How to work with the Cloud & manage your migration path

The journey to dynamic flexible Live Production

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Introduction

The viability of Cloud-based solutions for live production is no longer under debate. Spurred on by the necessity to deliver live sports coverage and events during the pandemic, many organisations moved to the Cloud almost overnight to support technical operations and manage dynamic workflows. The Cloud has proven to be a powerful catalyst for change. It's driving innovation and business agility, operational scalability and flexibility, and successfully connecting remote creative teams on an unprecedented level.

As we emerge into a new post-pandemic normality, digital transformation and innovation are top priorities. To deliver the dynamic content and live viewing experiences audiences now demand, technical teams are under immense pressure to make the most of what the Cloud offers, working with less resources and more agility. But migration to the Cloud is far from straightforward.

In this white paper, we breakdown what Cloud deployment and new business models mean for live production, the benefits and challenges, and explore how to mitigate the risks and determine your own path to a dynamic flexible live production environment.

Navigating the Cloud

Traditionally, broadcasters have hosted and managed their infrastructure on-premises with proprietary architecture built to address their complex and demanding live production requirements. But in the face of explosive changes in market dynamics, consumer demand and behaviour, such infrastructure fails to provide the flexibility and agility now needed to stay in the game. Deploying infrastructure in the Cloud delivers inherent benefits of utilization, elimination of waste, speed and scalability. It also introduces new business models that bring users greater flexibility and revenue opportunities. There are many paths to follow - no one-size fits all - and navigating the pros and cons can be bewildering.

Cloud deployment models

Let's start by clarifying the different ways to deploy your infrastructure in the Cloud.

PRIVATE CLOUD / DATACENTRE DEPLOYMENT

In a private Cloud environment, a broadcaster's proprietary infrastructure is virtualised with access completely isolated within its own firewall. It can be hosted in a dedicated on-premise facility or outsourced to a co-located third-party datacentre. Within a private cloud, the company's staff remains responsible for manageability, security and compliance of systems, with internet connectivity delivered by the datacentre provider.

PUBLIC CLOUD

In this model, media organisations avail of cloud computing services hosted by a third-party cloud service provider (such as AWS, Google Cloud or Microsoft Azure). These services are provisioned for the shared use of multiple organisations (or tenants.) The physical infrastructure exists on the premises of the cloud provider and can be scaled on demand.

HYBRID CLOUD

This approach spans both on-premises, private and cloud public resources. It allows organisations to mix and balance self-managed and third-party components in the workflow dependent on specific needs, eg continued use of on-prem infrastructure whilst making use of public cloud for temporary burstability or storage.

MULTI-CLOUD

This model is similar to hybrid with combinations of private and public cloud, but uses multiple cloud providers. So, a broadcaster could have AWS, Google and Microsoft clouds and move IT assets around in them.

Cloud business models

Cloud technology presents the opportunity to adapt to new OPEX business models, providing on-demand services that deliver new efficiency, innovation and agility.

01.
INFRASTRUCTURE AS A SERVICE (IAAS)

Infrastructure as a Service (IAAS) is also known as rehosting or "Lift and Shift". In this model, organizations eliminate the need for an on-premise infrastructure. All hardware components (eg servers, networking and storage) and virtual computing resources are provided and maintained by a third-party vendor. The user maintains complete control of data, workloads, middleware and applications through an API.

In this model, software business applications and workflows are hosted, managed, and stored in the service provider's database rather than installed locally. Typically delivered through a web browser, services are typically paid for on a subscription basis, with updates, fixes and maintenance taken care of for the user.

02.
SOFTWARE AS A SERVICE (SAAS)

03.
PLATFORM AS A SERVICE (PAAS)

Platform as a Service (PAAS) is also known as "refactoring". In this model, a third-party provider hosts application development platforms and tools on its own infrastructure and makes them available to users over the internet. Basically, it provides a framework for hardware and software tools built on top of an IaaS platform, allowing end users to focus talent on app development instead of infrastructure management.

