WTF is the CTV tech stack?

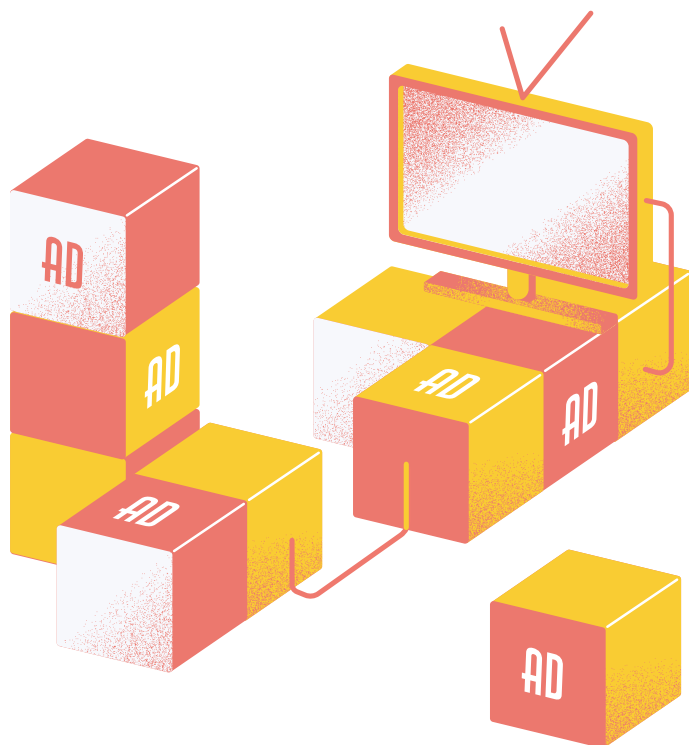# WTF is the CTV tech stack?

The marketer's guide to programmatic and CTV ad servers, data, bidding and more

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While video advertising — and CTV advertising specifically — has gained momentum over the past several years, many advertisers are unsure about what they need when starting a connected TV marketing program. They are looking for guidance on how to sustain campaigns over time in the CTV channel and what technologies they'll need to onboard, not to mention relevant skill sets to run it all.

For advertisers, identifying how the CTV-specific tech stack works is crucial to understanding how to make the most of the channel. Breaking down

and simplifying the process certainly helps, as well as identifying the data to which marketing teams already have access and where gaps may exist, such as difficulties due to walled gardens.

In this WTF guide, Digiday and Unruly unpack the essential elements CTV advertisers need to be aware of, how they differ from a typical programmatic digital advertising stack and how the pieces all fit together to create a cohesive CTV-specific setup that sets advertisers up for success in the space.

What's in this WTF guide?

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How does the CTV tech stack differ from a programmatic one?
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While CTV and programmatic tech stacks are similar in many ways, there are nuances to each of them in terms of data, ad bidding and the functionality of the ad server in play. For example, in addition to first-party and third-party data, the type of data within CTV that advertisers can activate looks different than with programmatic campaigns. This is because CTV doesn't — and never has — utilized cookies and instead is based on IP addresses. Because of this, advertisers' methods of gathering and storing data differ from that of their other digital activations.

On top of utilizing different types of data, there's also a difference in handling ad bids. CTV and programmatic work with this step in their own ways. It turns out to be a numbers game.

"When you look at the programmatic field of ad servers, publishers send you an ad request, you make a selection and give them a bid response," said Erhard Neumann, managing director of Spearad

and head of addressable TV at Unruly. "A CTV ad server will get one ad code and say, 'I have six spaces to fill,' and will send six ads, but on programmatic, they answer one call with one creative."

The ad server is the final link in the chain of the CTV tech stack, bringing all the other pieces together, and even though this is something publishers need as a part of their tech stack, there are differences that advertisers will want to keep in mind here, too. It's important to know what a CTV ad server can and can't do and to understand why certain CTV-specific phenomena are occurring.

"The new generation of ad servers focused solely on CTV can spend their time building solutions for the issues facing the industry, such as competitive separation, eliminating back-to-back creatives and volume control because they don't have a legacy display business to support," said Drew Goodrich, head of programmatic revenue and partnerships at Plex.
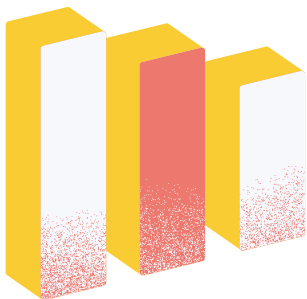
OK, so with CTV advertising, do I need to store or manage my data any differently?

