

Video Market Demands for a Modern Content Management Platform

Exploring the Growing Need for Vendor-Agnostic, Automated Management of Stored Assets Across All Storage Domains

Part 1 of a 2-Part Series Devoted to Exploring Stored Asset Management Challenges



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Introduction

Storing and using media assets has become increasingly complex, impeding flexibility and innovation. Video service providers can only overcome these challenges with a highly-automated, multi-tiered approach to managing storage resources.

Producers and distributors across every segment of the video services ecosystem are discovering Content Management Platforms that were adequate for operations in the early stages of the global transition to streaming video services fall far short of what's needed today. Some of these systems are configured to work with a specific vendor's storage platform. While others may offer vendor-agnostic solutions for managing assets, especially in the case of linear tape-open (LTO) and object-based cloud platforms, they're useless for managing assets stored on other types of storage systems.

Storage management in restricted domains demands more innovative solutions. These insufficient platforms prevent providers from employing cost-effective, best-of-breed approaches for short- and long-term storage on an as-needed basis. The ability to instantly find and apply any asset in any workflow is highly relevant to legacy and streamed video production.

In this two-part white paper series, we will look at the general market trends and current Content Management Platform limitations that call for a next-generation Content Management Platform. Then we turn to a discussion of the requirements to overcome these limitations as content producers and distributors respond to ongoing market developments.

In Part 1 we focus on the many challenges posed by the need for flexible, cost-effective management of assets across any mix of tape, hard-drive disk, optical, and/or cloud storage systems. The ability to search for and locate useful elements without having to know where assets are stored is essential, with speed and cost optimization being top of mind.

After spelling out the many challenges a next-generation Content Management Platform must meet, we conclude Part 1 with a deeper dive into understanding the specific needs of providers in five major market segments: General Interest Programming, Post Production Services, Sports, Broadcast News Stations, and Houses of Worship. We are especially interested in the vital roles stored assets play in building new audience experiences and growing in highly competitive environments.

Part 2 is devoted to exploring how Telestream's Content Management Solutions can meet these evolving demands. We will also look at how the solutions are used by customers in each of the sectors highlighted in Part 1.

The Global Video Content Management Platform Market

Relentlessly shifting market dynamics are impacting everyone who produces, stores, and distributes professional-caliber video. Nothing is more important to meeting commitments on time and at reasonable costs than a well-designed Content Management Platform.

The operative phrase here is “well-designed.” In an era when high volumes of assets can be scattered across tiers of tape, disk, and cloud storage with various network protocols, file systems, and media formats, there’s much more to think about when choosing a Content Management solution.

More Video Consumption Leads to Surging Volumes of Stored Media

The new perspective on Content Management requirements begins with the fact that the world is inundated with video, which accounted for nearly 66% of all internet traffic (upstream and downstream) in the first half of 2022, according to internet tracker Sandvine's latest report.¹ Video traffic was up 24% from a year earlier, closely tracking with a 23% increase in overall internet traffic.

“Video accounted for nearly 66% of all internet traffic in the first half of 2022.”

Video as a share of mobile data traffic registered even higher at 67.6%; average time spent on mobile apps jumped to five hours a day compared to three hours prior to the pandemic. With 69% of the world's population now connected to the internet compared to 55.6% just designated four years ago² and virtually every smartphone including a high-definition video camera, video is impacting far more people's lives than ever before.

As Sandvine Chief Solutions Officer Samir Marwaha noted with the release of the report, video is now integral to “virtually all apps that want to drive interactions and engagement.” Moreover, this pursuit of engagement has engendered more video apps that “fuse together multiple functions and features.”

Those engaged in video production and post production workflows have broken free of the pandemic-driven workforce displacement constraints. They need to pull content into workflows regardless of where it's stored as easily as they did in simpler times, when content repositories were co-located in the same facilities.

In fact, producers now have digital tools to embellish linear and on-demand content feeds. They need to accomplish more than they have in the past, especially as the need to store more content expands across multiple generations of storage technology and more locations. Most notably, the surge in storage volume is accompanied by an accelerating shift to reliance on cloud storage systems.

The cloud video storage market is on track to grow at a 16.1% CAGR, from \$7.37 billion in 2021 to \$20.93 billion by 2028, according to Fortune Business Insights.³ This trend runs in tandem with intensifying diversity in video storage – from both locational and technical perspectives.

"92% of companies that produce significant volumes of video are pursuing multi-cloud strategies, and over 80% are employing hybrid strategies that include public and private clouds, with on-premises tape and disk systems for long-term and backup storage."

