Winterberry Group

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OUTLOOK FOR IDENTITY IN ADVANCED TELEVISION:
CHALLENGES AND OPPORTUNITIES

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Acknowledgments

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In the process of developing this paper on Identity in Advanced Television, Winterberry Group heard from nearly 150 senior industry experts from both the US and Europe, between in-depth interviews with 30 leaders across the sector and a survey of 121 executives working across the sector. Our senior industry experts ranged from data, technology, identity and measurement specialists through to media owners and represented all the participants developing, implementing and using identity solutions in advanced television.

The challenges to the development of identity solutions in advanced television vary by geography both for reasons of local market evolution as well the prevailing regulatory environment. However, the need for the industry to develop advertising solutions that either support free to access television or help to dilute the subscription levels of some SVOD services is clear. This requires planning, activation and measurement solutions that utilize identity, although maybe not the same identity spanning each use case.

The forecast growth rates for advanced television are strong; it is inevitable that identity will play a key role in driving this growth and support the successful monetization of content. Coming a decade after the explosion in data enabled programmatic display the advanced TV ecosystem is developing a different approach to data and identity.

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EXECUTIVE SUMMARY

The Advanced TV (ATV) media market, composed of linear and digital addressable video, is entering a period of intense growth characterized by enormous complexity and multiple challenges. Fragmentation of the viewing audience, media ownership, content delivery and the paths to the TV set have created the imperative for an audience-first media approach. The viewing audience is increasingly not connected directly to the linear TV ecosystem, and brand marketers and media buyers are increasingly turning to more addressable ATV channels to extend reach, target growing segments and provide enhanced solutions for measurement and optimization.

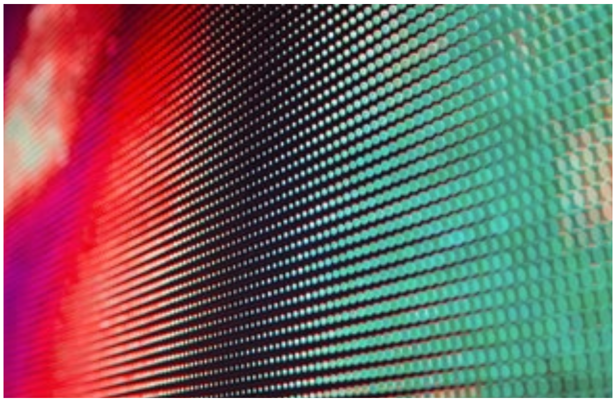
The industry focus is heightened by the opportunity to capture both new and shifting expenditure over the next five years, as 2021 US spending of $17.3 BB on addressable linear and CTV advertising is expected to grow from $17.3 BB to $47.8 BB in 2026, with a similar, though slightly slower, expansion in the UK from $6.2 BB to $10.1 BB during the same period.

The growth of the ATV ad market is going to be enabled by identity solutions in support of a wide variety of ATV use cases around the planning, activation and measurement of these audience-first media strategies. Identity's role will start with surfacing deeper insights about hard-to-find TV audiences, determining which segments to activate across viewing screens, managing frequency as much as possible and measuring the impact of campaigns with the measurement solution of choice. From there, the use cases will advance to the following:

- **Media planning:** Identity will enable reliable and accurate audience-first targeting on the numerous ATV platforms and delivery choices available to buyers. More than half of our survey respondents reported frequently using identity-based audiences in their linear TV media plans. The percentage is even higher in the UK, where the media ecosystem has adapted more quickly to GDPR restrictions to create addressable linear TV advertising products.
- **Audience activation:** Pseudonymized data linked to a unified ID can move easily through the ATV ecosystem. The majority of currently available ATV advertising inventory is directly sold, meaning the use case will focus on an identity solution's ability to create more accurate audience matching and will identify overlapping profiles across media platforms or channels.
- **Measurement and attribution:** Identity is the convergence point where the buyer's need for transparent and better metrics and the seller's need to prove audience quality will meet. It will become the core component in facilitating the measurement of ATV campaign performance and making decisions regarding media buying strategies.

But there are significant hurdles to overcome before these use cases can occur. Winterberry Group has identified four primary challenges to the implementation of accurate, audience-based activation and measurement:

- **A disconnect between linear TV media planners and digital buyers within the same brands and their agencies.** Whereas linear TV planners leverage time-tested metrics, digital buyers utilize a data science-based approach executed through programmatic platforms.
- **The five paths to buy media on TV sets within consumer households.** Today, advertisers reach audience segments through the set-top box, streaming device, broadband ISP, apps on the screen and directly to smart TVs. Within each path, every media seller has a different view of who the audience is, based on the information they have and the identity solutions they use.
- **The absence of a unified or standardized interoperable identity solutions**. Despite their shortcomings, web-based cookies provide a common approach to finding audiences. A standardized identifier at the household level does not yet exist in the ATV ecosystem.
- **Gaps in cross-channel measurement.** Established measurement solutions have struggled to accurately quantify and put a value on TV audiences across technologies and platforms, which has led to significant gaps in some panel solutions.



In addition, data privacy regulations and restricted access to identifiers will affect the rollout of identity in ATV use cases. As regulations at the state, national and international levels continue to evolve, intermediaries, brands, media owners and agencies will be forced to build and adopt flexible identity strategies that enable compliance and privacy-first data governance.

The sheer size of the ATV market opportunity will force the ecosystem of ATV buyers, sellers and intermediaries to collaborate on solutions that make identity work and improve the efficacy and profitability of their audience-first media strategies. This collaboration will be demonstrated by the following:

- **Interoperability between identity solutions** via crosswalks and clean rooms, as no single identity solution should or will meet demand across the many use cases. As the ATV market matures, identity solutions will be built with an understanding of privacy-by-design, led by the data/identity solution developers investing in—and prioritizing—measurement and activation to drive the upper funnel through performance-based outcomes.

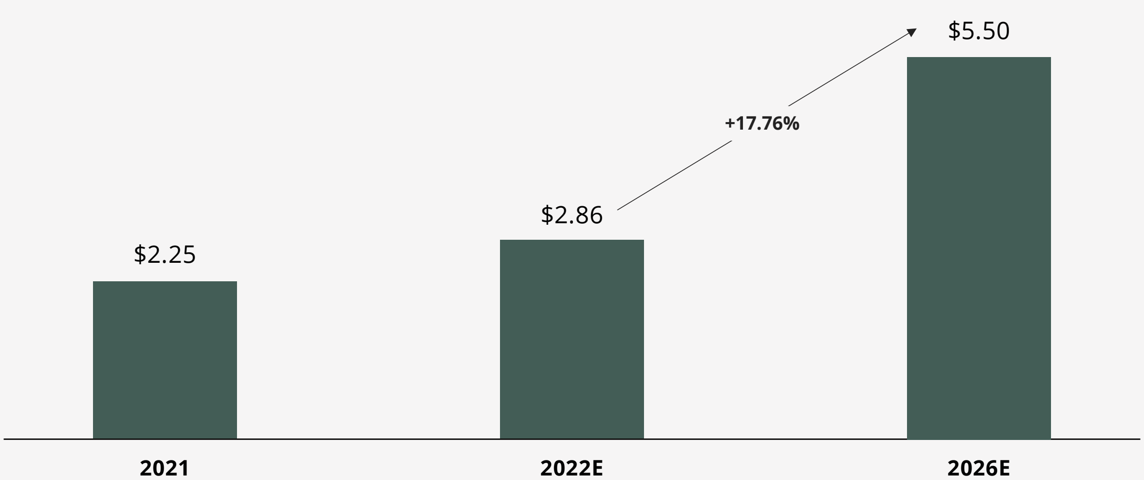
- **Restoration of balance between buyers and sellers.** Limited inventory for ATV ad placement and a long-term trend that caps total viewing hours will ensure that the market remains primarily directly sold, complemented by private marketplaces and with a significantly smaller share than today's programmatic ecosystem going to open auction. These factors will combine to expand spending across a greater number of media owners and their partners through cross-platform deals to reach hard-to-find audience segments. Supply-side identity will become more important, putting control of the data firmly in suppliers' hands.

- **Data collaboration solutions that are foundational to the technology stack.** Similar to how CDPs have evolved to complement CRMs and serve specific purposes within the enterprise, data collaboration solutions will emerge with an embedded identity solution to solve for the differentiation of data ingested and the analytics and activation tools used. Additionally, interoperability of identity is likely to be available via a some clean room environments.

- **Linkages between households and individuals through IP addresses.** The availability of identifiers such as IP address, device ID and app login is not guaranteed and, in many cases, will be limited by regulatory constraint, user-sharing of authentication, lack of adequately captured user consent and issues around data control and ownership. However, IP addresses will play an important role in the process of triangulating household identities, as well as recognizing individuals (or their devices) within the household.

Based on these assumptions, Winterberry Group expects identity solutions spending to continue to move toward high-engagement ATV channels, with investments increasing as both digital and linear buyers drive toward more effective, measurable outcomes. We forecast that identity solutions spending, underpinning the ATV market, will grow from $2.3 BB in 2021 to $5.5 BB in 2026. During the same period, growth in the more regulated UK market will go from an estimated $660 MM to $1.2 BB. Within identity, the quest for an interoperable and privacy-compliant ecosystem, characterized by multiple solutions (and solution providers) and enabled by technology, data will enable a better viewing experience and consumer engagement as the industry matures.

IDENTITY SOLUTIONS ATV SPEND, US ($ BILLIONS)



Spend includes that on: (1) first-party identity management platforms, including a portion of CDP, CRM and DMP spend (relevant only for connected TV, CTV, use cases); (2) second-party identity management platforms, including clean rooms, safe havens, bunkers; (3) third-party identity graph data, including device graph, digital data, third-party data for targeting, location data, non-PII providers; and (4) identity resolution, including matching, linking, onboarding and destination charges

Winterberry Group Spend Forecast, Spring 2022

THE EMERGING FOCUS ON AUDIENCE-FIRST MEDIA BUYING

Few media channels are evolving as rapidly as television. The COVID-19 pandemic accelerated an already visible transformation in the way that consumers interact with video content. Scheduled linear TV viewing is being replaced with a "view anywhere, view anytime" digital experience. The consumer is firmly in control, with more content, device, delivery and platform choices than ever before.

As a result, the ability to reach TV viewing audiences across a fragmented linear and digital landscape has become far more complex and difficult. To adapt to this new TV media reality, traditional brand marketers and media buyers are pivoting from a context-led approach to an audience-led strategy, embracing national linear, local spot, addressable TV and connected TV (CTV) to extend their reach into hard-to-find audiences. Digital media buyers, on the other hand, are looking to leverage programmatic advertising technology, now employed across digital display, social media and video channels, to automate the buying, planning and activation of TV audiences. In short, the media chase is on to engage TV viewers in live, linear, on-demand and streaming environments.

Advanced TV is the umbrella term used in this whitepaper to refer to the many forms of streaming television content, including addressable linear TV (both national and local), CTV and Over the Top (OTT), which can bypass the cable set-top box to deliver content via an internet connection. ATV is identified by the following four components: 1) how it is purchased; 2) where the content comes from and is delivered; 3) what the content is viewed on; and 4) who is viewing the content (i.e., the audience composed of an individual, household or segments created from these two). ATV content is consumed through a variety of devices, including smartphones, tablets, computers, gaming devices or smart TVs connected to the devices, or cable, broadband or satellite systems.

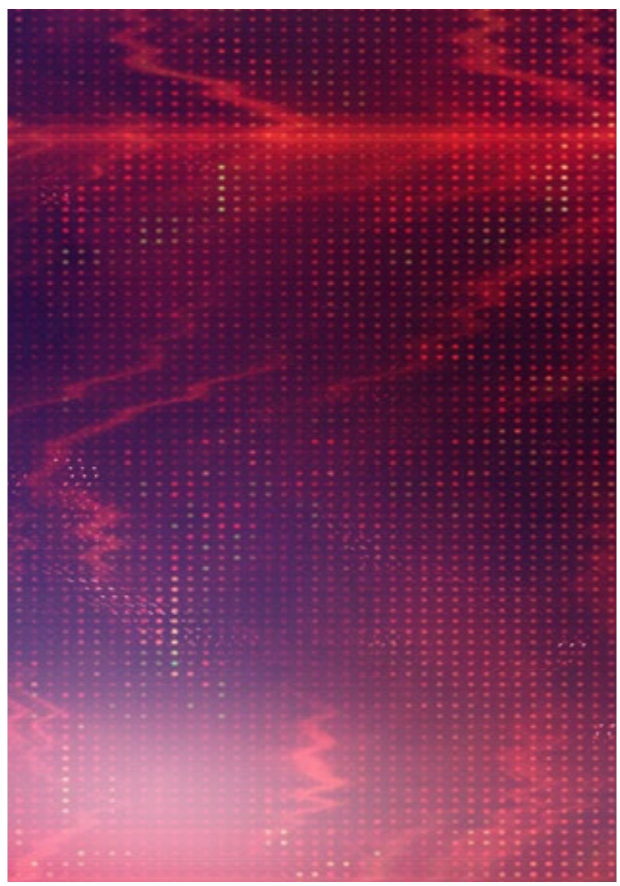
> "How can you extend reach and frequency while keeping TV at the center of your media plan? This can only be done through identity and connectivity."

– Director of Advanced Advertising, Connectivity Provider

Identity is a crucial tool in enabling the shift to audience-first media planning, buying and measurement. We have previously defined identity as the effort to recognize and understand individual audience members (including customers, prospects and other visitors) across channels and devices such that brands can interact with those individuals in ways that are relevant, meaningful and supporting of overarching business objectives. An identity represents a combination of data attributes (also referred to as identifiers) that describe a person or a household. Identity solutions coordinate the activation of platforms, data and supporting services (both provided by third parties and sourced from among marketers' in-house resources) to support the persistent recognition of individual audience members across all devices and other promotional or transactional touchpoints.

Due to the ongoing deprecation of third-party cookies in web-based media and the growth of walled gardens and other privacy-safe data environments, first-party data is now foundational to targeted, data-driven marketing across owned, earned and paid media. Our research found that 60% of marketers planned to increase their use of first-party customer data in response to third-party cookie deprecation, while 38% of those we surveyed had greater interest in third-party identity solutions. These solutions support marketing processes around audience targeting, measurement and personalization for both known and anonymous audiences across digital and offline channels.

In some ways, ATV has an advantage over other media channels in the cookie-less future, given that linear TV never depended on third-party cookie data. Moving forward, ATV will take its place alongside other digital channels, offering robust targeting and measurement capabilities. The goal within the TV environment—regardless of device or delivery path—will be getting the right message to the right person at the right time. In fact, ATV will become critical to digital media plans looking to achieve scale across multichannel audiences.

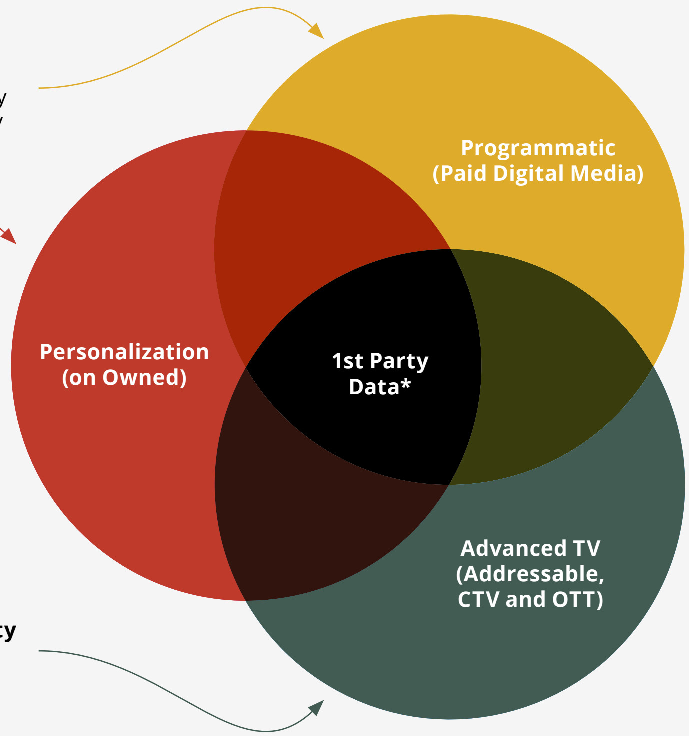


BY LEVERAGING DATA AND IDENTITY, MARKETERS RECOGNIZE INDIVIDUALS TO INFORM ADVERTISING INSIGHTS, ACTIVATION AND MEASUREMENT *(2022, % OF RESPONDENTS)*

Audience-based advertising use cases where **ads are bought and measured across media websites, apps and digital-out-of-home via programmatic technology solutions.** Identity profiles used to define an audience are built by matching first and third-party data, combined deterministically and/or probabilistically.

