitoring and tracking tools deployed by major brands.

- Experian offers “over 240 politically relevant audience” segments for sale, based on a detailed set of criteria, including “audience interactions, preferences, demographics, behaviors, location, income and more.”¹⁵²
- The Trade Desk offers a full arsenal of data-targeting tools for political campaigns, including consumer-identity data from LiveRamp (RampID).¹⁵³ The Trade Desk also partners with Comscore’s political targeting system called Proximic, in which viewers are targeted based on their “TV news consumption behaviors” as well as on the other streaming programming they view.¹⁵⁴ Through the multiple data sources and analytics used to drive programmatic advertising, including “finer granularity in geotargeting,” explains The Trade Desk, potential voters can receive “targeted messaging at scale,” including “near one to one” communications to “identified supporters.”¹⁵⁵
- Political campaigns are also taking advantage of automatic content recognition (ACR) technologies, developing “direct-to-glass” strategies to access “detailed insights into viewing behaviors and ad exposure,” and generating insights about “what is being watched on smart TVs in the households they are trying to reach,” including on “streaming apps, FAST channels and even gaming.”¹⁵⁶

All of these new connected TV tools will make it

possible for political campaigns to be even more effective in reaching and engaging with voters. But the surveillance and targeting system of today's contemporary television industry also raises concerns about possible misuse and manipulation. By harnessing the new data-driven connected TV targeting system, candidates could run covert personalized campaigns, integrating detailed information about viewing behaviors, along with a host of additional (and often sensitive) data about a voter's political orientations, personal interests, purchasing patterns, and emotional states. With no transparency or oversight, these practices could unleash millions of personalized, manipulative and highly targeted political ads, spread disinformation, and further exacerbate the political polarization that threatens a healthy democratic culture in the U.S.

Marketers for pharmaceutical products are heavily invested in connected TV advertising. The United States is one of only two countries that allow direct-to-consumer advertising of pharmaceutical products. Commercials for prescription drugs have become a pervasive presence on American televisions, promoting products for a range of illnesses and conditions—from diabetes to skin rashes to erectile dysfunction. Drug advertising has also generated concerns from the public health community over its high-pressure sales techniques, misinformation, and deceptive practices.¹⁵⁷ Pharmaceutical marketers are already “leaning heavily into data-driven ad buying,” tapping into vast sources of information about consumers, including diagnostic and procedure codes, medical claims, prescribing behaviors, retail transactions, and much more.¹⁵⁸ With the advent of connected television, pharmaceutical marketing has become even more powerful and intrusive.¹⁵⁹

- LG TV's ad division partners with health marketing company DeepIntent to give the latter “priority and exclusive access” to the millions of U.S. households it reaches, including LG's ACR-derived data.¹⁶⁰
- DeepIntent also partners with Roku to reach older viewers—the so-called “Silver Streamers”—whom the company regards as a “golden opportunity for pharma advertisers” to conduct what the industry calls *condition targeting*.¹⁶¹ These viewers, 55 and older, “are an opportunity to help condition

Food and beverage companies have embraced connected television market as a major tool for targeting children and teens, which are part of what the industry calls “Generation Stream.”

sufferers find the treatments they need,” as they “are more likely to have a diagnosed condition.”¹⁶²

- The Trade Desk promises pharma marketers access to “the best CTV inventory to reach their target audiences,” including networks such as “Peacock, Paramount+, Max, and Disney+,” as well as “premium CTV inventory specific to pharma advertisers.” The company's health-marketing partners offer pharmaceutical companies precise measurement of the effectiveness of their advertising campaigns, including the ability to tie ad exposure to retail sales data.¹⁶³

While health marketers have argued that the prescription and other health data they use for ad targeting is “anonymous,” the industry is able to take advantages of all the identity management and ad-tech tools we have discussed above to target specific individuals.¹⁶⁴

Food and beverage companies have embraced connected television market as a major tool for targeting children and teens, which are part of what the industry calls “Generation Stream.”¹⁶⁵ (See Sidebar: “Children's Television in the Age of Generation Stream.”)

