

CHOOSING THE RIGHT TECHNOLOGY PARTNER FOR FUTURE PROOF GROWTH

ABSTRACT

Transformation of broadcasting and its migration to the cloud stratosphere is a challenge that many broadcasters are experiencing in today's day and age. Multiple workflows on hybrid infrastructure models, applications and change management are just some factors that seek to challenge the evolution of the Online Video and Audio Platform (OVAP) industry.

However, despite these challenges, the recent pandemic has become the major driver of this migration. Technologies like cloud are key to successful direct-to-consumer models for broadcasters. It enables workflows to be conducted remotely and with real-time scalability due to greater demand for entertainment flexibility.

IPSB Technology, with its partners Amazon Web Services (AWS), Axle AI and Arista Networks provide turnkey open hybrid cloud-based solutions including the right tools, infrastructure sizing and bandwidth optimisation amongst others, to cater for the needs and demands of broadcasters to serve global content delivery. When the right solutions are in place, it means each department is operating in the most efficient way. Adapting state-of-the-art technologies makes businesses flexible, relevant, and competitive in the market. This transition will not happen overnight. It is a complex process. It is most likely that many broadcasters will not return to status quo once they have made the transition to virtual operations and experienced the benefits of cloud-based infrastructure, applications, and workflows.

There is no one size fits all approach to technological evolution and adoption. However, when in place, the infrastructure is custom-created to make things easier by designing it to maximise organisational resources. Broadcasters can choose to manage and operate the cloud, utilise third-party provider access, and purchase that access based on storage, bandwidth or other required metrics. Choosing the right partners to help achieve the necessary infrastructure will reduce operating expenses. An effective technological partner will strive to provide you with cost-effective solutions without cutting corners. When you reduce operating costs, you can put that money towards content growth instead. The saying of "Content is King" continues to apply in today's digital broadcasting world.

TRENDS IN THE ONLINE VIDEO AND AUDIO PLATFORM (OVAP) WITHIN THE BROADCASTING INDUSTRY

A fast-growing industry, the Online Video and Audio Platform (OVAP) or more commonly known in the media and broadcast industry as the Over-The-Top (OTT) platform is one of the many services offered and managed by IPSB Technology and partners. OVAP is essentially a media distribution method that delivers content outside the closed networks used by traditional cable and satellite television providers. By utilising the internet and bypassing the traditional gatekeepers of broadcasting media the Direct-to-Consumer strategy of these platforms allows for streaming of content to any compatible device with a stable internet connection.

This in turn, allows for the delivery of both video and audio content directly over the web without the hassle, frustrations, or high costs associated with traditional broadcasting. The market for OVAP services is expected to reach over \$156.9 billion by 2024 (*Over The Top (OTT) Services Market Size, Share and Global Market Forecast to 2024, n.d. Stoll, n.d.*).

This ongoing and upward trend is due to several benefits of the OVAP platform, one of which is its ability to allow audiences to stream the content on demand. In the beginning, Video on Demand (VOD), as offered by providers since the mid-90s, was limited and costly. However, the introduction of OVAP, encouraged the removal of several restrictions, such as dependency on

proprietary hardware and software or predetermined programme scheduling from traditional and conventional satellite broadcasting methods. By tapping into the power of the internet, broadcasters can override these limitations. When equipped with a compatible device, such as a SmartTV or SmartSpeakers, the OVAP broadcasting platform simplifies and improves the content delivery process. With a stable internet connection, the audience can access the content regardless of location, time of day, or network provider.

