

Digital Video Infrastructure:

Exploring the technology stack for building and scaling effective video content infrastructure

2020 EDITION

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Introduction:

The Evolution of Streaming Video

The streaming wars are here to stay

\$135
BILLION

US Businesses are estimated to spend \$135B on video every year by 2022

\$80
BILLION

US Consumers ad spending will be \$80 Billion annually by 2022

82%
VIDEO

By 2022, video will make up 82% of all internet consumption

The war isn't just between the giants like Netflix, Disney, HBO, or AT&T.

Media and entertainment companies are the clear players in the game, but they definitely aren't the only ones. From fitness companies developing Over the Top video applications to enterprises creating online courses for their employees and video channels to drive brand awareness, video is everywhere.

Every organization must find their footing on the battleground of streaming media. Should you consider distributing video on YouTube? On vMVPDs like PlutoTV or XUMO? Should you have your own OTT application? Do you integrate video into your website and mobile apps? What revenue and engagement models make sense for your enterprise? Do you need to modernize your internal team's video content management stack? These questions are just the tip of the iceberg when it comes to how companies must think about their digital video strategy.

As you start to answer these questions, you must be aware of the types of video content infrastructure available today and what you're going to need to deliver the high-quality video viewing experiences audiences demand.

Chances are, you have some existing video infrastructure like servers, a CDN, and/or even a basic customized video player. We'll even go out on a limb and say that it's likely either outdated or expensive.

If your video content infrastructure can't easily manage, distribute, and optimize your video content across every channel... it's probably time to look at new solutions. Video infrastructure isn't just servers storing your video content, a CDN, and a video player. There are table stakes content management, playout connectivity, and analytics pipelines that must be established to launch and stay relevant in this new streaming video landscape.

If your video content infrastructure can't easily manage, distribute, and optimize your video content across every channel... **it's probably time to look at new solutions.**

Robust digital video infrastructure allows teams to quickly deliver to downstream syndication partners or platforms is critical to succeeding in this fast-paced, dynamic environment. Without the right infrastructure, you're going to get left in the dust with a pile of legacy infrastructure.

As you look to diversify your digital video strategy, regardless of your role at the organization, understanding the complete infrastructure you're going to need to deliver the high-quality, multi-channel experiences your audiences want is pivotal to success.

After reading this guide, you should gain actionable insights around the five pillars of digital video infrastructure, an understanding of the different types of streaming media, channel and distribution platform opportunities, and ways to optimize the user viewing experience.

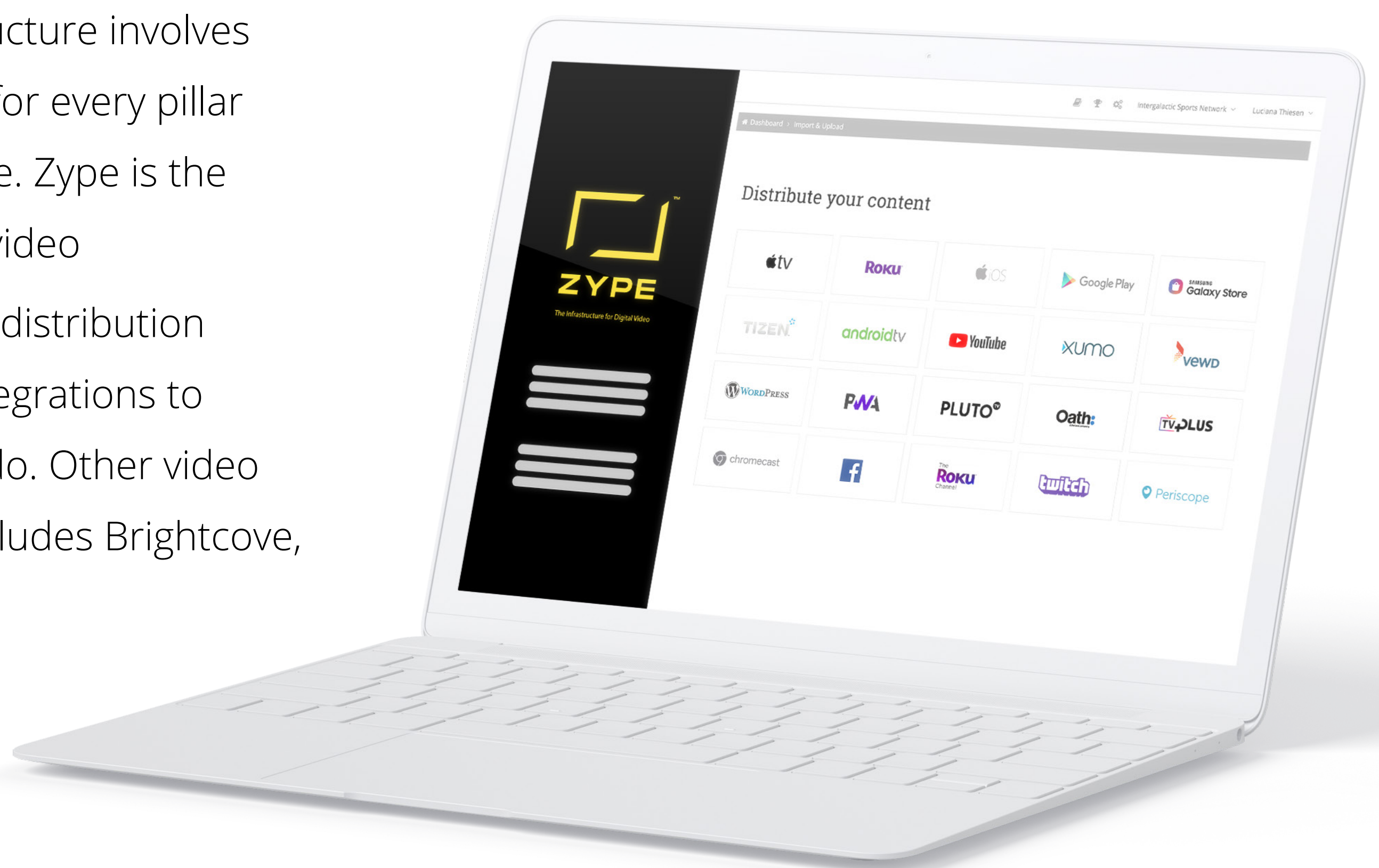
Video Content Management and Distribution: Defining Video Infrastructure

The evolution of digital video is about the diversification of distribution and ensuring effective engagement across all of the channels and platforms that audiences - which could be consumers, customers, and/or employees - are potentially viewing on. With the advent of cord-cutting, powerful mobile and TV devices, and virtually unlimited bandwidth, video distribution has become complex and fragmented.

Video and IT teams are tasked with building this infrastructure — whether they build it themselves, buy video software, or use a hybrid model.

Building your own video infrastructure requires specific knowledge and expertise of each tool and layer of the stack, as well as data center, cloud computing, and database management expertise. The organizations who typically build their own video infrastructure are those who tend to build everything internal.

Buying your video infrastructure involves relying on SaaS platforms for every pillar of your video infrastructure. Zype is the top-rated, award-winning video content management and distribution platform with the most integrations to work the way your teams do. Other video infrastructure software includes Brightcove, JW Player, and Vimeo.



Each offer a different suite of features at different price points, making due diligence a critical piece of building out your infrastructure when relying on external video software.

Many companies often look at utilizing a hybrid-model when building their video infrastructure. This means mixing a variety of completely self-built, cloud-based and modified solutions, and off-the-shelf video SaaS products into a complete service. For example, using your own origin storage, along with a cloud-based video content management system and a third party CDN like Verizon Media or Akamai is an example of building a hybrid video infrastructure.

By bringing your infrastructure in-house through building, buying, or using a hybrid model, your ability to control where and how your video is distributed is in your own hands.

By bringing your infrastructure in-house through building, buying, or using a hybrid model, your ability to control **where and how your video is distributed is in your own hands.**

The decision to build, buy, or use a hybrid approach is often based on your organizations needs, budget, available resources, and, maybe more critically, your timing. In this all out war for video viewing eyeballs, getting digital video infrastructure up and operating quickly is often one of the biggest priorities.

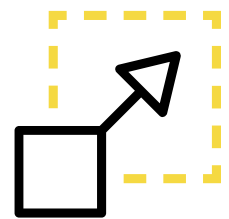
So... what are the core pieces of any digital video infrastructure? Let's dive in.