Individual consumer-based use cases, where brand or publisher efforts are focused on **personalizing the experience on owned properties, including websites, apps and in physical locations.** Profiles always start with **first-party data** that may be enhanced or enriched by third-party data.

Audience-based advertising use cases where **ads are bought and measured across linear addressable TV, CTV. Identity profiles link the individual and are used at the household level** leveraging first-party and third-party data sets.



Winterberry Group 2022

> "TV is in a great spot for the next three to six years, until we have made it creepy like we did with digital."

– Chief Strategy Officer, Measurement Provider

However, there are several challenges as well, including protecting consumer privacy, adapting programmatic technology to ATV, authenticating audiences and distinguishing between individual and household viewers. In our earlier investigation into the future of identity[1], one of the most frequently heard comments was the need for brands, publishers, data providers and technology platforms to improve the way that they work together to develop and integrate post-cookie, privacy-compliant solutions.

Regulation has created uncertainty about the long-term outlook for privacy across geographies, including the long-term convergence of views on what constitutes personally identifiable information. As a result, demand for solutions that enable both privacy compliance and enhanced consumer data security have increased.

> "CTV is different because the end of the funnel is very rarely happening on the same device. This creates a whole new set of problems and expectations for a one-to-one approach."

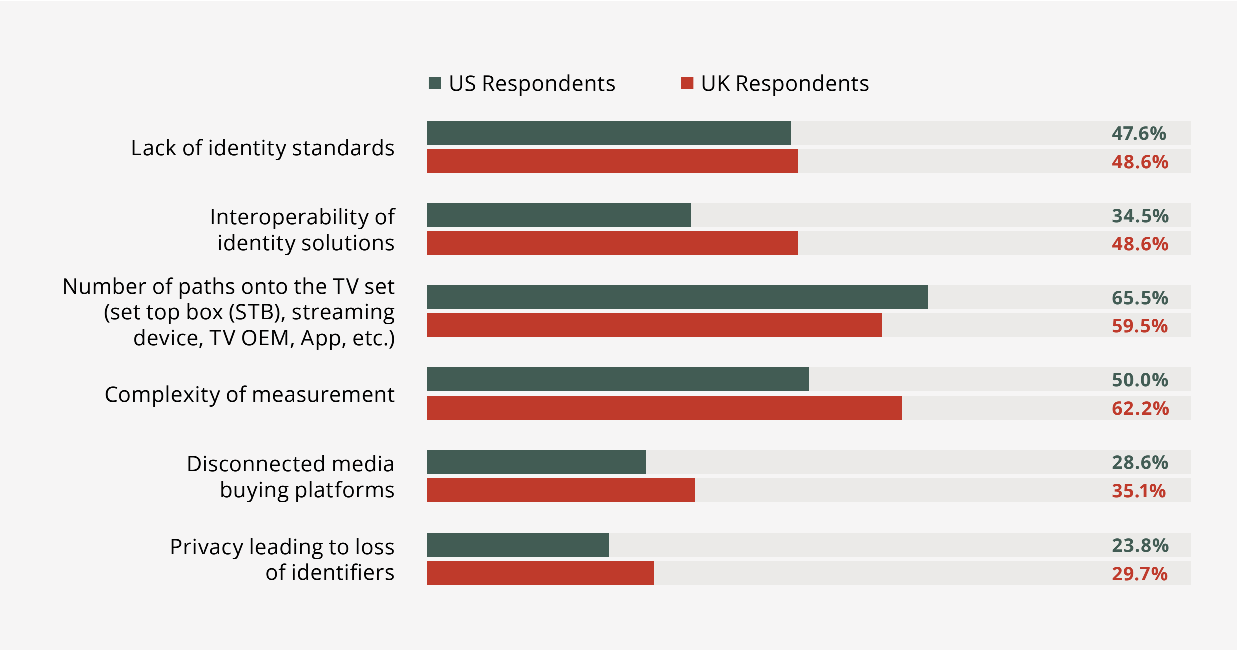
– Chief Technology Officer, Programmatic Platform

Programmatic advertising technology employs a data layer that facilitates the targeting of profiles based on known parameters including demographics, geolocation, purchase behavior and brand affinities. The data enables advertisers to reach highly targeted audiences online, wherever they are spending their time. Programmatic media buying makes up 89% of all digital display advertising, with spend reaching $99 billion in 2021. Programmatic growth is accelerating as advertisers ramp up investments in data-driven campaigns to deliver highly relevant messages to prospects and customers.

But unlike the current digital programmatic market, ATV focuses on households, without pinpointing the exact individual within the household who is viewing the content. The question is whether precision programmatic technology can be adapted to ATV channels to allow advertisers to understand and target the individuals

[1]*Source: Identity Outlook 2020: The Evolution of Identity in a Privacy-First, Post-Cookie World (Winterberry Group)*

WHAT ARE THE BARRIERS TO GROWTH FOR THE USE OF IDENTITY IN ADVANCED TV?
(2022, % OF RESPONDENTS)



WG Advanced TV Survey May 2022, n=121

within the household. Identity in ATV is fundamentally different than how it has evolved in other digital programmatic media and how it is leveraged on a brand or media owner's properties.

> "A lot of data-driven linear is bundled with CTV. We support these approaches because it is taking linear and putting it into the programmatic ecosystem."

– Chief Strategy Officer, Identity Provider

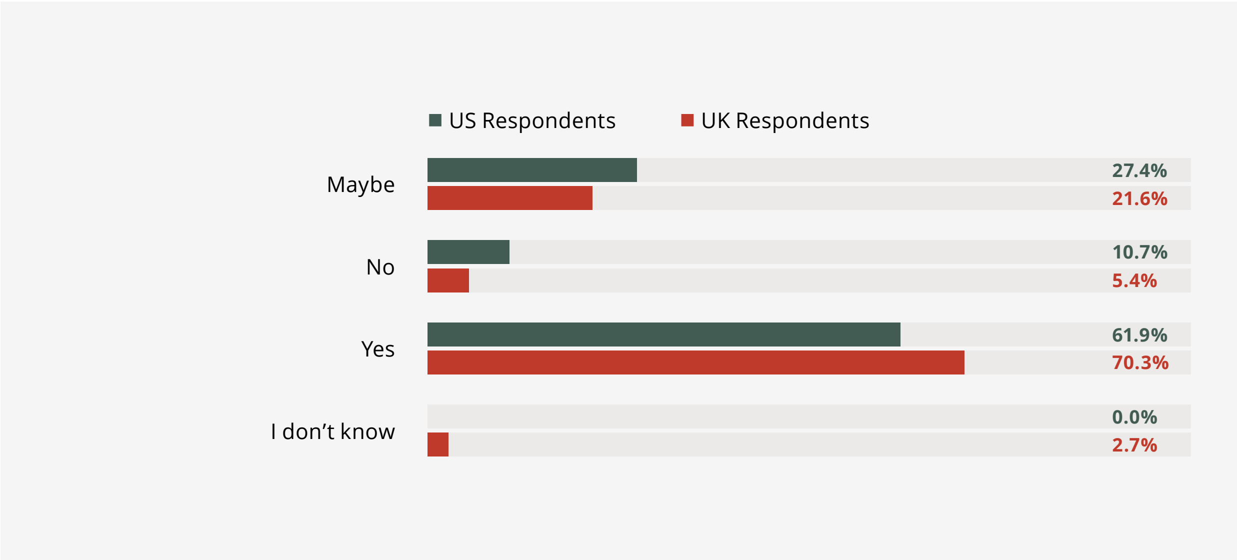
The ATV audience might be an individual or a household, and that is one of the primary challenges in trying to apply identity to an ATV audience-first strategy. Existing identity ecosystems, which enable marketers to personalize messages on owned and programmatic channels, target individual consumers on a personal device. In the ATV ecosystem, understanding the audience—whether an individual or group of individuals within the household—and where they are, is far more nuanced. Streaming TV, CTV and OTT may require multiple instances of viewer authentication, for example, but still create confusion around who is being authenticated. Is it the app streamed through the TV? Is it the streaming device? Or is it the cable subscriber? Is it even the same individual? Or a household member, or someone outside of the household "borrowing" the app password? There are estimates that a significant portion of Netflix viewership is shared—according to an April 2022 survey by Morning Consult, 23% of subscribers and 17% of non-subscribers report sharing or using someone else's password to access Netflix.

> "The waterfall right now is that brands are recognizing there are a lot of people they can no longer reach on linear TV. They are recognizing that if they want to reach a disconnected audience, they need to invest in CTV."

– Chief Strategy Officer, Measurement Provider

It's hard to learn from past practices to solve these issues, given that legacy systems in the ATV ecosystem don't exist. Linear TV media buys use traditional demographics of age and gender. Buying centers on Gross or Targeted Ratings Points (GRPs and TRPs), which are metrics derived from household-based panels. However, the link between household panels and their understanding of the individuals that are sharing viewership doesn't easily translate to an identity-based approach. This has given rise to an evolving landscape of cross-channel media buying currencies to understand media spending outcomes. Audience sampling or estimating advertising impressions, such as what Nielsen has done with linear TV audiences for decades, also will not work on their own. Identity will be critical for measurement and attribution (i.e., understanding who is watching at the household level). But the TV supply chain is more complex than the open web. Within the US, cable and broadband distributors, as well as the streaming device and TV OEMs, leverage IP addresses to build an understanding of household consumption through CTV IP server-to-server connections.

DO YOU THINK THAT LINEAR TV AND CTV/OTT BUYING WILL EVOLVE TO A SINGLE PROGRAMMATIC PLATFORM APPROACH — AS USED IN OTHER FORMS OF DISPLAY AND DIGITAL VIDEO ADVERTISING, SHARING SIMILAR METRICS AND TRADING PLATFORMS?
(2022, % OF RESPONDENTS)



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> "The TV industry has realized TV wins as a platform, not as an individual media company, because no one company has the scale to compete with Amazon, Google, or Meta."
>
> *– Chief Strategy Officer, Connectivity Provider*

During our industry interviews, some forward-looking solutions to these dilemmas included audience-based clusters that would not be completely geo-centric but based on a matrix of geography and demographics. Household-level ad impressions could be collected by combining linear TV data and ad occurrence data at scale through CTV or OTT IP server-to-server connections. In the UK, Sky TV, a leading subscription-based content distributor, is generating significant advertising revenue based on first-party consumer data within the confines of GDPR. Sky TV is the official inventory reseller for both linear and addressable TV buys. Sky's market penetration is nearly 50% of UK homes, providing the necessary data scale. Individual identities are linked to each household through subscriber and contract payment information.

FOUR MAJOR CHALLENGES IN SOLVING FOR ACCURATE AUDIENCE-BASED TV ACTIVATION AND MEASUREMENT.

The first is the media planning function within brands and their agencies. The linear TV planner leverages the time-tested metrics that they have always used to focus on buying linear first, and then scales those metrics to find audiences in CTV and across digital channels. The goal is to extend reach, but they define an audience based on personas and segments developed by their audience planners. On the other side of the house, digital buyers utilize a data science approach to define their target audience primarily built around finding people within a household. The result is an audience built and defined in a completely different way. The same holds true for the agencies that support the brands, which are frequently split between linear and digital buyers—with budget and spending linked to their channels. The lack of a common definition then rolls down into what audiences are bought and where.

> "In identity you are getting proprietary IDs that have different protocols to get in and out, so you are getting this walled garden of identity. We are looking for an identity solution that works across all of them."
>
> *– Vice President of Strategy and Market Development, Data Provider*

The second challenge is the fragmentation of buying paths in the ATV media market. Not only is media ownership and delivery highly fragmented, but the way to reach the audiences is also currently divided into up to five paths to buying on the TV sets within a home. Each path is further complicated by the fact that every media seller has a different view of who the audience is, based on the information they have and the identity solutions that they use. The lack of a common understanding of the audience impacts how media buyers plan, how activation works and just as importantly, how engagement and outcomes are measured.

AS A RESULT, TV ADVERTISERS ARE LIKELY TO STRUGGLE TO TARGET SPECIFIC AUDIENCES AND MEASURE OUTCOMES ACROSS APPROACHES

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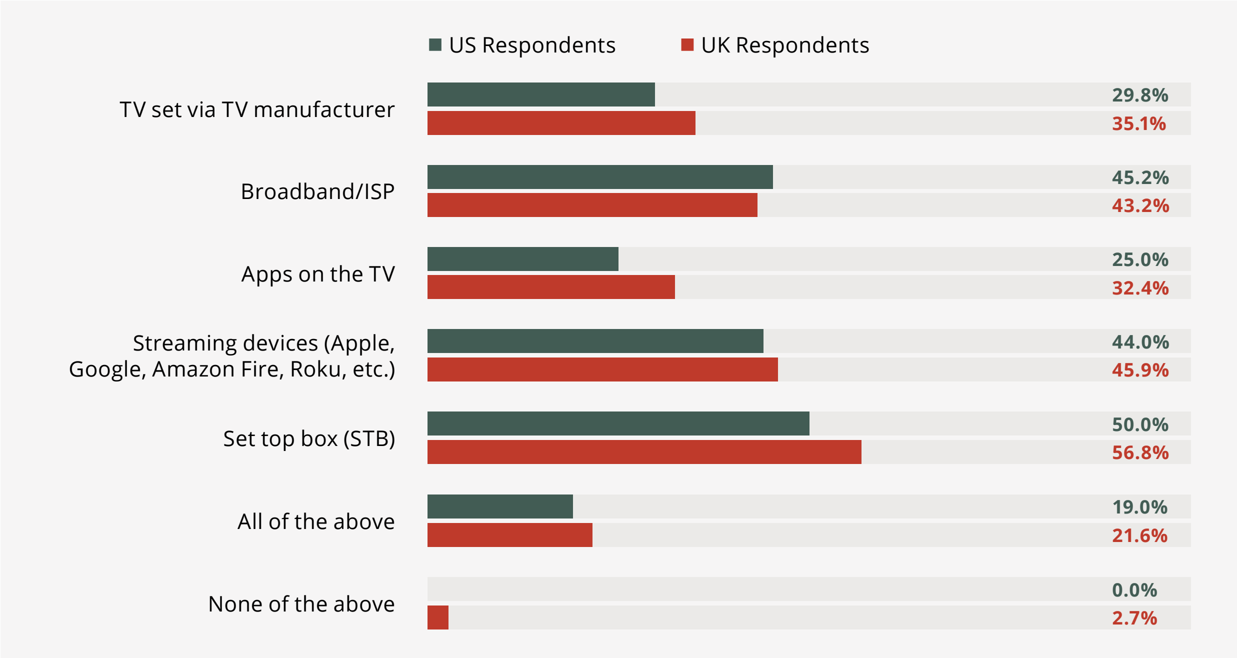
At this point in the maturity curve, none of these approaches has emerged as the clear leader. One in five of our survey respondents already use multiple activation paths to reach TV viewers, and we predict that in the long term, both subscription-based and advertising-supported linear TV and CTV will converge to solve many of the identity challenges we've discussed.

The third major challenge is the lack of a unified or interoperable identity solution. For all its shortcomings, the advantage of the cookie and people-based targeting is an accepted and common approach to finding audiences. Identity based on cookies—whether deterministically or probabilistically based—provides a common framework for the programmatic market, a standardized DSP-based buying approach and a process for contextual targeting to extend reach. This is enhanced by the fact that inventory is virtually unlimited, facilitating access to the inventory, whether directly to the media owner or through SSPs and exchanges. The common base for identity also allows for matching both on the open web and inside walled gardens. This approach has led to an ostensibly people-based model that looks for devices, whether it is a mobile phone, tablet, computer, gaming console, etc.

While the marketing technology tools in site personalization vary, the use of cookies and data do not. In the ATV ecosystem, however, the cookie was never the focus—the IP and household were. It is interesting to note, the household was the primary unit for segmentation in the offline direct marketing world, which gave way to people-based digital identity as it evolved. As identifiers were deprecated for browser, privacy or regulatory reasons, the identity solutions market further fragmented into deterministic, hashed, email-based identities, scaled with probabilistic models and contextual targeting to identify audiences at the people level and expand the use of the household (location) and IP address.

The accuracy and scalability challenges to making approaches work together is further compounded by the use of multiple identity solutions and providers that build the solutions based on different data attributes and analytics.