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First, it's worth noting that data management platforms (DMPs), where many marketers choose to store their data, can hold many types of data specific to CTV, such as set-top-box, cross-panel, ACR and audio fingerprinting.

"It's necessary to make sure you're using audience segments that have identifiers that will work in a CTV space," said Jessica La Rosa, vice president of partnerships and data at Tremor International. "Those currently look like IP addresses or CTV device IDs. Advertisers should think about how to use both first-party and third-party data in synergy when thinking about their overall CTV audience targeting strategies."

And data stored in a DMP is either based on the data provider or the audience segment rather than by screen or platform type. For example, one data provider might have hundreds or thousands of different audiences in a DMP with audiences that have different forms of user identifiers that dictate the sort of places those audience segments can be activated.

"There is a myriad of third-party datasets available, such as social data, location-based data, purchase-based data, web and app-based data and browser data," said La Rosa. "The specific dataset will depend on their brand and campaign goals. For example, we see retail and quick-service restaurant clients taking advantage of location-based data and retail clients taking advantage of purchased-based data. It's best to think about how to align different third-party datasets with your brand and campaign goals.

"It's also important to keep in mind that with CTV, an ad may be delivered to anyone in the household," La Rosa continued. "So, choosing audience segments that are a bit broader and have more of a chance to apply to anyone in the household versus one specific person will work better," La Rosa continued.

What are the main details that the CTV marketing team needs to know about data in particular?

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While there aren't specific or different demands put on an advertiser's DMP, they should know that it's possible to onboard data through either a DSP or SSP — just as they can with any programmatic campaign — as well as leverage specific data that the DSP or SSP has that they want to tap.

Luckily, the data onboarding works the same as well. The same type of data standard as any digital or video campaign is onboarded and activated the same way as with any traditional programmatic campaign.

The difference is that advertisers can also implement TV viewership data into their CTV and OTT campaigns. This type of data comes from set-top boxes, cross-device panels and ACR data — obtained through SDKs plugged into an OEM's operating system.

Unfortunately, there isn't a single cohesive source of TV viewership data. And while ACR data from OEMs is one of the most widely discussed forms of data in the CTV realm, the challenge is that many OEMs and OSes require advertisers to work with them directly in silos. With this, blind spots proliferate and advertisers are left to navigate inefficiencies around measuring campaigns.

To unify this disparate data, the key is to blend datasets and piece the puzzle together.

For example, SSPs and DMPs can ingest, blend, refresh and break down the different sources of viewership data into digestible chunks to craft a more accurate representation of streaming and linear households and enable marketers to meet audiences wherever they might be. Activating this data collectively leads to greater scale, fluidity, smarter targeting and retargeting — and creative conquesting.

For CTV and OTT campaigns, the metrics that can be gleaned include website attribution, TV reach and frequency analysis, foot traffic attribution and standard reporting metrics. Advertisers can also generate custom reports such as TV tune-in, add-to-cart, QR code scans, premier insights and scales or brand lift studies. For most, it's as simple as asking an SSP partner what they can provide.

Still, until the industry can agree on standard practices — which doesn't look likely anytime soon — it's essential to understand what types of things can be comprehensively measured from TV viewership when working with an SSP.
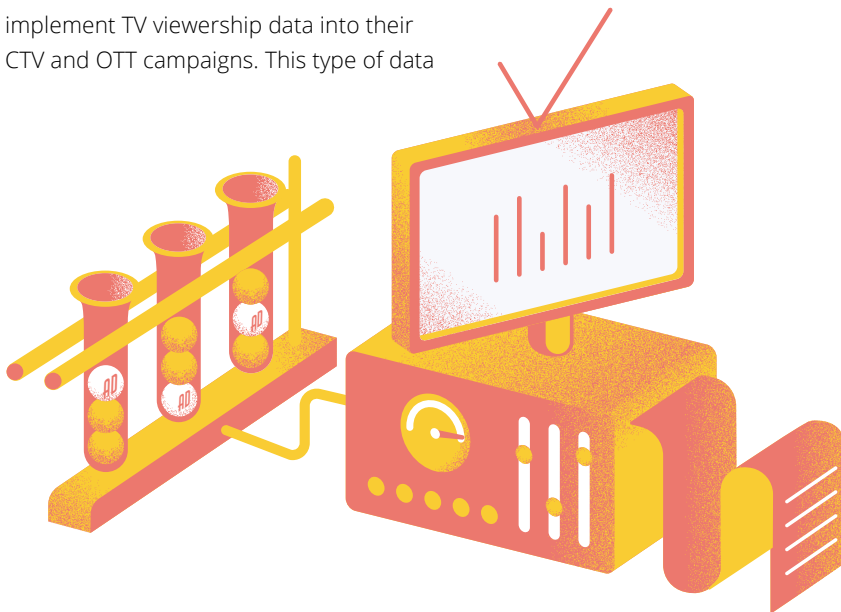
OK, so where does this CTV data come from?