As consumers continue to embrace over-the-top streaming, the lines between it and traditional broadcasting will eventually blur. Many users have begun the adoption

CONVERGENCE CONTINUE TO DRIVE FAST CHANGES IN OTT

FREE ADVERTISEMENT SUPPORT TV

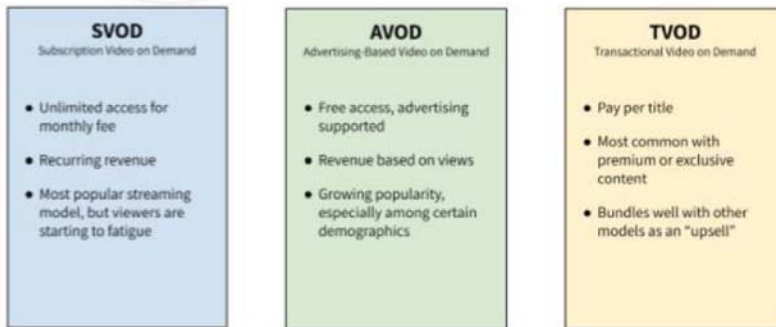


Image 1: F.A.S.T changes in the Over the Top Platforms

of hybrid combinations of the two, with others utilising OVAP as their only source of programming and content.

In today's fast-paced and ever evolving digital era, convergence has continued to drive free advertisement support television changes in the OVAP industry. The convergence of hybrid models in OVAP, which incidentally ranges from Subscription Video on Demand (SVOD). Transactional Video on Demand (TVOD) and Advertisement Video on Demand (AVOD), has proven to be the way forward for the broadcast industry. These models have accelerated the approach to free advertisement support television (FAST) changes to the online video and audio platforms (refer to *image 1*).

Another factor that has driven many broadcasters to adopt this convergence is the rampant spread of illegal content, which cost the industry an estimated \$60 billion in 2020 alone. The demand for free and available content has created a need for the adoption of the hybrid model or assimilation into the online video and audio platforms. Taking Malaysia as a sample, the anti-piracy advocacy stand taken by the government has led to a 64% decrease in illegal

pirated content consumption and a 20% increase in paying customers who subscribe to VOD and OVAP platforms available in the market, whereas the rest have switched to advertisement supported services.

***"The anti-piracy advocacy stand taken by the government has led to a 64% decrease in illegal pirated content consumption and a 20% increase in paying customers who subscribe to VOD and OVAP platforms available in the market, whereas the rest have switched to advertisement supported services."* – Mardhiah Nasir, Executive Director, IPSB Technology.**

As players in the broadcasting industry, providers will need to understand that changes in the Over the Top platform landscape are inevitable. Factors such as dependency on consumer devices and technological advancements, consumer demands and behaviours, as well as actions taken by OVAP providers, play an integral role in the development and demand of OVAP. Understanding the causal effect of these factors will allow for broadcasters to keep up to date with the needs of their audiences.

THE IMPORTANCE OF OPEN STANDARD ARCHITECTURE AND WEB-BASED SYSTEMS

Open Standard is a system architecture where commonly accepted standards are also considered as non-proprietary. Web-based is described as an application running via http or in a web browser. It enables a faster rate of overall innovation by allowing for stacks of systems. An ecosystem of different providers can all contribute to the solution. This shortens development time and time to market. The scalability of Open Standard System allows the ability to grow and interlink hardware and software to accommodate increased loads. To create competitive edge in the marketplace, interoperability in the system architecture is a critical factor to ensure the ability of computerised systems to connect and communicate with one another readily.

Benefits of an Open Architecture System are:

- Lower development and ownership costs
- Easy installation and maintenance
- Instant and constant accessibility
- Easy data sharing and collaboration
- Centralised security
- Reduced hardware cost
- Increased efficiency and scalability
- Adaptability to changing workloads

AWS Matches Capacity and Demand



Image 2: Amazon Web Services matches capacities and demands

- Greater access to information
- Interoperability

IPSB Technology, along with its partners at the Asia Pacific Broadcasting Union Symposium 2022, Amazon Web Services (AWS), axle ai and Arista Networks understands the benefits of such an ecosystem and the requirements demanded from broadcasters in the industry.