According to a global survey conducted by IT management solutions supplier Flexera, 92% of companies producing significant volumes of video are pursuing multi-cloud strategies. Over 80% are employing hybrid combinations of public and private clouds, often involving various mixes of on-premises tape and disk systems for long-term and backup storage.⁴

Increasing Demand for Content Management Platforms

Not surprisingly, researchers are finding demand for Content Management Platforms has been surging and will continue to do so for the foreseeable future. Multiple independent market research firms have cited the shift to cloud storage as a major reason for the increase in Content Management Platform demand. This is only reinforced by the increases in video production and the number of people connected to the internet.

These trends toward new, more complex storage ecosystems and video operations make the timely production and delivery of premium programming critical to a content provider's bottom line. This doesn't just apply to big video broadcasters. Broadcast stations, smaller sports enterprises, houses of worship, and other entities producing large volumes of content have similar needs.

The overarching goal should be to find solutions that minimize costs as the volume of assets going into storage continues to mount. The functionalities that make this possible go far beyond what was expected of Content Management Platforms in the past.



The Mandate for a Next-Generation Content Management Platform

Limitations of Current-Generation Solutions

There might be some confusion as to what's expected from Content Management Platforms across the video production ecosystem. Often systems are selected based on a particular vendor's solution, where the benefit is limited to making it easier to find media in a growing catalog of files stored in that specific system.

Other vendors offer Content Management solutions that are meant to work with any primary storage system, regardless of supplier. Usually these single-platform Content Management Platforms are designed for linear tape-open (LTO) systems or object-based cloud systems. They tend to ignore short-term storage, such as solid-state drive (SSD) and hard-disk drive (HDD) systems. The best solutions support fast, multi-departmental access to content by ensuring useful metadata is assigned to each file for enhanced searchability. They also typically include some measure of transcoding and formatting capabilities to make files ready for use across multiple device environments. But even these systems fall short of what's needed today.

Identifying A Cost-Cutting, Next-Gen Content Management Platform

The video marketplace has reached a turning point, where video producers have volumes of content accumulating across multi-generational combinations of disk drives as well as tape- and cloud-based storage. Thus, a modern Content Management Platform must be capable of delivering a frictionless, unified, vendor-agnostic solution for managing stored content. This solution should provide a single, multi-layered portal that affords all users access to all assets, for any use case, wherever they may be stored.

The Content Management Platform must provide technicians with immediate access to assets wherever they are by relying on an automated indexing system. In cases where an asset is stored in multiple locations, the Content Management Platform should follow user-defined policies that determine from where the asset should be pulled.

These capabilities are essential not only to minimizing the costs of operations, but also to making best-of-breed, value-based choices when shopping for storage options. Decision makers need the confidence to bring whatever storage resources they choose into the managed ecosystem with assurance the assets will be formatted to suit whatever types of tape, hard-drive disk, optical, or cloud storage systems are appropriate.

Multi-storage transfer capabilities also keep storage costs in check by allowing content managers to move assets into the optimal storage system at any given point in an asset's lifecycle. If there's a change in the status of an asset, the Content Management Platform should transfer it appropriately with just a few clicks.

The Content Management Platform also minimizes the costs of cloud storage by reducing egress fees that are incurred when transferring assets to other locations. In a global survey of cloud storage users, IDC found that 99% incur planned or unplanned egress fees with average costs coming to 6% of the annual cloud storage bill.⁵ Another study by managed service provider Aptum Technologies found that 73% of surveyed cloud storage users said moving to the cloud had cost them more than expected, with 65% asserting they viewed those unexpected expenditures as wasted money.⁶

Using storage lifecycle policies is another strategy to reduce costs, both for on-premises and cloud storage. The Content Management Platform solution should automate the movement of content from nearline storage to deep or offline storage, and purge files from storage systems as needed, based on user-configured rules. The goal of the Content Management Platform should be to eliminate as much of that waste as possible by cutting back on how often content must be transferred out of the cloud. One way to do this is by having the Content Management Platform create file indexes from readily available information without pulling the content from the cloud. Another way to avoid egress is to have the Content Management Platform use proxied content elements to avoid pulling entire files from the cloud and incurring higher fees.

"99% of cloud storage users incurred planned or unplanned egress fees."

This ability to operate efficiently in multiple storage environments depends on Content Management Platforms integrating and coordinating functions with other video production and asset management systems. In the case of content production and post production, the Content Management Platform must be able to interact seamlessly with various workflows, whether they rely on point solutions from Adobe and Avid or production asset management (PAM) systems that unify management across multiple systems. The Content Management Platform should also be able to seamlessly interface with media processing platforms that are used to prepare content for distribution, plus any media asset management (MAM) systems that orchestrate larger workflows.

Requirements and Trends in Key Market Sectors

The capabilities outlined previously are essential for all Content Management Platform providers that manage substantial amounts of video storage; there are specific priorities and unique requirements across key market segments. In the following discussion, we look at these nuances within five major sectors that have especially strong needs for a vendor-agnostic, multi-storage Content Management Platform.

