GLOBECAST

Broadcast,
Media &
Entertainment
Solutions

White paper

Understanding the Role and Impact of TV Headend as a Service

Taking content further

Understanding the Role and Impact of TV Headend as a Service

CONTENT

INTRODUCTION

TV head-end systems play a crucial role in the contemporary broadcast ecosystem by managing the acquisition, processing and distribution of television signals across multiple platforms. They are responsible for encoding, formatting and encrypting content – ensuring that high-quality signals are delivered to viewers.

They are relied on by a wide variety of organisations, from television broadcasters and ISPs to Over-the-Top (OTT) service providers and also within the enterprise and hospitality sectors. Part of the challenge for users of traditional head-end systems, however, is that they are often built using hardware-intensive infrastructure requiring significant upfront capital expenditures. This can result in a number of business and technology difficulties and risks, ranging from high operating costs to limited scalability and flexibility, particularly when users want to integrate new content delivery formats and technologies.

Among the key emerging solutions designed to address these challenges is TV Head-End as a Service (TVHEaaS). This approach leverages modern cloud technologies and a service-oriented approach to provide a flexible, scalable and cost-effective alternative to legacy platforms. Designed to enable operators to enhance their service offerings and maximise their Return on Investment, it offers a transformative approach to content delivery in the digital era.

This white paper will explore the role, use cases, and benefits of TVHEaaS so that organisations can make informed decisions about its potential value.

SECTION 1 - What is TV Head-End as a Service?

TV Head-End as a Service (TVHEaaS) is an innovative managed service concept that draws on the benefits of cloud technologies to manage and deliver digital content more effectively in a SaaS (solution as a service) model.

By replacing traditional hardware-centric systems with a unified and scalable cloud-based solution using state of the art technology, TV operators can concentrate on their core business priorities while outsourcing their TV head end operations to a specialist third-party provider.

The TVHEaaS service model is made up of several core components:

- Signal acquisition: Captures signals from various sources through a multi-network platform.
- Hybrid cloud processing: Uses the best hybrid cloud technologies to encode, transcode and prepare content in different formats.
- Content delivery: Distributes processed content to satellite, IPTV, OTT and mobile device platforms.

Key features and capabilities:

TVHEaaS is designed to provide users with a range of essential features and capabilities, enabling them to significantly improve platform management, technical upgrades and day-to-day operations. Key features include:

TVHEaaS Feature	Capability
Managed services	Managed service with 24x7 operation, which includes monitoring, maintenance and support, to ensure continuous and reliable service delivery.
Scalability	Easily scales up or down according to demand, supporting dynamic business needs.
Hybrid cloud processing	is based on an original architecture that can blend together the most effective cloud-based services with on-premise technologies, to handle large-scale content processing tasks.
Advanced encoding and transcoding	Utilises the latest codecs (e.g., H264/AVC, H265/HEVC, VBR/QVBR/CBR/ABR) to meet any quality / bit rate efficiency video delivery requisites
Unified formating with state-of-the-art technology	Can prepare formats – including multiplexing, OTT packaging, CAS and DRM content protection, etc. - for different delivery requisites (satellite, IPTV, OTT) under a single convergent approach, and ensuring compliance with industry standards.
Multi-network signal acquisition	Can capture signals from satellite, fibre networks, and IP sources.
Multi-network delivery	all types of networks for delivery, including satellite, DTH, IP multicast, OTT on-net/off net CDN
Security and compliance	In addition to security monitoring, availability is ensured by multiple redundancies (network links and paths, signal acquisition, processing, geographical sites, etc)

SECTION 2 - Benefits of TV Head-End as a Service

The key benefit of TVHEaaS is that it enables Broadcasters and PayTV Operators to refocus on their core mission: dynamically aligning their content proposition and value with the shifting demands of users. A flexible content preparation and distribution platform, with an efficient architecture, it is also cost efficient, performant.

In addition, TVHEaaS offers a range of capabilities that go beyond traditional TV Head End solutions:

Cost optimisation: 1

By leveraging mutualisation capabilities and by moving to a hybrid cloud architecture with lower TCO (Total Cost of Ownership), operators can achieve up to 30% savings per channel, from acquisition to delivery.

Business & financial flexibility: 2

By enabling organisations to move from a Capex model to an Opex model, they can reduce the need for substantial upfront investment in hardware and infrastructure.

This contributes to a more flexible business strategy to adapt to market uncertainties, from volatile usage trends to assets acquisition and mergers moves across the media industry.