- For example, cereal, fast-food and snack companies are working with Hollywood intermediaries to place their products into streaming content, including new techniques for tailoring the content and commercial messages to individuals.¹⁶⁶
- CTV enables marketers “to target a message to a device, browser, segment, and/or individual... [to]

show different ads to different audience segments watching the same TV program.”¹⁶⁷ “Where one customer sees a Coca-Cola on the table,” explained one marketing executive, “the other sees green tea. Where one customer sees a bag of chips, another sees a muesli bar... in the exact same scene.”¹⁶⁸

As streaming services converge with media, marketing, and retail sales, companies such as Amazon now share their valuable search, shopping, and ordering data with the food and beverage industry. This has enabled marketers to sell directly to young people and their families as they view video content.

- Hershey’s brand marketers worked closely with Amazon to promote the candy products via streaming TV, as well as through its own ecommerce marketplace. Amazon gave the company access to its storehouse of data so Hershey’s could market its products on Amazon’s streaming services and ensure the candy brands would “be positioned to essentially ‘win’ search in that category on Amazon and end up as the first result...” Hershey’s also made use of “impulse buy” strategies on the Amazon platform, including “cart intercepts,” which prompt a customer to “add in snacks as the last step in their online shopping trip, mimicking the way someone might browse for candy during the checkout at a physical store.”¹⁶⁹
- Roku, which provides an array of streaming children’s programming, allied with supermarket and grocery data giant Kroger so that brands could target supermarket shoppers while they watched streaming on its service. The partnership was able to bring “data from 60 million households across nearly 2,800 Kroger stores” to use with Roku’s nearly 40 million customers, providing food and beverage advertisers with a “closed loop” to see how exposure to streaming TV ads are linked to actual sales. “TV streaming brings digital-like precision to the big screen,” explained a Kroger Precision Marketing official.¹⁷⁰ As the online and retail sectors merge even further, food and beverage marketers see increased opportunities for directly influencing buying and consumption behaviors.

REGULATING CONNECTED TELEVISION

The trends we have described in this report are part of a larger set of technological and commercial developments that are reconfiguring the entire media landscape, encompassing not only connected TV, but also the rest of the contemporary television industry, including cable and broadcasting. But while these media have traditionally been subjected to at least some regulations and public policies, connected television has taken root and grown as an unregulated medium in the United States, along with the other platforms, devices, and applications that are part of the massive internet industry.

For decades, the authors of this report and our allies have called on federal policymakers to regulate online data collection and digital advertising practices, warning of the growing threats to privacy and security, the harms of powerful and pervasive marketing tactics, and the threats of discrimination and manipulation posed by the algorithms that are at the heart of commercial internet operations.¹⁷¹ Until very recently, these warnings were largely ignored, as regulators permitted countless mergers and acquisitions by platforms, databrokers, and advertising technology companies that enabled a tiny handful of corporations and their partners to dominate the online industry. Policymakers also failed to take seriously the operations of digital advertising, allowing online media to become a data-devouring behemoth engaged in countless manipulative and unfair practices. Despite ongoing public interest advocacy efforts, the U.S. still does not have a comprehensive federal internet privacy law. The only exception is the 1998 Children’s Online Privacy Protection Act (COPPA), which provides data protection and marketing safeguards for young people under the age of 13.¹⁷²

The self-regulatory regimes adopted by the internet industry in the 1990s to ward off data-protection regulations—including complicated consent mechanisms, hard-to-see icons, legalistic “privacy policies,” and dozens of different industry “codes of practice”—have done little to protect consumers, but have helped pave the way for the development and growth of an expansive digital surveillance system that drives all of the internet-connected services in today’s online landscape.¹⁷³ These powerful data, tracking, and

targeting systems that operate across search engines, social media sites and mobile apps have all been extended into the connected television industry.