WHICH TARGETED ACTIVATION PATHS DO YOU USE TO REACH VIEWERS ON TV SETS TODAY?
(2022, % OF RESPONDENTS)



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FIVE PATHS TO ATV MEDIA BUYING

Individual/Household	Viewing devices	Delivery channel/path
Individual	Smartphone, tablet, computer, wearable	Broadband and WiFi via browser
Individual and/or household	Television screen	Broadband and WiFi direct to the TV via the operating system
Individual and/or household	Television screen	Cable or satellite provider set-top box
Individual and/or household	Television screen	Streaming or gaming device connected to the broadband/TV
Individual and/or household	Television screen, computer, smartphone	App on the TV, set top box, streaming/ gaming device

Translating these identity solutions to the household level and making them interoperable is going to require collaboration—not just in the tools or environments used, but in defining audiences and how they are identified across the buy and sell sides.

The fourth challenge to solving for accurate audience-based TV activation and measurement is the lack of unified measurement across channels. As TV expands from traditional linear viewing to the plethora of data-enabled ATV approaches delivered by a wide range of technology participants, TV advertising measurement has become more complex. Established measurement solutions have been challenged by the fragmentation of audiences across technologies and platforms, which has led to significant gaps in some panel solutions. As a result, panels have found it necessary to increase in size and combine with appropriate ACR-based data, in some cases, to build solutions that more accurately reflect fragmented markets. Additionally, efforts to develop a unified measurement approach have been hampered by a unified view and utilization of which and how many measurement trading currencies will be used to satisfy brand requirements in the US markets.

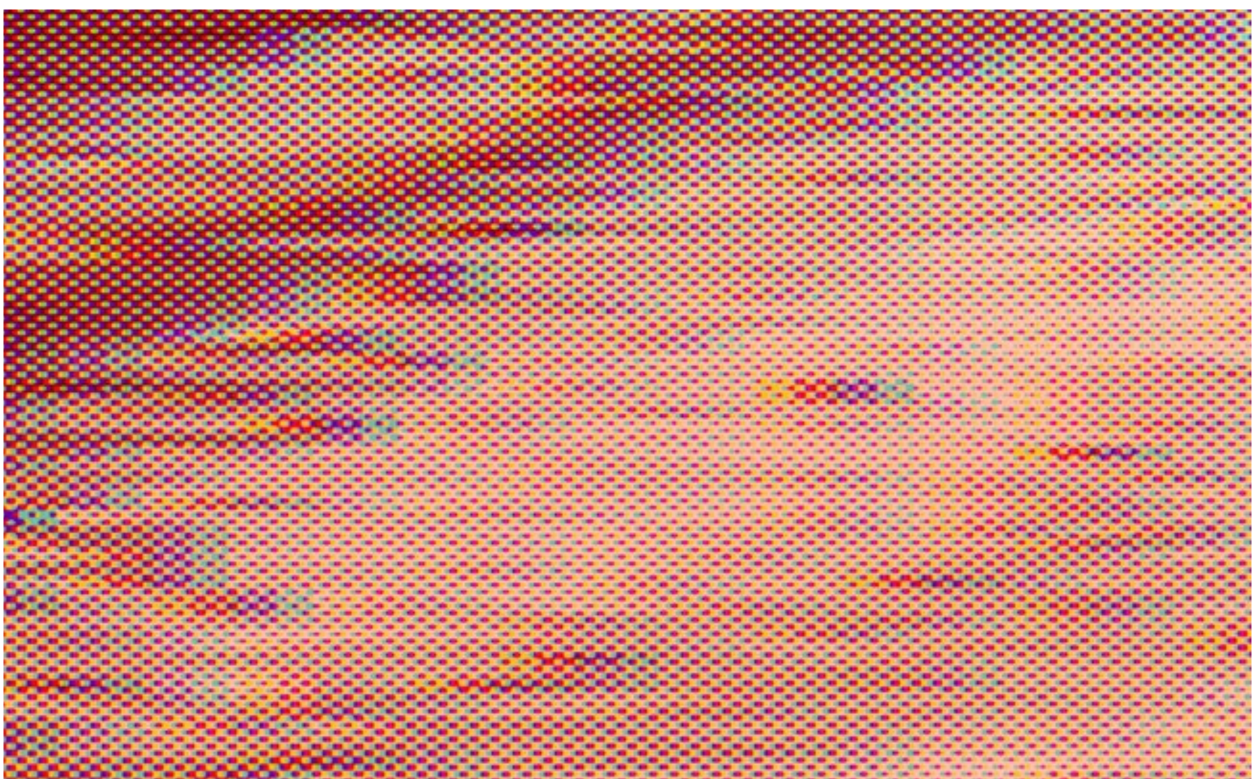
CHALLENGES TO ACCURATE, AUDIENCE-BASED ATV ACTIVATION AND MEASUREMENT

Challenge	Potential Solutions
Lack of identity standards	None clearly visible
Lack of interoperability among identity solutions	Translating identity to the household level; collaboration to define audiences and identifiers
Number of paths to the TV set	Convergence among subscription-based and ad-supported linear TV and CTV
Complexity of measurement	Increase consumer panel size, combine with ACR-based data
Disconnected media buying platforms	Adapt programmatic technology to ATV channels to understand and target households
Privacy/access to identifiers	Interoperable clean room environments

> "It will take a few years for publishers to decide what definitions of households and people they want to use. They ask us to structure the interoperability between those people and households. The tests right now are more real than we have ever seen."

– Head of Solutions, Connectivity Provider

Despite these sizable challenges, Winterberry Group believes that identity can and will play an integral role to help ATV media buyers and sellers implement effective audience-first strategies across a diverse and complicated landscape. We envision that the ATV media market will evolve to support a dual approach: media that is purchased separately by channel and format, and media that is bought in an integrated manner. For this to happen, collaboration among the many intermediaries, brands and publishers will be required. Supply side exchanges, owners and distributors, conversely, need to demonstrate value and performance through the development of accepted currencies and audience performance metrics. Conversely, DSPs, agency media buyers and brand marketers will need to adhere to privacy-centric data practices to work with identity solutions to find and target audiences.



THE ROLE OF IDENTITY IN ATV USE CASES

Despite the challenges, identity will play a critical role in ATV use cases to plan, target, activate and measure the performance of audience-first marketing and media strategies. Driven by the need to reach audiences that are currently infrequently or not at all connected directly to the linear TV ecosystem, brand marketers and media buyers are increasingly turning to more addressable ATV channels to extend reach, target more niche segments and provide enhanced solutions for measurement and optimization.

The role of identity in these pursuits starts with the need to surface deeper insights about these hard-to-find audiences, determine which segments to activate across viewing screens, manage frequency as much as possible and measure the impact of campaigns with the measurement solution of choice. To support the use of identity, ATV media buyers from both linear and digital teams are focusing on first-party data, data collaboration solutions such as clean rooms and third-party data enhancement to build more robust profiles around the household, the individuals linked to that location and the devices to which they are linked within the household.

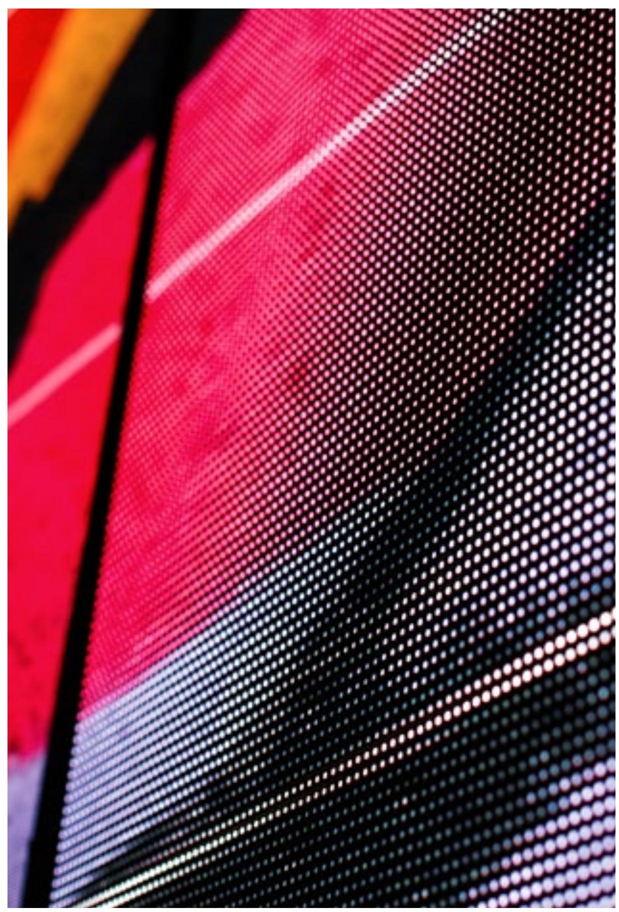
> "The future of identity for all use cases is going to be what the household is, the type of devices within the household and the attributes of who is in the household. If this isn't the case, then the data will be conflicting."

– Chief Strategy Officer, Connectivity Provider

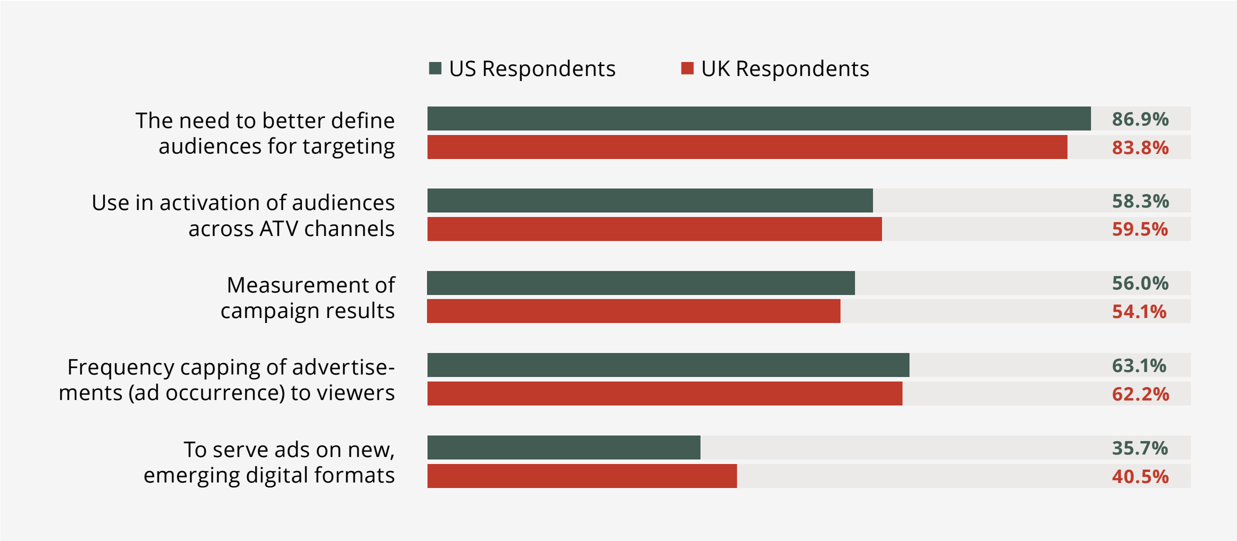
Solutions for improved audience insights are not just focused on what brand marketers know: a similar effort is coming from the supply side of the industry, with media owners leveraging similar data from authenticated audiences and anonymous visitor behaviors on websites and across screens. The ability to understand viewer behavior across personal and household devices, enabling them to build privacy-compliant audiences, improve audience segmentation and provide the information to media buyers, has shifted the market to one with more balance between the supply and demand sides of the market, with greater interdependence in achieving advertising objectives and supply-side yield optimization of inventory.

Through our interviews, we found a consensus that brands are focused on creating and leveraging identity to bridge the gaps in offline/online connections and improve accuracy in understanding the customer journey across screens in the upper funnel (i.e., awareness advertising), as well as driving deeper insight into mid- and lower-funnel outcomes. However, in these early stages of ATV and its multiple buying paths, fragmented media inventory and viewership, the process of stitching attributes from known individuals to households and IP addresses, is not fully evolved. Viewing across devices changes frequently, the pathways to the screen vary and are not easily interoperable, and there are few aggregation points. Further complicating the ability to derive insights, executives report seeing significant drops in audience volumes as the identity resolution process moves downstream.

The tip of the problem—and maybe one that is as significant as any other—is that the buyers of media are coming from two directions. The first is the traditional linear buyer, who buys households against GRPs and, just as importantly, TRPs, and thinks of audience expansion in terms of reach extension to find the audiences media planners have defined. The second is the digital media buyer, supported by data scientists and their people-based models, who define an audience differently, start their planning with CTV and extend their addressable buying into linear—across local segments and even into national buying. The two different audience definitions from within one organization, often supported by multiple agencies, present a major challenge to a common company definition of an audience. This further leads to activation challenges downstream as the results fail to come together to deliver desired outcomes. While integrating organizations is a challenge, the use of a consistent approach to identity is the key to a common definition of audiences.



WHAT ARE THE KEY DRIVERS OF THE USE OF IDENTITY IN ADVANCED TV (LINEAR, CTV)?
(2022, % OF RESPONDENTS)



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Media planning and targeting. The use case for identity in media planning is to enable reliable and accurate audience-first targeting on the numerous ATV platforms and delivery choices available to buyers. More than half of our survey respondents reported frequently using identity-based audiences in their linear TV media plans. The percentage is even higher in the UK, where the media ecosystem has adapted more quickly to GDPR restrictions to create addressable linear TV advertising products targeting 35 million users based on location and demographic data. Over the next 24 months, the vast majority of both US and UK-based marketers and media owners expect their use of identity-based audiences in linear TV planning to grow even further—again, UK marketers led US respondents. Within the UK, the mandatory registration for any BBC streaming services has normalized authentication across the market, with the resultant benefits.

Precision targeting will take precedence over reach in ATV, particularly for US marketers and media buyers. American media buyers are grappling with how to transform the brand-building strategies behind much of linear TV advertising to the one-to-one targeting required to reach the right people within the household with the right message at the right time. A one-size-fits-all approach will not work in the ATV media environment.

> "I think there will be more of a connection between measurement and targeting within an automated system sooner than we think. I think that is where it's going to go."

– Vice President of Strategy and Market Development, Data Provider

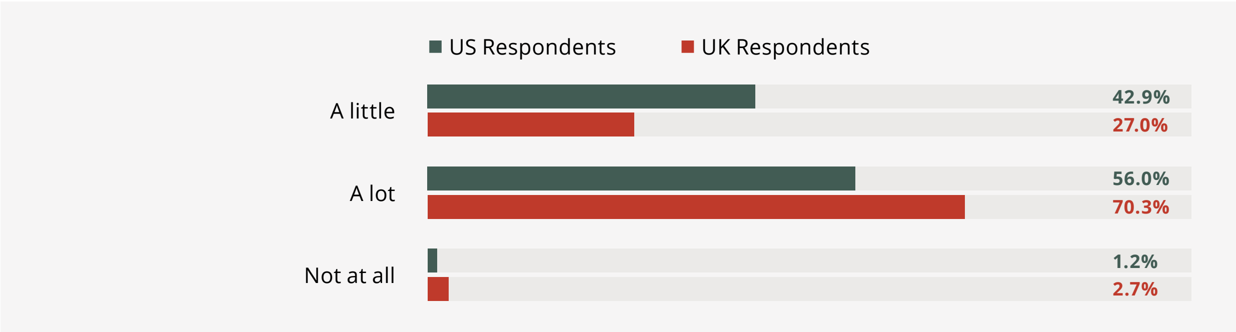
The question of accurate campaign planning and targeting in CTV and other streaming TV media, however, may not be solved until the technology is available to optimize advertising frequency. Marketers agree that the cadence necessary in ATV will be faster than the standard linear TV monthly frequency and will likely be weekly or even daily refreshes. This potential increase in frequency in ATV advertising campaigns has led to concerns around sequencing, consumer privacy and the need for frequency capping, especially for mass market brands seeking scale. The use of identity solutions will be central to understanding audience receptivity to when, how often and where users want to view ATV advertising. Robust frequency capping will rely on both demand-side and supply-side players working together to understand and meet the privacy expectations of consumers.

> "Using identity for sequencing is the right use case because it moves people properly through the funnel. IP and workflow technology needs to change for this to be accomplished."

– Chief Strategy Officer, Measurement Provider

The desire to improve ATV media planning, segmentation and, ultimately, the buying process has highlighted the need for a common—or at least, interoperable—set of identity solutions. Data collaboration and clean room solutions, used in linear TV for planning and measurement, will become essential for creating a privacy-driven, common view of identity profiles. Brands and media owners will be able to place first-party data or graph profiles into the clean room, perform overlap analysis and gain a deeper understanding and common definition of the audience. The clean room environment meets the requirement for permission from both the buyer and media owner to protect data security and provides the ability to analyze audience behavior within the media owner's site.