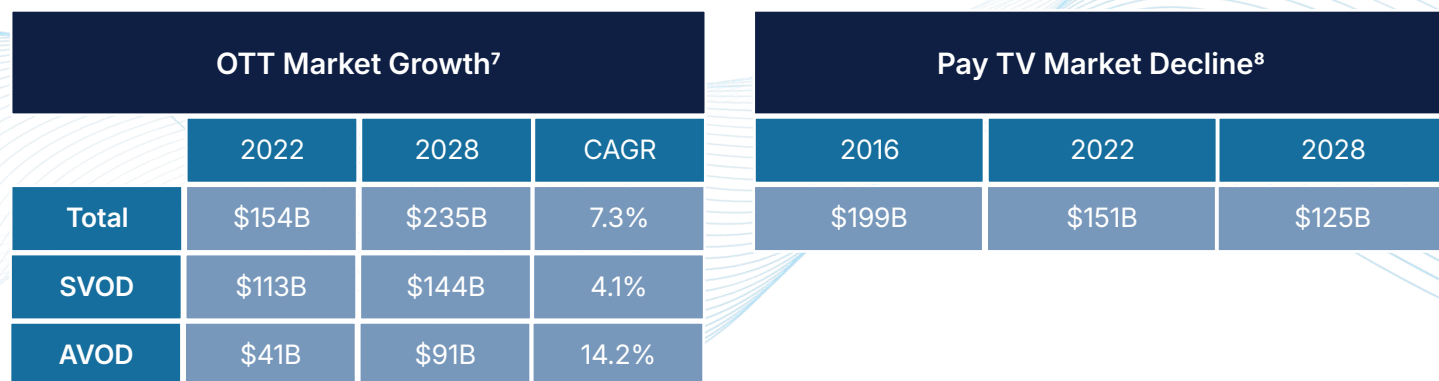
General Interest Commercial Video

Consumer Demand and Provider Priorities

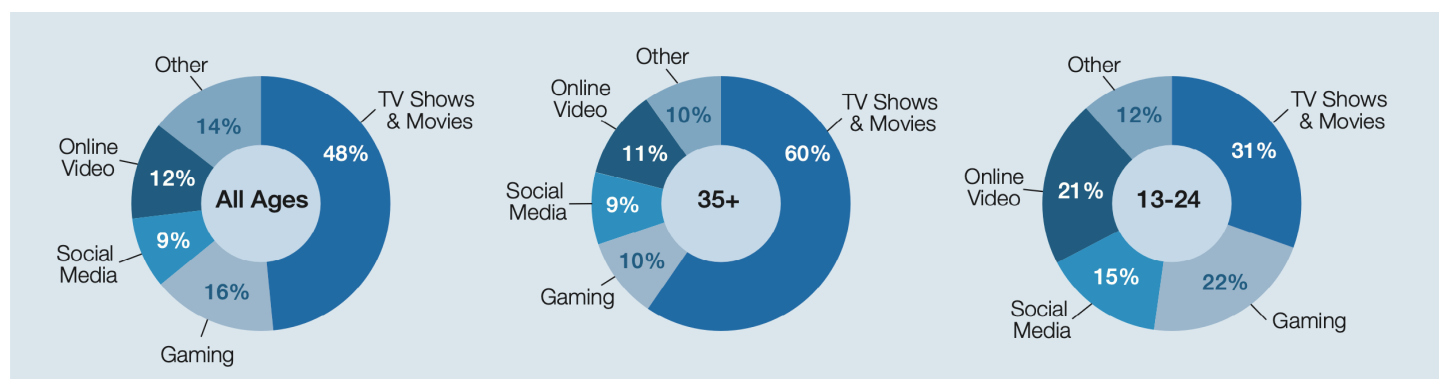
Across the world, virtually every provider of broadcast TV content has been swept up in trends dominating the digital IP transition. Numerous research reports, some of the most recent of which are highlighted in Figure 1, tell the story.

Global Trends in Premium Video Consumption

Figure 1



Global Average Divisions of Entertainment Screen Time⁹



Global Share of Streamed Video Viewing by Device ¹⁰	
Smart TV	35%
CTV Device	35%
Mobile Device	11%
Gaming Console	7%
Desktop	7%
Tablet	5%

How Viewing Time is Spend in the U.S. ¹¹		
Year	Legacy TV	OTT
2022	50.7%	49.3%
2023	47.7%	52.3%

Countries Where 50+% of Housholds Subscribe to 1-4 OTT Services ¹²	
Spain – 76%	Italy – 70%
Australia – 73%	Mexico – 66%
South Korea – 73%	U.S. – 63%
U.K. – 73%	France – 61%
Brazil – 71%	China – 59%
Canada – 70%	India – 57%
Germany – 70%	

Sources (see footnotes for specific attributions):
 Digital TV Research, Insider Intelligence, Hub Entertainment, Conviva, Morning Consult

In a nutshell, consumers' unrelenting demand for instant access to long-form content has led to surges in revenues from internet-delivered services as traditional pay TV revenues plummet. These services are increasingly competing with gaming, short-form video, and user-generated content for consumers' viewing time. Gen Z viewing habits reflected in Figure 1 reinforce these challenges big media companies face in efforts to keep viewers engaged with their content.