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TV operating systems allow users to connect to cable or satellite TV and apps to connect to services such as Hulu, Netflix and YouTube. Operating systems are also where data such as ACR are gathered and onboarded into a data management platform.

Original equipment manufacturers or OEMs, like Samsung or LG, are usually the companies creating operating systems that make those TVs run.

Some OEMs, such as Samsung, have their own OS and keep their ACR data within their walled garden, so if an advertiser wants to use ACR data from a Samsung device, they must work directly with Samsung.

Walled gardens are abundant in the CTV and OTT world, which creates challenges in efficiency and measurement. One example is audience duplication. If an advertiser wants to use Samsung and Roku ACR data, they'll need to go to each company separately and likely end up with some overlap regarding the audience.

Other tech companies, such as Android/Google, Apple and Roku, do not make smart TVs but have access to the ACR data from the smart TVs that use their OS.

Google, Apple and Roku have streaming devices that can collect ACR data; similarly, Amazon collects this data through its Firestick.

While advertisers don't need to worry about choosing an operating system themselves, it is essential to note the speed at which some operate to know how that may affect the ads running within those systems. When comparing them, it comes down to the hardware, or OEM, the OS is running on.

"If I use a computer analogy, Windows will run slow on slow hardware and fast on fast hardware," said Jernej Smisl, global marketing director at VIDAA. "But on comparable software, VIDAA's OS is among the fastest, for example. In terms of capabilities, most platforms support

the same capabilities, such as targeted advertising, billing, recommendations, as well as the same apps."

Operating systems hold a wealth of data that providers can monetize, so it makes sense that most TV manufacturers are doubling down on building out their operating systems or acquiring ones to use with their equipment.

On top of this, TV manufacturers are seeking more advertising space, such as Hisense with its VIDAA technology. VIDAA is not only an OS built with advanced personalization capabilities but also a content platform that features top providers and exclusive content from FIFA, of which advertisers can take advantage.

Keeping an eye on the types of OS being used can help advertisers identify more unique ad opportunities in the TV space.

I've heard about 'ACR data' when it comes to CTV; what is ACR data and how do we use it?

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Automatic content recognition — ACR data — is an advanced technology on most smart devices that instantly identifies the content a consumer is listening to or watching. This type of data is inherently privacy-compliant, making it especially valuable when targeting data is under fire.

ACR is deployed within the hardware of the TV itself and uses audio or video fingerprinting. This involves snippets of metadata from the television — either three-second acoustic clips or image-based clips taken from the TV — that are then gathered by the OS and matched to content and ad catalogs to identify what's being played on the TV.

"ACR data is valuable to CTV advertisers, and they should be thinking about using or capturing it as part of their overall data strategy," said La Rosa. "ACR data allows advertisers to leverage their linear TV investments to make their digital advertising more valuable, and as a result, makes their linear TV investments work harder for them. ACR data lets you understand who viewed your linear ad."

There are many lanes advertisers can take in terms of how to utilize ACR data

best. There's linear reach extension — retargeting viewers exposed to the linear TV ad while consuming CTV content to amplify TV investments — which hopefully helps move customers down the funnel by giving them another message.

Then there's incremental reach. Instead of trying to retarget audiences who've seen an ad on linear, advertisers can suppress viewers who've already been exposed to the ad to ensure it reaches a net new audience on top of linear.