AMAZON WEB SERVICE: EXPERTS IN RELIABLE, SCALABLE AND EFFICIENT INFRASTRUCTURES

Media and entertainment customers face industry-wide transformation, with companies reinventing how they create content, optimise media supply chains, and compete for audience attention across streaming, broadcast, and direct-to-consumer platforms. Amazon Web Services (AWS) aligns the most purpose-built media and entertainment capabilities of any cloud to five solution areas to help customers transform the industry. The five solutions offered range from Content Production; Media Supply Chain and Archive; Broadcast; Direct-to-Consumer and Streaming; and Data Science and Analytics. With AWS, selecting the right tools and partners for workloads is made more convenient, with the end goal of accelerating production launches, and achieving faster time to value (*AWS for Media & Entertainment* (1:37), n.d.).

AWS aligns the most purpose-built media and entertainment capabilities of any cloud – including nine AWS Services, 11 Solutions, dedicated appliances, and over 400 AWS Partners, including Glue MPS, Arista, Axle Ai; as well as dedicated AWS industry specialists and AWS Professional Services teams.

With over 15 years of experience in supporting transformation for leading industry customers such as Comcast, Discovery Inc., Disney, FORMULA 1, FOX, HBO Max, Hulu, Method Studios, MGM, The National Football League, and many others, AWS offers unmatched media and entertainment experience and solutions.

Amongst many of the customers that have benefited from the AWS solutions and workflows is Netflix. The over the top online video and audio platform (OTT OVAP) is the world's leading internet television network, with over 200 million members in over 190 countries enjoying 125 million hours of TV shows and movies each day. Netflix uses AWS for nearly all its computing and storage needs, including databases, analytics, recommendation engines, video transcoding, and more – hundreds of functions that in total use over 100,000 server instances on AWS (*Netflix on AWS: Case Studies, Videos, Innovator Stories*, n.d.).

alongside our very own region OTT OVAP provider like RTMKLIK from Radio Televisyen Malaysia and RTBGo from Radio Television Brunei.

Case Study 1:

[IPSB Technology Accelerates Time-to-Market of Streaming Video and Mobile Applications for Radio Television Brunei](#)

Case Study 2:

[RTMKlik Digital Media Delivery Platform](#)

Shad Hashmi, AWS Media and Entertainment Partner Lead, APAC, explains how AWS can help organisations improve cost efficiency. The question that is posed by many broadcast and media organisations is “What happens when capacity does not meet demand?”. According to Mr Hashmi, there is a loss of opportunity. At AWS, the aim is to move away from the original and old model of production and workflow economics (refer to *image 2*) where OPEX and CAPEX are still applied and make sure that capacities and hence, spending, match the demand. This is what cloud economics looks like and what AWS can help with by purchasing for peak (refer to *image 3*).

He adds, “A study that we have conducted basically says that data centres are at average 50% under-utilised, which means you have

On Premise Purchase for Peak

Studied by Gartner, McKinsey and the Uptime Institute have stated that typical data are on average less than 50% utilised