However, in the last few years there have been some positive moves to regulate some of these harmful data and marketing practices, and to rein in the powerful forces of the commercial internet industry. These include, for example: antitrust proceedings at both the Federal Trade Commission (FTC) and the Justice Department to break up some of the largest Big Tech companies; FTC efforts to investigate and develop safeguards for surveillance advertising; legislative proposals in the U.S. Congress to protect young people from internet harms and data practices; and dozens of complaints, class action lawsuits, and highly publicized “whistleblower” actions exposing exploitive and harmful practices at Google, Meta, and other companies.¹⁷⁴ There have also been recent laws enacted at the state level to regulate data practices on internet-connected platforms. For example, under the California Consumer Privacy Act (CCPA), a 2018 law that was amended by ballot initiative in 2020, consumers in the state are now afforded a number of safeguards related to the use of their personal information. Earlier this year the California attorney general began an investigative sweep of streaming services to determine whether these companies are violating the law.¹⁷⁵

Unfortunately, CCPA’s key policy provision is based on the so-called “opt-out” model, which means that consumers must make an affirmative decision to decline having their personal information used for targeted advertising. But as this report has explained, such mechanisms are likely to be insufficient tools for protecting privacy in today’s massive, complex, and nontransparent CTV surveillance system. Regulators should not force viewers to have to go through different privacy policies, descriptions of dozens of CTV companies, and have an advanced degree in digital advertising in order to protect themselves and their families from harmful and invasive practices. We do believe that California’s privacy law provides the foundation for policymakers to take a much broader approach to regulating the connected television industry, which could ultimately result in stronger and more effective protections for consumers.

CHILDREN’S TELEVISION IN THE ERA OF “GENERATION STREAM”

YouTube has long been the leading video-streaming destination for kids on mobile phones, tablets and computers. And now children are also flocking to connected television. Young children in the U.S. have \$28 billion in “direct purchasing power”—for toys, fast food, entertainment and technology—making them a highly valuable target for advertisers and programmers in the connected TV industry.¹⁷⁶ Children and teens are also playing a powerful role in determining the viewing patterns of their families, serving as “streaming decision-makers,” “key in influencing what platforms families subscribe to, as well as what content they watch.” As youth-focused digital ad company SuperAwesome explains, children’s program choices are “the #1 reason parents add or keep [CTV] subscriptions.”¹⁷⁷ According to industry research, families with young children tend to watch more streaming TV content. As measurement firm Comscore explains, “households with children (aged 1 to 17) are particularly avid CTV consumers,” viewing hundreds of hours monthly.... [T]he larger the household the more CTV is being consumed.”¹⁷⁸

Disney Advertising calls the cohorts of children, teens and adults viewing its Disney+ and other content “Generation Stream.”¹⁷⁹ Its Disney+ prime is a popular viewing destination for children, offering movies and programs including *Mickey Mouse Clubhouse*, Marvel’s *Spidey Amazing Friends*, and an array of shows from its “Disney Jr.” and related youth-focused channels. While claiming it does not target children with advertising, Disney clearly conveys to advertisers how available they are on its CTV operations. A recent report designed to assist marketers to target Disney’s streaming viewers included an “online study among 2,500 nationally representative 13-to-54-year-olds, “video ethnographies and a 20 “Modern Family Tree Projects” involving “diverse, culture-forward families” who sent Disney videos about their values, pastimes, and—importantly—their streaming experiences. “This group included “children 13-17 living with parents or guardians.”¹⁸⁰

Other major CTV companies have created specialized programming channels and services for the lucrative children’s market, many of which are advertiser-supported. These offerings include recycled TV series from public and commercial TV, as well as popular online content, including immersive video-games.¹⁸¹ The following are a few samples of what is available:

1. Amazon’s Prime’s kids section offers *Sponge Bob*, *Dora the Explorer*, *Peppa Pig*, and much more. Its FAST Freevee channel delivers numerous children’s movies, including *The Dog Who Saved Halloween*, *Mr. Frog*, and *Top Cat*.
2. Roku’s FAST child-directed programming, which features programs targeting specific age categories between 1 and 10, includes *Blippi*, *Garfield and Friends*, *Ninja Kidz*, and shows based on video games and Lego products. Programming to children is available in Spanish, too.¹⁸²
3. Vizio’s “Kids + Families” lineup of “free” content includes *Baby Shark*, *Ryan and Friends*, *Strawberry Shortcake*, *TeleTubbies* and *Bob the Builder*. It also offers several children’s FAST channels distributed by Paramount’s Pluto, including “Nick, Jr,” “Dora TV,” and “Totally Turtles.”¹⁸³
4. “The Kids Channel” is part of LG TV’s FAST lineup designed to serve “toddlers,” and features *Bob the Train*, *Junior Squad*, *Little Eddie*, *Baby Bao Panda*, and *Bottle Squad*.¹⁸⁴
5. Google has expanded YouTube into a CTV network (YouTubeTV) that includes content highly attractive to children, including programming from Disney, Paramount’s Nickelodeon, Universal Kids and others.¹⁸⁵

CTV programming aimed at young people is about to undergo a transformation wrought by Generative AI, which will be used to easily create animation and personalized ads. Child-focused marketers say that “today’s kids and teens are the pioneers” of Gen AI and are already “AI natives.”¹⁸⁶ Earlier this year, a media executive explained that “Generative AI will enable the streamers to generate new kid programming much faster and cheaper, which they absolutely will do. Originality and quality is sure to suffer, but the streamers will bank on the hope that kids won’t notice.”¹⁸⁷

A POLICY AGENDA FOR TELEVISION'S FUTURE

It is time to develop a broad policy agenda for connected television, one that is aimed at creating the kind of media system that will not only protect consumers, but also serve the needs of citizens and democracy in the 21st century. While there is an urgent need to establish federal and state regulations to curtail the growing and egregious data collection and intrusive marketing practices, it is equally important to develop a broad future-oriented vision to ensure that CTV can help build communities, facilitate civic discourse, and enhance democratic institutions. One of the aims should be to create a diverse and equitable system of ownership, management and content creation that actually reflects the growing diversity of the U.S.

The following is a brief outline of what we see as major priorities for such an agenda:

Robust privacy protections. Although there has been some progress at the federal and state levels on privacy regulation, a great deal more work is going to be needed in order to curb the expansion of ubiquitous data gathering, profiling, tracking and targeting of individuals.¹⁸⁸ For example, both the Federal Trade Commission and the Federal Communications Commission should investigate the practices in connected television, and should consider building on laws and enforcement actions that are already on the books, including the 1988 Video Privacy Protection Act and the 2017 settlement by Vizio with the FTC about its data practices and viewers.¹⁸⁹ Regulators and lawmakers will also need to conduct research on the structure and operations of the connected television industry. This will require a “deep dive” into the entire system in order to “follow the data”—taking into account everything from initial sign-up for service on the set, device and programming platform; to the extensive internal data operations of CTV individual companies; to the far-reaching multiplicity of partnerships involving leading brands, ad agencies, ad-tech companies, data brokers, ad platforms, retailers and other players. Policy researchers will also need to investigate the strategies and tactics for targeting and influencing CTV viewers, including neuromarketing and other efforts to trigger emotional and subconscious behaviors, measurement, video

advertising methods and techniques, and sales prompts. Without a full understanding of how this system operates and what roles are played by various participants, policymakers will not be able to develop effective policy safeguards for consumers of connected television.

The simplistic mechanisms that require consumers either to “opt-out” of, or even “opt-in” to industry data collection schemes simply do not work. Policymakers need to take a different approach to data protection. Data collection in CTV should be prohibited beyond what is minimally needed for the basic functioning of the service—such as delivery of programming. The multiple methods used to surveil viewers—on sets, networks, devices and video apps—are excessive and should be stopped. Services should not be fully tied to data collection and advertising; subscriptions rates or fees should be fair and subject to regulation.