As decision makers shape strategies to meet new challenges, a recent state-of-the-industry report from IABM notes that premium video providers are growing anxious. These anxieties stem from macro-economic headwinds, low returns on historically high spending, manpower shortages, and intensifying competition for viewers' attention.¹³

While producers focus on cutting content management and storage costs, they also face greater complexity in the use of stored assets. As a result, improved performance through automation, improvements in content management technology, and the use of cloud resources are now top priorities as well. (Figure 2)

"Premium video providers growing anxious, stemming from macro-economic headwinds, low returns on historically high spending, manpower shortages, and intensifying competition for viewers' attention."

Television Industry Concerns and Priorities

Figure 2

Strategic Roadmap Priorities		Supply Chain Investment	
Top Seven		Top Categories	Fastest-Growing Categories
Cloud & Virtualization		Remote Production	Automated Production/Post
OTT & Streaming		Workflow Orchestration	Storage/Archive Mgmt.
AI/ML & Analytics		Internet Distribution	Large LED Screens
IP Transport & Networking		Personalized Features	Personalized Features
Imaging		IP Routing & Networking	Inter-Facility Connectivity
Remote Production		Cloud Compute	On-Premises Compute
Social Media		Cloud Archive Storage	Cloud Archive Storage

Source: IABM

Along with evolving dynamics in video service delivery and monetization, reliance on IP and cloud technology has had a powerful impact on viewer engagement. Many of these advances are deeply rooted in the management of stored assets, including:

- Device-tuned, personalized feature enhancements to user experiences, requiring Content Management Platforms to support fast access to and use of stored elements in production and post production workflows.
- The growing popularity of cloud DVR services, which involve managing personalized aggregations of cloud-stored content for customers.
- Search and recommendation requirements that find and deliver any program chosen by a user, no matter where it's stored.

The FAST Market Impact

Beyond these implications for stored asset usage, the emergence of Free Ad-Supported Television (FAST) channel development platforms that allow service providers to quickly spin up linear streams of relevant, topical content has created a major business segment where stored assets are fundamental to service development (Figure 3).

2022 Revenues		Projected 2028 Revenues		
Global Total	U.S. Share	Global Total	U.S. Share	U.S. Share of 6-Year Growth
\$6B	\$4B (67%)	\$18B	\$9.9B (55%)	\$5.9B (49%)



Source: Digital TV Research¹⁴

FAST services, once a largely ignored OTT market niche, began to take off in 2019 when Viacom, now operating with CBS under the Paramount banner, acquired the leading FAST provider Pluto. The sector has since become a major OTT battleground with a wide mix of giant enterprises such as Comcast/NBC Universal, Warner Bros. Discovery, Fox, Amazon, Google, and Samsung jumping in through acquisitions or proprietary FAST services.

Based on the Digital TV Research projections in Figures 1 and 3, FAST revenues would represent 8% of the total OTT market by 2028. There's really no telling how far providers will go toward building this side of the business as consumer resistance to subscription-based service models intensifies.

The foray into FAST, with relatively obscure programs, has demonstrated that content producers can drive higher CPM rates on ads using dynamic ad insertion (DAI) technology. This DAI technology can deliver geographically, contextually, and demographically-targeted ads in an intelligent, automated fashion. This suggests a significant upside potential should FAST providers choose to supplement their offerings with programming from their top-tier TV lineups.

"Content producers can drive higher CPM rates on ads using dynamic ad insertion (DAI) technology for FAST services."

In any event, efficiently accessing and managing programming across all archives is essential to the success of FAST services. Whatever role FAST services have to play in the larger OTT market, this phenomenon has created a new urgency to ensure Content Management Platforms perform adequately to meet providers' needs.

Post Production Environments

Disruptions roiling the premium video marketplace are transforming post production processes. Rapidly expanding workloads and tight time constraints can only be accommodated through highly automated enhancements to workflow efficiency and quality control.

This certainly applies to Content Management Platform operations in all the prior scenarios discussed. Additionally, when post production is outsourced, post service suppliers' workflows must be able to interact with multiple content creators' respective archives.