Increased monetisation: 3

By taking advantage of segmentation options for Core/Long tail and Live/FAST content, operators can more effectively target their audiences and open up new revenue streams. These on-demand capabilities allow them to validate service changes and enhancements and focus on increasing monetisation.

Enhanced service offerings with unified delivery channels: 4

TVHEaaS enables users to continuously revisit the relevance of their video service line-up, complement their existing broadcast services (Sat/Cable/IPTV) with Adaptive Bitrate (ABR) streaming for OTT platforms, ensuring a broader multi-platform reach.

Convergent approach to replace multiple dedicated platforms allows to unify technical quality and customer experience while inducing cost savings.

High quality outsourcing of TV Headend infrastructure and operations: 5

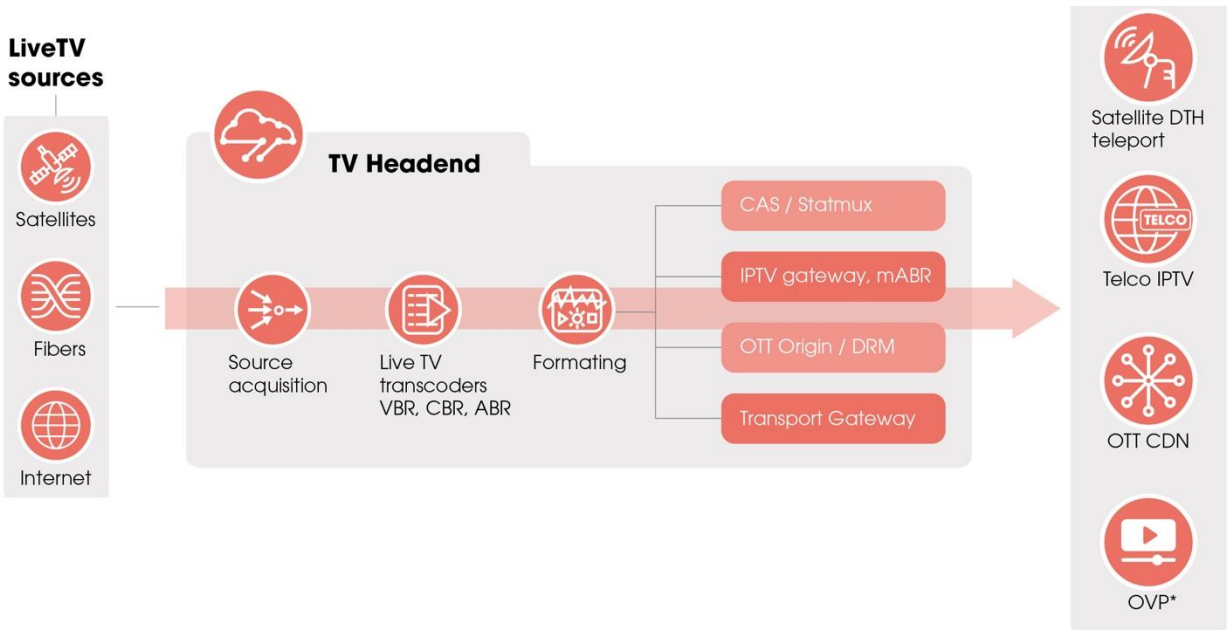
By outsourcing their TV Head-End infrastructure and operations with an experienced provider, operators can focus time and resources on more strategic growth priorities, while maintaining a high standard of quality and technical performances.

SECTION 3 - The Globecast Approach to TVHEaaS

Globecast is a multi-network platform operator, media service integrator and managed service provider. We have the connectivity capabilities, the knowledge and the technology the industry needs to drive performance and on-demand innovation while we manage associated risks.

A pioneer in the development and delivery of TVHEaaS, Globecast enables TV operators to maximise their Return on Investment by allowing them to focus more clearly on multi-platform reach and monetisation options.