HOW FREQUENTLY ARE IDENTITY-BASED AUDIENCES USED IN PLANNING FOR LINEAR TV MEDIA?
(2022, % OF RESPONDENTS)



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This, in turn, will enable both sides to develop the right creative engagement and determine the right frequency to optimize return on ad spend (ROAS) for the brand and increase revenue retention for the media owner. As interoperability between identity solutions and clean rooms improves, brands will be better able to unify planning and buying teams tasked with finding a common definition of an audience, and the upfront planning process will be far more precise in targeting the right audience on the right channel, device and platform.

> "If you are not matching your IDs with planning, activation and measurement, you are in a world of pain and reconciliation."

– Vice President of Product, Connectivity Provider

Audience activation. The use case for identity in ATV audience activation is more straightforward, as pseudonymized data (identity hidden as a pseudonym, which can later be linked back to the individual, unlike anonymized data, which cannot) linked to a unified ID can move easily through the ecosystem. The most currently available ATV advertising inventory is directly sold; therefore, the use case focuses on an identity solution's ability to enable more accurate audience matching and identify overlapping profiles across media platforms or channels. Building on the planning use case and central to ATV identity activation is the ability to take the audience definition from the clean room and activate it to buy audiences. The key here is a common set of audiences to activate against, which requires buyers to match the segments in their buying systems, DSP or with the segments built on the supply for activation. Currently, there are three issues that the market is in the early stages of addressing. The first is the lack of a common ID, or more accurately, identity solution interoperability. While the market is not seeking a single ID to rule in place of the cookie, the lack of a scaled common cross-reference or crosswalk makes accurate or precise matching challenging. The result is a higher degree of waste and a lower ROAS. The second issue is clean room environments—also currently without interoperability between suppliers—are more effective for audience analysis and media planning, and not yet conducive to audience activation.

The movement of data between clean rooms also brings up significant issues around data privacy. With brand data governance policies built on privacy-by-design, more brands are refusing to share their customer data to support unknown universal identities. Fewer publishers are licensing their subscriber data, preferring instead to work with trusted partners to match and create IDs. The solution may be brand- or publisher-owned private clean rooms that centrally manage audiences for segmentation, analysis and activation. This approach will facilitate cross-channel media planning, resource allocation and reporting across publishers or partners.

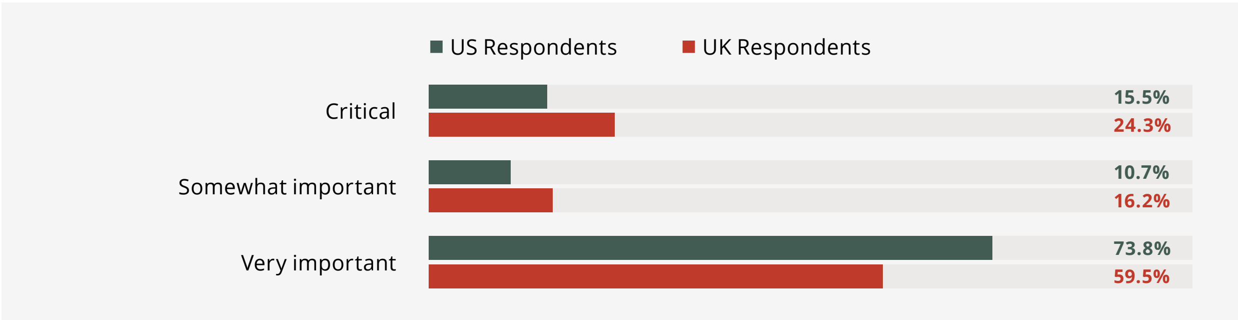
> "The underpinnings of identity have become crucial for measurement and attribution. The industry has realized that they need to collaborate on things because there will be no Facebook of CTV."

– Vice President of Strategy and Market Development, Data Provider

Finally, there is the dilemma of what is the right buying solution to use across ATV targeting paths. While there is alignment that the programmatic approach can drive efficiency, the market needs to further invest in a unified set of planning tools that can then seamlessly work across any buying path to the screen or device. This will mean that the DSP's role will expand in a market that will remain predominantly directly sold vs. auction based. Or, that the supply side, with a scaled group of media owners, unifies its identity and collaboration solutions and brings with it buying platforms (such as those that Amazon, Google and Facebook have in traditional programmatic buying), complemented by a greater role for SSPs to build privacy-compliant, transparent, identity-based audiences matched to content.

Measurement and attribution. No ATV use case has been more impacted than the shifting needs for unified measurement. As audiences have fragmented, capturing the data needed to measure and attribute has become an ever-growing challenge. In the digital ecosystem, the continuous loss of identifiers through regulation or browser action has made this a major problem.

HOW IMPORTANT IS PRECISION VERSUS REACH IN PLANNING ADVANCED TV CAMPAIGNS?
(2022, % OF RESPONDENTS)



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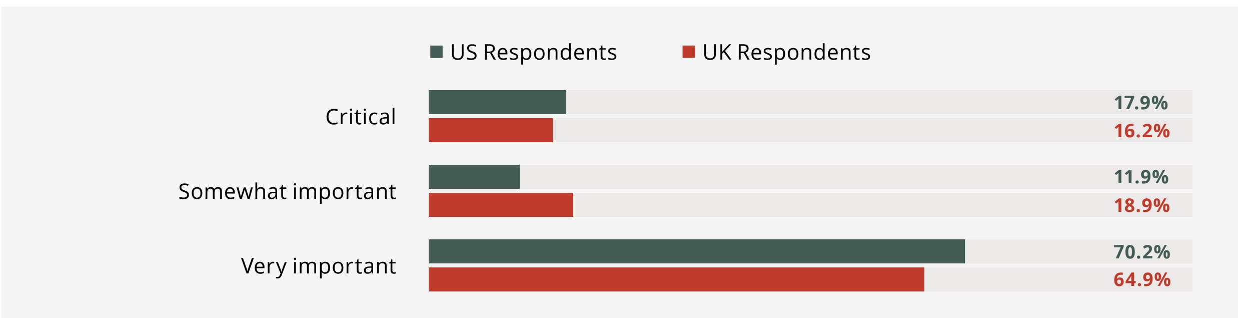
HOW IMPORTANT IS IDENTITY TO SUCCESSFUL ACTIVATION IN CTV/OTT?
(2022, % OF RESPONDENTS)



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It has become a perfect storm where digital identifier loss, combined with linear activation and delivery fragmentation, and the panel-based solutions that have been used for decades, now highlight the need for a common set of solutions that cross the digital and linear delivery solutions. Demand for unified measurement is coming from both the brand side, which needs transparent and better metrics, as well as the sell side, where media owners are seeking to prove the quality of their audiences. The point where the needs of demand and supply converge is at the use of identity, which becomes the core component in enabling the measurement of ATV campaign performance and making decisions regarding media buying strategies.

There are two questions that the market is focused on today, neither of which has been fully answered:

WHAT IS AN ATV MEDIA BUY WORTH? AND WHAT IS THE RIGHT CURRENCY TO USE TO MEASURE THAT VALUE?

> “The biggest challenge for brands is a market focus on reinventing currency: having intelligence to tell you what to buy. The industry has gone through a huge upset because technology for distribution in media has changed and audiences are dispersed.”

– Director of Research, Analytics and Data, Measurement Provider

In the linear TV world, identity wasn’t necessary because measurement companies such as Nielsen established a recognized standard currency for media buys. But as more set-top box inventory became addressable in the past three to five years, the use case for identity as a complement to panel measurement grew, specifically to define who is watching at the household level and who is behind the screen. Now with more ATV content delivered through internet-connected devices and streaming apps, identity has become essential to establishing household identities and will be critical to establishing value moving forward. On the CTV supply side, for example, one impression will have a very different value for each brand advertiser based on factors such as whether the audience is authenticated (or not).

Still, progress is being made due to the fact that CTV is based on IP server-to-server connections, which facilitate the collection of household-level advertising impressions. By combining linear TV data and ad occurrence data, media buyers can measure performance based on when, where and how ads were seen. For example, streaming ATV service Roku sells its inventory based on a device ID, which is a stronger solution but still lacks deep insight into who is behind the screen.

> Ultimately, measurement should be owned by the brands, not the sale side. The money is coming from brands. I favor a brand-first approach that gets traction by good product design that becomes definitive and is adopted. It is extremely complicated because there are a lot of brands and a lot of counterparties.

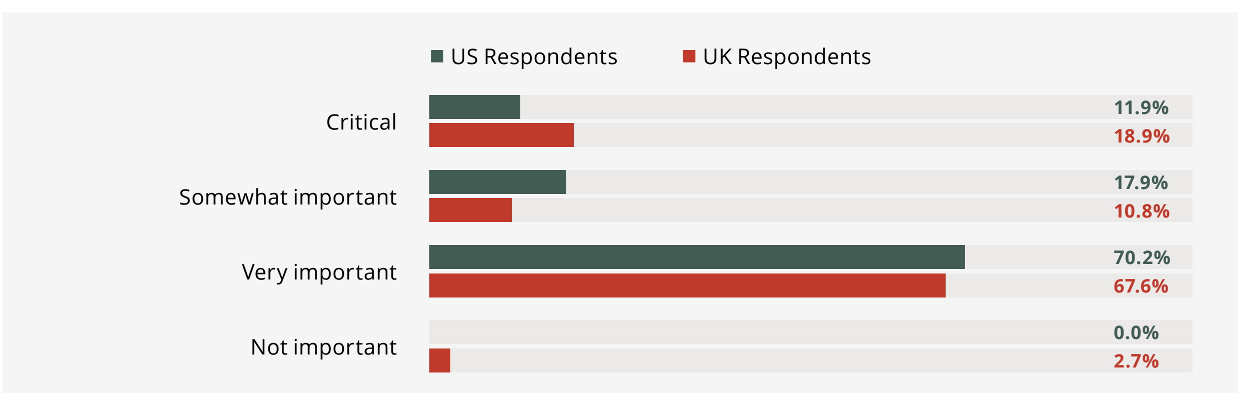
– Director of Research, Analytics and Data, Measurement Provider

For programmatic media buyers, digital measurement and attribution companies are aggregating viewership data based on streaming application downloads from CTV, linear and addressable TV. Identity is used to provide DSPs with an ID for audience targeting, rather than an IP address. As more ATV measurement services become available, the next step will be cross-channel measurement, which will attempt to measure mobile and desktop audiences, as well as linear and addressable audiences. Ultimately, the use case for identity in ATV audience-first measurement will require a significant degree of collaboration across platforms.

> It is amazing to me that we are going to an upfront period without a currency in this space. First thing, there is a difference between measurement and currency. You can be a measurement company and not be in currency, but you can't be a currency company and not be a measurement company.

– Chief Strategy Officer, Measurement Provider

HOW IMPORTANT DO YOU THINK THE USE OF IDENTITY TO BRIDGE MEASUREMENT SOLUTIONS IN ADVANCED TV IS GOING TO BE? *(2022, % OF RESPONDENTS)*



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IDENTITY SOLUTIONS AND THE DEMAND FOR INTEROPERABILITY IN ATV

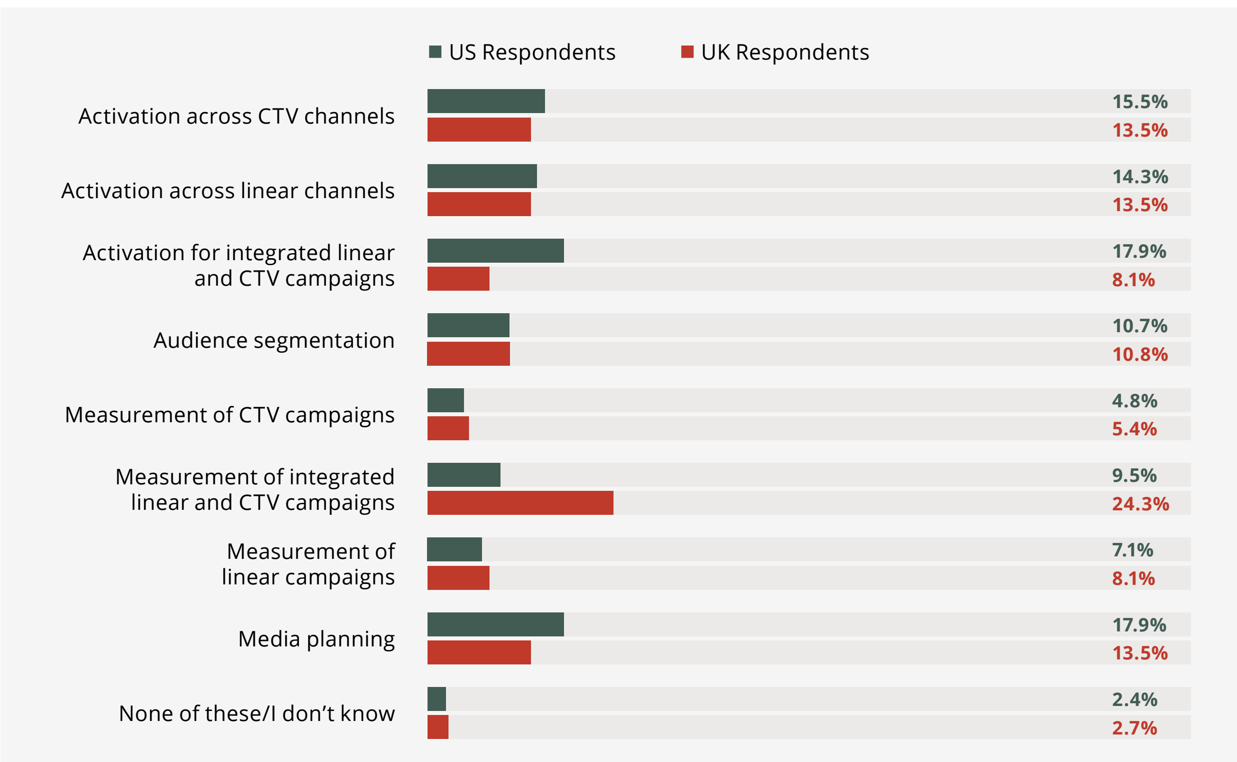
Identity solutions are rooted in the creation of persistent individual and household IDs that combine data attributes to describe a person, household or entity (for B2B). Data matching may be highly precise and accurate, when every individual identifier is validated against an established "truth set" of referential data within the solution's identity graph using deterministic and/or probabilistic methodologies.

Given the disparities in ATV audience data collection, management, precision and measurement, there is work to do before the current ecosystem of ATV buyers, sellers and intermediaries can realize the full benefit of identity in their audience-first media strategies. Winterberry Group views the following three components of identity solutions as critical requirements in the approach to ATV: 1) using data to enable the linkage of households to individuals, bridging digital and linear addressability; 2) ensuring data integrity and privacy compliance among multiple clean room environments; and 3) establishing a common approach to identity to enable audience-first media planning, activation and measurement.

Linkage of household data to individual-level IDs. We have established that ATV media ownership and content delivery is highly fragmented, with five paths to buying on household TV sets. All of these approaches have some degree of user authentication and permission capabilities to identify household viewers, although precision and accuracy will vary based on the approach. Whereas the TV operating system and set-top box offer authentication, permission and a high level of precision tied to a geographical location, as one extends into authenticated streaming apps, the degree of precision can degrade based on sharing habits across household devices and beyond.

A true one-to-one approach, such as that used in programmatic digital media or email, for example, targets audiences through individual-level devices such as a smartphone or laptop. That leap is more difficult with the shared devices inherent in ATV, although the available data has grown exponentially with the advent of digital streaming and applications delivered through the TV set. IP addresses will play a critical role in this process of triangulating household identities, as well as recognizing individuals (or their devices) within the household. Streaming app services collect IP addresses every time a campaign advertisement is run. IP addresses can be matched to household viewership data owned by the multi-channel video programming distributor (MVPD).

WHAT ARE THE PRIMARY USE CASES FOR CLEAN ROOMS WITH LINEAR AND CTV/DIGITAL VIDEO CAMPAIGNS? *(2022, % OF RESPONDENTS)*



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Path to the TV set	Authentication	Permission	Precision
App provider	✓	✓	×
TV OS	✓	✓	✓
Set-top box	✓	✓	✓
Streaming device	✓	✓	×
Broadband provider	✓	✓	×

ATV measurement companies are bridging the gaps by linking available digital data on website visits to TV exposure impressions through digital and deterministic methods.