CORE OF EVERY DIGITAL VIDEO INFRASTRUCTURE

**Origin**

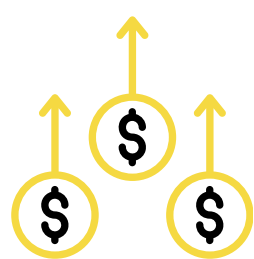
Origin is where your original video content is kept or hosted. This could be on a content management system, in an internal cold solution, or even on YouTube. It highly depends on your organization's digital video prowess, but since there is no physical difference between a digital original and a digital copy, the term implies that the origin is the one that is maintained and updated by the enterprise. If one of your core business pieces is video, your origin should be:

**Highly scalable**

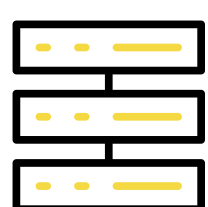
Able to handle a large volume of origin requests to access your video, which is particularly true for live streaming events

**Multi-Region**

Localizing an origin as close to the majority of the users that consume the content as possible to help delivery speeds

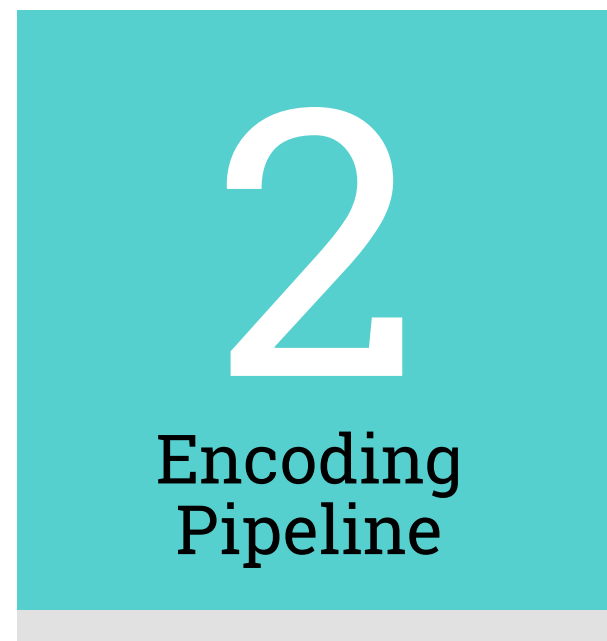
**Efficiently Optimized for Costs**

Whenever your origin video source is called by either a CDN, a video player, or your OTT app — your video hosting provider will charge fees for data leaving their networks. As such, optimizing efficiency in terms of cost, between origin and CDNs, is paramount to maintaining a healthy margin

**Located Near CDN**

An origin and CDN should be close to each other in physical location to reduce latency and overall quality of service for content distribution.

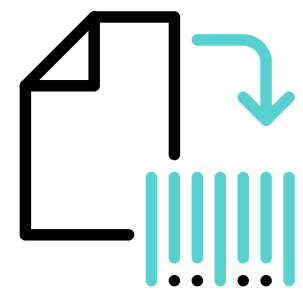
CORE OF EVERY DIGITAL VIDEO INFRASTRUCTURE



Encoding Pipeline

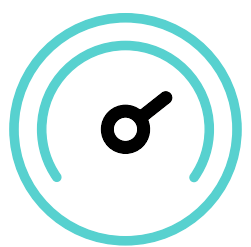
A video encoding (sometimes called “transcoding”) pipeline comprises of systems, hardware or software that compresses and optimizes digital video for distribution to ensure proper formatting for end-user experiences.

At a minimum, encoding pipelines for digital publishers need to support:



Encoding Industry Standards

Encode content using widely supported industry standard codecs including h.264, h.265, VP9, VP10/AV1, AAC, OGG



Bitrate and Formatting

Encode to different bitrates and formats to support streaming to viewers with varying quality of connection and bandwidth



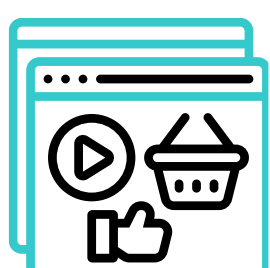
Multi-File Formatting

Encode to multiple file formats for delivery to multiple end players and/or downloadable use cases like MP4 or HLS



Detection of Advertising Breaks

Detect and preserve advertising signaling metadata so that ads can be stitched upon delivery to users



Multi-Channel Encoding

Encode for live, video on demand, and linear playout use cases.

CORE OF EVERY DIGITAL VIDEO INFRASTRUCTURE



Video Content Management

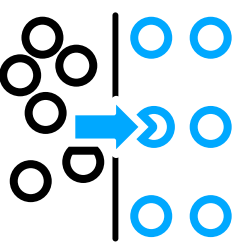
A video content management systems or vCMS allows you to easily manage metadata like video names, descriptions, tags like actors or directors, and beyond for every digital video distribution endpoint.

Video content management systems should feature the ability to:



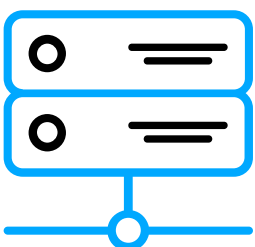
Edit Content

This includes titles, descriptions, keywords, tags, and thumbnails



Organize Content

Through Categories, Playlists, and self-defined classifications



Extensibility

The ability to add structured and unstructured metadata, video, images, media, and files, and relate them to video and playlists without having to deploy or maintain a separate database

CORE OF EVERY DIGITAL VIDEO INFRASTRUCTURE

4

Content Delivery Network (CDN)

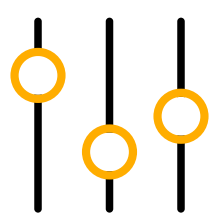
Content Delivery Network (CDN)

A content delivery network is a system of distributed servers that deliver video and other content as quickly as possible to end-users and consumers. The goal of a CDN is to provide end-users with the same quality viewing experience regardless of where they are in the world.

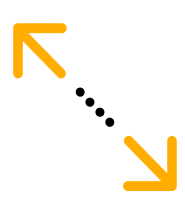
A CDN should be:

**Global**

Make sure your CDN partners can deliver high-quality video playback to where your users are with as many edge nodes geographically near your consumer base as possible

**Able to Optimize for Different Types of Content**

A CDN should support all types of content like VOD, progressive media, and live streams

**Scalable**

As your audience and overall success grows, your CDN partner(s) should be able to expand service alongside your organization.

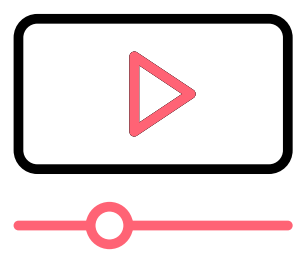
CORE OF EVERY DIGITAL VIDEO INFRASTRUCTURE

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Clients and
Players**Clients & Players**

A client or player is a software application that viewers actually watch your video content through when they click play.

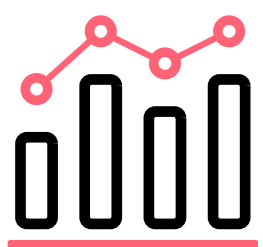
At a minimum, every digital video player should support:

**Latest Video Codecs**

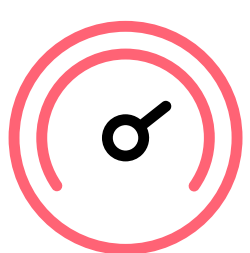
Encode content using widely supported industry standard codecs including h.264, h.265, VP9, VP10/AV1, AAC, OGG

**Content Entitlement and Paywall Security**

Encode to different bitrates and formats to support streaming to viewers with varying quality of connection and bandwidth

**Analytics**

Encode to multiple file formats for delivery to multiple end players and/or downloadable use cases like MP4 or HLS

**Support Adaptive Bitrate Playback**

Detect and preserve advertising signaling metadata so that ads can be stitched upon delivery to users

**Casting to Chromecast and Apple Airplay**

Encode for live, video on demand, and linear playout use cases.

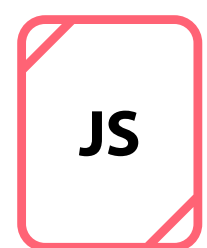
CORE OF EVERY DIGITAL VIDEO INFRASTRUCTURE

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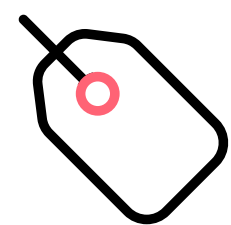
Clients and
Players**Clients & Players (continued)**

A client or player is a software application that allows your viewers to actually watch your video content.

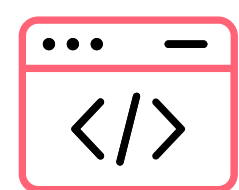
At a minimum, every digital video player should support:

**Open Javascript
API Framework**

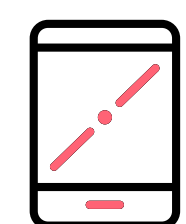
Allows organizations can manipulate the player visuals for their own implementations

**Advertising
Support**

Through industry standard VAST tags, your video player should be able to support advertising whether you're actively using it or not

**HTML5
Support**

Don't get stuck with outdated technology — your video player should as a standard feature HTML5 support for desktop and mobile web

**Support for
Multi-Screen
Playbacks**

Ideally, your player will allow you to broadcast across channels and platforms including mobile and OTT/Connected TV apps and marketplaces

Video players are constantly evolving and changing, and a video player on a closed-system like Apple TV is a completely different animal than an open HTML5 browser optimized for desktop browsing. Managing the variety of players in the wild can become daunting once a publisher moves beyond their website. **Dynamic Player Technology (DPT)** allows teams to scale their video without being limited by a particular video player's limitations.