Then and Now

Not so long ago, movie and TV workflows required support for sequential editing steps to prepare master files for distribution (to motion picture theaters, DVD producers, broadcasters, and pay TV operators). Theatrical release dates and seasonal broadcast schedules traditionally determined these timeframes. Today, fixed release schedules have been supplanted by a perpetual rush to push new content into distribution pipelines as quickly as possible.

Traditional workload tasks are still in play, including editing and synchronizing video and audio tracks; color grading and corrections; addition of visual effects; closed captioning; metadata insertion; generation of masters for storage and hard copy distribution to theaters; and mezzanine encoding for playout to broadcast stations and pay TV affiliates.

"Today, fixed release schedules have been supplanted by a perpetual rush to push new content into distribution pipelines as quickly as possible."

But now, across a vastly expanded range of distribution affiliates serving the global demand for OTT streaming services. Each OTT distributor has its own unique set of requirements for incoming A/V files, including which types of formats are required – SD, HD, UHD, UHD with HDR – and, within them, the basic quality parameters for each.

Mandated video parameters can vary with regard to bit depth, color profiling, framerates, HDR modes, upscaling HD to UHD, and downscaling UHD to HD or HDR to SDR. Audio must be mastered to meet individual requirements ranging from basic stereo to immersive Dolby Atmos audio.

Post production service suppliers must also work with far more metadata and ancillary assets than ever before. There are substantially more metadata fields tied to descriptors and formats associated with the growing volumes of content. Distributors are also working with schema that support input of data to enable richer search, recommendations, personalized advertising, trailer dubbing, poster art, and other ancillary streams associated with this media.

These challenges all stem from a market transformation that has produced more business for creatives, editors, colorists, and others in the production pipeline. But now, as described in the previously-mentioned IABM report, uncertainties have shifted the emphasis to containing costs and fostering operational efficiency.

The Next-Gen Content Management Platform Imperative in Post Production

Efficient storage usage is more important than ever, especially given the impact of expanded volumes of data and versions. Producers outsourcing post production will be doing whatever they can to reduce storage costs, balancing baseline pricing against the costs of moving files. As the latest advances in Content Management technology drive transfer costs lower, producers will be pursuing options that are optimized to work with more frequent file transfers with the lowest total cost of ownership (TCO).

For providers of post production services, this increasing demand for dynamic storage presents challenges best met by a master Content Management Platform that can be used effectively across all storage domains, while minimizing both the frequency and the volume of transfer costs. In these multi-post customer environments, the platform must keep pace with record-keeping responsibilities by defining and collecting KPIs (key performance indicators) that can track storage usage on a per-file basis.

It's also important to minimize the time and staffing costs of integrating a Content Management Platform with archive access systems. This relies on a platform pre-integrated with multiple vendor iterations of every type of storage system. A scalable way of accomplishing this is through the use of standardized APIs that facilitate additional integrations as needs arise.

"Workflow connectivity is essential to dispersed and remote post production workflows."

Another major prerequisite is workflow connectivity, which is essential to dispersed and remote post production workforces. Whether performed in-house or outsourced, today's post production operations require the flexibility to engage specialists operating as independent contractors, wherever they are, without having to maintain full-time staffing for peak load situations.

Obviously, a centralized Content Management Platform suited to the storage-related needs of post production operations goes hand in hand with centralizing broader post production workflows. The better these workflows can work together across all post production processes, the more efficient the entire operation becomes.

Sports Operations

No aspect to the transformation in TV entertainment is more dramatic than what's transpiring in the world of sports. From major professional productions to the smaller-budget operations delivering more localized coverage of college and even pre-college competitions, the overarching trend, as in all other programming categories, is a growing reliance on IP-based streaming.

The Surging Transition to Live Streaming

With sports, the shift to OTT has moved at a slower pace than the rest of the traditional broadcast and pay TV providers. This is largely due to the outsized role sports exclusivity has played in TV networks' efforts to retain viewership that drives legacy business models. But that resistance has given way to reality. Consumer demand for live-streamed sports content forces license holders to embrace OTT streaming rather than treating it as a threat to their traditional TV affiliates' interests.

As the online publication Streaming Media observed, sports "moved to the center of major streaming provider strategies" in 2022.¹⁵ Whether the streamers are traditional TV channel providers adding OTT outlets, pure-play OTT service providers, or the growing number of individual leagues and teams launching direct-to-consumer (D2C) services, the race is on to capture the growing legions of consumers worldwide who don't watch traditional linear TV programming.

