

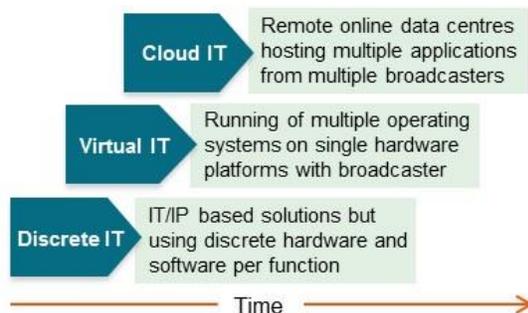
## Moving broadcast services to the cloud: if and when?

Broadcast services companies appear to be rushing into cloud video solutions at great speed. But before ditching in-house options a number of questions need to be answered. In this article CIL and Media Asset Capital look at how and when broadcasters should move services to the cloud.

### 1. The benefits of the cloud

Broadcast technology is changing rapidly; migrating from bespoke hardware to commodity IP-based solutions. Tapeless environments are unbundling the value chain, while non-linear is proliferating standards, complicating distribution and causing an explosion in metadata and media asset management. Within this context, media processing is shifting from discrete on-premises hardware solutions to cloud-based services provided by data solutions companies.

#### Exhibit 1. Evolution of broadcast services



Source: CIL and Media Asset Capital

Cloud services deliver a number of benefits over in-house solutions.

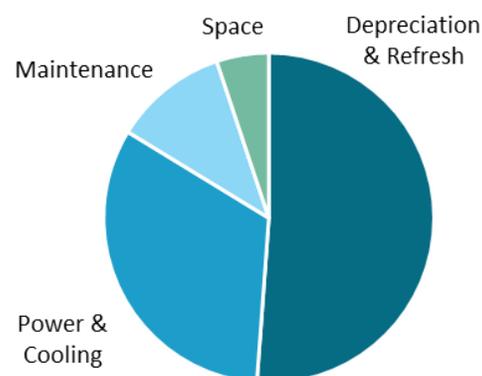
- **Lower barriers to entry:** The cloud reduces up-front capital investment and enables short term and ad hoc contracts
- **Elasticity and lower redundancy:** cloud services are elastic; they flex and scale relatively quickly to manage peaks and troughs and so require less redundancy.
- **Security:** With appropriate measures (e.g. encrypting content 'at rest') the industry is now comfortable with the security of well-known cloud services.

With their ability to scale, cloud services appear to offer cost advantages. However, assessing the cost of cloud vs in-house solutions is complex.

### 2. Comparing in-House and cloud costs

Before assessing the cost of cloud services, it is important that the full costs of the counterfactual, in-house video solutions, are pinned down. The capital costs are well known. However, in our experience, running costs are often underestimated. Few fully assess the costs of power, floor space and maintenance; these can double annual costs. In addition, refresh rates can be underestimated; broadcast equipment is usually depreciated over 5-7 years (and typically has a longer useful life), the useful life of IT is typically only 3-4 years.

#### Exhibit 2. Annual costs of in-house solutions



Source: Media Asset Capital Cost Model

Comparing in-house media services with cloud options is like comparing apples and oranges. Our cost model identifies a number of cloud costs that can trap the unwary.

**Distribution costs:** Getting large volumes of content (e.g. archive) in and out of the cloud is difficult, even with high speed networks. Devices (such as Amazon Snowball) on which up to 50TB of content can be encrypted and stored for delivery by courier solve this problem but incur the cost of local storage and encoding.

**Access Costs:** The pricing models of the major platforms (e.g. Amazon, Google and Microsoft) include data access (most charge for downloads rather than uploads). However, the cost of editing, checking and transcoding (especially HD) can rapidly exceed potential savings.

**Storage Charges:** Many providers offer different classes of storage; with instant access, high performance storage the most expensive, and lower performance archive storage more cost competitive. Migration between storage classes, and the deletion of redundant content, requires disciplined management to control costs.

**Archive Costs:** Cloud archiving delivers redundancy, remote access and disaster recovery benefits. However, the costs and delays associated with restores can make cloud archiving more expensive and less practical than on-premises storage.

### 3. Changing processes

In light of the above dynamics, for cloud services to be cost effective, careful workflow design and management is required.

- Editing and review processes need to limit the number of times content is viewed or transferred in the cloud
- Working on content 'in place' may reduce costs, though some providers price streaming at a similar rate to downloading.
- The use of proxy files needs to be established to reduce access costs.

Even with good workflow management, our modelling shows that currently cloud costs can significantly exceed on-premises infrastructure. However, this is changing rapidly.

### 4. Evaluating cloud service providers

At a global value of \$27 billion (only a small portion of which is hosted solutions), broadcast services are a tiny portion of the \$4.1 trillion IT and telecoms services industry. In this market broadcasters are no longer the main customers of specialist niche suppliers such as Avid and Quantel. Instead they are small clients of global players; a very different supplier relationship.

The market for cloud services is still dominated by Amazon, Google and Microsoft. New players such as B2 by Backblaze, are challenging these with more competitive pricing and SLAs. However, these do not typically offer media services (transcoding, auto QC, editing, metadata management etc). While it is possible to store content within, say, Backblaze and export to another cloud provider for processing, this incurs data access and processing costs.

#### Exhibit 3. Overview of main players

	Cost Of			Availability of Video Processing Services
	WIP Storage	Archive Storage	Data Retrieval	
Amazon				
Google				
Microsoft				
Backblaze				
Rackspace				

Source: CIL and Media Asset Capital

High Low

The market and pricing of media cloud services are changing very quickly and need to be constantly reviewed. However, currently, where high volumes of processing are required, if workflows are not designed effectively, 'low cost' cloud platforms can prove to be anything but!

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