Advantages of Cloud in Live Production

As we've faced the challenges of COVID-19 since early 2020, Cloud infrastructure (private and public) and Cloud services (SAAS) has been instrumental in the successful delivery of live production events, keeping operations running and audiences connected across the globe.

Efficient rapid & flexible deployment

Freed from cumbersome on-premise infrastructure, broadcasters are using Cloud platforms to rapidly deploy and scale virtualized systems with speed and ease. The ability to deliver massive temporary burstability for events as and when you need it is streamlining production planning process. The ability to access resources remotely from anywhere is driving significant on-site cost-savings and efficiencies that make Cloud a no-brainer.

Facilitating storytelling & new revenue opportunities

The adoption of SAAS and new cloud-native tools is having a major impact on the creative process of live production. Using web interfaces, operators and creative teams can now access tools, work and collaborate together in real-time where-ever they're based with the comfort of familiarity. These tools enable creatives to speedily facilitate storytelling and diversify content across digital platforms - expanding audience engagement and exploiting new revenue opportunities without capital expense.

Speed to market & competitive advantage

The Cloud is driving technical innovation at pace. It provides users with access to new technologies such as AI and Machine Learning tools to enhance their workflows and through PAAS adoption, significantly reduce development cycles and helping to speed up application time to market and gain competitive advantage.

All these benefits are undoubtedly compelling. However, whilst we pivot to the Cloud, the reality is that there remain compromises and pitfalls in live production that need to be considered before taking the plunge.

XtraMotion
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A reality check:
Cloud is not a panacea today

The vision of having a video server in the Cloud that lets an entire team connect through a web-based environment and seamlessly start and manage every live production through the Cloud is not a reality today – and, despite the hype, nor will it be in the foreseeable future. There remain technology shortfalls and limitations that need to be addressed. Furthermore, Cloud migration is not just a technical shift; it impacts your business as a whole and the change can be difficult.

There are technical constraints & limitations

For those delivering multi-camera live sports and events production - managing massive media files and ensuring quality of service - issues of latency, delivery of uncompressed files and common standards in the Cloud cannot be ignored. Today direct camera-to-Cloud acquisition still falls short and no public Cloud vendor can currently support SMPTE-2110 uncompressed files or fulfil the same level of guarantee for uncompressed workflows that the on-premises solutions provide. Cloud vendors are hyper-focused on resolving these issues, in the meantime, they represent roadblocks for many.

Cloud doesn't fit all production use-cases

Whilst Cloud is an enabler, its adoption doesn't make sense for all live production use-cases. It's proved efficient in short-term live production projects where extreme flexibility is required, usage is temporary, and resources are highly agile. But Cloud deployment is not always the most efficient approach to meet your needs and may it be an option for some regional events:

- For high usage environments (including 24/7 news), the magnitude of egress costs and running costs can make it unviable - despite ongoing decreases in charges.
- In reality, for most large live production events, there will always be key elements that need to remain on-premises.

- If switching a large number of resources at a remote venue is a requirement, then it's still more efficient and cost-effective to manage this in a local production workflow than via the Cloud.
- When it comes to regulatory compliance and security, Cloud may not be an option. Broadcasters have to work within the dictates of the host region and as such may have to rely on dedicated private lines.
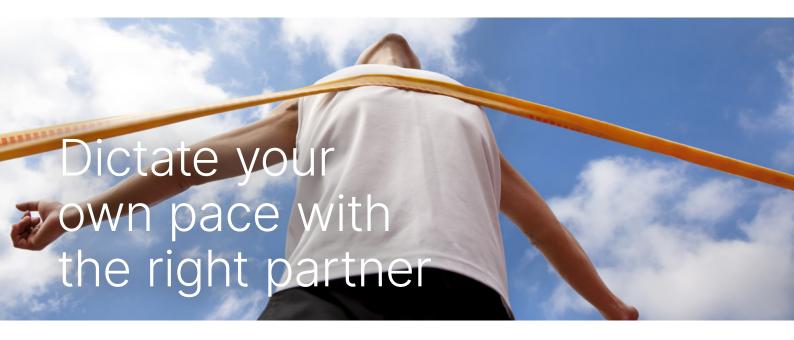
Lower TCO is not guaranteed in the Cloud