> “There will be many clean rooms, because the clean rooms will have many use cases: analytics, CRM, audience data, conversion data and forming attribution.”

– Chief Strategy Officer, Identity Solution Provider

Moving data safely between clean room environments. Demand for audience-first media planning, buying and measurement, coupled with greater concerns about data leakage, the ability to develop insight while limiting movement of data and more stringent data privacy regulations, have led to the emergence and adoption of technology-based clean room solutions that provide a privacy-driven environment for the sharing of data. These solutions are divided into two approaches: data sharing that involves the movement of data and data collaboration without movement. As such, not all clean rooms provide the same level of data privacy and security. While permission levels are determined by both consent and the agreement between the parties utilizing the solution, different clean room providers can enable tiers of permission for intra-company, peer-to-peer and multi-party arrangements. Interestingly, when it comes to data movement, privacy was the most significant concern for UK brand executives in our survey, while their US counterparts were most worried about their data security.

But there are still some limitations within the current group of clean room solutions. While clean rooms are important for audience data planning and analysis, the ability to work within walled garden environments for activation and measurement has been challenging due to the lack of shared decisioning systems and audience tools among ATV content owners and distributors. The goal for clean room solutions as a component of ATV media buying and selling will be the ability to move from granular data to aggregate data, from the permission-based compliance of the clean room into the buying solutions and the ability to integrate the audiences into decision systems.

> “Clean rooms may not be interoperable because the data may not be compatible. What I’d expect is for brands to have their preferred privacy technology and the ability to have a repository of enclaves that you can back data into. This depends on what brands deem as viable in terms of privacy.”

– Product Marketing Leader, Clean Room Provider

In our interviews with ATV suppliers and intermediaries, the challenge cited most frequently was clean room interoperability, due to the expanding number of clean rooms that brand marketers and media owners will agree to work with for specific marketing use cases. In addition, there is a mix of walled-garden proprietary clean rooms and commercial options that will need to connect to the current and potential emerging ATV-centric “gardens” and marketplaces. Private identity graphs, which house enriched first-party data for brands’ use (and potential use with selected partners) are one solution that can centralize mixed-media results and audience management. For enterprise brands that can scale first-party data, in-house identity graphs also solve issues associated with the movement of data and the ability to partner with multiple clean rooms for interoperability.

> “At the end of the day, we will end up with a fragmented world. I don’t think we are going to get to a world where there is a single identifier. The stakes are too high, and the players are too big. The small players benefit a lot, but their contribution is minimal, and the large players can only lose.”

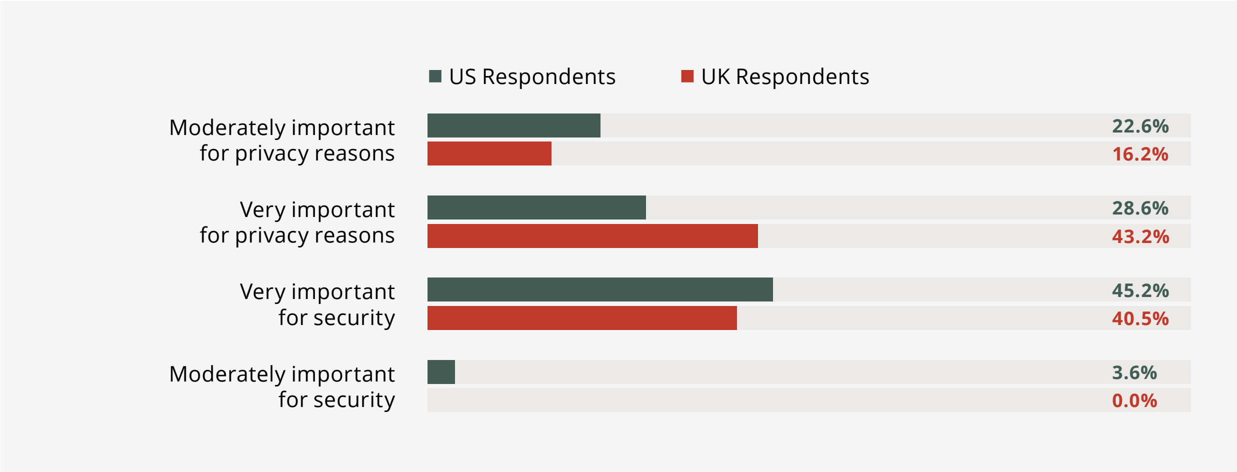
– Chief Technology Officer, Measurement Provider

Irrespective of approach, and despite the best wishes of marketers, there is general agreement that a standard will be hard to achieve. It is therefore expected that “identity crosswalks,” which enable the linkage of an identity solution or graph from one environment to another, will facilitate the sharing of audiences for planning and activation. This would include both direct matching and referencing and enablement across a variety of clean rooms where permission and privacy regulations allow. Using crosswalks between first-party and extended third-party graphs, brands on the buy side and media owners on the sell side would be able to translate their in-house IDs to the proprietary IDs created by identity intermediaries. Approaches here would include the embedding of an API set or a first-party tagging framework that can be connected back to an identity solution’s proprietary IDs.

> “The SSPs could be the potential aggregator, doing it at the inventory level, which would mean not going through the DSP.”

– Vice President of Global Identity, Data Provider

HOW IMPORTANT IS THE NON-MOVEMENT OF DATA TO YOU?
(2022, % OF RESPONDENTS)



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> "TVs in households are communal machines, but the market is trying to make them individual for the sake of selling more eyes. The translation from household data into people-based viewing must go through some tiny filter that doesn't exist."

– Director of Research, Analytics and Data, Measurement Provider

> "I think in theory, crosswalks are possible. But in practice, it's harder, especially in the mid-tier. The big players will be able to do it to some degree because they can afford to partner with someone to make it happen."

– Vice President of Global Identity, Data Provider

> "In the UK, we are seeing all of the major broadcast media companies building and owning their identity graphs including ITV, Channel 4 and Sky. Their scale and coverage of the UK market gives them a mature ability to sell across audiences for linear, addressable and CTV."

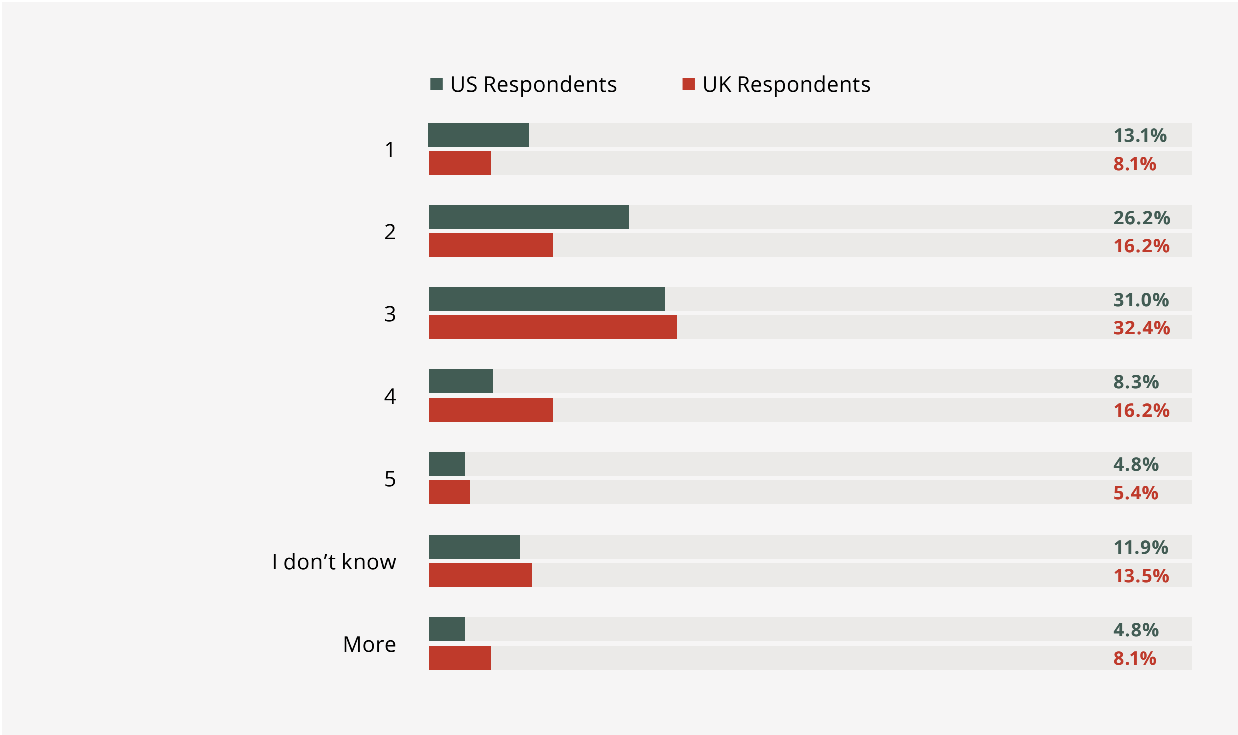
– Director of Advanced Advertising UK, Connectivity Provider

ATV and current approaches to identity. Winterberry Group has identified six approaches to identity that are currently used by brands to deploy targeted audience-first marketing and media strategies on the buy side, and by media owners to quantify audience value and performance on the sell side. Some of these approaches will not work in the ATV media environment because of their reliance on pieces of the digital programmatic ecosystem. The lack of a standard, ubiquitous identifier that can be transferred between buyer and seller remains a significant obstacle.

In fact, interoperability has been a common theme throughout our research for this report. Many of the ATV intermediaries that we interviewed are skeptical that a common ATV identifier will emerge to solve the issue, based on privacy and first-party data control concerns and the sheer number of ATV participants and paths to the end user watching the TV screen.

Over the longer term, brands are more confident that an industry-recognized ID will emerge from the buy side that utilizes standardized methods to identify individuals and a taxonomy to correlate identity and data across media channels. This may result not in a single identity graph but a unified approach to how to crosswalk. Over the past 12-15 years, brands have flexed their strength in programmatic media through the use of DSPs and cookie-based identities. In ATV, media owners, with their fixed inventory and prevalence of direct deals, are disinclined to repeat past mistakes and cede control of audience and context. The ability to leverage their first-party identity graphs, control the definition of audiences and enable activation is likely to provide supply-side technologies with an opportunity to play a more significant role in the market. As proxies for the suppliers, SSPs are in a position to develop the ability to aggregate and anonymize ATV audiences, as well as create standardized inventory-based IDs that could work across multiple clean rooms. At the same time, they could provide the scale and reach desired, as well as the ability to find unique or micro-segmented audiences. Ultimately, media buyers and sellers will have to collaborate to fully benefit from the role that identity can play in recognizing, targeting and quantifying ATV audiences.

HOW MANY DIFFERENT CLEAN ROOM SOLUTIONS DO YOU WORK WITH?
(2022, % OF RESPONDENTS)



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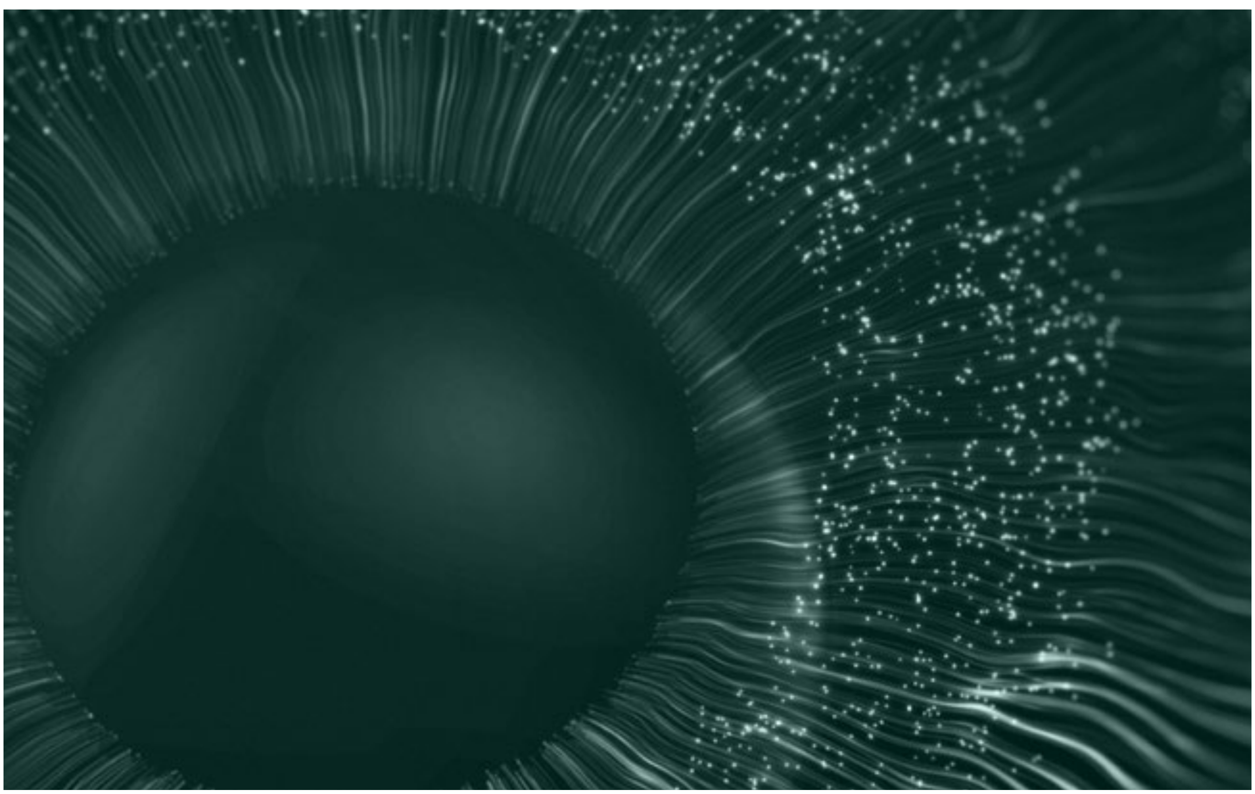
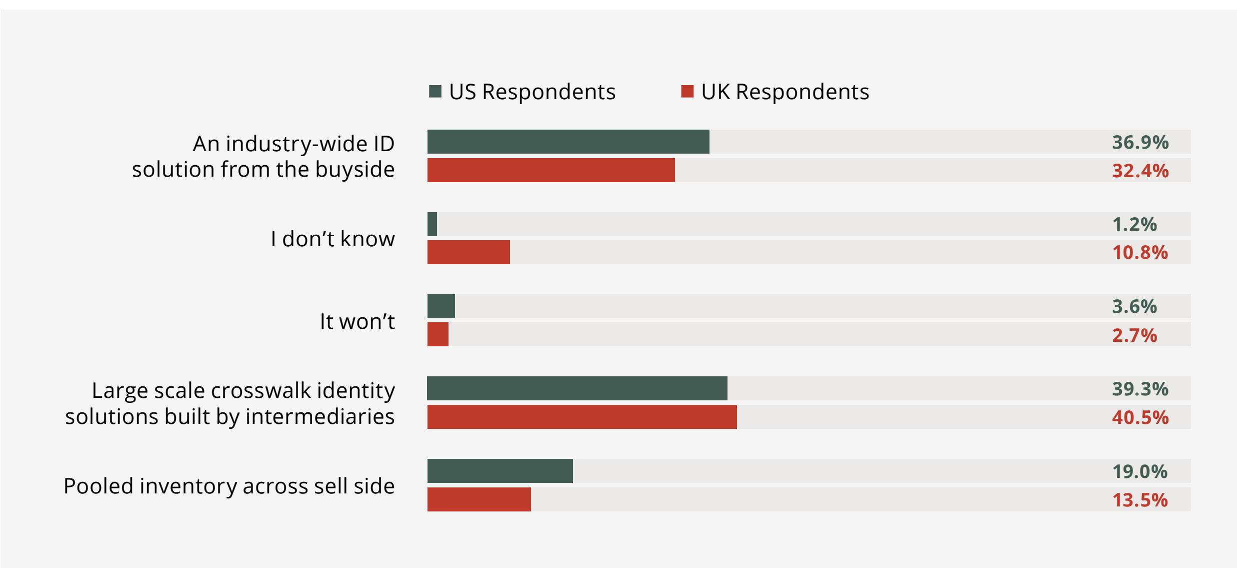


Identity approach	Individual vs Household ID	Clean room accessible	Applicable to ATV	Use case supported
Proprietary ID based on first-party data used by the brand or media owner to use on owned properties and for matching with partners either directly or through privacy-safe environments.	Individual	✓	✓	Planning, insights, activation, measurement
Common ID based on first-party match to third-party data match, and PII-based reference data set.	Individual and household	✓	✓	Planning, insights, activation, measurement
Common identity token used to facilitate enhanced recognition across the programmatic trading ecosystem.	Individual	×	×	Activation, measurement
Second-party data environment based on clean environments with anonymous ID linking to allow privacy-safe data partnerships to be created.	Individual and household	✓	✓	Planning, insights, activation, measurement
Household ID based on IP address and geographic match.	Household	✓	✓	Planning, insights, activation, measurement
Contextual targeting, although not strictly "identity." Has re-emerged as a complementary and standalone option in cases where there is limited or no first-party data.	NA	×	×	Planning, insights

THE ADVERTISING INDUSTRY IS EVOLVING TO HAVE MANY WALLED GARDENS FROM BROADCASTERS TO HARDWARE MANUFACTURERS. HOW WILL INTEROPERABILITY BE MANAGED:

(2022, % OF RESPONDENTS)



WG Advanced TV Survey May 2022, n=121

THE CHALLENGE FROM THE RESTRICTION, LOSS AND SHARING OF IDENTIFIERS

The groundswell of data privacy concerns—from consumers, legislators, browser companies and operating system owners—has significantly impacted digital marketing practices. It will also impact the use of identity in ATV marketing and media planning, activation and measurement. Regulations at the state, national and international levels continue to evolve, forcing intermediaries, brands and agencies to build and adopt flexible identity strategies that enable course correction and compliance.