BEYOND THE BASICS OF BUILDING YOUR VIDEO CONTENT MANAGEMENT AND DISTRIBUTION SYSTEMS

Building a modern video infrastructure that scales with your digital video strategy is more than just solving for these main pillars — especially when you're looking at multi-channel distribution. Every platform and channel can require their own specific set of specifications from the type of player, video sizing, and origin source.

Because of today's fragmented video technology landscape, product and engineering team are working overtime to manage content and delivery across every channel.

This distributed landscape has left teams using specific players or technology to deliver video on their sites while plugging in other technology to deliver video on mobile, and even more technology if they want their own OTT application or to get on existing OTT channels like PlutoTV. Zype built our all-in-one video management and distribution hub to solve for this chaotic landscape by bringing all of your digital video needs together in a single platform.

Other video infrastructure considerations include:

- Complete backend CMS with content library, metadata management, thumbnail optimization & more
- Content Security & Digital Rights Management
- Multi-Channel Payout & Social Publishing
- Non-technical content curation and video publishing
- Paywall Support
- 3rd party video content ingestion via quasi-standards like MRSS
- 3rd party video delivery & syndication control
- Live & Linear Streaming capabilities
- Ad Server & SSP integrations, ad pod support
- Viewer registration & subscription monetization
- Analytics (built-in as well as 3rd party integrations)

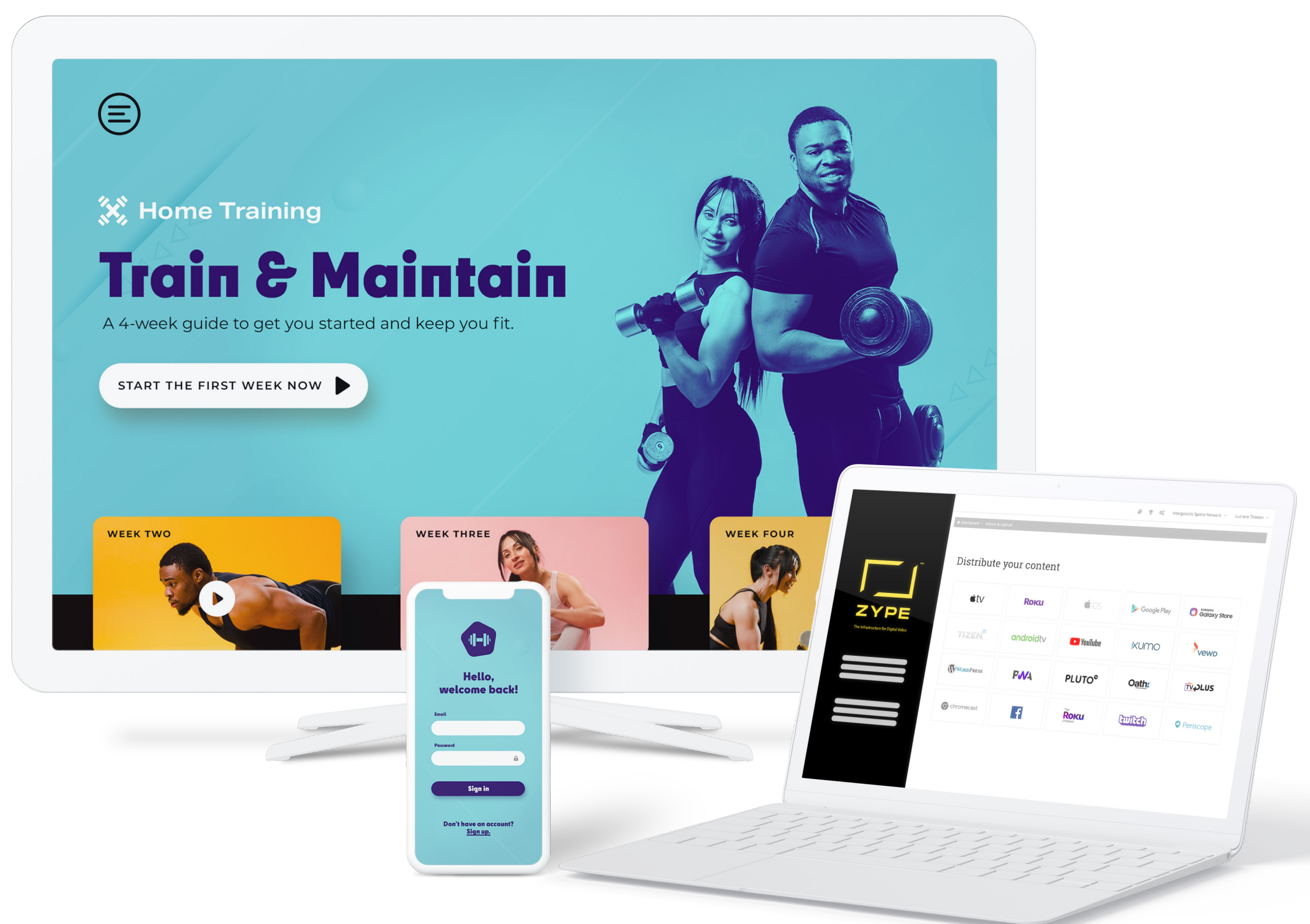
How to Choose Where to Distribute

You may be a media company with content libraries across several brands. Or maybe you're a fitness organization looking to stream your classes on OTT platforms. You might even be an enterprise wanting to share internal training videos.

Whatever type of content you own, you need to understand the dynamic environment, abundant opportunities, and the unrelenting and highly competitive arena that is digital video today.

Today's diversified digital video landscape is open with opportunities for companies to distribute their content to wherever viewers are or could be. This has put the pressure on product and engineering teams to deliver high-quality video experiences across channels as quickly as possible.

But... what are the main types of digital video distribution?
In reality, there are only three main types.



LIVE, LINEAR, ON DEMAND: THE THREE MAIN TYPES OF DIGITAL VIDEO DISTRIBUTION

While you can share video across distribution endpoints like onsite, social, and OTT, there are really only three types of digital video distribution: linear, live, and on demand.



Before the internet, viewers typically watched content linearly, where there was a 24/7 stream of continuous content and they could not manually select which show streamed when. This is also known as leanback watching as viewers just have to “leanback” and watch whatever is on.

In the olden days, live video streaming traditionally focused on news and sports. Now, live video has expanded into live streaming video games, events, and even our daily lives. Watching on demand is the newest form of video viewing, although many would argue that VHS or DVDs were the OG video-on-demand viewing methods. Viewers can watch on-demand by recording shows on traditional television or using AVOD, SVOD, or TVOD services on their smart TVs or online.

There are nuances business, product, and engineering teams need to deeply understand about these three types of video content. For example, live streaming huge concerts is much different than live streaming a local sports game -- and requires different infrastructure. Let's dive into the nuances of each type of digital video and what teams need to think about.

LINEAR

The phrases linear, live linear, and playout all represent a fast growing opportunity in the OTT streaming landscape. Linear is essentially like creating a television channel where a stream of content is played 24/7 and the user can not select content on demand but can simply leanback and watch what's on. Organizations are now leveraging new software-based technologies to construct "simulated" live linear streams based on their existing video content across channels.

This is where old school broadcasting and new school OTT are coming together to create familiar experiences for the viewer. Linear channels are excellent engagement and discovery opportunities for content owners, and offer a flexible range of monetization options, from server-side ad insertion, to subscription paywalls. There are some big linear OTT applications like PlutoTV where content owners can establish their own "live" channels which are simply channels set up to stream 24 hours a day, 7 days a week. Today, you can also feature linear streaming programmatically on your own OTT app, onsite, and even on mobile.

Getting your content on linear distributors like Xumo, PlutoTV, and The Roku Channel is feasible if you have content relevant to a broad audience. What's great about these channels is monetization is typically taken care of by the distributor and you'll get a cut of the ad revenue generated from your video content.

Technology for constructing linear live channels on the 3rd party channels mentioned above can be as simple as uploading your content to your content management system which provides a feed directly to the platform. In some cases, the platforms will provide tools where you can do manual uploading as well. This is typically because these distributors don't require you to setup "App Store" marketplace accounts, building custom software code, or provide the rest of the video plumbing required to run your own app.

If you plan to create your own live linear channels, whether on your own website, social media, or vMVPDs (like SlingTV for example), you'll need a more robust technology stack that can offer solutions like automated programming, ad marker generation, and encoding and broadcasting technology.

LIVE CONTENT

Back in the day, viewers typically only watched live video when it came to the news and sports. Nowadays, anyone can stream live video content on platforms like Facebook, Twitch, YouTube, and more. We even have live musicals on major broadcast networks and digital access to watch presentations live from top events like SXSW and Ted.

How an organization utilizes live streaming in their digital video mix is typically highly dependent on the type of organization they are. If you're a media and entertainment company, it's likely you own only pre-recorded or production-style content. However, digital publishers or even toy companies might utilize live streaming for breaking news or unboxing of new toys.

When deciding to invest in live streaming, teams should be cognizant of the costs to get started.