Cost-savings and efficiencies are key motivators to move to the Cloud. But measurement of Total Cost of Ownership (TCO) is complex and a true comparison of CAPEX & OPEX models is hard to define. New entrants, unimpeded by legacy technology, have the freedom to start afresh with a full OPEX business model but there is a lack of clarity and transparency when it comes to long-term costs. For those broadcasters who have already invested heavily in core infrastructure and technology solutions designed to last for years, it is too much of a risk to simply abandon existing on-premise infrastructure all together - despite the advantages the Cloud provides. There remains safety in continuing to sweat existing physical on-premises infrastructure, whilst waiting to see how early adopters fare.

Cloud migration is daunting & difficult

There is no Cloud migration blueprint or guide to thrive once you're there. Every organisation will have to plot its own unique journey. This is because Cloud migration is more than a shift in infrastructure provisioning; it is a business transformation that will impact systems, processes, users and how you do business. Time-intensive, costly, successful migration requires focused leadership and skilled expert resources to deliver it and maintain it.

Dictate your own pace with the right partner

In the race to deliver the content and live viewing experiences audiences now demand, broadcasters have no option but to embrace dynamic flexible production and agile business models or be left behind. Whilst some organisations are primed to shift their production environment into the Cloud to achieve this today, many broadcasters remain hesitant to jump all in and will instead test the water with incremental steps.

Whatever path you choose, don't go on it alone. Your choice of strategic technology partners on this journey and how you work with them is critical to how you progress.

Align to business goals

The path forward should be led by your business goals rather dictated by the transition to Cloud at any cost. Seek out technology partners who understand your business requirements and what you want to achieve. They will help you harness Cloud technology for as much or as little as needed to deliver efficiencies today and develop new capabilities at a pace that makes sense to your business.

Live Production expertise

It's vital that your technology partners truly understand the complexities and demands of live production environments, where latency and bandwidth are mission critical and compromises cannot be accepted. Aware of the limitations, they will help to derive benefits from the Cloud and optimise resource management whilst mitigating the risks. When you hit a problem - and undoubtedly you will – you need to count on partners who can dive in and resolve the issues quickly.

Maintain choice and control

Broadcasters want choice when deciding where to build and how to run their applications. The right technology partner will provide you with a range of solutions, services and microservices that mix new and old development processes, support traditional architectures and new applications that run on any footprint – on-premise, private, public or hybrid Cloud. This will keep you agile and in control.

Empowering creative teams

Select technology partners who understand the creative process and are obsessed with making users lives easier. Harnessing the Cloud is more than taking existing products and running them on virtual machines. It's about seamlessly delivering innovation and new creative opportunities to your users, whilst shielding them from the complexity of your chosen back-end deployment.

Build your skills and resources

The key to a successful Cloud migration is to have the right mix of resources and technical expertise and today we're faced with a shortage of skilled people. As the Cloud constantly evolves, you'll need to continually develop new skillsets that can manage the complexity and deal with the unforeseen. Strategic technology partnerships will extend your IT, workflow and Cloud capabilities and ensure your organisation keeps up with the fast pace of change.

Your Live Production transformation partner

As a leader in live video technology, EVS helps broadcasters and media companies around the world create compelling live storytelling in the most reliable, efficient and creative way.

Through our pioneering work in IP, HDR, AI and the Cloud, we provide the most integrated solutions platform for live content creation, with innovative tools and services that complement your existing workflows and support your future business needs - whether on-premises, in private, public or hybrid cloud.

With years of experience developing and delivering solutions for a changing media world, we enable our customers to adapt to emerging technologies, new business models and maximise their potential at their own pace.

Contact us today to find out how EVS can help you embrace the opportunities of Cloud and flexible live production.

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