In the U.S., for example, only 48% of adults subscribe to pay TV services, contributing to an advertising imbalance where 93% of all ad impressions reach only 55% of American households, according to Samba TV.¹⁶ Globally, some parts of the world are experiencing increases in pay TV viewing as services become available in previously-underserved areas. But the overall rate of pay TV service penetration worldwide peaked in 2018 at 60.6% and will drop to 56.6% by 2025 according to S&P Global Market Intelligence.¹⁷

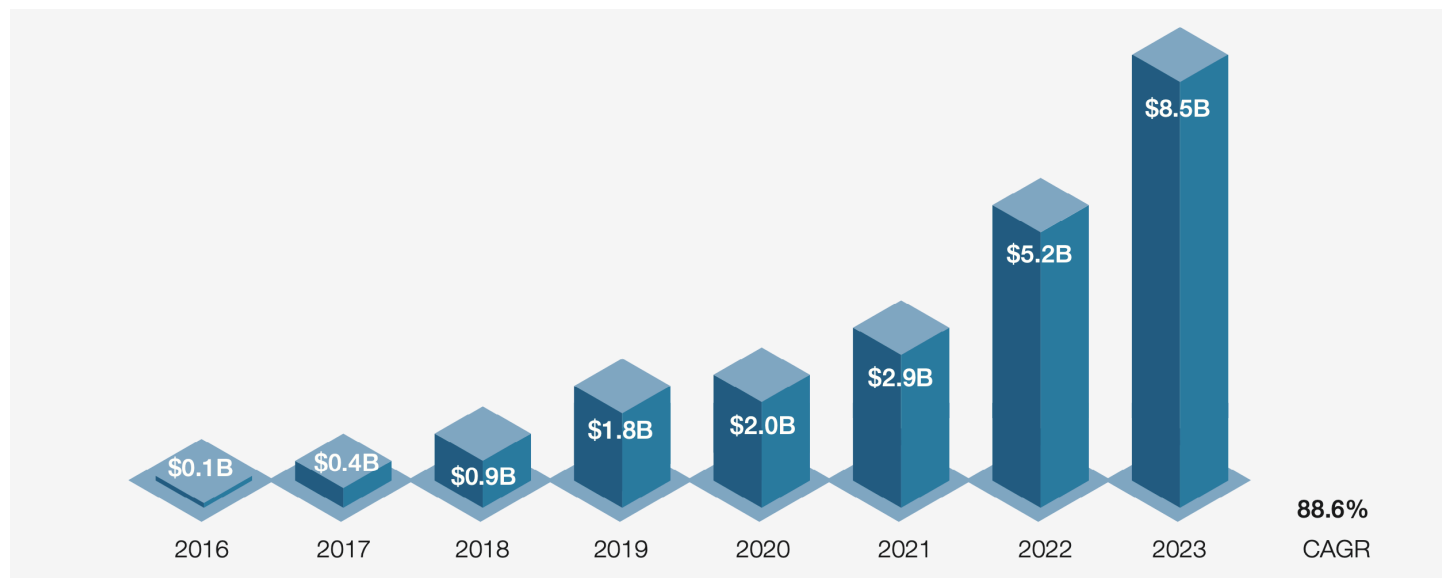
In 2022, 40.7% of sports fans worldwide were streaming sports events through online platforms, according to Nielsen.¹⁸ Production platform supplier Grabyo predicts that, by 2026, the traditional TV market's share of live sports viewership will drop to 28%.¹⁹

These trends have produced a rapid increase in the investments streaming services are making to license sports content (Figure 4). The leap has been especially dramatic over the past three years, going from \$2.9 billion globally in 2021 to an estimated \$8.5 billion in 2023, according to eMarketer.²⁰

"In 2022 40.7% of sports fans worldwide were streaming sports events through online platforms"

Global OTT Service Spending on Sports Rights 2016-2023

Figure 4



Source: eMarketer

New Dimensions in User Experience

The shift to OTT for sports isn't just about the transfer of programming from one distribution system to another. An equally vital consideration is how sports providers can create much richer viewing experiences for fans.

Personalized data feeds, multi-screen viewing options, and socialized engagement are gaining steam as essential ingredients to winning and retaining viewers. Long-term experience with OTT services has conditioned consumers to expect no less, as revealed by a global survey of consumers from 451 Research Group.

The researcher reported that when respondents were asked to identify what they found appealing about online viewing, personalization (55% of responses) was second only to price (59% of responses).²¹ 49% across all age brackets, and 54% in the specific 18-34 Millennial category, indicated they expected their video service providers to use the data they collect to provide custom-tailored service offerings and customer support.

According to a report issued by MediaKind, three quarters of sports rights holders were offering standalone D2C services by 2021, and half of those services were making full use of technology advances to create differentiated services with high levels of fan appeal.²² With workflows running on cloud infrastructure, all sports producers can extend personalization beyond the usual recommendations.

"Workflows running on cloud infrastructure allow sports producers to extend personalization beyond the usual recommendations."