Digital marketing safeguards for politics, health, and children. Regulations are also needed to address the unfair, intrusive, and deceptive practices of today’s real-time, data-driven programmatic marketing, including the layers of data brokers, ad-tech companies, and measurement firms that are part of the targeting apparatus. This is especially true of data involving highly personal concerns, such as health, race or ethnicity and political interests. Policymakers should explore less onerous forms of “contextual” advertising, where the reliance on personal and other granular data for targeting would be prohibited. Protecting the privacy and wellbeing of children and teens will also require special policies, as we discuss below.

If this year is any indication, connected television will continue to be a key part of candidates’ advertising strategies. Regulation of political advertising in the U.S. is already very weak, based on minimal record keeping and reporting requirements overseen by the Federal Election Commission, which is not known for its aggressive or enterprising approach to policy. There have been some regulatory efforts in recent years to require better disclosures for political advertising on social media, mobile and other internet-connected platforms, as well as specific proposed policies for addressing the use of artificial intelligence in political campaigns.¹⁹⁰ But while social media platforms have undergone some public scrutiny and a few companies

have instituted their own policies for handling political advertising, the connected television industry remains largely opaque and unaccountable.¹⁹¹ Public interest organizations, journalists, and regulators should investigate the techniques and current practices for political advertising on connected television platforms, and call for effective safeguards to ensure transparency and fairness for American voters.

U.S. consumers also need protection from aggressive and manipulative CTV marketing of drugs and other health-related products. The Food and Drug Administration is responsible for regulating the advertising of prescription drugs. The FDA's framework for the advertising and promotion of pharmaceuticals and other regulated medical products is that they "must be truthful, accurately communicated, and balanced in presenting a drug's risks and benefits" (or "fair balance"). These rules are designed to prevent "false and misleading" pharmaceutical advertising, and to ensure such ads reflect known risks of using a particular drug.¹⁹² The agency has issued guidance for advertising prescription drugs on social media and other internet platforms, and has also recently concluded a rulemaking procedure to clarify its requirements for radio and television advertising.¹⁹³ However, it does not appear that the FDA has focused specific attention on the issues that are unique to CTV, which combines the data-driven, programmatic, and personalization functions of digital media with the power and presence of big-screen television, and enables marketers to insert ads into viewing experiences using an expanding set of techniques, such as virtual product placement, generative AI, and "shoppable content." Regulators will need to examine these practices carefully in order to determine whether more effective policies are needed to protect the public. Consumer groups and professional health organizations, including the American Medical Association—which has called for a ban on direct-to-consumer prescription advertising—have an important role to play in holding the government, the pharma industry, and the tech industry accountable.¹⁹⁴

The Federal Trade Commission is also involved in protecting health consumers from unfair and deceptive marketing and data practices. Under the leadership of current chair, Lina Khan, the agency's Bureau of Consumer Protection has made protecting digital

U.S. consumers also need protection from aggressive and manipulative CTV marketing of drugs and other health-related products.

health data a key priority, launching enforcement cases against individual companies, issuing policy statements, and conducting regulatory proceedings. Given the FTC's overall responsibility for policing the digital marketplace, we urge it to conduct focused efforts on pharmaceutical and health marketing practices in the connected television industry.¹⁹⁵

Because they are such avid users of connected television, children and adolescents require particular attention from regulators. As we indicated earlier in this report, children's online privacy is one of the only issues of internet policy for which there are laws and regulations. The Children's Online Privacy Protection Act (COPPA), which has been in place for over 20 years, applies to any internet-connected service directed at children under the age of 13, and has specific requirements for how and when data can be collected from them. The implementation rules for COPPA have evolved over the years, with a set of specific provisions for addressing social media, mobile, and other platforms, as well as contemporary data collection and ad targeting practices. Congress is in the process of updating the COPPA statute, including raising the age limit to 16. The proposed Children and Teens' Online Privacy Protection Act (COPPA 2.0) would also ban targeted advertising to children and teens, and create an "eraser button for parents and kids to eliminate personal information online."¹⁹⁶ In July 2024, the Senate overwhelmingly passed COPPA 2.0, along with another child protection bill called the Kids Online Safety Act (KOSA).¹⁹⁷ As this report was being completed, it was unclear whether the law would be enacted in the current congressional session.