In addition to the European Union's GDPR, the California Consumer Privacy Act (CCPA) gives consumers the right to "opt out" of the sale of their data. The update to this state legislation, now known as the California Privacy Rights and Enforcement Act (CPRA), will take effect in January 2023 and will more explicitly allow consumers to opt out of the sharing of their data for "cross-context behavioral advertising." To comply, online publishers will be required to display a "do not sell or share my personal information" link on their homepages.

> "The laws in privacy are convoluted and evolving, so everyone is just trying to figure out what the best way to go about it is."

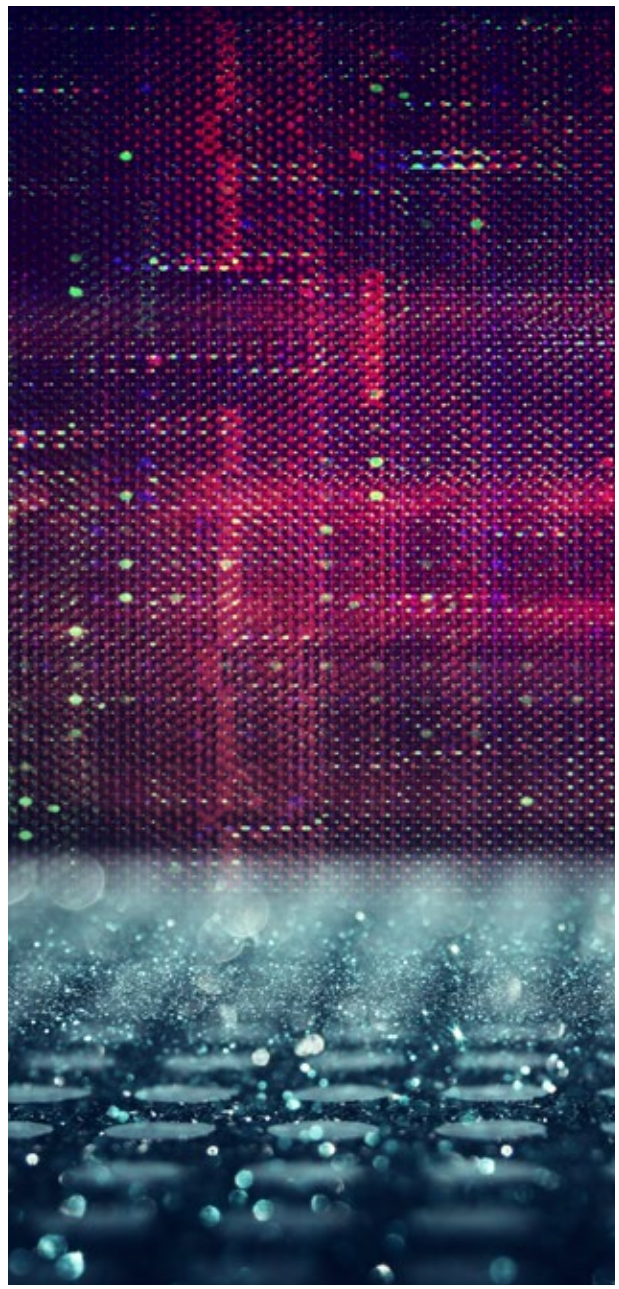
– Chief Executive Officer, Identity Solution Provider

Much has already been written about the ongoing deprecation of third-party, web-based cookies. Unless there are further delays, Google will phase out third-party cookies in its Chrome browser in late 2023. Apple has already disabled IDFA, its mobile identifier for advertisers, and now requires iPhone users to opt-in to sharing their identity with Apple advertisers. Initial research shows that only about one in five users do so. As we've discussed in this whitepaper, digital marketers are also losing access to large pools of potential customer data due to the proliferation of digital marketplace walled gardens.

> "Google seems to be doubling down on behavioral-based data and moving away from profile-based, so now they are so clean, no one can touch them. I think a world will emerge in which the operating system will have a bigger role in AdTech than it did in the past."

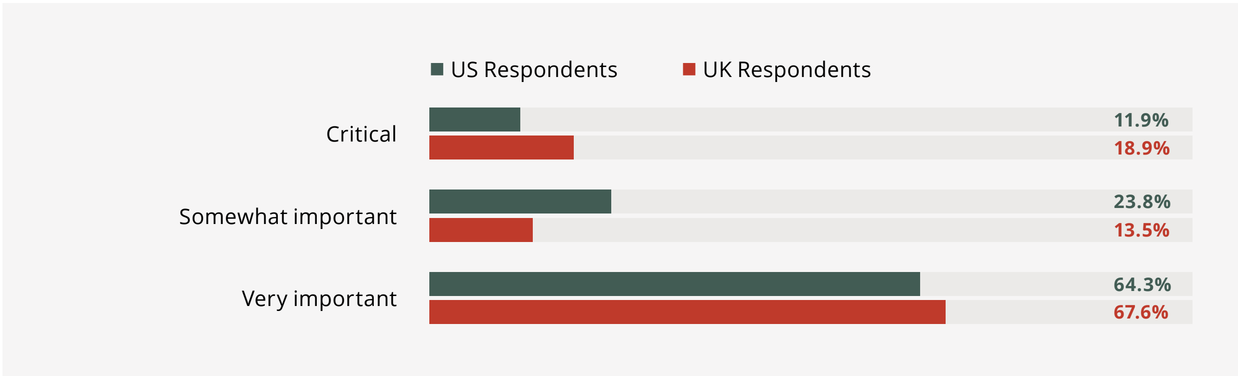
– Chief Technology Officer, Measurement Provider

Some of these challenges will not be as damaging to ATV media buyers and sellers since linear TV and CTV have never relied on tracking cookies to identify viewers. However, as privacy-by-design becomes foundational to data governance policies across all industries, first-party data sets will similarly become foundational to building scalable identity graphs for ATV use cases. Private identity graphs, in particular, can house a brand's enriched first-party data to centralize mixed-media results and audience management. For enterprise brands that can scale first-party data, in-house identity graphs also solve issues associated with the movement of data and the loss of identifiers due to web-based cookie deprecation.



IN ENVIRONMENTS WHERE IP ADDRESS ISN'T ALREADY OPT-IN, HOW IMPORTANT WILL ITS GRADUAL DEPRECATION BE?

(2022, % OF RESPONDENTS)



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One question that may complicate identity even within first-party data sets is: Who owns the user data? With so many players in the ATV path to the TV set and the viewer behind the glass, that question is difficult to answer. Streaming services such as Roku, Amazon Fire or Apple TV have a direct relationship with the viewer and perhaps consent through the app login. But video advertising content travels through multiple parties—DSP, SSP, server, device and media owner—each closer or further away from the end-user viewer. Collaborative solutions, such as second-party identity graphs, use cooperative data-sharing agreements between multiple buy-side or sell-side participants to create common, anonymized identity assets. On the sell side, full, first-party identity resolution in ATV would require all participating media owners to agree to share login information to create a single source of truth connected to the IP address at a specific time, which seems unlikely in the short term and challenging in some regulatory environments.

> "The first problem with IP addresses is that the users did not choose to give them. The second, is that there is no understanding of a contract from the user's perspective."

– Chief Technology Officer, Measurement Provider

Within the ATV ecosystem itself, the availability of identifiers such as IP address, device ID and app login is not guaranteed and, in many cases, will be limited by user sharing, lack of adequately captured user consent and issues around data control and ownership. The dwindling supply of household-level IP addresses (IPV4) has led to the introduction of IPV6, a technical change that has both advocates and detractors.

> "No matter what device you watch Netflix on, your direct relationship is with Netflix. In terms of relationships with an ABC or NBC, this has never been a consideration. We are trying to throw an established TV industry into a new paradigm. It is a relationship between the eyeballs and the content—and how the content got there."

– Vice President of Product Management, SSP

IPV6 advocates say the technical update was inevitable because there are only about 4 billion IPV4 addresses available. With more connected devices in each household, the potential for inaccurate or unavailable matches in the ATV media universe has grown significantly.

Detractors of the change from IPV4 to IPV6 cite the technology's current shortcomings, particularly around the loss of fidelity and lack of scale. Many identity onboarding services cannot yet match identifiers to IPV6, which has resulted in an impression value that is one-tenth of the CPM due to the lower field rate and problems resolving location-based IDs. Frequency capping, matching and unique reach calculations are difficult if not impossible, because each multiple systems operator (MSO) is using proprietary machine logic to assign an IPV6 identifier to a household device. Because of these IPV6 issues, some of the executives we interviewed still felt that IPV4 provides greater breadth of audience coverage and resolution quality.

Perhaps the bigger issue around IP addresses is that of IP masking. Two-thirds of our survey respondents across both the US and UK said the gradual deprecation of IP addresses will be very important. IP addresses are already being obfuscated by Apple, Google and Amazon, which has rolled out a feature to strip out the end of an IP address to restrict tracking. If the IP address goes the way of the third-party web cookie, it could be a tremendous blow for the use of identity in ATV. A solution is needed that can deliver some geographical privacy to the consumer, yet still maintain the key role that IP addresses play in identity across fraud and other use cases that provide benefits to the consumer. It is unclear if household identification within ATV will evolve to be one of those use cases.

MARKET EVOLUTION AND OUTLOOK

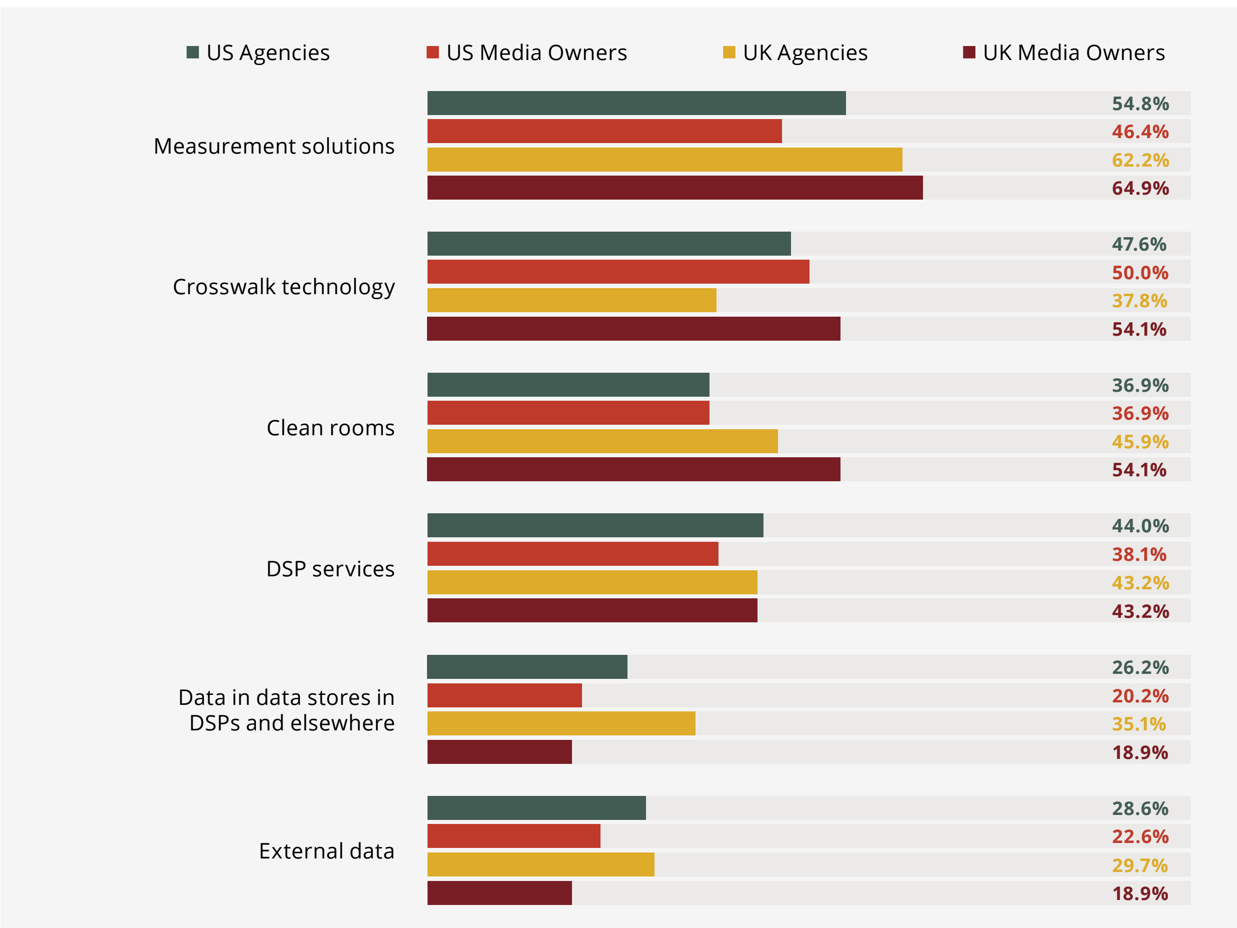
In summary, the future development of identity in ATV is ultimately tied to two concepts: interoperability and collaboration. Winterberry Group expects the market to evolve over the next 24–36 months in the following ways:

Interoperability will occur. Across the ATV ecosystem, both buyers and sellers acknowledge that there are too many buying paths, too many definitions of audiences, too many disparate methods of building and maintaining identity graphs and too many vendors of those graphs. The model is unsustainable if the ATV media market is to thrive. We expect that identity solutions will be made interoperable via crosswalks and clean rooms, as no single identity solution should or will meet demand across the many use cases. As the market matures—it is still very early in the ATV ecosystem—identity solutions will be built with an understanding of privacy-by-design, led by the data/identity solution developers investing in, and prioritizing, measurement and activation to drive the upper funnel through performance-based outcomes. The use of machine learning will increase to improve probabilistic matching around a deterministic core and will combine with greater use of data collaboration solutions that reduce the movement of data but operate within a common interpretation of identity.

> "Having more publishers that band together and create publisher/media owner alliances to provide transparency across non-competing entities—that should be where we are going."