First, it highly depends on what your distribution endpoint is for live streaming. If you only plan to live stream on a single social channel like YouTube or Facebook, they provide the basic infrastructure you need.



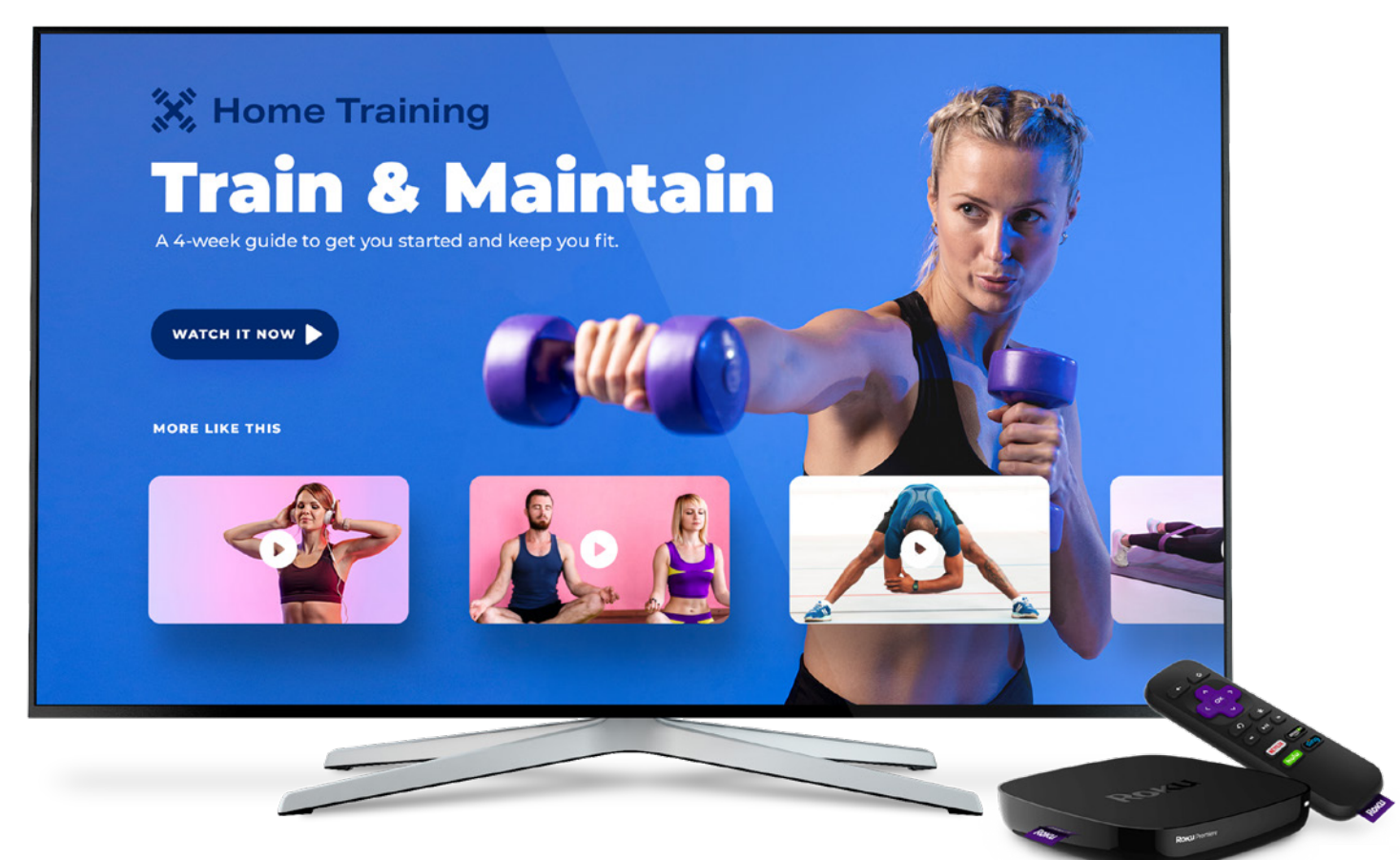
If you plan on live streaming content across channels or on your own site, you're **going to need some in-house infrastructure.**

However, if you plan on live streaming content across channels or on your own site, you're going to need some in-house infrastructure. This can either be bought or built — depending on your needs and overall investment into live streaming (i.e. are you live streaming one event or creating a live series, etc).

ON DEMAND

Since the dawn of the internet, the way we've watched video online has typically been on demand.

While video on demand (VOD) will remain the cornerstone of digital video, it is growing more and more complex. To deliver video on demand, organizations must either upload their content to a site like YouTube or set up their own infrastructure to host and play the content. If you are an early stage organization, simply hosting your content on YouTube or even Vimeo's Pro addition might be enough for you. However, if you want more control over who and how users watch, you'll likely need to invest in a more robust system. For example, if you want to put paywalls, add subscriptions, customize the player's visuals, or control advertising, you'll need your own infrastructure.



Rather than cobbling together players, analytics, and other tools for specific channels like onsite or OTT, **publishers are finding success with all-in-one video solutions.**

Rather than cobbling together players, analytics, and other tools for specific channels like your owned and operated site or OTT, publishers are finding success with all-in-one video solutions that allow them to scale across channels, distribution opportunities, and types of content from video on demand to live streaming.

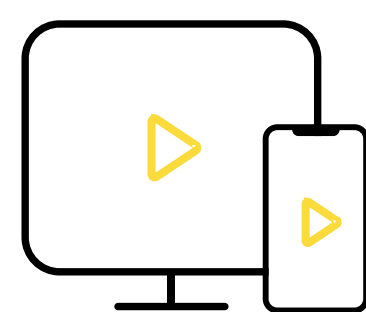
DISTRIBUTION CHANNELS FOR DIGITAL VIDEO CONTENT

All three types of video distribution described above can be utilized across various channels. For example, you might live stream a daily video on Facebook that is available later in a VOD format.

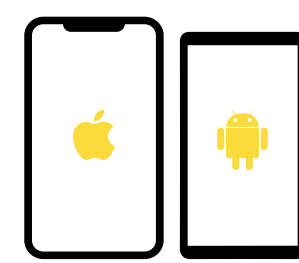
Below, we highlight the main types of video distribution channels with concrete examples of each.

Owned & Operated

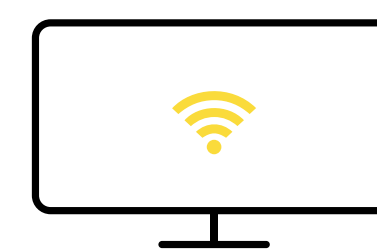
Owned and Operated (O&O) is a term used to describe a company's branded digital endpoints, presence and experiences that are solely owned and operated by the brand, and are not subsidiaries of a larger conglomerate and or licensing structure.



Web (Desktop & Mobile)



Native Mobile Applications



Native Connected Smart TVs



Native Connected OTT Devices

Social

Social media video widely varies in its use cases based on the organization but typically serves as a great resource for acquisition and long-term engagement for owned and operated services.



Cable/Satellite Television Network

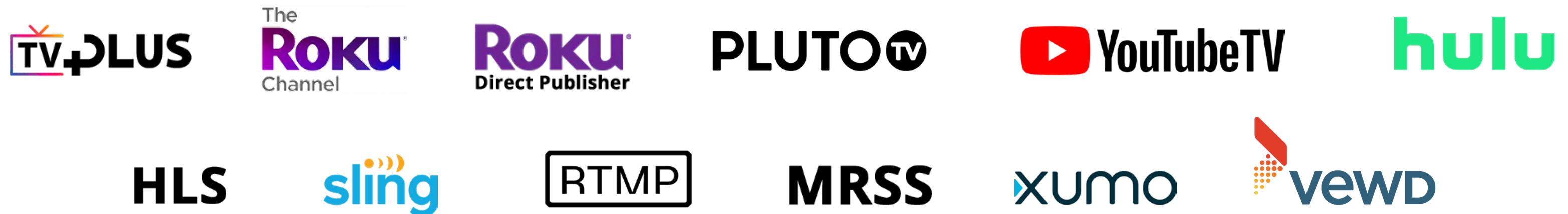
These are the typical television providers consumers are moving away from with cord-cutting.