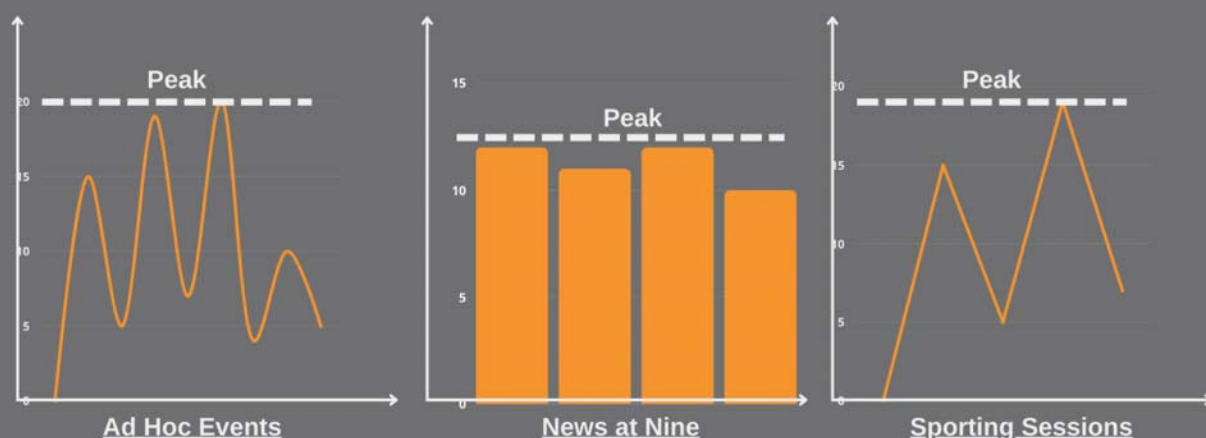


Image 3: On Premise purchase for peak

bought it but do not use it.” AWS Elemental and its partners can take entire broadcasting and workflows to the cloud via solutions such as virtualised productions, virtualised studios, and fibre optic distributions.” This knowledge allows publishers or content owners to scale up their infrastructure, deliver live multimedia content to consumers faster.

AXLE AI: DELIVERING A COMPLETE SOLUTION FOR STORAGE, MANAGEMENT AND AUTOMATION SEARCH CONTENT

Axle AI, a company whose slogan is “Making Media Smarter” uses browser-based hybrid cloud software that helps teams access, search and collaborate with locally stored or cloud media, and handle a mix of local and remote workflow seamlessly. The product’s AI-driven features include automated speech transcription and face recognition, with other capabilities under development. Custom tags are also supported so that tagging by editors, producers and assistants can complement the automated AI-based tagging.

Axle AI, which has been around since 2012, bridges the gap between on-premise workflows and cloud workflows, which both have significant roles to play in the broadcasting infrastructure. With over 800 sites worldwide and BBC and NBCU amongst some of its most

notable media and broadcasting clients, the range of axle ai products have helped its customers in cost optimisation by deploying both cost effective and easy-to-use software, unlike traditional MAM. The development of this AI platform aims to answer two key problems faced by many broadcasters. They are, the uploading of content onto other cloud platforms for analysis, and cost efficiency.

Sam Bogoch Chief Executive Officer, axle ai and Neil Blake, Business Development Manager, axle ai during the recent ABU Digital Broadcasting Symposium 2022 shared BBC’s Nature Watch Workflow and further reiterates the importance of ensuring a competent and seamless end-to-end platform. According to Neil, “Nature Watch is one of the most popular nature programmes in the UK. All content is remote. The camera operation team uploads content to the server where axle processes it. It later allows producers, directors and team members to log in remotely, access the content and create shortlists for editors. Although it is a remote styled production system, it maintains its seamlessness and smoothness for users due to the nature of axle and the ability to access media anywhere’. Neil adds that BBC Nature Watch had a metadata set where axle ai could import and integrate the old workflows with new ones, allowing

for programmes to be broadcast to consumers smoother and faster.

ARISTA EOS NETWORK: FOR HIGH INTENSIVE THROUGHPUT HUNGRY WORKFLOWS & UNIFIED ZERO TRUST SECURE NETWORK

Arista Networks is an industry leader in data-driven, client to cloud networking for large data centres, campus and routing environments. Arista’s award-winning platforms deliver availability, agility, automation, analytics and security through its advanced network operating system (*About Arista Networks, n.d.*).

As more and more assets migrate to cloud, there is an increase in prevalent threats and most of the time, these threats are large scale. A survey conducted suggests that over 50% of devices are unprotected and malware bridge attacks occur 51% of the time. Even if 70% of traffic is encrypted, this vulnerability still occurs.

The Arista Extensible Operating System (EOS) is the core of Arista cloud networking solutions for next-generation data centres and cloud networks. Cloud architectures built with Arista EOS scale to hundreds of thousands of computer and storage nodes with management and provisioning capabilities that work at scale. Through its programmability, EOS enables a set of software applications that deliver workflow

automation, high availability, unprecedented network visibility and analytics and rapid integration with a wide range of third-party applications for virtualisation, management, automation and orchestration services.