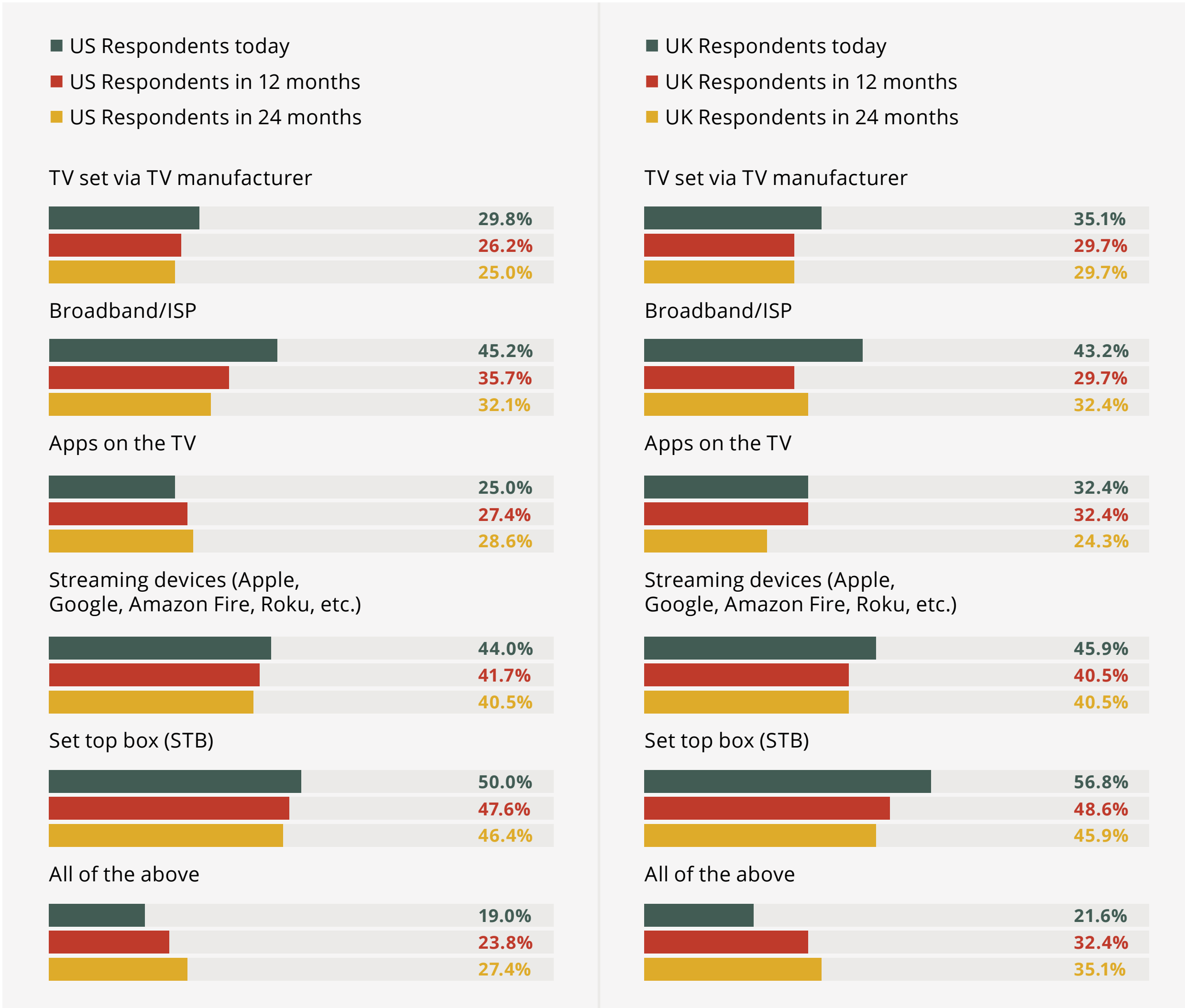
– Product Marketing Leader, Clean Room Provider

WHAT AREAS DO YOU EXPECT TO INCREASE EXPENDITURE ON FOR AGENCIES AND MEDIA OWNERS? *(2022, % OF RESPONDENTS)*



WG Advanced TV Survey May 2022, n=121

WHICH TARGETED ACTIVATION PATHS DO YOU USE TO REACH VIEWERS ON TV SETS TODAY, IN 12 MONTHS AND IN 24 MONTHS? *(2022, % OF RESPONDENTS)*



WG Advanced TV Survey May 2022, n=121

Note: Not all answers shown

Targeting paths into the household will not consolidate, but consolidators are likely to emerge to simplify buying. Buyers will continue to focus on audience accuracy and reach, the viewer experience and the ability to measure the impact of their media investments. To solve for the market's current complexity, we expect buyers to continue to leverage all targeting paths to the screen. However, we are most likely to see continued consolidation of media ownership as winners emerge through content and app/channel contraction. Additionally, we expect that "private" marketplaces with unified audience definition will expand, whether through media owner consortia, device consolidation (streaming and gaming), expanded inventory management and access to SSPs or to what may look like the "ad network" models that assisted in bringing inventory together in the first internet media era of the 2000s. The reality is we predict all of the above for the next 36 months before a greater degree of standardization occurs.

Data collaboration solutions will proliferate and become a foundational part of the technology solution stack. The use cases are going to determine which collaboration approaches are leveraged, with different needs and permissions based on the relationship of the participants. The intersection of insight for audience definition, activation and measurement will matrix with the relationship: brand to brand, brand to agency, brand to media owner, media owner to media owner, etc. In many ways, this is similar to how CDPs have evolved to complement CRMs and serve specific purposes within the enterprise. In both cases, the container CDP or clean room will need to have an embedded identity solution to solve for the differentiation of data ingested and the analytics and activation tools used. With this as the most likely outcome, interoperability of collaborative solutions is required at the application with or without movement, identity, encryption, permission and ultimately, cloud storage layers. This will likely be made possible via clean rooms.

Co-operative identity graphs will provide scale and control. Second-party, collaborative identity graphs will allow contributors to add what they know about households and individuals to match to device, platform, streaming content and TV identifiers. Contributors should have the ability to extract what has been matched to develop insight into audience behavior as it moves across screens.

The market will rebalance. The current programmatic display model provides buyers with outsized control of the open internet, with walled gardens capturing most of the advertising revenue. Conversely, limited inventory for ATV ad placement and a long-term trend that caps total viewing hours—even as viewing shifts between apps, channels, devices and screens—will ensure that the market remains primarily directly sold. These factors will combine to expand spending across a greater number of media owners and their partners, which can make cross-platform deals, capturing the higher value of the different paths to reach hard-to-find audience segments. Supply-side identity is going to be more important as the ATV market evolves, putting control of the data firmly in the hands of the supply side.

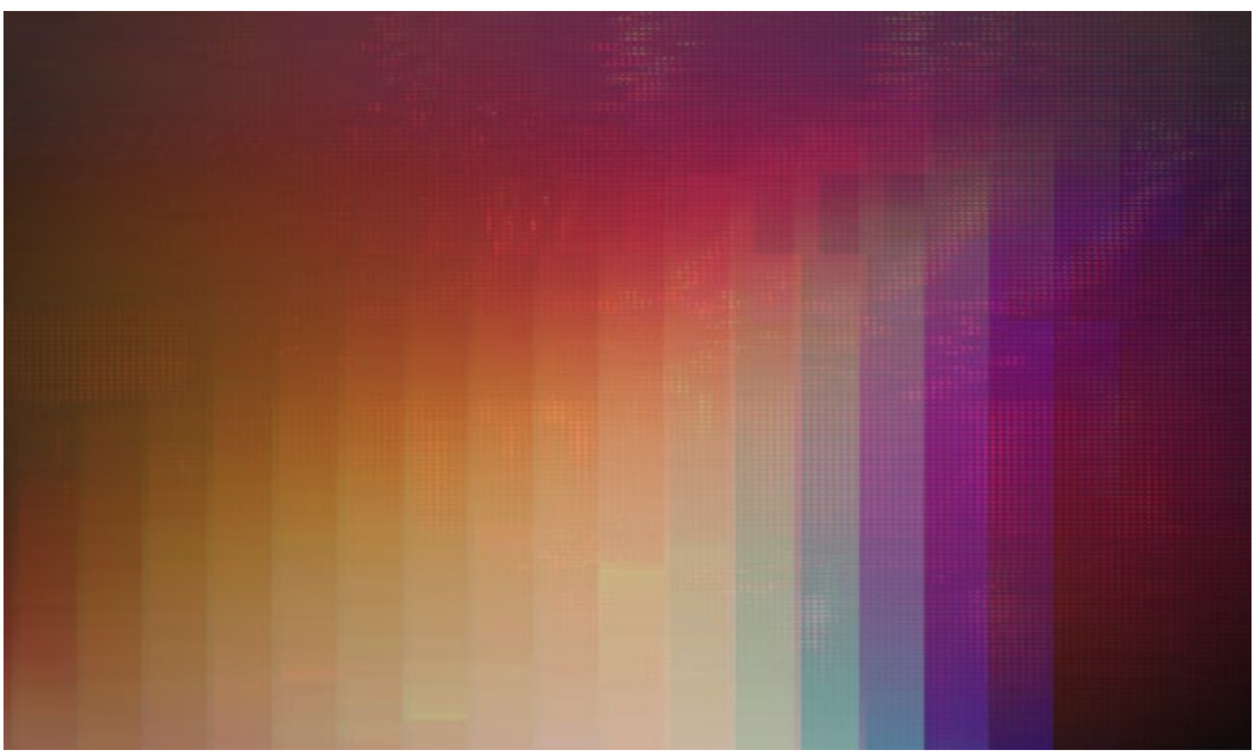
Audience activation and measurement will become more precise. Given the increase in subscriber churn, shift to ad-supported streaming (SVOD to AVOD) and a limit on the available audience who can afford multiple streaming services, the industry is likely to move toward a restriction on authenticated sharing beyond the immediate household. The downstream impact of this, will be an increase in the precision of audience activation and measurement. In Europe, more mature due to the early onset of GDPR and a more consolidated set of media options, we are already seeing geographical and device number limits.

Identity solutions will evolve to meet a broadening set of regulations, which will be increasingly restrictive in the US, but change more slowly in European markets. Despite the loss of identifiers, first-party identity solutions will remain at the core, and identity solution providers will continue to adapt to meet the needs of a more regulated market with the expectation that there will be federal regulation over time.
It is more likely the industry will have to operate with multiple state interpretations of privacy in the US and individual country interpretations under GDPR across Europe.

> "It could be multi-partner, multi-cloud federated collaboration. It is being able to work across multiple clouds and multiple partners without shipping data anywhere and being able to conduct cross-cloud queries. In the meantime, there will be competition and fragmentation."

– Head of Solutions, Connectivity Provider

Finally, marketers are telling us that identity spending will increase. Winterberry Group models indicate, and have been validated by our surveys, that spending on identity - to reach and measure audiences - will continue to increase over time across identity data, data collaboration solutions and the use of multiple measurement providers and currencies. As spending continues to move toward high-engagement ATV channels with fixed inventory, the investment in audience, and in turn identity, will grow along with it.



GLOSSARY

GLOSSARY

CONTENT DISTRIBUTION

Connected TV (CTV)
Content accessed by apps and streamed over smart TVs, mobile, or OTT devices via an internet connection.

Full Episode Player (FEP)
Professionally produced, TV-like content that can appear on any device type, across both apps and web browsers. The content is television-length, typically 30-60 minutes, with commercial breaks in between.

Internet Protocol Television (IPTV)
Content is delivered through IP packets. IPTV is also on-demand video over an internet connection, but that is done so in a slightly more controlled manner: through a closed proprietary network delivered through an ISP.

Linear TV
Another name for traditional television viewing. Viewers can watch linear TV through cable or satellite services, as well as over-the-air broadcasts.

Live Streaming
The television content that is streamed in real time over the internet. This live content is usually delivered by a paid streaming service, or directly by the network.

Living Room-Quality CTV
Live or on-demand, ad-supported programming through an internet connection (not via a paid cable or satellite provider), from blue-chip broadcast and content companies. Content is served via an IP address and is primarily viewed on a large screen/HDTV in the living room over CTV and OTT advertising. The goal is to deliver a more personalized ad experience.

Multiple Systems Operator (MSO)
Operator of multiple cable television systems.

OEM
Original equipment manufacturer.

Over the Top (OTT)
Content delivered "over" the cable box to provide access to TV content. OTT advertising platforms deliver content using an internet connection, as opposed to a cable or broadcast provider.

CONNECTED TV DEVICES

TABLETS, PHONES AND DESKTOPS

Dongle
A small device able to be connected to, and used with, a computer, especially to allow access to wireless broadband or use of protected software.

OTT and CTV Devices
Connects to the TV to create a continuous stream of content. As long as the internet connection is not disrupted, viewers don't need to wait for an entire piece of content to download before hitting play. Examples include Roku, Chromecast, Amazon Fire Stick and Apple TV.

Smart TV
A television with a built-in connection to the internet. No sticks or dongles are required.

INVENTORY, FORMATS

Video on Demand (VOD)
Allows users to watch their preferred content at the times they want to watch it. VOD content is available to stream or download after it airs live.

Direct-to-Consumer (DTC)
Deliver content without using a middleman (i.e., Netflix).

Content Delivery Network (CDN)
Proxy servers in data centers that deliver content to audiences.

OTT Aggregators
Offer content from many providers, but without the services of an MSO (Multi-system operator, or a company that owns and operates two or more cable TV systems).

OTT Standalone Devices
These content providers do not require an MSO and are delivered directly to a consumer over the internet.

FASTS
Free ad-supported streaming services (i.e., Tubi) that have users watch ads rather than require a subscription.

FNAS
Free network apps that allow users to watch free streaming TV content from cable and broadcast networks and offer ad-supported clips of shows for those without a cable or broadcast subscription.

Hybrids
Hybrid subscription and ad-supported apps (i.e., Hulu or CBS All Access) that allow users to pay for a version of their services with fewer ads.

Virtual Multichannel Video Programming Distributors (vMVPDs)
Also called "skinny bundles," these are less expensive digital cable or satellite packages. vMVPDs partner with cable and broadcast networks to distribute limited minutes of content across live channels.

MEASUREMENT METRICS

Cost Per Point (CPP)
Measures how well, for the price, an ad reaches the desired audience. CPP is total media cost divided by GRP.

Cross Screen Measurement
Allows users to track and measure video metrics across different devices, such as mobile, television, OOH, Connected TV and desktop.

Frequency
The average number of times an ad is delivered to a given person. When frequency is known, advertisers can prevent the same ad from being served repeatedly to the same person.

Gross Rating Point (GRP)
Used to determine how many people within an advertiser's target audience saw an ad.

Household (or Householding)
Groups all members of a household together for marketing purposes.

Identity Graph
Provides a single, unified view of customers and prospects based on their interactions with a product or website across a set of devices and identities. It is used for real-time personalization and ad targeting.

Reach
The number of unique people that will be exposed to a Connected TV ad. Often shown as a percentage of a specific audience, it indicates the percentage of the targeted population that has seen at least one traditional or Connected TV spot.

Targeting Rating Point
The percentage of an advertiser's target audience that views its advertisements.

PROGRAMMATIC TV

Ad Exchange
Digital marketplace that enables advertisers and publishers to buy and sell advertising space, often through real time auctions.

Addressable TV Advertising
Enables advertisers to use audience targeting and segmentation with each advertisement. Similar to addressable digital advertising, addressable TV advertising can serve ads programmatically.

Advanced TV
Refers to many forms of streaming TV content, including CTV and addressable TV. Does not include any forms of television watched through a broadcast, cable or satellite connection on a television.

AVOD
Advertising-based video on demand is a streaming video service (i.e., Fox Sports) that offers free on-demand programs in exchange for the inclusion of ad breaks.

Demand-Side Platform (DSP)
Software system that has audience data, allowing advertisers to better target viewers, resulting in automatic and more efficient TV ad buying.

Sell-Side Platform (SSP)
Software system that allows publishers to offer their available inventory to ad exchanges and DSPs.

Subscription Video on Demand (SVOD)
A streaming video service (i.e., Netflix) that allows users to have unlimited access to a range of on-demand programs for a recurring subscription fee.

Multi-Channel Video Programming Distributor (MVPD)
Refers to any service provider that delivers video programming services. Usually includes cable, satellite and broadcast.

Programmatic TV Advertising
A form of traditional TV advertising with a data-driven slant. Certain TV ad slots are made available for programmatic purchase, which is carried out by a DSP.

MISC.

Co-viewing
Refers to multiple people watching a program on the same device, which can make measuring impressions more difficult for advertisers.

Audience-Based TV
Media buyers use data from data-management platforms to target television viewers.

Broadcasters Audience Research Board (BARB)
A British organization that provides the industry-standard television audience measurement service for broadcasters and the advertising industry.

Bitrate (Encoded/Available)
Encoded bitrate tracks the number of bits (or amount of data) per second that has been used to store a media signal. Available bitrate is the instantaneous delivery rate of data in bits per second, kilobits per second and megabits per second from the source server to the destination device through one or many digital networks. Available bitrate is used for technical purposes, while encoded bitrate is more commonly used for business purposes.

Hashed Email
A cryptographic function, hashing is a way of encrypting a piece of data, such as an email address, into a hexadecimal string.

IP Address
A unique address that identifies a device on the internet or a local network.

IPV4
The fourth revision of the Internet Protocol and a widely used protocol in data communication over different kinds of networks. Provides the logical connection between network devices by identifying each device. There are many ways to configure IPV4 with all kinds of devices, including manual and automatic configurations, depending on the network type.