DISTRIBUTION CHANNELS FOR DIGITAL VIDEO CONTENT

vMVPDs

Whenever your origin video source is called by either a CDN, a video player, or your OTT app — your video hosting provider will charge fees for data leaving their networks. As such, optimizing efficiency in terms of cost, between origin and CDNs, is paramount to maintaining a healthy margin



FAST (Free Ad-Supported Television) Deals

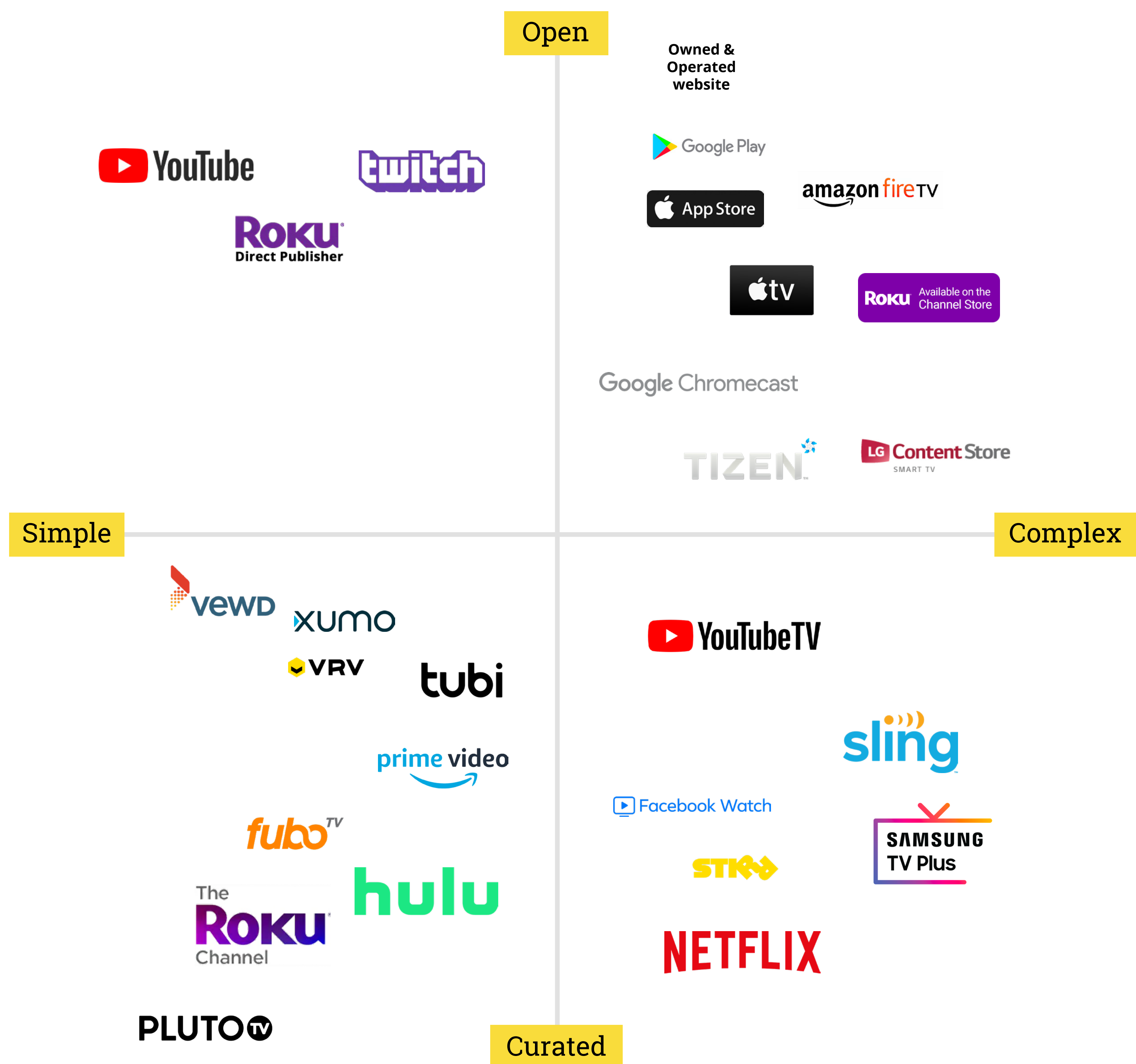
OTT Platform Deals

Getting your content on OTT channels is highly dependent on the individual content provider and their process with some incredibly open while others are closed doors



DISTRIBUTION CHANNELS FOR DIGITAL VIDEO CONTENT

We've created the landscape below to help teams understand the different distribution channels and the infrastructure investments needed to launch on each. The horizontal axis represents complexity of infrastructure needed. The vertical axis highlights the openness of the platforms. For example, nearly any publisher can push their content to YouTube today, but partnering with Netflix is a much more curated business arrangement.



DISTRIBUTION SPECIFICS FOR TYPES OF DIGITAL VIDEO AND CHANNELS

When creating partnerships with other channels, brands, applications, or platforms, there are often differing requirements for each.

For example, to get VOD content onto Tier 1 vMVPDs (examples include YouTube TV and SlingTV), you'll need a MRSS feed... But if you want to have a linear channel on YouTube TV or SlingTV you may need SCTE-35 or similar ad tag timings. If you don't know what any of this means, that's okay.

It gets complicated... but, luckily, there are platforms like Zype that can handle all of these distribution specifications.

From encoding, storage, metadata management, player, ad server, and server or client side ad insertion tech, video content owners should be prepared to work whatever way their partner needs them to.

If you know you have the types of digital video PlutoTV, YouTube TV, Roku, and other leading over-the-top television providers want and are actively seeking, you should look at investing in an all-in-one solution to distributing to various partners rather than cobbling together each technology as a reactive process to closing deals. Having robust video infrastructure that easily scales as your business teams sign deals is critical to being able to get to market quickly and efficiently.

Having robust video infrastructure that easily scales as your business teams sign deals is **critical to being able to get to market quickly and efficiently.**



DISTRIBUTION SPECIFICS FOR TYPES OF DIGITAL VIDEO AND CHANNELS

We've broken down what it typically takes to distribute your content on these top channels:

	VOD	Live	Linear
Owned & Operated (O&O)	You provide the full infrastructure stack		
"The Roku Channel"	You provide a feed pointing to hosted, encoded videos & metadata	You bring a stream + ad serving tech including SSAI. Have to serve their tags with yours.	You bring a stream + ad serving tech
Social Media (Facebook, YouTube, etc)	You upload or have automation to push video to these platforms. Metadata is managed directly on these platforms.	You bring a source stream, no ad tech (ad serving deals done between publisher and platform to the extent they have them)	You bring a stream + ad serving tech
Tier 1 vMVPDs (YouTube TV, SlingTV, etc)	You upload or have automation (usually with MRSS feeds)	You bring a stream with SCTE-35 or similar ad tag timings (ad serving deals done between publisher and platform). Playout/programming done by publisher. Sometimes you can sell through or with the distribution partner.	Same as live, except you will usually also have to provide Electronic Program Guide (EPG) data to accompany your linear stream.
Aggregators (Tier 2 vMVPDs)	You upload or have automation (usually with MRSS feeds)	If supported, you provide a source stream.	If supported, typically your content will be curated directly by the vMVPD.

KEY FEATURES FOR DIGITAL VIDEO DISTRIBUTION

Whether you're expanding into VOD, live, or linear, there are a few key features every digital video team should consider when building out their video distribution infrastructure:

1

Identity And Consumer Authentication

Consumer identification and authentication is paramount to being able to maintain security, entitlement consistency, and discrete analytics.

- Consumer authentication should leverage OAuth2 or equivalent schema
- OAuth token expiration intervals should be customizable
- Each consumer should have a unique hashed identifier
- Emails should be unique across your service
- Passwords should always be stored at rest

2

Paywalls

A paywall is an interface that allows for easy login, signup, purchase and management of subscriptions and/or transactions to a service.

Paywalls come in many forms, most commonly on web implementations, but are prominent on OTT and Mobile as well. The basic features of a paywall include:

- Consumer login
- Consumer sign up & registration
- Consumer subscription plan purchase
- Consumer TVOD transaction purchase
- Consumer subscription management
- Overall the paywall is there to protect entitled content and provide a method for purchase and/or access

KEY FEATURES FOR DIGITAL VIDEO DISTRIBUTION

3

Subscription, Transaction And Payment Processor Management

These functions are a necessary component of entitled content access and subscription management. In general, you want to consider the following

- Payment processor selection - there are many different payment processor vendors out there (Stripe, Braintree, Recurly, Authorize.net, etc) that all have API's that allow for integration into almost any workflow
- Payment types you want to be sure you support all of the possible

4

Metadata

Metadata includes the title, descriptions, tags, and other details about your video content that enables search, organization, and internal content management.

- Metadata management should be customizable based on the information you want to include like actors, series, directions, producers, and more

5

MRSS Feed Management

A MRSS or media RSS feed is where you host the video on your own server and reference the media files in your feed. Often times, partners who have their own distribution platforms will request a MRSS feed of the video content

- Metadata management should be customizable based on the information you want to include like actors, series, directions, producers, and more

KEY FEATURES FOR DIGITAL VIDEO DISTRIBUTION

6

Marketplace Connectivity

Marketplaces are wherever your video content can live amongst other content. A marketplace could be the Roku Marketplace where your OTT channel lives or the AppStore if you're distributing video content on mobile.

- You'll want video infrastructure that can easily deliver your video to every marketplace quickly and efficiently

7

Playout

Playout solutions offer easy-to-use workflows for transforming playlists of videos into IP-delivered linear live streams. This includes workflows for selecting and ordering a playlists of videos to create a linear channel schedules, slate and ad timing management, and scheduling and packaging linear channels for distribution.