Arista EOS is a fully programmable and highly modular, Linux-based network operating system, using familiar industry standard CLI and runs a single binary software image across the Arista switching family. Designed for resiliency and programmability, EOS has a unique multi-process state sharing architecture that separates state information and packet forwarding from protocol processing and application logic.

Most issues that deter users from applying a sound security system include high costs, high attacker dwell time and a high risk of missed attacks. Apart from worry free endpoint application downloading, Arista's AI Security system, coined Awake Security, allows for high fidelity threat hunting (adversarial modelling to uncover complex threats with low false positive and negatives), situational analysis called EntityIQ discovers, profiles and tricks

devices, users and applications using AI fingerprinting and autonomous security called AVA, an AI based export system to automate triage, investigation and response skills. Arista says, "AVA allows for intention, anomaly and intent detection and behaviour analysis."

IPSB TECHNOLOGY: MAKING TECHNOLOGY WORK FOR YOU

Changes in the broadcast industry, experienced by broadcasters, are something that can be assured. The transformation and migration from traditional and conventional broadcasting methods to the application of cloud workflows is unquestionable and the importance of providing end-to-end service is becoming more and more apparent. Multiple workflows, convergence of hybrid models and change management are just some of the many factors that add a constant variable to the ever-growing industry.

By sharing our expertise of 14 years within the industry with the support of notable key players, IPSB Technology will help increase business agility and reduce the need to manage IT systems, scale and manage any type of unstructured data that lives and created On-Premise, Edge,

Core or Cloud and manage Digital Media Assets by leveraging on IPSB Technology's content production, delivery platforms and monetisation solutions.

In a world where consumer demands are increasing daily, more and more channels are retiring and slowly diminishing in relevancy when they cannot keep up the pace. More and more platforms are decentralising in this ever-evolving landscape. Broadcasters need to understand that 'content is king, and the platform is queen' and with the right strategy and tools, these demands can be met.

Some info from slides:

<https://docs.google.com/presentation/d/117zvuXm1EntfVBRtwXyrYGMzh9fQ81nLNIQFLqeIELU/edit?usp=sharing>

Advert video:

<https://drive.google.com/file/d/1A0R4HoqWIMtDpjTXYCcxarabWJnpNi7p/view?usp=sharing>

Article references:

<https://www.exponential-e.com/blog/why-technology-is-vital-for-future-proofing-the-broadcast-and-media-industry>

AUTHORS



Mardhiah Nasir is on a mission to empower clients with their digital transformation. She has a unique 11-year background in project management on various industries projects, in-depth knowledge of Big Data Infrastructure & Digital Media, strategic planning, market analysis and business development which provides clients with unique advantages. She is the Executive Director and Vice President of Sales for IPSB Technology whereby she manages and engages with local and international clients to be ahead of the curve with latest solutions, partners and technology. Her visionary perspective has earned her opportunities to speak at Broadcast Asia & ABU DBS and has written articles that were featured in global publications. IPSB has a wide based clientele including the no. 1 OTT platform in Brunei RTBGo, managing petabytes for Media Prima, Astro, RTM and many others clientele include both public sector and enterprise customers in Malaysia, Brunei and Indonesia with plans of expansion in the APAC region. IPSB's Specialising in Managed Services for Big Data Infrastructure and Digital Media, Mardhiah leads the team in Making Technology Work For You.



Farikh Ikram has over 14 years of experience in the Broadcast and Media industry and is currently the Head of Technology for IPSB Technology. In IPSB Technology, he manages all forward technology of the company's products and services, which focuses on Big Data Infrastructure and Digital Media. Previously, he was a part of the team that led Media Prima Television Network's tonton, Malaysia's pioneer OTT service and his passion also led him and other teammates to win the Gold Award in the Marketing Events Awards for "Best Online Drive Category" for Anugerah Juara Lagu Ke-26 (AJL26)'s website. He has gained the skill sets to meet and transform our client's digital journey, which includes Radio Television Brunei – RTBgo, the no. 1 OTT platform in Brunei, Media Prima Berhad, Radio Television Malaysia and many others. ■