For example, a sports network with the flexibility to use any stored asset from any storage location can give fans the option stream clips of their favorite players' past exploits on-demand. By compiling data from across the storage infrastructure, sports producers can let fans know how their fantasy sports teams are doing in real-time with unprecedented immersion.

These possibilities are reflected in the D2C initiative launched by the New York-based regional sports network YES, which offers an OTT streaming app to anyone subscribed to its TV channel. This app combines interactive graphics, live stat overlays, real-time polling, and a four-person watch-party option with video chat to add more value and engagement for viewers. Audience members can easily view Yankee baseball, Nets basketball, Islander hockey, regional college sports, and other live events across desktop, iOS, and Android phones, tablets, and some connected-TV devices.

As reported by Sports Video, YES Network officials say their investment in these capabilities has already paid off. Nets game streams were up 21.3% YoY with a 130% increase in average minutes watched per game.²³ The per-game stream count for Yankees games grew by a staggering 246%, with a 145% gain in average minutes watched.

In another case of sports service enhancement, the NBA exemplifies the possibilities sports producers have with D2C operations that are unaffiliated with traditional networks. To bolster subscriptions to its League Pass OTT service, the league began supporting synchronized watch parties and a wide range of ancillary personalized features by delivering clips and data tied to each viewer's interests.²⁴

Adding to the momentum around enhanced sports viewing experiences, mobile providers are exploiting the capacity, versatility, and low latency of 5G networks to deliver sports experiences that draw users to their services. In some cases, the enhancements are designed to make the in-venue sports experiences, as well as remote viewing, more compelling. For example, according to the Groupe Speciale Mobile Association (GSMA), Verizon deployed 5G millimeter wave networks to deliver advanced features in 25 NFL stadiums and 35 other sports and concert venues nationwide.²⁵

With the versatility to quickly draw assets from any storage platform, all sports operations now have the opportunity to introduce these types of fan-pleasing experiences at far lower costs than previously was possible. As a result, such enhancements will become the norm for virtually all entities hoping to draw viewers to their online services.

Broadcast News Station Operations

Even for broadcast stations, the last bastions of traditional TV operations, business as usual is coming to an end. Two major trends, both tied to online distribution, point to the need for new approaches to sustaining ROI for station groups' and single, independently-owned stations' most valuable original programming: local news, sports, and weather.

"The North American broadcast station business is undergoing a historic conversion to over-the-air (OTA) and online distribution."

The Growing Impact of the Next-Gen TV Transition

Most prominently, the broadcast station business in North America is undergoing a historic conversion to over-the-air (OTA) and online distribution, as well as on-premises OTA reception infrastructure tied to the rollout of ATSC 3.0. This parallels some aspects of the broadcast transformations underway in Europe, as well as other parts of the world that rely on the Digital Video Broadcast (DVB) OTA standard and its use in the conversion to Digital Terrestrial TV (DTT).

The ATSC 3.0 standard was created out of necessity when the FCC decided to recover the UHF broadcast spectrum for mobile and other uses. This meant broadcasters would have a lot less spectrum to allocate to 4K UHD channels. ATSC 3.0 makes the digital spectrum more efficient with new modulation schemes that are not compatible with the original ATSC 1.0 OTA standard. As a result, to benefit from ATSC 3.0, broadcasters must install new transmitters and promote availability of home antennae, smart TVs, and gateways that work with the standard.

Construction of ATSC 3.0 transmitters and other infrastructure has accelerated across the U.S. and Canada along with rollout of smart TVs with 3.0 tuners. There are now over 100 cities with stations equipped to broadcast in ATSC 3.0, with over 70 next-generation TV models in the market from Sony, Samsung, LG, and Hisense.

"By the end of 2023, 75% of the US will be in reach of ATSC 3.0 signals."

By the end of 2023, 75% of the U.S. will be in reach of 3.0 signals, according to the National Association of Broadcasters.²⁶ But this is just the beginning. There is a long way to go before 4K over-the-air reception and IP-streamed interactive enhancements will breathe new life into local TV.

While some broadcasters look at ATSC 3.0 simply as the way to introduce Ultra HD programming, many want to support new business opportunities. These involve delivering more OTA services and applications, including mobile services, and simultaneously leveraging seamlessly-integrated OTA and OTT distribution services that enable localized or personalized targeting of services, features, and ads.

The New OTT Environment for Broadcast Stations

The other major trend transforming broadcast station agendas: bringing local broadcast programming into OTT services. This trend has raced ahead of ATCS 3.0 adoption as station groups compete to build audiences for local content they're developing for those services.

Eventually, when there's a mass market for 3.0, these services could become conduits for delivering personalized advertising and interactive features that can be integrated with the OTA signals by 3.0 Smart TVs. Meanwhile, local station operators are taking the necessary steps to contribute their content to whichever OTT initiatives align with their business goals.