- Linear channels mean continually streaming content rather than say video on demand (VOD) which means users can watch what they want, when they want. Think of Linear like a regular television channel.

8

Player Management

As discussed above, HTML5 Players work for typical web-based video delivery on mobile and desktop, but other distribution endpoints require specific type of video players. Video player management takes care of playing your content regardless of where it's being distributed.

- From vertical video to casting on a television, your infrastructure must be optimized to play out content on the various player sizes

KEY FEATURES FOR DIGITAL VIDEO DISTRIBUTION

Whether you're expanding into VOD, live, or linear, there are a few key features every digital video team should consider when building out their video distribution infrastructure:

9

Geo-Fencing

Often times, video content has restrictions on where it can be viewed such as restrictions on specific countries. Your video infrastructure should be able to block access based on contract requirements.

- Typical geo-fencing is done by blocking IP addresses from certain countries

10

Video Analytics

Video analytics can contain both engagement and business analytics. There are specific video analytics tools to measure both including subscription churn and OTT channel analytics

- Often times, publishers use a combination of Google Analytics and digital video specific analytic providers or built-in analytics through CDNs and SaaS platforms like Zype

11

Encoding and Distribution Management

Encoding typically entails taking your high-quality source video content and converting it into a format appropriate for IP-based streaming or distribution. This usually includes transcoding videos into multiple streamable renditions of different qualities to provide viewers with a better continuous streaming experience, regardless of their bandwidth.

- As your source videos are encoded to different delivery formats, you need a robust distribution management platform to determine which format and rendition should be delivered to different players and syndication partners based on situational needs
- Overall the paywall is there to protect entitled content and provide a method for purchase and/or access

Revenue Optimization

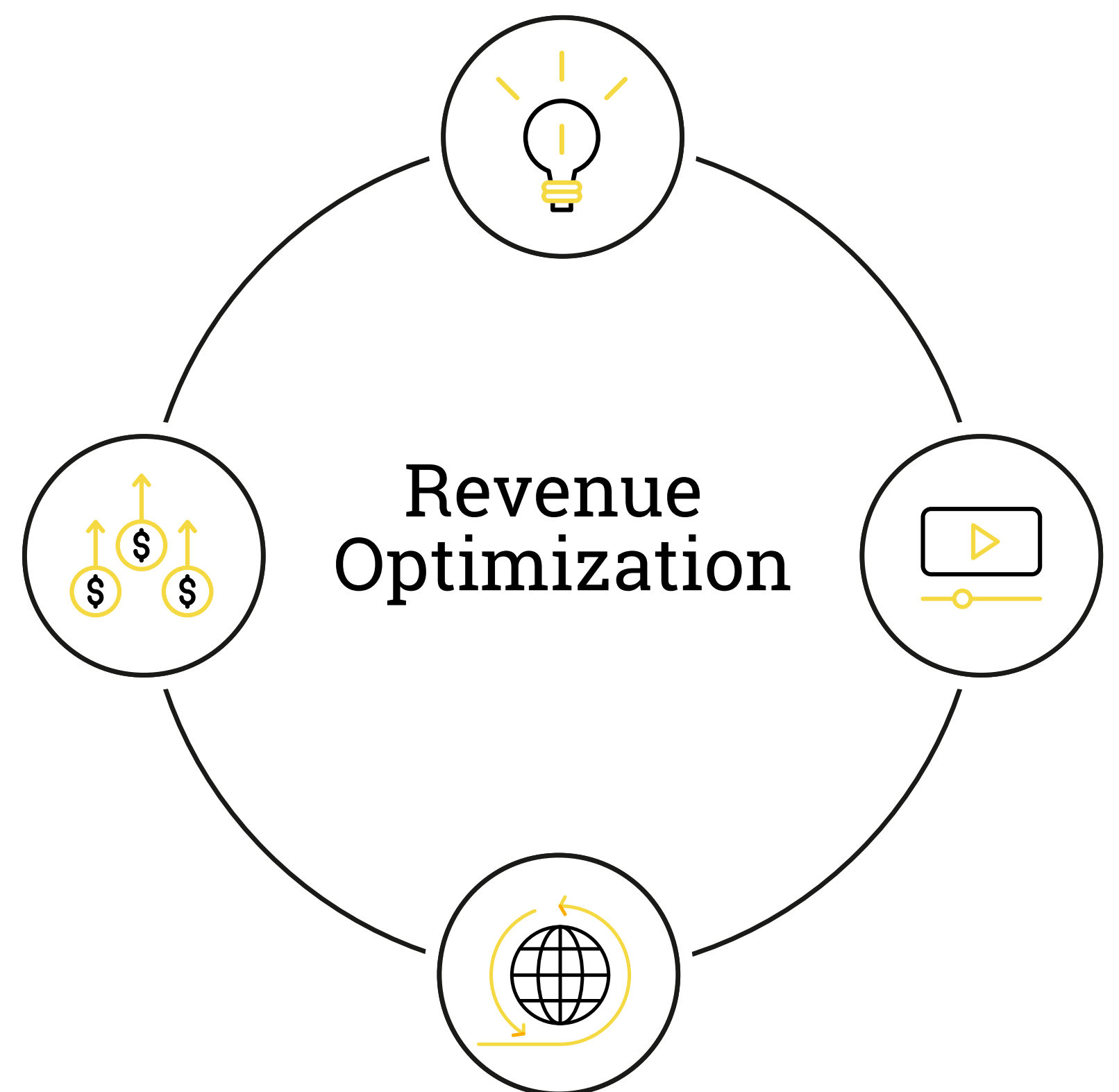
Video and advertising have always been two peas in a pod. The streaming wars has started to disrupt this match, especially with Netflix refusing to adopt ads (for now, at least) and larger organizations offering subscriptions to remove ads.

Most video owners are still utilizing advertising to some degree when it comes to monetizing their video.

If you're going to feature advertising within your content, it's critical to strike the right balance with your audience. Too many ads and they'll hate the user experience and churn. Not enough ads and you won't hit your revenue goals. It's a fine balance to strike and there are many levers an organization can pull to get this right.

Some of the digital video advertising levers include:

- ✓ Pre and post-roll ads
- ✓ Mid-Roll Ads
- ✓ Ad Pods
- ✓ Overlay Ads
- ✓ Companion Ads
- ✓ Table Reads and Product Placement Drops (for live / interview / podcast formats)
- ✓ Subscription and Subscribe to Watch Ad Free



OPTIMIZING ADVERTISING THROUGH INFRASTRUCTURE

While the business team is busy figuring out ways to get more revenue from current and future video content, product and engineering teams are tasked with a whole different subset of problems when it comes to monetization.

When building your video advertising technology stack, teams will likely need to consider:

- **Ad Timing & Placement**

The scheduling of your ad cue points within videos, including setting preroll, midroll, and postroll cue points.

- **Frequency Capping**

Limiting the number of times ads are served to your audience based on their viewing behavior. Typically you will cap ad playback to limit ads every N minutes of viewing, or every number of videos watched.

- **Ad Tag Management**

The process of managing multiple ad tags from different direct sale and SSP sources, including setting up rules around ad waterfalls in the event your primary ad tag does not fill.

- **Ad Server Implementation**

Setting up an ad server capable of managing your ad inventory and ad serving rules. This can include implementing rules based on dynamic ad macro values to specify which creatives or SSPs should be returned to specific users based on the content being watched, viewing device, location, and more.

- **Sponsorship Delays**

Sponsorship overlays are often static image assets rendered on the page or screen that supplement inline linear video ads

- **Interactive Advertising**

As opposed to passive advertising, interactive advertising encourages the viewer to engage with the ad being shown to them