IPV6
The latest version of the Internet Protocol, which allows computers to uniquely identify and locate other computers and devices on the Internet. IPV6 was introduced by the Internet Engineering Task Force (IETF) to cope with the depletion of IPV4 addresses. Apart from the larger address space, IPV6 provides a more efficient packet handling mechanism, better security and improved performance.

ABOUT OUR SPONSORS

PREMIER SPONSORS

InfoSum is the world's leading data collaboration platform and the only secure data clean room, empowering companies to deliver better customer experiences while prioritizing customer privacy. InfoSum enables safe connections between multiple parties to unlock the full potential of their customer data without risk of exposure or misuse. InfoSum not only prioritizes consumer privacy, but enhances it with patented, non-movement of data technology to create the most protected, most connected, and most accessible data collaboration network. InfoSum was founded in 2016 with a vision to connect the world's data without ever sharing it. The company has multiple patents, protecting its invention of the 'non-movement of data.' InfoSum has offices throughout the US, UK, Europe, and Australia. The company is poised for continued growth following a Series B investment in August 2021, and a rapidly expanding client base.

Learn more at *www.infosum.com*.

Innovid (NYSE:CTV) powers advertising delivery, personalization, measurement and outcomes across linear, CTV and digital for the world's largest brands. Through a global infrastructure that enables cross-platform ad serving, data-driven creative, and currency-grade measurement, Innovid offers its clients always-on intelligence to optimize advertising investment across channels, platforms, screens, and devices. Innovid is an independent platform that leads the market in converged TV innovation, through proprietary technology and exclusive partnerships designed to reimagine TV advertising. Headquartered in New York City, Innovid serves a global client base through offices across the Americas, Europe, and Asia Pacific.

To learn more, visit *www.innovid.com* or follow us on LinkedIn or Twitter.

LiveRamp is the leading data enablement platform for the safe, easy and effective use of data. Powered by core identity resolution capabilities and an unparalleled network, LiveRamp enables companies and their partners to better connect, control, and activate data to transform customer experiences and generate more valuable business outcomes. LiveRamp's fully interoperable and neutral infrastructure delivers end-to-end addressability for the world's top brands, agencies, and publishers.

For more information, visit *www.LiveRamp.com*.

TransUnion is a global information and insights company that makes trust possible in the modern economy. We do this by providing an actionable picture of each person so they can be reliably represented in the marketplace. As a result, businesses and consumers can transact with confidence and achieve great things. We call this Information for Good®. A leading presence in more than 30 countries across five continents, TransUnion provides solutions that help create economic opportunity, great experiences and personal empowerment for hundreds of millions of people.

Powered by a three-dimensional view of people, households and devices, TruAudience® solutions provides precise, scalable identity to enable audience targeting and consumer engagement across offline, digital and streaming environments.

To learn more, visit *www.truaudience.com*.

SUPPORTING SPONSORS

Alliant is trusted by thousands of brands and agencies as an independent data solutions partner. The Alliant DataHub — built on billions of consumer transactions, an expansive identity map, advanced data science and high-performance technology — enables marketers to execute omnichannel campaigns with responsive consumers at the center. Data security and privacy have been core values since day one, with continual validation of our people, processes, and data through meaningful certifications such as SOC2 and IAB Tech Lab Data Transparency.

Learn more at *www.alliantinsight.com*.

Ampersand is moving TV forward. As the industry's largest source of combined multiscreen TV inventory and viewership insights, we are changing the way TV is bought and measured. Powered by using aggregated and authenticated audience data insights from 42 million households, and with a commitment to protecting personal information, our AND Platform gives advertisers true audience first planning, scale inexecution, and advanced measurement of their TV investments. Ampersand represents 80M households and over 70% of addressable households in the U.S. Whether a local or national advertiser, we help clients reach their unique target audience and deliver their stories–anytime, anywhere and on whatever device. Ampersand is owned by Comcast Corporation, Charter Communications, Inc. and Cox Communications.

For more information, please visit Ampersand at *www.ampersand.tv*.

Cadent powers the evolution of TV brand advertising. We provide marketers, agencies, operators, and media owners with data-driven solutions for buying and selling TV advertising. By connecting brands with opportunities across national inventory sources—cable, broadcast, and OTT—our technology improves efficiencies and boosts the results of linear, addressable, and cross-screen campaigns.

For more information, visit *cadent.tv* or follow *@CadentTV*.

Merkle, a dentsu company, is a leading data-driven customer experience management (CXM) company that specializes in the delivery of unique, personalized customer experiences across platforms and devices. For more than 30 years, Fortune 1000 companies and leading nonprofit organizations have partnered with Merkle to maximize the value of their customer portfolios. The company's heritage in data, technology, and analytics forms the foundation for its unmatched skills in understanding consumer insights that drive hyper-personalized marketing strategies. Its combined strengths in consulting, creative, media, analytics, data, identity, CX/commerce, technology, and loyalty & promotions drive improved marketing results and competitive advantage. With more than 14,000 employees, Merkle is headquartered in Columbia, Maryland, with 50+ additional offices throughout the Americas, EMEA, and APAC.

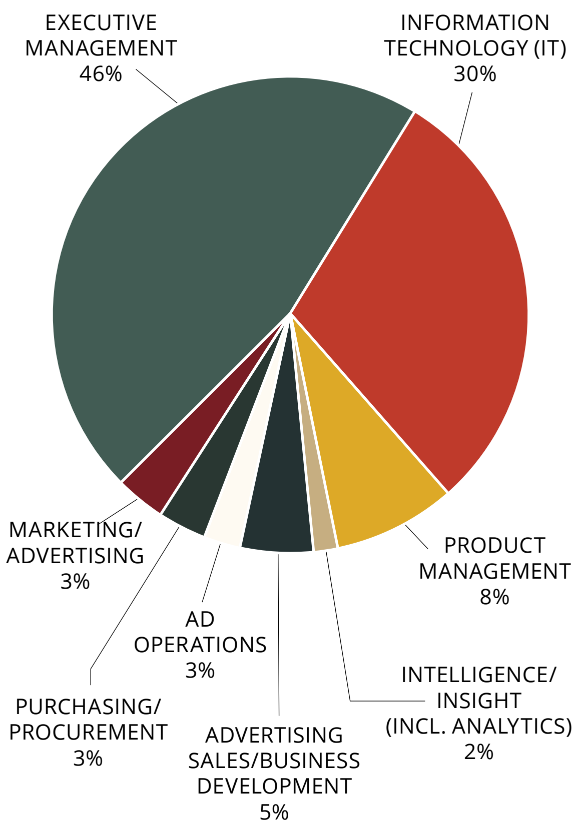
For more information, contact Merkle at *1-877-9-Merkle* or visit *www.merkleinc.com*.

METHODOLOGY

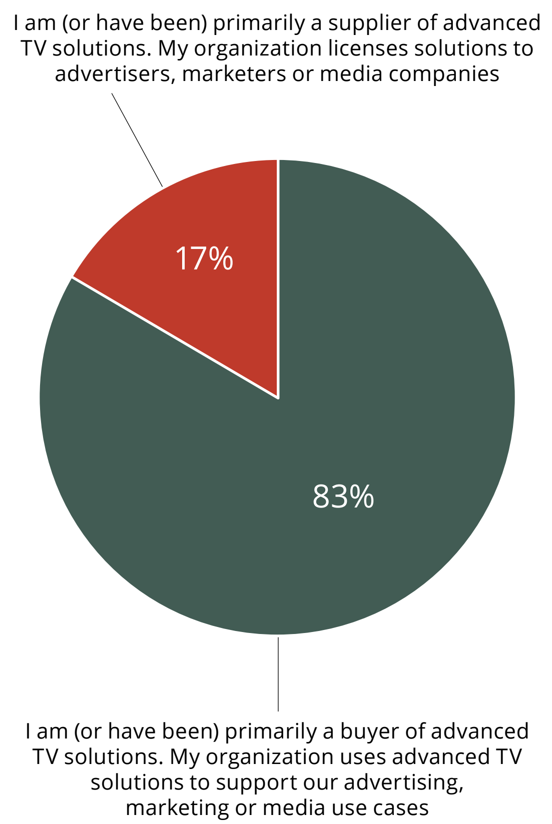
METHODOLOGY

The insights in this report were validated by extensive industry research, including a survey conducted in May 2022 of 121 experienced media owners and publishers as well as agencies and brands across the United States and Europe. We are indebted to the 30 individuals who provided their opinions in over 25 hours of video-conference interviews, conducted between March and May 2022.

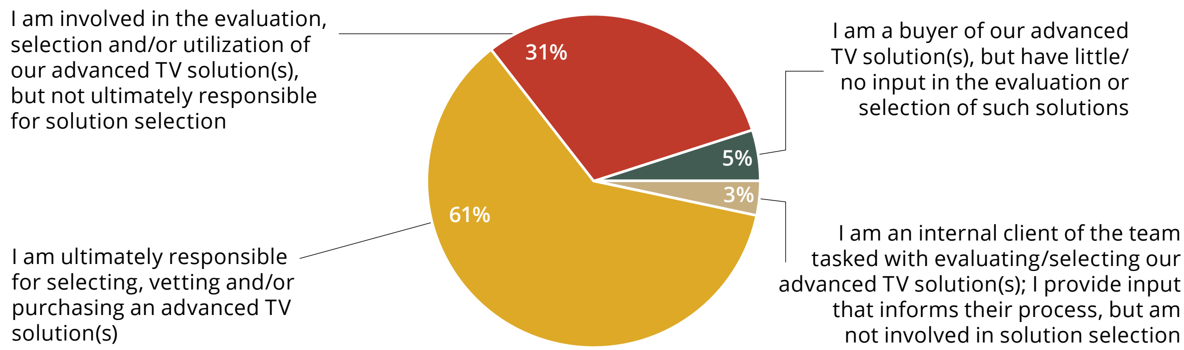
Which of the following best describes your department or current functional role where you work?



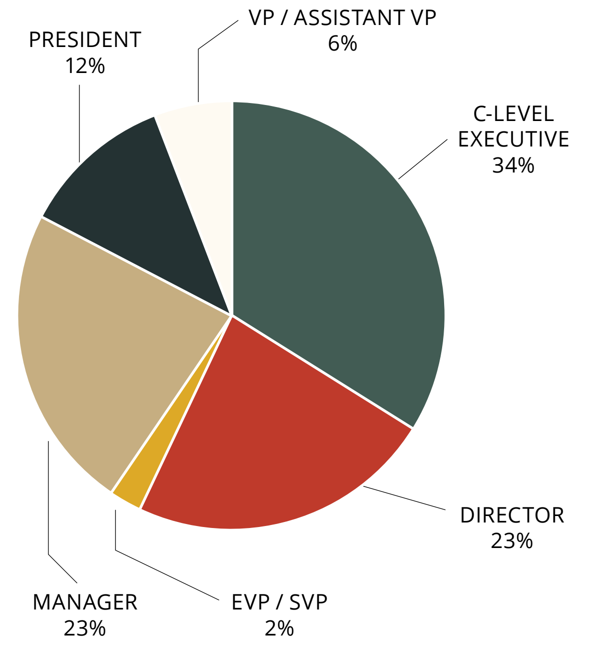
Which of the following best describes your experience with respect to advanced TV other related topics?



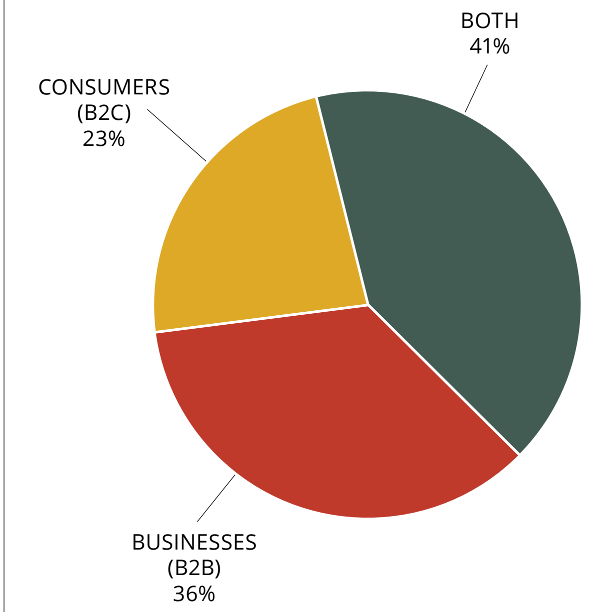
What is your role in your organization's use of advanced TV solutions to support advertising and marketing needs?



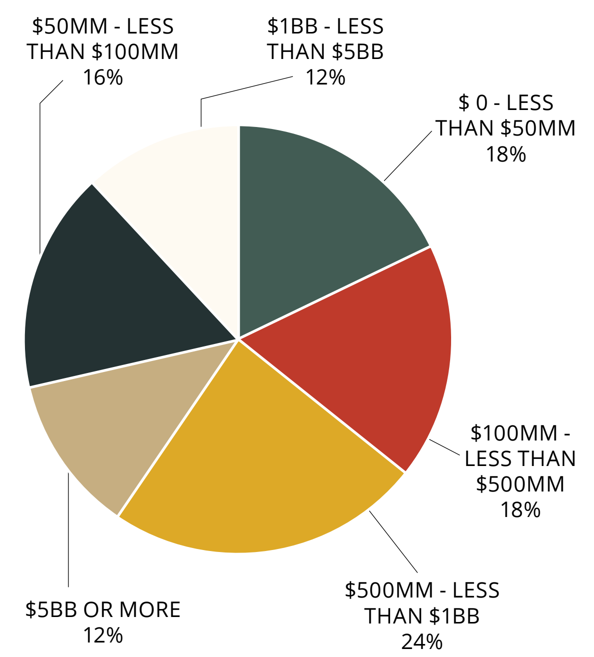
Which of the following best describes your current role / business title?



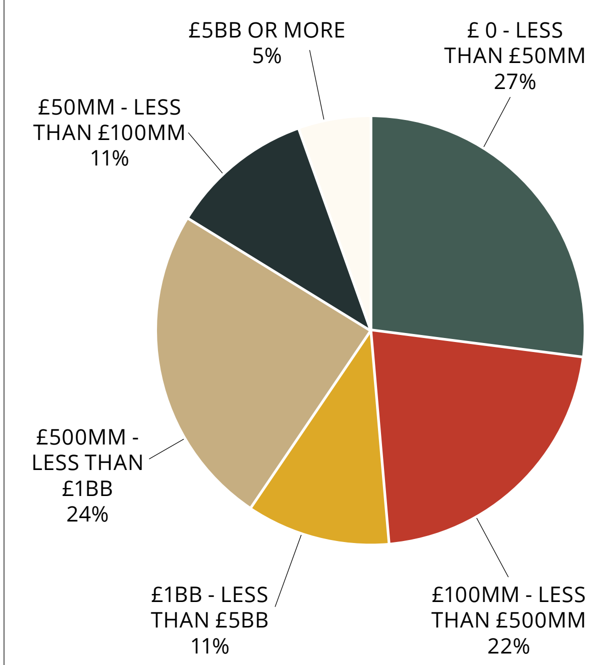
Who does your organization primarily market to?



Approximately, what is the annual revenue for the company for which you work? (US ONLY)



Approximately, what is the annual revenue for the company for which you work? (UK ONLY)



Companies Represented by Interviewees: Acxiom, Alliant, Blockgraph, Cadent, Experian, InfoSum, Innovid, Kinesso, LiveRamp, Magnite, Merkle, Merkury, Roku, Simulmedia, TransUnion, Tubi, TV Squared Limited, W Promote

ABOUT WINTERBERRY GROUP

About Winterberry Group

Winterberry Group is a strategic management consultancy specializing in the intersecting disciplines of advertising, marketing, data, technology, and commerce. We bring more than two decades of experience and deep industry, operational and M&A expertise that bridges strategic development and tactical execution—driving unprecedented speed-to-action.

Through our highly collaborative approach, we enable knowledge transfer and actionability, giving our clients a competitive edge and powering growth in performance, team engagement and shareholder value.

Winterberry Group Services

Growth Strategy
Help clients assess core competencies, understand the impact of market dynamics and build actionable, comprehensive strategies that consider a range of "buy, build and partner" opportunities

Digital Transformation
Guide brands and marketing practices through business process planning efforts aimed at helping them achieve lasting competitive advantage—by transforming how they leverage data, technology, and digital media

Mergers & Acquisitions
Support investors and operators in their efforts to leverage M&A as a tool for building lasting shareholder value—helping both buyers and sellers better understand addressable market opportunities and dynamics

Market Intelligence
Leverage our independent research platform to help clients and partners achieve clear thought leadership concerning issues of importance to the marketing community

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