"Another strategy is competitive conquesting," La Rosa recommended. "We're targeting viewers who have been exposed to your competitor's ads to reach consumers who are interested in a similar product and try to steal share from your competitors. There's also the opportunity to utilize viewership patterns, like the types of networks, shows, or even tentpole events like the Super Bowl, the Oscars or Grammys, to inform who you'll serve your CTV ads to. That will ensure that a consumer has a specific interest in one of those areas to give you a level of content adjacency without having to actually place a linear buy in one of those environments."

What is a CTV-specific ad server and how does it affect my ad experience?

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While deciding on which ad server to use is up to the publisher, advertisers must understand how consumers see their ads.

A CTV-specific ad server is better equipped to handle CTV-specific tasks, such as ad breaks. When a publisher utilizes a dedicated server for CTV, it also means that the ad server isn't splitting its time between CTV and other display services.

"When a person sits down to watch a movie on their TV, they have very specific expectations," said Goodrich at Plex. "They want their movie to play instantly, they want their ads to play seamlessly with that content, and they want to know that the ads are relevant to them. CTV-specific ad servers were built to deliver exactly that experience and are constantly iterating on those ideas. Ad servers with a display business to support don't have as much focus on the complexities of CTV ad serving like SSAI, ad podding and price-per-second optimization that the CTV-specific ad servers have mastered."

And one of those complexities to master is ad breaks. CTV has seen its share of issues with this aspect, but Neumann offered insight into how dedicated ad servers can remedy this.

"Going back to the traditional, linear side of TV, what you see is ad breaks that look technically perfect," said Neumann at Unruly. "You don't see the same ad over and over; there's no problem with low resolution and the audio file is always on the same level. On the CTV side, you have ads that aren't just coming from one source, which makes this a bit more difficult. CTV ad servers, when built right, should handle ad breaks similarly to how they're presented on traditional TV."

Advertisers should check that the publisher they are working with can deliver high-quality ad breaks without any repeat ads while enabling them to preview the ad break.

I've had different bidding experiences across platforms. What's the difference between a unified auction and header bidding?

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First, it's important to note what came before these methods, the waterfall structure. This is where publishers would offer impressions in one sales channel, and if a buyer didn't bite, they'd push it down to a less valuable channel until someone bid. It was a fractured and inefficient way of selling ads, and luckily many are moving away from this structure and toward header bidding or unified auctions instead.

Header bidding and unified auctions are often used interchangeably, but header bidding is essentially a form of a unified auction. Header bidding gets its name from code embedded in a site's header.

"Header bidding was a game-changer when it first came to market in display advertising," said Drew Goodrich, head of programmatic revenue and partnerships at Plex. "Companies like Criteo and Index pioneered the way to have a truly fair way to input bids into a publisher's ad server and evened the playing field versus the large companies that owned the ad stacks."

The function of a unified auction is to level the waterfall and let different demand sources compete more fairly.

For advertisers, unified auctions offer more transparency and access to inventory that may have previously only been reserved for direct or programmatic buys.

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Linear TV also has more control through competitive rules, such as allowing a brand to set an avoidance rule to ensure a direct competitor doesn't appear in the same ad break as their own ad.

"Modern CTV ad servers should be built to manage channel inventory and deliver ads in ad breaks according to a set of rules which is very different to a website ad server," said Neumann. "In the traditional TV world, we have distance and avoidance rules. If Coca-Cola, for example, has an avoidance rule where they don't want to have Pepsi running during their ad break, then it's out. What we usually say is to put in a distance rule and put it in by advertiser rather than by category. Some places, such as Germany, can have ad breaks that go on for seven or eight minutes, where a category-based avoidance rule can block 20 advertisers at once, making filling that ad break very difficult."

Advertisers should communicate with the publishers they are engaging with to see what capabilities they can access. Do they have the ability to enact competitive rules that could best set up their ads for success? Does the publisher even have a CTV-specific ad server in the first place?

For advertisers, access to support dashboards with real-time data, frequency controls and full campaign measurement are additional features that CTV-specific ad servers can provide if requested by the publishers with which they're working.

With this in mind, measurement is one area where the industry has made vast improvements. It may be time for advertisers to evaluate how their current tech stack measures up.

"Marketers should take advantage of all the advancements that have been made in the CTV space from a measurement perspective," said La Rosa at Tremor International. "We've gotten far past where we were a year ago. We can get deeper metrics around viewability, and a lot of companies are making headway with attention-based metrics. I would say it's time to focus on those newer emerging measurement sort of metrics and offerings that will help you understand the efficacy of the CTV advertising and help give you that feedback."