- Key features of Globecast TVHaaS include:
- Source signal acquisition platform to a common TSoIP multicast format
- Audio-video transcoding stage: H264/AVC, H265/HEVC, VBR/QVBR/CBR/ABR, advanced audio with multiple tracks, subtitling, SCTE-35
- Additional features: time-delay, EPG, data carousel (HbbTV), Live-to-VOD
- OTT Packaging (HLS, DASH), live time-shifting, DRM, Origin shield, CDN ingest
- Broadcast multiplex with CAS/Simulcrypt, VBR/statmux, DVB signaling
- IPTV multicast, mABR, PIP low res, FEC
- Linear TV ad break replacement



Our solution unifies our worldclass multi-network acquisition and delivery connectivity with hybrid cloud processing at scale. It is vendor agnostic and is engineered around our own service orchestrator, developed by Globecast to manage live TV services processed in an all IP and software based multi-vendor environment. This service orchestrator is designed in particular to support quick service provisioning, mass configurations and automatic provisioning of supervision, through reproductible, less error-prone scripts.

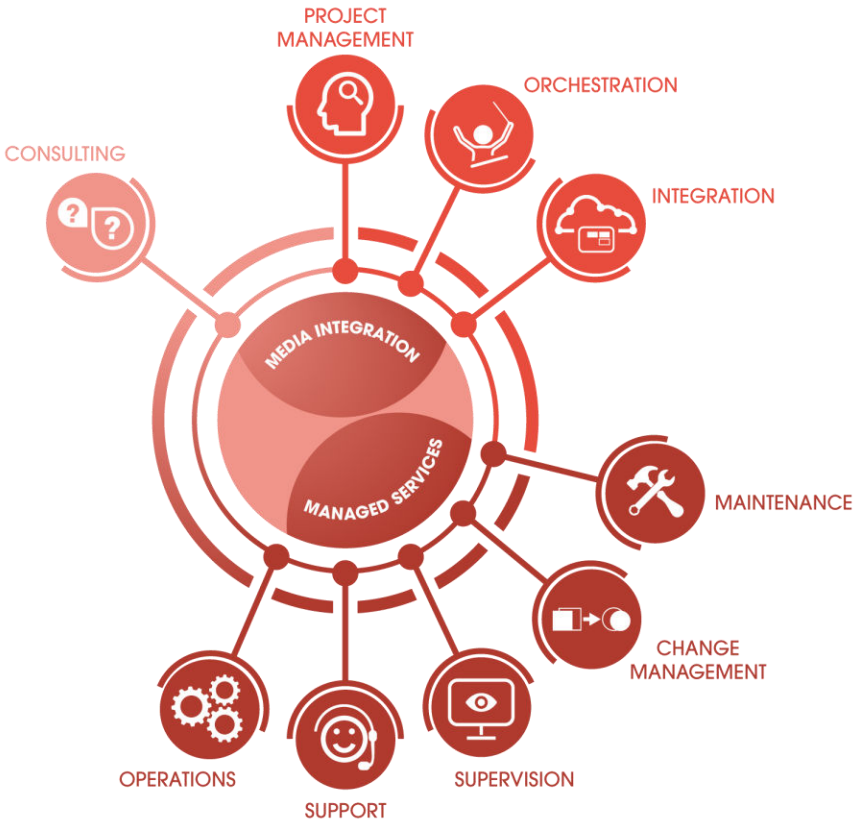
The managed service model is designed to meet various levels of performance requirements, including uptime as well as other QoS and SLA indicators, through a robust architecture embarking redundancies and security features on different levels.

Integration expertise

With 30 years of experience serving the media industry, Globecast has accumulated technical expertise and a rich history with broadcast and media technology vendors. As cloud technologies opened new opportunities, we have embraced the revolution by onboarding vendors' cloud offers and by consolidating our infrastructure into a comprehensive multi-network cloud platform that would be an effective and efficient foundation for the integration of cloud and on-premise technologies.

With these assets, we provide independent strategic advisory services and integration expertise to help organisations develop and refine their business plans. Our consulting team collaborates closely with clients to align executive visions, perform line-up reviews and other audits as well as create transformation plans tailored to specific business requirements.

Thanks to our trained and certified professional services, we design and deploy multi-vendor and multi-site workflows, orchestrating the various components of the TVHEaaS solution to ensure smooth integration with the customer's IT infrastructure.



A strong track record on quality and managed services

Globecast provides 24x7 Managed Services, backed by maintenance and change management capabilities throughout the platform lifecycle. We also offer proactive monitoring and fault detection with automatic fail-over to ensure maximum uptime.

Our industry-leading support teams deliver fault management, troubleshooting, root cause analysis and improvement capabilities, providing customers with full confidence in the quality of our TVHEaaS solution and our commitment to their success.

We have been operating at scale for the last two years, transcoding 3 million hours of content per month.