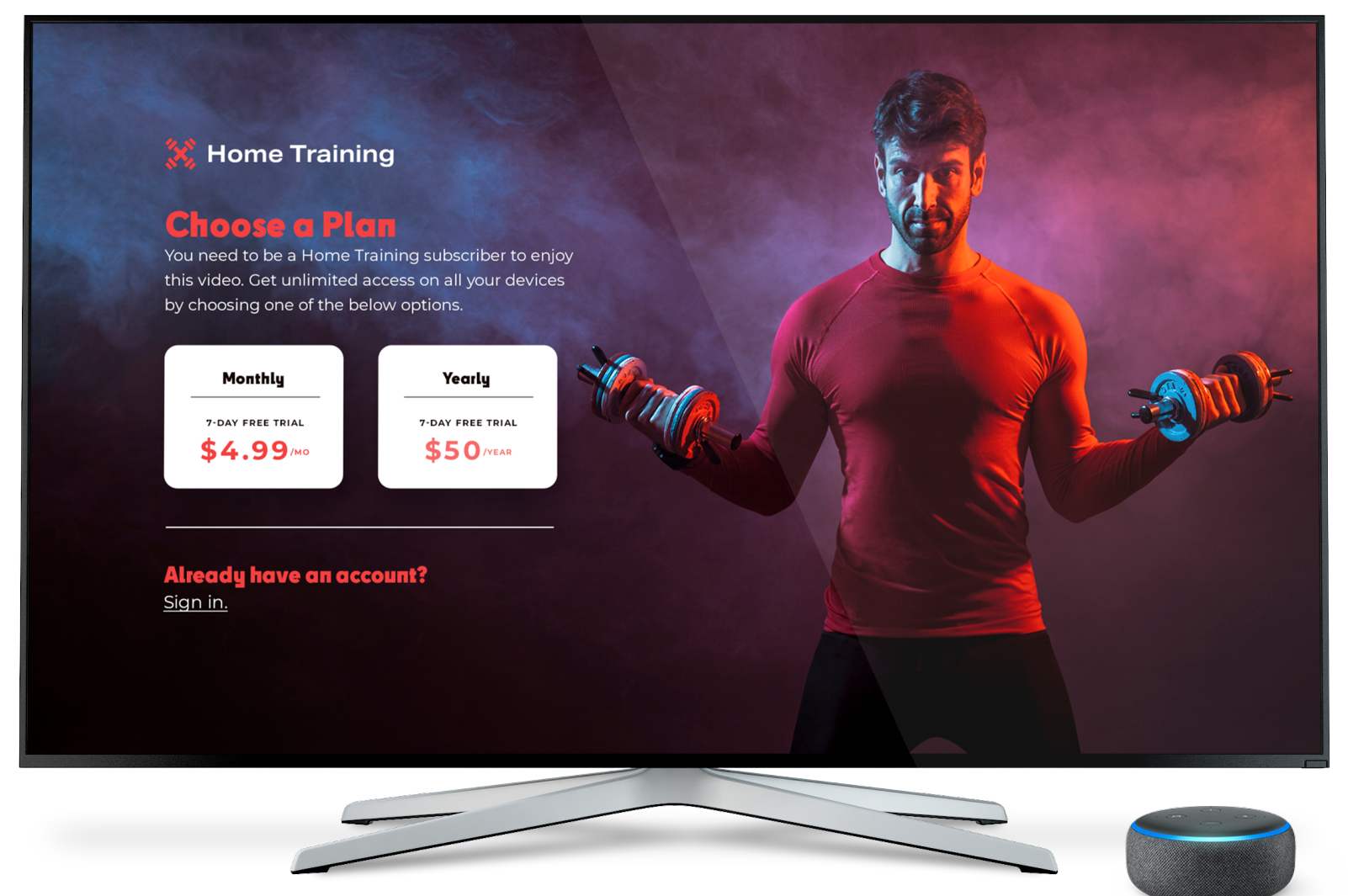
If you rely on outside infrastructure like Youtube, Vimeo, or other uncontrollable video management systems, **your ability to control the advertising experiences on your video content is limited.** Having in-house video infrastructure, whether built or bought, allows organizations to set up their own advertising parameters and monetization methods that they can optimize over time.

GOING BEYOND ADVERTISING WITH SUBSCRIPTIONS AND PAYWALLS

While advertising is the dominant form of monetization for video content, companies are increasingly diversifying their options by introducing subscriptions and paywalls. Nowadays, organizations are looking at how they can offer different pay options for their viewers.

Typically, this means it is either free for a reduced cost to watch content with ads and a premium price to have an ad-free viewing experience. These subscriptions are usually charged monthly and open up the door to recurring revenue.

Paywalls are a bit different, and are traditionally thought of with publishers blocking their content. When it comes to video paywalls, organizations may create paywalls after a certain number of views or a paywall per piece of premium content. For example, if you want to offer a digital ticket to your event where viewers can watch a livestream from their home, you can put up a paywall for that stream. Your video infrastructure should support multiple types of video paywalls and be customizable to all of your needs.



When you implement paywalls or subscriptions into your video infrastructure, you're going to need to need a payment processor. Typically, organizations rely on integrations with Stripe or Braintree to process their OTT or onsite video-viewing subscriptions and paywalls. You'll likely have to use Apple and Android's built-in payment system if your video content is on mobile app stores.

Because you want to create high-quality video experiences for your viewers, you want to make sure that they can watch everywhere. While you might have content on OTT, mobile, and onsite...can someone use a single log-in to access your content across every device? Your video infrastructure must support cross-device viewing and content access.

User Experience Expectations

In the creation of this guide, we took a look at over 200 digital video experiences across web, mobile, social, YouTube, and OTT.

Every experience was different.

Today's world of video analytics is about empowering teams to truly understand viewing habits and make long-term strategic decisions through first and second party data.

Which is somewhat expected...except when the experience was incredibly different within the same brand. Because of disparate technology platforms like Wordpress for your website and another software for your mobile app, user experiences are incredibly different. This often occurs with an overreliance on YouTube and legacy infrastructure that prevents global distribution across every channel from a single endpoint.

Today's viewers have high expectations when it comes to products and experiences. If your content takes too long to load, continues to buffer, or features too many ads, you're going to have churn. But... these user experience concerns are just the tip of the iceberg.

Some of the deeper user experiences to think about with digital video include:



- Continuous Play
- Deep linking
- Relevant, context-appropriate metadata
- Content Carousels
- Content Recommendations
- Favoriting videos
- Playlists/Series/Content Categories
- Native Search
- Offline Viewing
- Closed Captioning

Video Analytics:

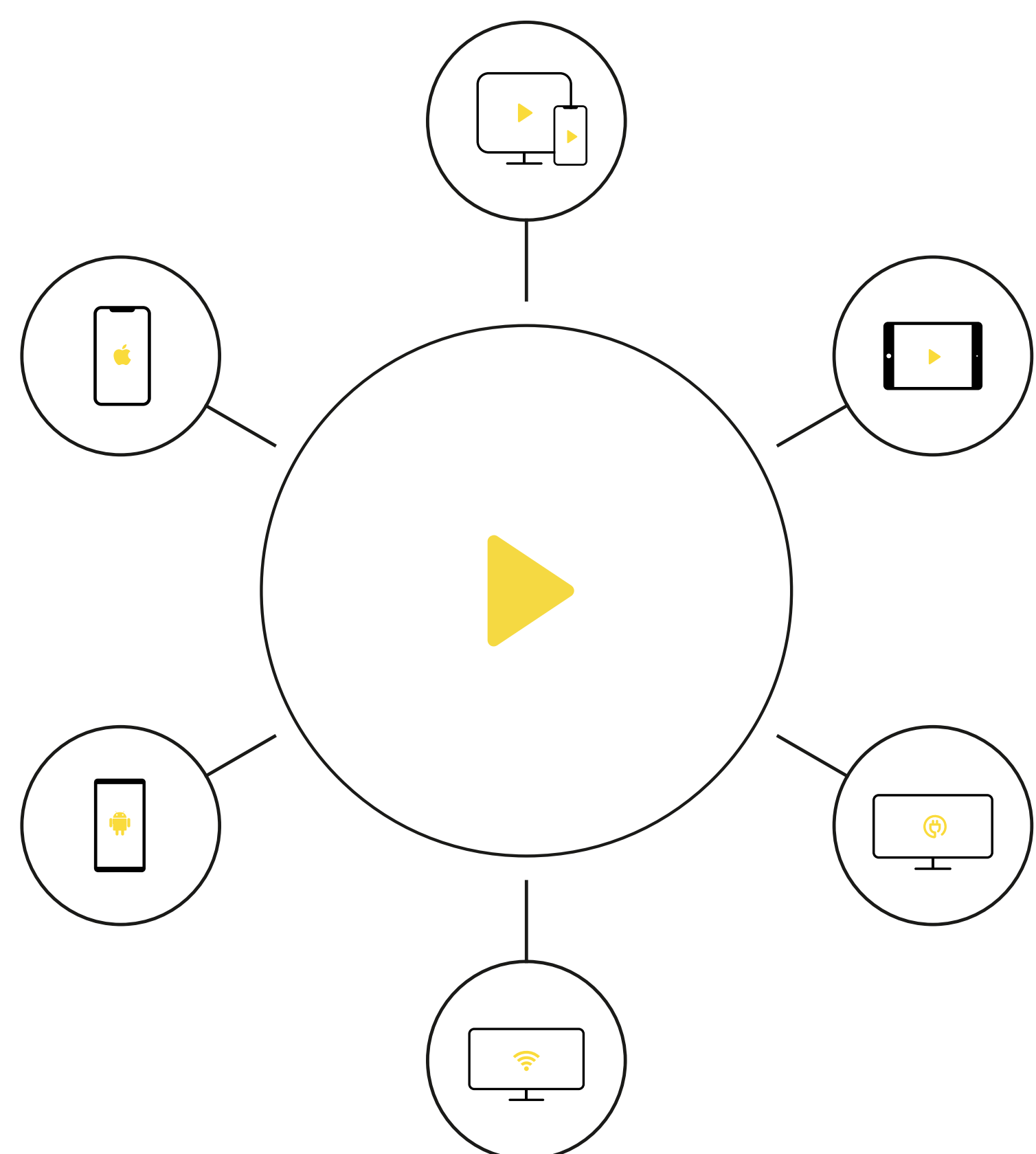
Optimizing Infrastructure and User Experience

Today's world of video analytics is about empowering publishers to truly understand viewing habits and make long-term strategic decisions through first and second party data.