Meanwhile, the industry continues to find ways to evade regulation. For example, while streaming television services are currently subject to COPPA rules, many companies claim they are targeting *families*,

But CTV insiders know that many young people view CTV without parental supervision, too, as busy parents and caregivers perform other tasks.

suggesting that because it is the adults who are being tracked, no children’s privacy laws are applicable. But CTV insiders know that many young people view CTV *without* parental supervision, too, as busy parents and caregivers perform other tasks.¹⁹⁸ These strategies suggest that more work will need to be done to ensure that effective regulations and oversight are put in place to protect children and adolescents. Regulators will need to probe the programming and advertising practices across the spectrum of “Generation Stream” CTV channels and services, and to adapt the current federal and state rules so that they will be able to offer adequate protections within the amorphously defined demographic categories that the industry has established to avoid accountability.

Competition and diversity in the digital and connected TV marketplace. For too long, the U.S. has ignored the monopolistic control of the internet. The three leading online platforms, Alphabet (Google), Amazon, and Meta (Facebook/Instagram), operate what is called a “triopoly”—dominating data-gathering-related advertising revenues.¹⁹⁹ The current antitrust proceedings at the FTC and Department of Justice are an important positive development. But a different approach will be needed to address the unique nature of concentration and control in the connected television industry. The series of overlapping relationships and alliances within CTV, built on the already formidable online and video marketplace dominance of Google, Amazon, Comcast and Disney, for example, require antitrust regulators to delve deeply into the industry’s operations, where everyone is working with everyone else—to share and use data, develop ways to measure advertising on multiple platforms and services, and even to offer consolidated programming services. These practices create conditions that may be unfair and anti-competitive.

- A recent example is the new sports programming joint venture Venu, operated by Disney, Warner Bros. Discovery, and Fox. Venu will stream the combined sports programming assets of the three video giants, including from the NBA, NFL, MLB, NASCAR and many other popular events. Policymakers, advocates and sports CTV company Fubo have raised concerns about Venu’s impact on competition, although there has been little attention paid to how the potential integration of all the CTV-related data harvested by these three companies working in concert may be having a harmful impact on the marketplace.²⁰⁰

Other government initiatives will also be needed to ensure diversity of ownership and control in the connected television industry, and to foster a system that promotes democratic discourse and participation. As the Writers Guild of America West warned in a 2023 report aptly titled “The New Gatekeepers: How Disney, Amazon and Netflix Will Take Over Media,” “action is required” to protect competition and ensure that the U.S. has a streaming system promoting “the free exchange of ideas and diversity of content.”²⁰¹

Instituting policies for connected television will not be easy, especially after the online industry has been allowed to operate and grow unfettered and unchecked for decades. The systems and relationships that enable ongoing data collection and its use are deeply embedded. Undoubtedly lobbyists and trade associations for this very influential industry will turn to the same “it’s-too-early-to-regulate” mantra that has repeatedly thwarted efforts to enact laws and regulations the U.S. communications system so badly needs. In addition to protecting consumers, the connected TV industry must do more to serve our democracy, especially as CTV continues to move into such a central and influential position in the media landscape. The long history of television in this country has shown that this medium can be a powerful force in our society, extending far beyond its role as a conveyer of entertainment and facilitator of commerce. It can create an arena for civic engagement and democratic discourse, foster cultural and political understanding, and serve as a critical check against the abuse of power. But the television of the future will not fulfill this promise without the strong leadership of lawmakers, regulators, advocates, and citizens.

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