SECTION 4 - TVHEaaS – real-world examples

Even today, most broadcasters and PayTV Operators run their headend with on-premises infrastructure. However, many are exploring the possibility to move to an as-a-service solution as they need to embrace innovation, implement new formats (including UHD, HDR, Dolby Atmos), improve reach and maximise monetisation.

In this context, TVHEaaS can be used by TV operators, broadcasters and media companies to streamline operations, reduce costs and enhance service offerings across multiple platforms. Real-world implementations include:

- Orange: Unified signal acquisition and processing for 457 live TV channels, including 70 UHD, delivered across IPTV and OTT platforms. This is currently the largest deployed hybrid cloud Telco TV Head-End.
- UPICtv / BoFiNet (Botswana): Live TV and radio channels processed and delivered via OTT with DRM and CDN.
- SNRTLive.ma (Morocco): Live TV and radio channels with OTT delivery and 24x7 managed services.
- Arabsat TV Everywhere: Live TV channels delivered via OTT with comprehensive managed services.

A short case study

In April 2023, Globecast announced it had launched its first video public cloud video headend, powered by AWS, for a major European Telco.

The telco, a returning Globecast customer, wanted to optimise its video headend capabilities for its IPTV and OTT services, with an initial scope of 380 channels and 1,400 streams and a key objective to move to an OPEX environment, alongside significantly increased flexibility to add and remove services.

In developing this solution, it was essential to maintain video processing quality and robust security while also delivering the benefits of public cloud infrastructure and its inherent flexibility. Content acquisition and encryption, as well as some other tailored add-ons, are handled on-premises, with Globecast uniquely positioned to work in both environments.

All video processing functions are carried out in the cloud, with redundancy provided using different locations and zones. Globecast also built a MediaHub, allowing the interconnection of its points of presence with the cloud to offer specific add-ons and any type of output for worldwide distribution with the strength of a fully managed network. Connections are secured using innovative gateways and AWS Direct Connect over a private network. These gateways provide additional operational and technical functions, including monitoring and signal remapping.

By using AWS Media Services, and especially AWS Elemental MediaLive as the core component, to build this video headend, Globecast is providing the scalability – the capacity to scale resources up and down, as required – and the video quality needed in today's highly competitive market. AWS offers a huge range of capabilities, from market-leading resiliency to premium security, while the ability to create a video headend makes it easy to manage, maintain and update infrastructure. Combining this with Globecast's three decades of B2B video expertise and cloud know-how, the customer has been supplied with a platform that satisfies its requirements today and can be adapted and grown to handle future requirements without any additional CAPEX.

SECTION 5 - Current and Future Developments

The TVHEaaS landscape is rapidly evolving, with significant growth and innovation driven by technological progress and changing market demands. Globecast is at the forefront of this evolution, leveraging its extensive global network and Media Services Centers to expand TVHEaaS offerings worldwide.

Expanding global reach

Globecast is strategically expanding its TVHEaaS footprint by utilising its extensive network of Points of Presence (PoPs) around the globe. This expansion not only increases the reach of TVHEaaS but also enhances the ability to offer localised content delivery and support, meeting the diverse needs of broadcasters and operators in different regions.

Enhancing efficiency through mutualisation

One of the key strategies for the future of TVHEaaS is mutualisation - an approach where multiple broadcasters and operators can share the same infrastructure. Globecast, as a trusted third-party provider, is well-positioned to facilitate this process, offering a hybrid architecture that optimises hardware and energy efficiency across clients. This approach not only reduces costs but also enhances the environmental sustainability of the service, aligning with the growing corporate social responsibility (CSR) initiatives in the media industry.

Focus on energy efficiency and sustainability

As the media industry increasingly prioritises sustainability, TVHEaaS is being developed with a strong focus on energy efficiency. By upgrading to the most energy-efficient technologies and implementing shared platforms across customers, Globecast's TVHEaaS contributes to reducing the environmental impact of TV head-end operations. This commitment to sustainability is an integral part of the future development of TVHEaaS, positioning it as a solution that aligns with global environmental goals.

CONCLUSION

TVHEaaS gives organizations across the broadcast and content distribution sectors the ability to operate high-performance infrastructure backed by the cloud's proven cost and performance advantages.

Armed with these transformational capabilities, TVHEaaS users can focus on their core business priorities, enhance their service offerings and quickly adapt to changing market demands, free from the burden of managing complex hardware infrastructure.

To learn more, visit the Globecast website

https://www.globecast.com/

Taking content further