When you're distributing digital video across YouTube, your site, apps, social, and/or OTT, understanding viewers and their cross-channel viewing habits is critical yet complex. An advanced video analytics solution should allow you to track individual viewer behavior across devices and platforms. Collecting these user viewing habits allows you to enhance and customize cross-channel user experiences with improved features and better targeted programming, to attract new customers and increase viewer satisfaction.

By enabling you to understand how content is discovered and accessed, your team can understand which devices and platforms to focus your video optimization efforts on including how to optimize monetization, what distribution channels to attack, pricing structures and overall video performance.

Customize crosschannel user experiences **to attract new customers and increase viewer satisfaction.**



THE TABLE STAKES VIDEO ANALYTICS THAT WILL HELP YOU OPTIMIZE YOUR STRATEGY INCLUDE:

- ✓ Viewership across your library
- ✓ Viewership across devices
- ✓ Video View-through Rates
- ✓ Average Number of Views Per Session
- ✓ Average Watch time
- ✓ Most Watched Content
- ✓ User Segmentation
 - New vs. Returning
 - Paid vs. Organic
- ✓ Viewer Segmentation and Cohort Analysis



Video analytics solutions should **enable you to make long-term infrastructure and strategy decisions.**

But, it's not just about user experience —video analytics must also focus on quality assurance analytics by assessing performance metrics including bitrate, rebuffering, dropped frames, and startup time. Implementing quality assurance video analytics allows you to understand any issues that are occurring so you can optimize your infrastructure to continuously deliver high-quality viewing experiences.

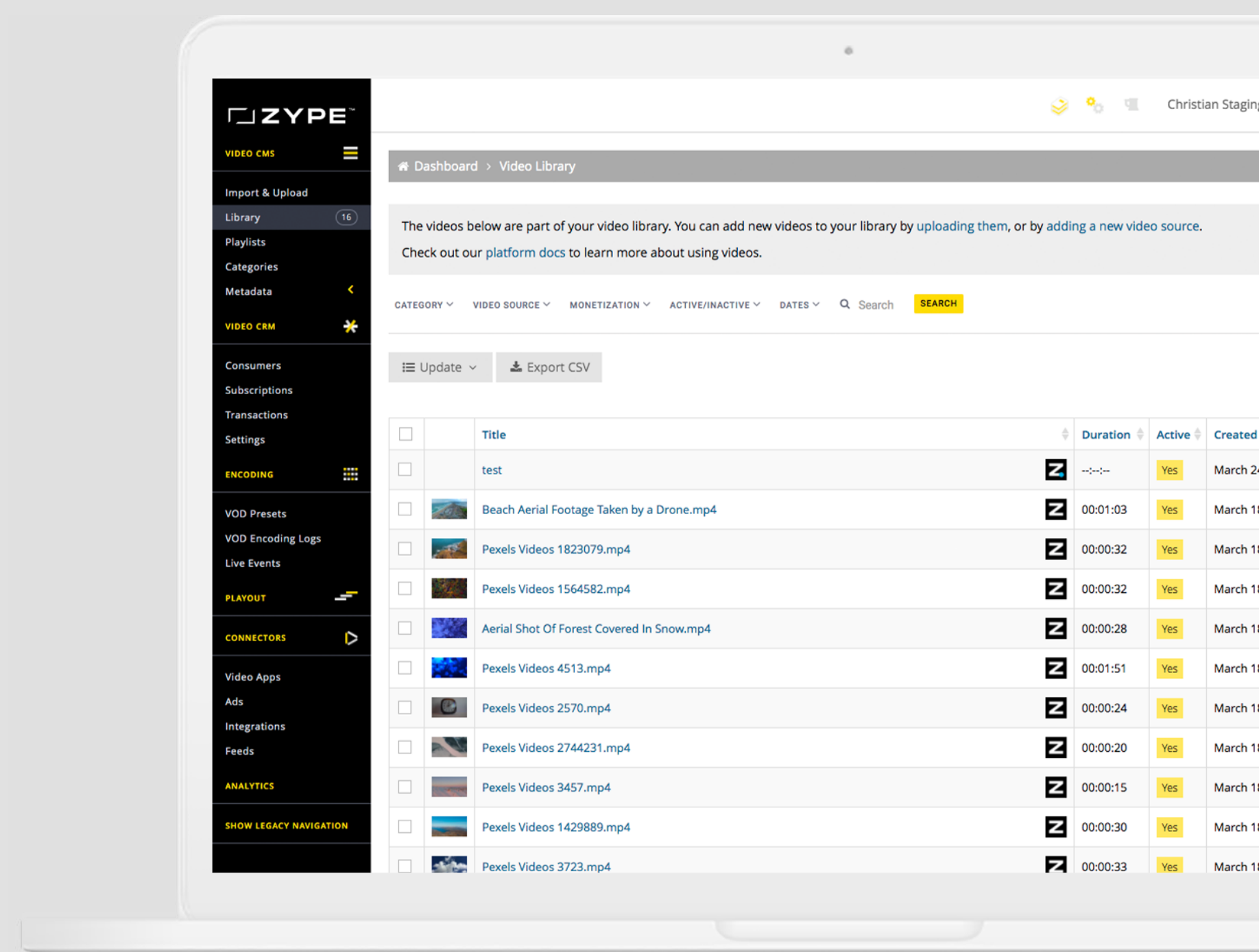
Video analytics solutions should offer in-depth, multidimensional insights into your viewers and the quality of your video experiences to enable you to make long-term infrastructure and Wstrategy decisions.

The Future of Digital Video Relies on Robust Video Infrastructure

This new world of digital video is all about diversifying distribution and monetization. From requiring subscriptions to watch on site to partnering with Amazon or PlutoTV for distribution, having the right infrastructure is key ensuring sure you can control your content's destiny.

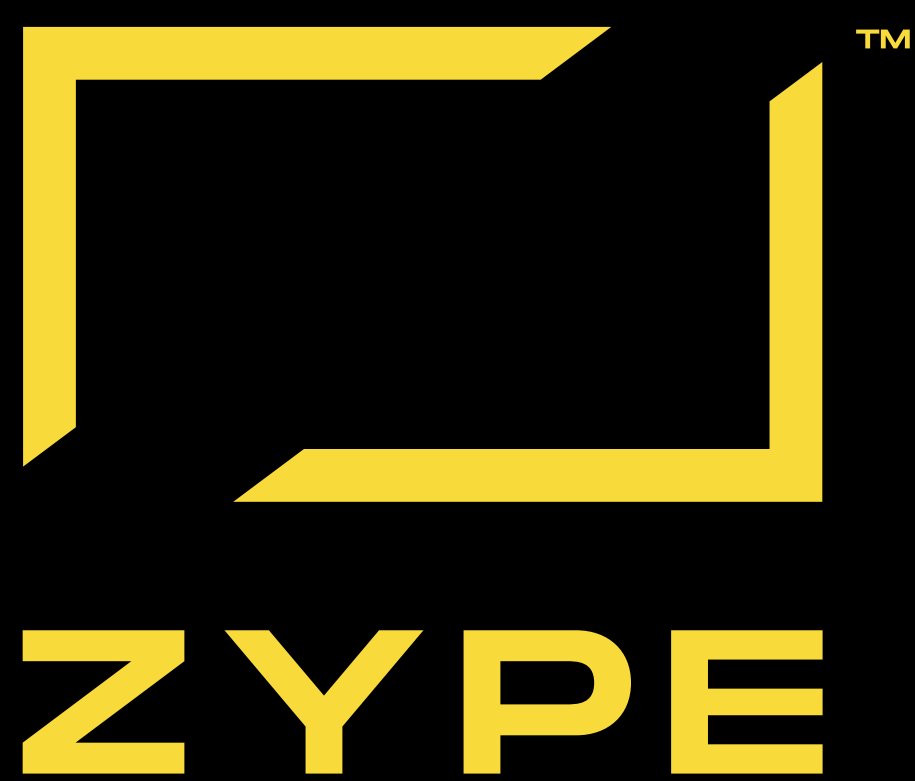
Whether you've already started diving deep into long-form video content or are looking to diversify distribution of your existing content, the number one dilemma organizations face is if their video infrastructure can handle the many new asks and demands of digital video teams like:

- Can I distribute videos across every channel through a single platform?
- What happens if I want to test live streaming without investing too many resources?
- Can I choose where and how many ads play within my content?
- How can I collect video analytics data without implementing another platform?
- How do I create cohesive video viewing experiences across my site, mobile app, and OTT?



While the digital video landscape is more complex than ever, the video infrastructure that powers your strategy doesn't have to be. There are platforms, processes, and protocols that can optimize and speed up your ability to deliver high-quality video experiences across channels.

By focusing on how your infrastructure empowers video content management, distribution, monetization while delivering a high quality experiences based on analyzing your viewers, the new era of digital video is in your hands.



The Infrastructure for Digital Video

Learn more at
zype.com

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