This creates a pervasive need for Content Management Platforms that maximize stations' efficient use of stored assets to embellish newscasts and other live programming. This extend to new local content that can't be included in a packed broadcast channel programming lineup, but can be produced for OTT distribution.



In some cases, station group-backed OTT services have made it a priority to foster a repository of station-produced local content beyond what's available on air. This creates a pool of unique sports, concerts, and other programming people can't see anywhere else, which is further enhanced by producing separately-branded programming for streaming. This includes examples like the 24x7 Alaska Iditarod Channel, the Politics Uncut political channel, and many more.

"Station group-backed OTT services are prioritizing the development of unique sports, concerts, and other programming people can't see anywhere else."

As this new era in local broadcast station operations takes shape, fast and efficient use of stored assets will become as essential to their businesses as it is to all the other segments of the video services market.

Houses of Worship

As with many other aspects of culture, education, and employment, reliance on video connectivity during the pandemic has had a transformative impact on how people engage with churches, synagogues, mosques, and other centers of religious activity.

Hybrid ways of life where people's pursuits are split between external venues and home are just part of the story. By all accounts, religious leaders have discovered that video is a major asset in their efforts to engage a population, specifically one that is attuned to the widespread presence of video and has moved away from religious affiliations altogether.

In a study reflective of these global trends, Gallup's latest report on church attendance in the U.S. found that, in 2020, only 47% of Americans belong to a church, synagogue, or mosque, which was down from 50% in 2018 and 70% in 1999.²⁷ This trend is widely expected to accelerate over time, given the close correlations between church membership and age, which showed 66% of adults born before 1946 and 58% of Baby Boomers were members of a religious organization, while the numbers for Gen X and the combined numbers of Millennials and Gen Z adults registered at 50% and 36%, respectively. Gallup attributes this decline in membership to an overall trend of more Americans lacking a religious preference, reinforcing the need for worship leaders to find new ways of engaging with these disconnected audiences.

Remote churchgoing is now a major component of religious services. According to the faith-based and non-profit payments platform supplier Pushpay, a recent survey of 2,200 church officials found that 89% are engaging with their membership in hybrid mode using video streaming.²⁸

Nearly all of these respondents said they stream the services on social media. Going forward, there will be greater reliance on proprietary streaming operations, with an anticipated drop off in the use of social media to just 47% by early 2024. This trend is driving the growing use of custom video players and embeds on web pages.

But as more houses of worship move to independent streaming, cost is "more front-of-mind" than ever, the researchers reported. 86% of respondents indicated they don't want more technology tools, even as they take on more video responsibilities, signaling an emphasis on reducing waste with "consolidated, integrated, and purpose-built solutions." Now that video has become a core part of their ministries, it won't be just the megachurches that find themselves in operational modes resembling professional video production groups.



With greater volumes of video to manage and archive as they reach growing audiences, the days of making DVD recordings of services and storing them in file cabinets are over. Cost-effective use of high-capacity storage options, relying on high-performance Content Management technology, will be essential to the cost containment everyone is looking for.

Conclusion

The need for elevated performance in Content Management Platform operations is taking hold in the video production and distribution ecosystem worldwide. Research studies tracking multiple trendlines in professional video markets confirm this, including the historic transition to IP streaming, changes in consumer behavior and expectations, growing usage of cloud storage, surging demand for Content Management Platform solutions, and more.

As entities in every sector generate growing volumes of video content and ancillary media, they are leveraging multiple storage environments to minimize the costs of holding those assets over time. Stored assets now have greater potential than ever before, going well beyond traditional VOD services to encompass a vast array of approaches for enhancing viewer experiences across every type of streamed service.

Content Management Platforms are vital to facilitating this flow of assets across a multi-tiered storage grid at any scale. Specifically, they need to be able to:

- Accommodate any type of storage system required, without vendor lock-in
- Automatically transfer and index files for use in the storage system best suited for the asset at its specific stage in the lifecycle
- Access and activate stored assets instantly on any internal or external partner workflow

These requirements cannot be met by a vendor-specific Content Management Platform, or one tied to a specific class of storage systems. Providers need a vendor-agnostic Content Management Platform that meets these requirements while significantly reducing the overall costs of storage-related operations.

Part 2 of this series will describe how Telestream has responded to these needs with its innovative Content Management Solutions. Readers will learn how these solutions can fit into any media asset management environment to work with other media processing systems, or be integrated with the Telestream Vantage Media Processing Platform to achieve even greater levels of efficiency in production and post production.

Notes

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About Telestream

Telestream is a globally recognized leading provider of innovative solutions that enable the creation, processing, and delivery of digital media. The company's media workflow and measurement technologies are designed to drive efficiency and scale across the media supply chain through AI.

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